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Earth–Mars Trajectories, 1964

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W. E. Bollman
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C. G. Pfeiffer

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FOREWORD

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

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

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

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

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

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

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

I. INTRODUCTION

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

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

A. Heliocentric Conic Computation

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

B. Planetocentric Conic Computation

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

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

C. Differential Corrections

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

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

D. Mid-Course Guidance

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

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

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

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

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

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

E. Orbit Determination

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

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

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

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

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

F. Accuracy of Computations

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

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

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

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

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

II. ANALYTICAL MODEL FOR INTERPLANETARY TRAJECTORIES

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

A. Heliocentric Motion

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

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

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

1. Determination of Planar Orientation

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

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

[2] Hyperbolic heliocentric motion is not considered herein.

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

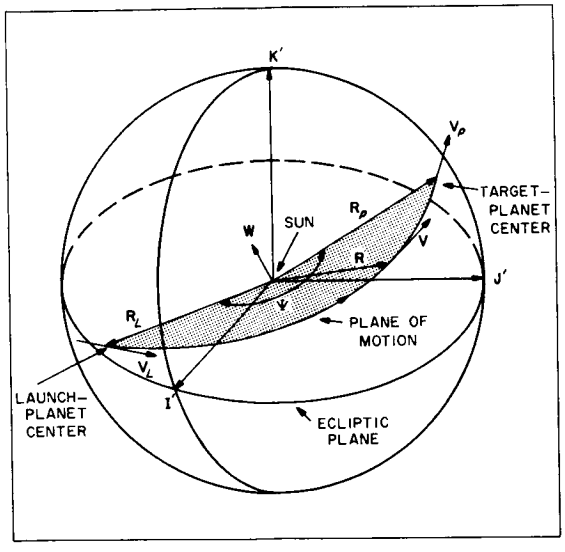

Fig. 1. Heliocentric transfer geometry

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

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

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

2. In-Plane Relations

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

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

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

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

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

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

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

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

and the path angle Γ is found from

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

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

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

3. Lambert's Theorem

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

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

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

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

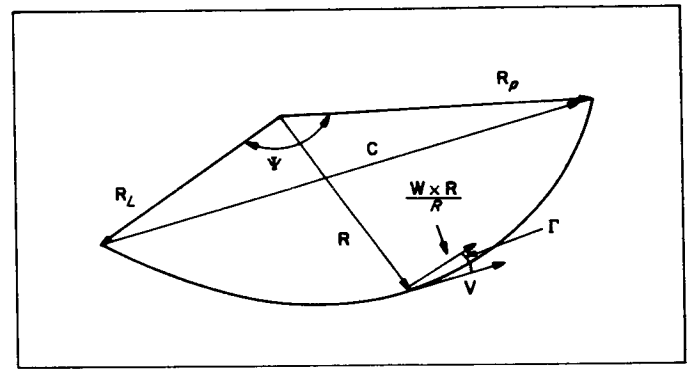

Fig. 2. In-plane transfer geometry

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

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

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

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

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

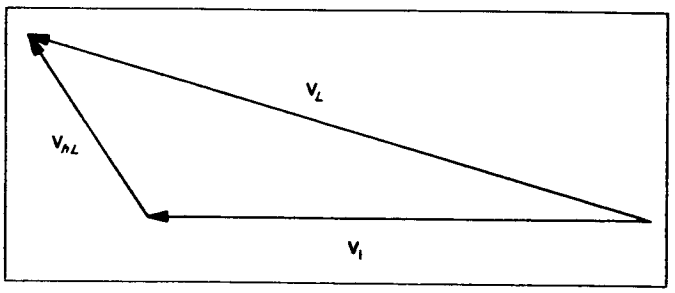

Fig. 3. Determination of the hyperbolic-excess velocity vector $\mathbf{V}_{hL}$

B. Launch Planet Escape Hyperbola

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

1. Assumptions

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

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

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

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

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

2. Size and Shape of the Escape Hyperbola

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

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

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

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

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

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

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

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

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

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

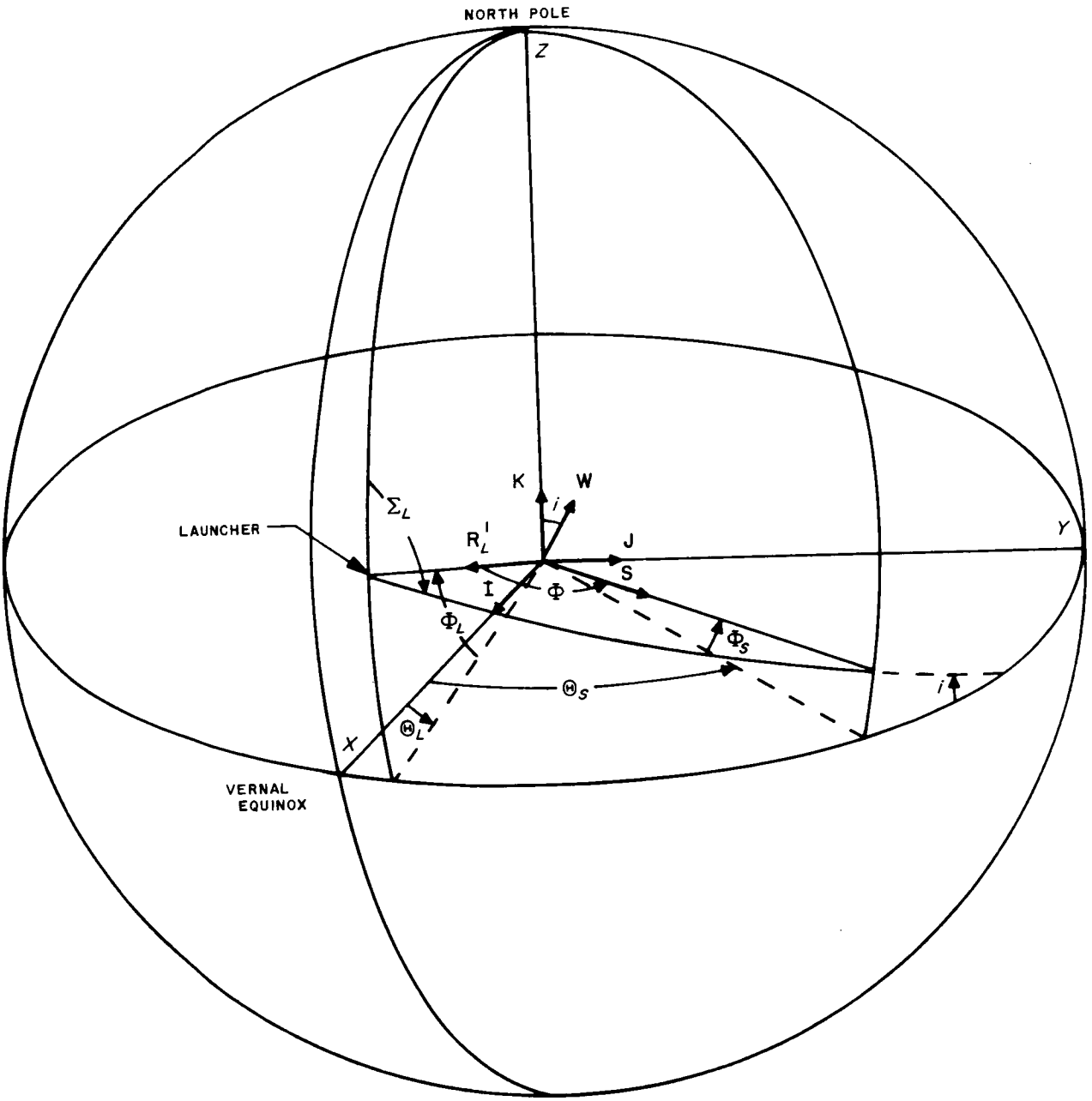

Fig. 4. Vehicle flight plane

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

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

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

C. Differential Corrections

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

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

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

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

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

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

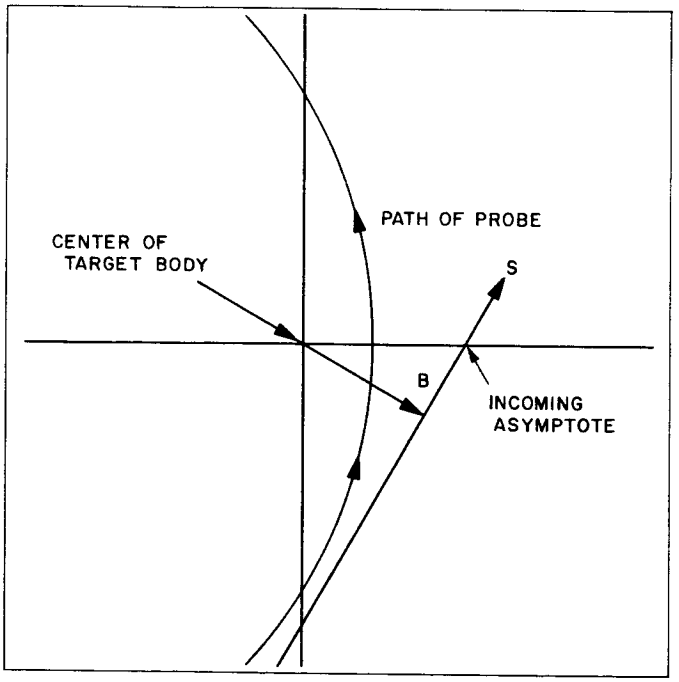

Fig. 5. Impact parameter B

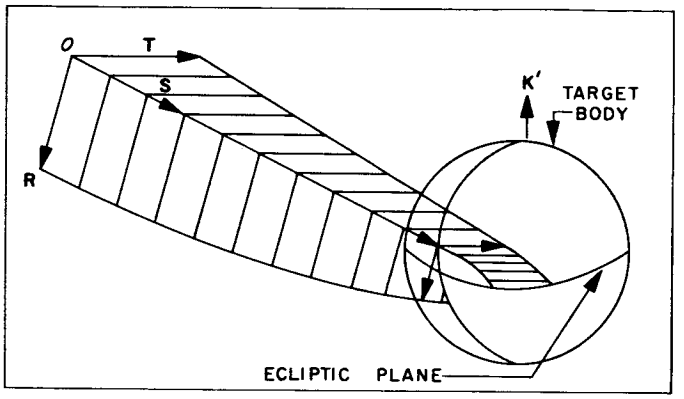

Fig. 6. The R, S, T target coordinate system

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

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

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

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

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

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

where

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

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

The semimajor axis a' is obtained from

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

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

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

The semilatus rectum p' and eccentricity e' are

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

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

The eccentric anomaly at launch E'_L is

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

The mean anomaly at launch M'_L is obtained from

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

The mean orbital rate n' is

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

The mean anomaly at the target M'_p is

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

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

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

if

$$\cos E_p \geqq 0$$

or

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

if

$$\cos E_p < 0$$

where

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

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

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

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

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

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

The heliocentric central angle Ψ' is

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

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

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

The heliocentric position vector at the target is

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

where

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

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

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

The heliocentric velocity at the target is

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

The hyperbolic-excess velocity at the target is

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

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

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

The impact parameter **B** is

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

The flight time error is

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

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

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

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

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

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

from whence

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

and

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

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

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

D. Mid-Course Execution Accuracy

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

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

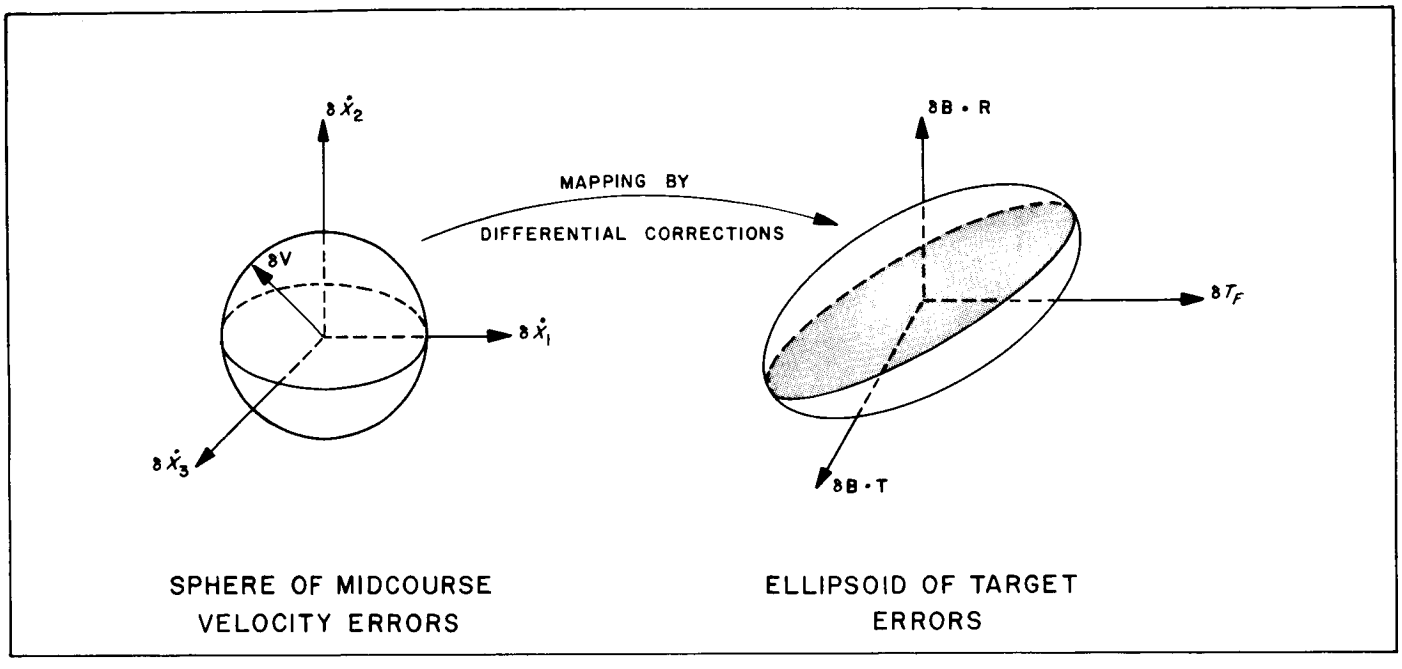

Fig. 7. The mapping of mid-course execution error

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

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

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

Then a new matrix F can be formed,

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

where

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

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

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

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

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

where

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

and

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

The elements of the Λ matrix are:

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

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

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

Then the Λ matrix becomes

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

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

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

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

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

where the matrix L is given by

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

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

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

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

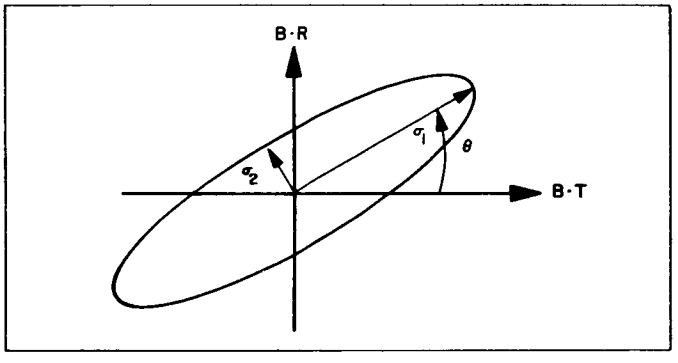

Fig. 8. Projection of three-dimensional error ellipsoid on the T-R plane

E. Orbit Determination Accuracy

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

1. Method of Describing Orbit Determination Accuracy

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

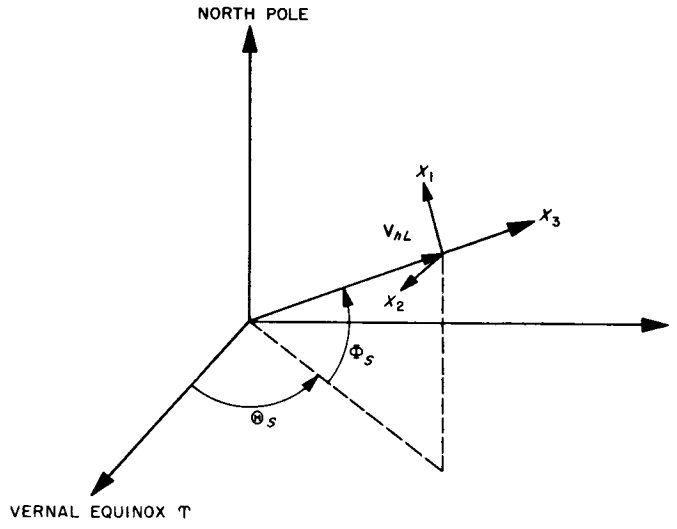

Fig. 9. Orientation of the X_i Cartesian coordinate system to describe uncertainties in the hyperbolic-excess velocity vector $\mathbf{V}_{hL}$

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

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

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

Note that

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

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

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

2. Accuracy of Near-Earth Tracking

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

Table 1. Trajectory parameters influencing tracking accuracy

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

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

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

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

Table 2. Tracking station parameters influencing tracking accuracy

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

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

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

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

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

3. Calculation of Target Errors

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

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

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

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

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

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

By postmultiplying K by

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

the F matrix is obtained.

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

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

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

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

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

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

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

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

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

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

III. EXPLANATION OF TRAJECTORY TABLES

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

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

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

A. Heliocentric Conic Group

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

HELIOCENTRIC CONIC DISTANCE

RL LAL LOL VL GAL AZL HCA SMA ECC INC V1

RP LAP LOP VP GAP AZP TAL TAP RCA APO V2

RC GL GP ZAL ZAP ETS ZAE ETE ZAC ETC CLP

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

Line 1

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Line 2

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

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

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

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

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

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

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

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

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

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

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

Line 3

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

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

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

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

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

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

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

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

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

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

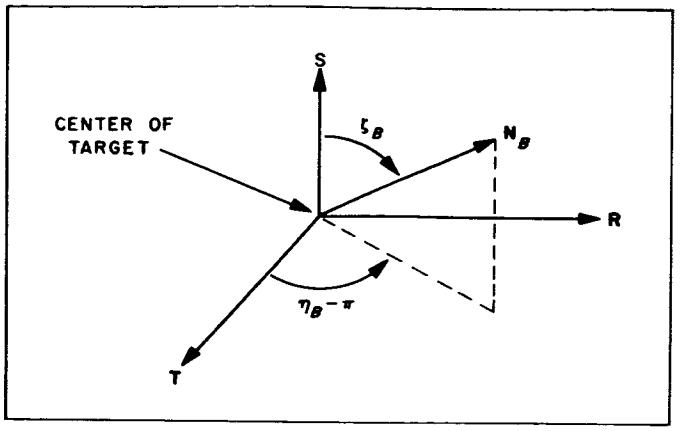

Fig. 10. Generalized geometry for aiming point angles

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

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

since

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

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

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

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

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

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

ETS, η_S — defined as above.

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

ETE, η_E — defined as above.

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

ETC, η_C — defined as above.

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

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

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

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

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

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

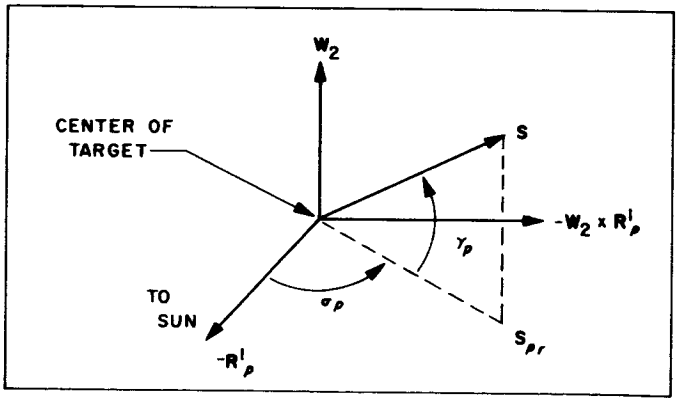

Fig. 11. Definition of σ_p and γ_p

B. Planetocentric Conic Group

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

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

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

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

t_1 the time from launch to parking-orbit injection.

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

t_2 the time of final burn.

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

v_1 the true anomaly in the hyperbolic orbit at injection.

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

ϕ_L the longitude of the launch site.

θ_L the latitude of the launch site.

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

$\Phi_1 =$ 17 deg

$t_1 =$ 500 sec

$\Phi_2 =$ 8 deg

$t_2 =$ 100 sec

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

$v_1 =$ 3.7 deg

$R_p =$ 6560 km

$\phi_L =$ 28.317 deg

$\theta_L =$ 279.457 deg

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

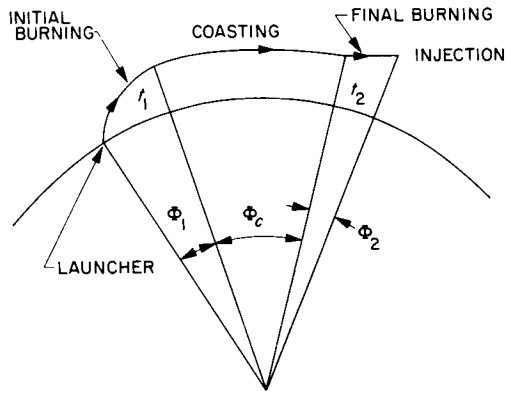

Fig. 12. Ascent trajectory profile

The print array for the PLANETOCENTRIC CONIC group is:

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

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

Line 1

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

Line 2

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

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

C. *Differential Corrections Group*

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

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

DIFFERENTIAL CORRECTIONS

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

The symbols are defined as follows:

Line 1

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

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

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

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

Line 2

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

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

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

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

Line 3

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

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

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

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

Line 4

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

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

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

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

D. Mid-Course Execution Accuracy Group

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

The print array for this group is:

MID-COURSE EXECUTION ACCURACY

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

The quantities are defined as follows:

Line 1

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

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

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

Line 2

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

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

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

Line 3

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

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

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

Line 4

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

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

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

E. Orbit Determination Accuracy Group

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

ORBIT DETERMINATION ACCURACY

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

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

Line 1

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

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

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

Line 2

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

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

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

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

Line 3

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

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

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

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

Line 4

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

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

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

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

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

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

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

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

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

IV. CONSTANTS

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

Gravitational Constants

1. Sun

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

2. Earth

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

Astronomical Unit-to-Kilometer Conversion Factor

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

Earth's Rotation Rate

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

REFERENCES

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Earth-Mars Trajectories, 1964

Launch date interval: December 3 to December 26, 1964

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

LAUNCH DATE DEC 3 1964 FLIGHT TIME 140.00 ARRIVAL DATE APR 22 1965

HELIOCENTRIC CONIC DISTANCE 382.362 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	36.036	GAL	-2.94	AZL	88.63	HCA	117.16	SMA	264.68	ECC	.44526	INC	1.3711	V1	30.214
RP	245.23	LAP	1.22	LOP	188.04	VP	24.103	GAP	26.13	AZP	90.63	TAL	350.44	TAP	107.61	RCA	146.83	APO	382.53	V2	22.364
RC	123.232	GL	8.19	GP	1.40	ZAL	105.25	ZAP	176.37	ETS	156.08	ZAE	154.05	ETE	359.99	ZAC	90.08	ETC	256.07	CLP	176.65

PLANETOCENTRIC CONIC

C3	36.507	VHL	6.042	DLA	8.99	RAL	179.87	RAD	6568.4	VEL	12.565	PTH	2.28	VHP	11.857	DPA	.60	RAP	185.40	ECC	1.6008

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 3	2645.94	-27.17	70.68	55.06	98.30	18 7 9	2045.9	-25.74	62.30
90.00	7 41 18	4724.65	16.11	202.13	49.36	66.39	9 0 2	4124.6	12.78	195.03
100.00	18 48 47	2369.43	-28.52	50.10	54.82	99.37	19 28 16	1769.4	-26.93	41.66
100.00	8 58 15	4476.39	17.35	183.29	48.78	65.27	10 12 51	3876.4	13.87	176.23
110.00	20 7 1	2124.59	-32.13	30.71	54.02	102.35	20 42 26	1524.6	-30.10	22.09
110.00	9 56 30	4293.99	20.65	167.73	47.06	62.14	11 8 4	3694.0	16.76	160.76

DIFFERENTIAL CORRECTIONS

TDE	.6522	TRA	-1.7141	TC3	.6842	BAU	.3344
RDE	-.5817	RRA	-.2601	RC3	-.0339	FAU	.05370
FDE	-.1776	FRA	.8298	FC3	-1.2734	BSP	6320
BDE	.8739	BRA	1.7337	BC3	.6851	FSP	390

MID-COURSE EXECUTION ACCURACY

SGT	1942.8	SGR	606.9	SG3	150.4		
RRT	.0305	RRF	-.0407	RTF	-.7946		
SGB	2035.4	R23	-.0138	R13	-.7946		
SG1	1942.9	SG2	606.6	THA	.61		

ORBIT DETERMINATION ACCURACY

ST	791.7	SR	556.7	SS	303.2
CRT	-.6902	CRS	-.4555	CST	.9528
LSA	939.1	MSA	381.8	SSA	32.0
EL1	900.7	EL2	354.1	ALF	148.76

LAUNCH DATE DEC 3 1964 FLIGHT TIME 142.00 ARRIVAL DATE APR 24 1965

HELIOCENTRIC CONIC DISTANCE 383.675 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	35.891	GAL	-2.76	AZL	88.64	HCA	118.07	SMA	259.26	ECC	.43342	INC	1.3575	V1	30.214
RP	245.01	LAP	1.20	LOP	188.94	VP	23.905	GAP	25.50	AZP	90.64	TAL	350.87	TAP	108.93	RCA	146.89	APO	371.63	V2	22.385
RC	125.213	GL	8.31	GP	1.44	ZAL	104.46	ZAP	175.89	ETS	158.23	ZAE	153.72	ETE	.23	ZAC	90.21	ETC	256.05	CLP	176.15

PLANETOCENTRIC CONIC

C3	34.525	VHL	5.876	DLA	9.42	RAL	179.19	RAD	6568.4	VEL	12.486	PTH	2.26	VHP	11.572	DPA	.47	RAP	185.78	ECC	1.5682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 58	2645.55	-27.17	70.65	53.51	98.32	18 1 4	2045.5	-25.73	62.27
90.00	7 41 57	4696.84	15.34	200.45	47.73	65.91	9 0 13	4096.8	11.96	193.40
100.00	18 42 56	2368.30	-28.50	50.02	53.27	99.41	19 22 24	1768.3	-26.91	41.58
100.00	8 58 40	4449.32	16.57	181.66	47.14	64.76	10 12 49	3849.3	13.04	174.65
110.00	20 1 41	2121.86	-32.09	30.51	52.47	102.46	20 37 3	1521.9	-30.04	21.89
110.00	9 56 24	4268.53	19.83	166.20	45.40	61.57	11 7 33	3668.5	15.88	159.31

DIFFERENTIAL CORRECTIONS

TDE	.6403	TRA	-1.6779	TC3	.7598	BAU	.3511
RDE	-.5629	RRA	-.2520	RC3	-.0340	FAU	.05513
FDE	-.1672	FRA	.8382	FC3	-1.3824	BSP	6309
BDE	.8526	BRA	1.6967	BC3	.7606	FSP	421

MID-COURSE EXECUTION ACCURACY

SGT	1984.4	SGR	604.1	SG3	158.2		
RRT	.0289	RRF	-.0469	RTF	-.8055		
SGB	2074.3	R23	-.0212	R13	-.8055		
SG1	1984.5	SG2	603.8	THA	.56		

ORBIT DETERMINATION ACCURACY

ST	798.8	SR	553.9	SS	301.2
CRT	-.6905	CRS	-.4255	CST	.9425
LSA	942.1	MSA	383.7	SSA	32.3
EL1	905.6	EL2	353.4	ALF	149.23

LAUNCH DATE DEC 3 1964 FLIGHT TIME 144.00 ARRIVAL DATE APR 26 1965

HELIOCENTRIC CONIC DISTANCE 385.194 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	35.752	GAL	-2.58	AZL	88.66	HCA	118.97	SMA	254.31	ECC	.42215	INC	1.3436	V1	30.214
RP	244.80	LAP	1.18	LOP	189.85	VP	23.716	GAP	24.88	AZP	90.65	TAL	351.30	TAP	110.27	RCA	146.95	APO	361.67	V2	22.407
RC	127.239	GL	8.42	GP	1.48	ZAL	103.64	ZAP	175.40	ETS	159.93	ZAE	153.44	ETE	.47	ZAC	90.34	ETC	256.03	CLP	175.64

PLANETOCENTRIC CONIC

C3	32.687	VHL	5.717	DLA	9.85	RAL	178.48	RAD	6568.3	VEL	12.412	PTH	2.24	VHP	11.294	DPA	.34	RAP	186.16	ECC	1.5380

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 42	2645.75	-27.17	70.66	51.95	98.31	17 54 48	2045.7	-25.74	62.29
90.00	7 42 34	4669.05	14.56	198.78	46.10	65.45	9 0 23	4069.1	11.13	191.78
100.00	18 36 54	2367.74	-28.50	49.98	51.72	99.43	19 16 22	1767.7	-26.90	41.54
100.00	8 59 3	4422.29	15.78	180.04	45.51	64.28	10 12 45	3822.3	12.19	173.09
110.00	19 56 11	2119.65	-32.06	30.34	50.92	102.55	20 31 31	1519.6	-30.00	21.73
110.00	9 56 16	4243.15	19.01	164.70	43.76	61.04	11 6 59	3643.2	15.00	157.88

DIFFERENTIAL CORRECTIONS

TDE	.6181	TRA	-1.6525	TC3	.8277	BAU	.3620
RDE	-.5445	RRA	-.2438	RC3	-.0336	FAU	.05684
FDE	-.1608	FRA	.8416	FC3	-1.5055	BSP	6550
BDE	.8238	BRA	1.6704	BC3	.8284	FSP	444

MID-COURSE EXECUTION ACCURACY

SGT	2026.0	SGR	600.7	SG3	166.7		
RRT	.0349	RRF	-.0502	RTF	-.8105		
SGB	2113.2	R23	-.0192	R13	-.8105		
SG1	2026.1	SG2	600.3	THA	.65		

ORBIT DETERMINATION ACCURACY

ST	799.3	SR	550.8	SS	300.1
CRT	-.6828	CRS	-.4067	CST	.9389
LSA	938.9	MSA	386.9	SSA	33.2
EL1	902.9	EL2	356.2	ALF	149.58

LAUNCH DATE DEC 3 1964 FLIGHT TIME 146.00 ARRIVAL DATE APR 28 1965

HELIOCENTRIC CONIC DISTANCE 386.897 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	35.619	GAL	-2.40	AZL	88.67	HCA	119.88	SMA	249.77	ECC	.41141	INC	1.3294	V1	30.214
RP	244.57	LAP	1.15	LOP	190.75	VP	23.536	GAP	24.27	AZP	90.66	TAL	351.75	TAP	111.62	RCA	147.01	APO	352.53	V2	22.429
RC	129.306	GL	8.53	GP	1.53	ZAL	102.80	ZAP	174.89	ETS	161.30	ZAE	153.21	ETE	.70	ZAC	90.47	ETC	256.02	CLP	175.13

PLANETOCENTRIC CONIC

C3	30.982	VHL	5.566	DLA	10.28	RAL	177.75	RAD	6568.2	VEL	12.343	PTH	2.23	VHP	11.024	DPA	.22	RAP	186.54	ECC	1.5099

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 15	2646.55	-27.17	70.72	50.40	98.28	17 48 21	2046.6	-25.75	62.34
90.00	7 43 9	4641.29	13.77	197.12	44.48	65.01	9 0 30	4041.3	10.29	190.17
100.00	18 30 41	2367.76	-28.50	49.98	50.16	99.43	19 10 9	1767.8	-26.90	41.54
100.00	8 59 24	4395.32	14.98	178.44	43.88	63.83	10 12 39	3795.3	11.34	171.54
110.00	19 50 31	2117.96	-32.03	30.22	49.36	102.62	20 25 49	1518.0	-29.96	21.62
110.00	9 56 3	4217.87	18.17	163.22	42.12	60.53	11 6 21	3617.9	14.10	156.46

DIFFERENTIAL CORRECTIONS

TDE	.5961	TRA	-1.6250	TC3	.9016	BAU	.3737
RDE	-.5269	RRA	-.2360	RC3	-.0329	FAU	.05862
FDE	-.1525	FRA	.8447	FC3	-1.6379	BSP	6753
BDE	.7956	BRA	1.6420	BC3	.9022	FSP	470

MID-COURSE EXECUTION ACCURACY

SGT	2067.3	SGR	597.0	SG3	175.6		
RRT	.0406	RRF	-.0545	RTF	-.8161		
SGB	2151.8	R23	-.0184	R13	-.8161		
SG1	2067.5	SG2	596.5	THA	.73		

ORBIT DETERMINATION ACCURACY

ST	798.5	SR	547.4	SS	298.1
CRT	-.6751	CRS	-.3828	CST	.9333
LSA	934.2	MSA	390.1	SSA	34.1
EL1	899.2	EL2	358.6	ALF	149.90

LAUNCH DATE DEC 3 1964 FLIGHT TIME 148.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 388.765 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	35.492	GAL	-2.23	AZL	88.68	HCA	120.78	SMA	245.59	ECC	.40117	INC	1.3149
RP	244.34	LAP	1.13	LOP	191.66	VP	23.365	GAP	23.65	AZP	90.67	TAL	352.20	TAP	112.99	RCA	147.07	APO	344.11
RC	131.411	GL	8.63	GP	1.57	ZAL	101.93	ZAP	174.38	ETS	162.42	ZAE	153.03	ETE	.94	ZAC	90.60	ETC	256.00

V1	30.214	V2	22.451	CLP	174.61														

PLANETOCENTRIC CONIC

C3	20.400	VHL	5.422	DLA	10.72	RAL	176.98	RAD	6568.2	VEL	12.279	PTH	2.21	VHP	10.761	DPA	.10	RAP	186.91
ECC	1.4838																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 36	2647.96	-27.19	70.82	48.84	98.23	17 41 44	2048.0	-25.77	62.44
90.00	7 43 42	4613.59	12.97	195.48	42.86	64.61	9 0 36	4013.6	9.44	188.58
100.00	18 24 18	2368.35	-28.50	50.02	48.60	99.41	19 3 46	1768.4	-26.91	41.59
100.00	8 38 42	4368.43	14.17	176.86	42.26	63.40	10 12 30	3768.4	10.48	170.01
110.00	19 44 41	2116.81	-32.02	30.13	47.81	102.67	20 19 57	1516.8	-29.94	21.53
110.00	9 55 48	4192.73	17.32	161.77	40.50	60.06	11 5 41	3592.7	13.21	155.07

DIFFERENTIAL CORRECTIONS

TDE	.5750	TRA	-1.5962	TC3	.9804	BAU	.3856												
RDE	-.5099	RRA	-.2284	RC3	-.0319	FAU	.06043												
FDE	-.1430	FRA	.8473	FC3	-1.7795	BSP	6940												
BDE	.7685	BRA	1.6124	BC3	.9809	FSP	499												

MID-COURSE EXECUTION ACCURACY

SGT	2108.6	SGR	593.2	SG3	184.8		
RRT	.0460	RRF	-.0596	RTF	-.8219		
SGB	2190.5	R23	-.0186	R13	-.8220		
SG1	2108.8	SG2	592.5	THA	.81		

ORBIT DETERMINATION ACCURACY

ST	797.1	SR	543.8	SS	295.4		
CRT	-.6677	CRS	-.3550	CST	.9258		
LSA	928.7	MSA	393.2	SSA	34.9		
EL1	895.1	EL2	360.5	ALF	150.20		

LAUNCH DATE DEC 3 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 390.782 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	35.370	GAL	-2.06	AZL	88.70	HCA	121.69	SMA	241.74	ECC	.39141	INC	1.3002
RP	244.11	LAP	1.11	LOP	192.57	VP	23.202	GAP	23.04	AZP	90.68	TAL	352.67	TAP	114.36	RCA	147.12	APO	336.36
RC	133.550	GL	8.73	GP	1.63	ZAL	101.04	ZAP	173.86	ETS	163.34	ZAE	152.90	ETE	1.18	ZAC	90.73	ETC	255.99

V1	30.214	V2	22.475	CLP	174.08														

PLANETOCENTRIC CONIC

C3	27.932	VHL	5.285	DLA	11.17	RAL	176.19	RAD	6568.1	VEL	12.219	PTH	2.20	VHP	10.505	DPA	-.01	RAP	187.28
ECC	1.4597																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 46	2649.96	-27.21	70.96	47.28	98.16	17 34 56	2050.0	-25.80	62.58
90.00	7 44 13	4586.00	12.16	193.86	41.25	64.23	9 0 39	3986.0	8.59	187.00
100.00	18 17 44	2369.51	-28.52	50.11	47.05	99.37	18 57 13	1769.5	-26.93	41.67
100.00	8 59 57	4341.68	13.34	175.30	40.65	63.00	10 12 18	3741.7	9.62	168.49
110.00	19 38 41	2116.18	-32.01	30.08	46.26	102.70	20 13 57	1516.2	-29.93	21.49
110.00	9 55 28	4167.78	16.46	160.34	38.88	59.61	11 4 56	3567.8	12.31	153.70

DIFFERENTIAL CORRECTIONS

TDE	.5540	TRA	-1.5664	TC3	1.0650	BAU	.3979												
RDE	-.4936	RRA	-.2211	RC3	-.0304	FAU	.06237												
FDE	-.1323	FRA	.8491	FC3	-1.9331	BSP	7105												
BDE	.7420	BRA	1.5820	BC3	1.0655	FSP	528												

MID-COURSE EXECUTION ACCURACY

SGT	2150.4	SGR	589.1	SG3	194.7		
RRT	.0516	RRF	-.0654	RTF	-.8278		
SGB	2229.7	R23	-.0193	R13	-.8279		
SG1	2150.6	SG2	588.3	THA	.88		

ORBIT DETERMINATION ACCURACY

ST	794.7	SR	540.1	SS	292.1		
CRT	-.6602	CRS	-.3230	CST	.9164		
LSA	922.0	MSA	396.4	SSA	35.7		
EL1	889.9	EL2	362.2	ALF	150.48		

LAUNCH DATE DEC 3 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 392.934 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	35.254	GAL	-1.90	AZL	88.71	HCA	122.60	SMA	238.18	ECC	.38211	INC	1.2851
RP	243.87	LAP	1.08	LOP	193.48	VP	23.048	GAP	22.43	AZP	90.69	TAL	353.14	TAP	115.74	RCA	147.17	APO	329.19
RC	135.719	GL	8.82	GP	1.68	ZAL	100.12	ZAP	173.33	ETS	164.12	ZAE	152.82	ETE	1.43	ZAC	90.87	ETC	255.97

V1	30.214	V2	22.498	CLP	173.55														

PLANETOCENTRIC CONIC

C3	26.570	VHL	5.155	DLA	11.62	RAL	175.37	RAD	6568.1	VEL	12.163	PTH	2.18	VHP	10.256	DPA	-.12	RAP	187.64
ECC	1.4373																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 43 47	2652.53	-27.23	71.15	45.72	98.08	17 27 59	2052.5	-25.83	62.76
90.00	7 44 41	4558.57	11.34	192.26	39.65	63.88	9 0 40	3958.6	7.74	185.44
100.00	18 11 0	2371.22	-28.54	50.23	45.49	99.30	18 50 31	1771.2	-26.96	41.79
100.00	9 0 9	4315.11	12.52	173.76	39.05	62.63	10 12 4	3715.1	8.75	166.99
110.00	19 32 33	2116.05	-32.00	30.07	44.71	102.70	20 7 49	1516.0	-29.93	21.48
110.00	9 55 5	4143.05	15.61	158.93	37.28	59.19	11 4 8	3543.1	11.41	152.35

DIFFERENTIAL CORRECTIONS

TDE	.5329	TRA	-1.5356	TC3	1.1530	BAU	.4097												
RDE	-.4779	RRA	-.2141	RC3	-.0285	FAU	.06436												
FDE	-.1204	FRA	.8495	FC3	-2.0970	BSP	7284												
BDE	.7158	BRA	1.5504	BC3	1.1533	FSP	562												

MID-COURSE EXECUTION ACCURACY

SGT	2191.0	SGR	584.8	SG3	204.8		
RRT	.0575	RRF	-.0718	RTF	-.8333		
SGB	2267.7	R23	-.0202	R13	-.8334		
SG1	2191.2	SG2	583.8	THA	.95		

ORBIT DETERMINATION ACCURACY

ST	790.9	SR	536.1	SS	288.1		
CRT	-.6523	CRS	-.2871	CST	.9050		
LSA	913.8	MSA	399.5	SSA	36.6		
EL1	883.5	EL2	363.8	ALF	150.71		

LAUNCH DATE DEC 3 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 395.207 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	35.143	GAL	-1.73	AZL	88.73	HCA	123.51	SMA	234.88	ECC	.37325	INC	1.2697
RP	243.63	LAP	1.06	LOP	194.39	VP	22.901	GAP	21.82	AZP	90.70	TAL	353.62	TAP	117.13	RCA	147.21	APO	322.55
RC	137.915	GL	8.90	GP	1.73	ZAL	99.19	ZAP	172.79	ETS	164.78	ZAE	152.78	ETE	1.68	ZAC	91.00	ETC	255.96

V1	30.214	V2	22.522	CLP	173.00														

PLANETOCENTRIC CONIC

C3	25.307	VHL	5.031	DLA	12.07	RAL	174.53	RAD	6568.0	VEL	12.111	PTH	2.17	VHP	10.013	DPA	-.23	RAP	188.00
ECC	1.4165																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 38	2655.66	-27.26	71.37	44.16	97.97	17 20 53	2055.7	-25.88	62.98
90.00	7 45 6	4531.35	10.52	190.69	38.07	63.56	9 0 38	3931.4	6.89	183.89
100.00	18 4 7	2373.47	-28.56	50.39	43.94	99.22	18 43 41	1773.5	-26.99	41.94
100.00	9 0 18	4288.78	11.69	172.24	37.46	62.29	10 11 46	3688.8	7.80	165.51
110.00	19 26 16	2116.41	-32.01	30.10	43.17	102.69	20 1 33	1518.4	-29.93	21.51
110.00	9 54 38	4118.60	14.75	157.56	35.69	58.81	11 3 16	3518.6	10.51	151.02

DIFFERENTIAL CORRECTIONS

TDE	.5127	TRA	-1.5039	TC3	1.2464	BAU	.4218												
RDE	-.4628	RRA	-.2072	RC3	-.0261	FAU	.06647												
FDE	-.1083	FRA	.8487	FC3	-2.2738	BSP	7425												
BDE	.6907	BRA	1.5181	BC3	1.2466	FSP	595												

MID-COURSE EXECUTION ACCURACY

SGT	2231.9	SGR	580.3	SG3	215.6		
RRT	.0633	RRF	-.0784	RTF	-.8390		
SGB	2306.1	R23	-.0215	R13	-.8391		
SG1	2232.2	SG2	579.0	THA	1.01		

ORBIT DETERMINATION ACCURACY

ST	786.5	SR	532.0	SS	284.1		
CRT	-.6447	CRS	-.2495	CST	.8921		
LSA	905.0	MSA	402.3	SSA	37.5		
EL1	876.6	EL2	364.9	ALF	150.94		

LAUNCH DATE DEC 3 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 397.591 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 35.036 GAL -1.57 AZL 88.75 HCA 124.43 SMA 231.82 ECC .36481 INC 1.2539 V1 30.214
RP 243.38 LAP 1.03 LOP 195.30 VP 22.762 GAP 21.21 AZP 90.71 TAL 354.10 TAP 118.53 RCA 147.25 APO 316.39 V2 22.547
RC 140.134 GL 8.98 GP 1.79 ZAL 98.22 ZAP 172.25 ETS 165.34 ZAE 152.78 ETE 1.94 ZAC 91.14 ETC 255.95 CLP 172.46

PLANETOCENTRIC CONIC

C3 24.136 VHL 4.913 DLA 12.52 RAL 173.66 RAD 6568.0 VEL 12.063 PTH 2.16 VHP 9.776 DPA -.32 RAP 188.36 ECC 1.3972

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 29 20	2659.31	-27.30	71.63	42.61	97.84	17 13 39	2059.3	-25.93	63.23
90.00	7 45 28	4504.39	9.70	189.13	36.49	63.27	9 0 33	3904.4	6.03	182.37
100.00	17 57 6	2376.21	-28.59	50.59	42.39	99.12	18 36 43	1776.2	-27.03	42.14
100.00	9 0 23	4262.73	10.86	170.75	35.88	61.98	10 11 25	3662.7	7.03	164.06
110.00	19 19 52	2117.24	-32.02	30.16	41.63	102.65	19 55 10	1517.2	-29.95	21.56
110.00	9 54 6	4094.46	13.89	156.21	34.10	58.45	11 2 21	3494.5	9.62	149.72

DIFFERENTIAL CORRECTIONS
TDE .4900 TRA-1.4727 TC3 1.3429 BAU .4334
RDE -.4483 RRA -.2006 RC3 -.0230 FAU .06866
FDE -.0932 FRA .8471 FC3-2.4626 BSP 7581
BDE .6641 BRA 1.4863 BC3 1.3431 FSP 631

MID-COURSE EXECUTION ACCURACY
SGT 2272.2 SGR 575.6 SG3 226.8
RRT .0711 RRF -.0866 RTF -.8442
SGB 2344.0 R23 -.0226 R13 -.8443
SG1 2272.6 SG2 574.0 THA 1.10

ORBIT DETERMINATION ACCURACY
ST 778.9 SR 527.8 SS 279.2
CRT -.6345 CRS -.2011 CST .8749
LSA 892.6 MSA 406.2 SSA 38.4
EL1 866.5 EL2 366.7 ALF 151.08

LAUNCH DATE DEC 3 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 400.077 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 34.935 GAL -1.42 AZL 88.76 HCA 125.35 SMA 228.97 ECC .35676 INC 1.2377 V1 30.214
RP 243.12 LAP 1.01 LOP 196.22 VP 22.630 GAP 20.61 AZP 90.72 TAL 354.60 TAP 119.94 RCA 147.29 APO 310.66 V2 22.572
RC 142.373 GL 9.04 GP 1.85 ZAL 97.24 ZAP 171.69 ETS 165.82 ZAE 152.83 ETE 2.20 ZAC 91.27 ETC 255.93 CLP 171.90

PLANETOCENTRIC CONIC

C3 23.051 VHL 4.801 DLA 12.97 RAL 172.77 RAD 6567.9 VEL 12.018 PTH 2.15 VHP 9.545 DPA -.42 RAP 188.71 ECC 1.3794

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 21 54	2663.47	-27.34	71.93	41.06	97.70	17 6 17	2063.5	-25.99	63.52
90.00	7 45 47	4477.74	8.88	187.60	34.93	63.00	9 0 25	3877.7	5.19	180.87
100.00	17 49 58	2379.44	-28.63	50.83	40.85	99.00	18 29 37	1779.4	-27.08	42.36
100.00	9 0 24	4237.00	10.03	169.29	34.32	61.69	10 11 1	3637.0	6.17	162.63
110.00	19 13 21	2118.50	-32.04	30.26	40.09	102.60	19 48 40	1518.5	-29.98	21.65
110.00	9 53 30	4070.70	13.04	154.89	32.54	58.12	11 1 20	3470.7	8.74	148.44

DIFFERENTIAL CORRECTIONS
TDE .4700 TRA-1.4400 TC3 1.4439 BAU .4450
RDE -.4344 RRA -.1942 RC3 -.0193 FAU .07098
FDE -.0793 FRA .8436 FC3-2.6659 BSP 7752
BDE .6400 BRA 1.4531 BC3 1.4440 FSP 669

MID-COURSE EXECUTION ACCURACY
SGT 2312.4 SGR 570.7 SG3 238.6
RRT .0780 RRF -.0946 RTF -.8493
SGB 2381.7 R23 -.0242 R13 -.8494
SG1 2312.8 SG2 568.8 THA 1.17

ORBIT DETERMINATION ACCURACY
ST 772.2 SR 523.3 SS 274.6
CRT -.6263 CRS -.1549 CST .8565
LSA 881.3 MSA 409.0 SSA 39.4
EL1 857.4 EL2 367.4 ALF 151.25

LAUNCH DATE DEC 3 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 402.655 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 34.838 GAL -1.27 AZL 88.78 HCA 126.26 SMA 226.32 ECC .34908 INC 1.2211 V1 30.214
RP 242.87 LAP .98 LOP 197.14 VP 22.506 GAP 20.01 AZP 90.72 TAL 355.10 TAP 121.36 RCA 147.32 APO 305.33 V2 22.598
RC 144.629 GL 9.10 GP 1.91 ZAL 96.25 ZAP 171.13 ETS 166.23 ZAE 152.91 ETE 2.48 ZAC 91.41 ETC 255.92 CLP 171.33

PLANETOCENTRIC CONIC

C3 22.044 VHL 4.695 DLA 13.42 RAL 171.85 RAD 6567.9 VEL 11.976 PTH 2.13 VHP 9.320 DPA -.51 RAP 189.06 ECC 1.3628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 14 21	2668.08	-27.38	72.26	39.52	97.53	16 58 49	2068.1	-26.05	63.85
90.00	7 46 2	4451.45	8.06	186.10	33.38	62.76	9 0 13	3851.4	4.35	179.39
100.00	17 42 42	2383.10	-28.66	51.09	39.31	98.87	18 22 26	1783.1	-27.14	42.62
100.00	9 0 21	4211.66	9.21	167.86	32.77	61.44	10 10 32	3611.7	5.33	161.22
110.00	19 6 44	2120.18	-32.07	30.38	38.56	102.53	19 42 4	1520.2	-30.01	21.77
110.00	9 52 49	4047.34	12.20	153.61	30.98	57.82	11 0 16	3447.3	7.86	147.20

DIFFERENTIAL CORRECTIONS
TDE .4484 TRA-1.4073 TC3 1.5494 BAU .4566
RDE -.4211 RRA -.1880 RC3 -.0148 FAU .07344
FDE -.0627 FRA .8390 FC3-2.8840 BSP 7891
BDE .6152 BRA 1.4198 BC3 1.5495 FSP 709

MID-COURSE EXECUTION ACCURACY
SGT 2352.4 SGR 565.6 SG3 251.1
RRT .0863 RRF -.1041 RTF -.8542
SGB 2419.4 R23 -.0260 R13 -.8544
SG1 2352.9 SG2 563.4 THA 1.26

ORBIT DETERMINATION ACCURACY
ST 762.8 SR 518.8 SS 269.7
CRT -.6160 CRS -.0980 CST .8325
LSA 867.1 MSA 412.7 SSA 40.5
EL1 845.7 EL2 368.6 ALF 151.34

LAUNCH DATE DEC 3 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 405.319 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 34.745 GAL -1.12 AZL 88.80 HCA 127.18 SMA 223.85 ECC .34177 INC 1.2041 V1 30.214
RP 242.60 LAP .96 LOP 198.06 VP 22.388 GAP 19.42 AZP 90.73 TAL 355.60 TAP 122.78 RCA 147.35 APO 300.36 V2 22.624
RC 146.900 GL 9.14 GP 1.98 ZAL 95.23 ZAP 170.55 ETS 166.59 ZAE 153.04 ETE 2.76 ZAC 91.56 ETC 255.91 CLP 170.76

PLANETOCENTRIC CONIC

C3 21.112 VHL 4.595 DLA 13.87 RAL 170.91 RAD 6567.9 VEL 11.937 PTH 2.12 VHP 9.100 DPA -.59 RAP 189.40 ECC 1.3474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 41	2673.11	-27.42	72.62	37.98	97.36	16 51 14	2073.1	-26.12	64.20
90.00	7 46 12	4425.57	7.25	184.63	31.85	62.55	8 59 57	3825.6	3.52	177.94
100.00	17 35 21	2387.17	-28.71	51.39	37.78	98.72	18 15 8	1787.2	-27.20	42.91
100.00	9 0 13	4186.75	8.40	166.46	31.23	61.21	10 10 0	3586.7	4.49	159.85
110.00	19 0 2	2122.23	-32.10	30.53	37.04	102.45	19 35 24	1522.2	-30.05	21.92
110.00	9 52 2	4024.45	11.37	152.36	29.44	57.54	10 59 7	3424.4	7.00	145.98

DIFFERENTIAL CORRECTIONS
TDE .4262 TRA-1.3750 TC3 1.6580 BAU .4680
RDE -.4084 RRA -.1820 RC3 -.0096 FAU .07600
FDE -.0453 FRA .8332 FC3-3.1166 BSP 8049
BDE .5903 BRA 1.3870 BC3 1.6580 FSP 752

MID-COURSE EXECUTION ACCURACY
SGT 2392.3 SGR 560.4 SG3 264.2
RRT .0960 RRF -.1144 RTF -.8590
SGB 2457.1 R23 -.0274 R13 -.8591
SG1 2392.9 SG2 557.6 THA 1.36

ORBIT DETERMINATION ACCURACY
ST 751.9 SR 514.1 SS 265.1
CRT -.6042 CRS -.0362 CST .8050
LSA 851.1 MSA 416.7 SSA 41.6
EL1 832.2 EL2 370.1 ALF 151.40

LAUNCH DATE DEC 3 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 408.060 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 34.656 GAL -.98 AZL 88.81 HCA 128.11 SMA 221.55 ECC .33480 INC 1.1867 V1 30.214
RP 242.34 LAP .93 LOP 198.98 VP 22.277 GAP 18.83 AZP 90.73 TAL 356.11 TAP 124.22 RCA 147.37 APO 295.72 V2 22.651
RC 149.184 GL 9.18 GP 2.05 ZAL 94.20 ZAP 169.97 ETS 166.90 ZAE 153.21 ETE 3.06 ZAC 91.70 ETC 255.90 CLP 170.17

PLANETOCENTRIC CONIC

C3 20.247 VHL 4.500 DLA 14.31 RAL 169.95 RAD 6567.8 VEL 11.901 PTH 2.11 VHP 8.886 DPA -.67 RAP 189.74 ECC 1.3332

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 58 56	2678.54	-27.47	73.02	36.45	97.17	16 43 35	2078.5	-26.19	64.58
90.00	7 46 18	4400.11	6.45	183.19	30.32	62.37	8 59 38	3800.1	2.70	176.52
100.00	17 27 54	2391.61	-28.75	51.71	36.25	98.55	18 7 46	1791.6	-27.27	43.22
100.00	9 0 0	4162.28	7.59	165.08	29.70	61.00	10 9 23	3562.3	3.67	158.50
110.00	18 53 14	2124.63	-32.13	30.71	35.53	102.35	19 28 39	1524.6	-30.10	22.09
110.00	9 51 10	4002.02	10.54	151.14	27.92	57.29	10 57 52	3402.0	6.16	144.80

DIFFERENTIAL CORRECTIONS

TDE .4142 TRA-1.3321 TC3 1.7910 BAU .4848
RDE -.3964 RRA -.1763 RC3 -.0038 FAU .07861
FDE -.0242 FRA .8281 FC3-3.3610 BSP 7973
BDE .5733 BRA 1.3437 BC3 1.7910 FSP 802

MID-COURSE EXECUTION ACCURACY

SGT 2437.2 SGR 555.3 SG3 277.7
RRT .0989 RRF -.1267 RTF -.8674
SGB 2499.7 R23 -.0365 R13 -.8677
SG1 2437.9 SG2 552.5 THA 1.36

ORBIT DETERMINATION ACCURACY

ST 745.8 SR 509.5 SS 261.2
CRT -.6045 CRS .0411 CST .7570
LSA 840.8 MSA 418.7 SSA 42.1
EL1 825.4 EL2 366.7 ALF 151.43

LAUNCH DATE DEC 3 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 410.874 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 34.570 GAL -.83 AZL 88.83 HCA 129.03 SMA 219.39 ECC .32816 INC 1.1687 V1 30.214
RP 242.06 LAP .91 LOP 199.90 VP 22.172 GAP 18.25 AZP 90.74 TAL 356.62 TAP 125.65 RCA 147.39 APO 291.39 V2 22.678
RC 151.478 GL 9.20 GP 2.13 ZAL 93.16 ZAP 169.37 ETS 167.17 ZAE 153.41 ETE 3.37 ZAC 91.84 ETC 255.89 CLP 169.58

PLANETOCENTRIC CONIC

C3 19.448 VHL 4.410 DLA 14.74 RAL 168.98 RAD 6567.8 VEL 11.867 PTH 2.11 VHP 8.677 DPA -.74 RAP 190.07 ECC 1.3201

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 51 9	2684.25	-27.52	73.43	34.93	96.97	16 35 53	2084.3	-26.26	64.98
90.00	7 46 18	4375.25	5.67	181.79	28.82	62.21	8 59 13	3775.2	1.90	175.13
100.00	17 20 25	2396.33	-28.80	52.05	34.74	98.38	18 0 22	1796.3	-27.34	43.55
100.00	8 59 42	4138.41	6.80	163.75	28.19	60.82	10 8 41	3538.4	2.86	157.18
110.00	18 46 24	2127.30	-32.17	30.91	34.03	102.23	19 21 51	1527.3	-30.15	22.28
110.00	9 50 13	3980.20	9.74	149.97	26.41	57.07	10 56 33	3380.2	5.33	143.65

DIFFERENTIAL CORRECTIONS

TDE .3875 TRA-1.3028 TC3 1.8932 BAU .4922
RDE -.3846 RRA -.1705 RC3 .0035 FAU .08148
FDE -.0070 FRA .8164 FC3-3.6274 BSP 8264
BDE .5459 BRA 1.3139 BC3 1.8932 FSP 847

MID-COURSE EXECUTION ACCURACY

SGT 2470.8 SGR 549.7 SG3 292.2
RRT .1138 RRF -.1380 RTF -.8695
SGB 2531.2 R23 -.0342 R13 -.8698
SG1 2471.7 SG2 545.9 THA 1.52

ORBIT DETERMINATION ACCURACY

ST 729.1 SR 504.4 SS 257.0
CRT -.5859 CRS .1047 CST .7285
LSA 819.1 MSA 423.5 SSA 43.7
EL1 805.7 EL2 369.9 ALF 151.38

LAUNCH DATE DEC 3 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 413.753 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 34.489 GAL -.70 AZL 88.85 HCA 129.96 SMA 217.37 ECC .32184 INC 1.1502 V1 30.214
RP 241.79 LAP .88 LOP 200.83 VP 22.073 GAP 17.67 AZP 90.74 TAL 357.14 TAP 127.09 RCA 147.41 APO 287.33 V2 22.706
RC 153.781 GL 9.21 GP 2.20 ZAL 92.11 ZAP 168.76 ETS 167.40 ZAE 153.66 ETE 3.71 ZAC 91.99 ETC 255.88 CLP 168.98

PLANETOCENTRIC CONIC

C3 18.707 VHL 4.325 DLA 15.17 RAL 167.98 RAD 6567.8 VEL 11.836 PTH 2.10 VHP 8.473 DPA -.80 RAP 190.39 ECC 1.3079

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 43 18	2690.23	-27.56	73.86	33.42	96.76	16 28 8	2090.2	-26.34	65.40
90.00	7 46 13	4350.95	4.89	180.42	27.33	62.07	8 58 44	3751.0	1.12	173.77
100.00	17 12 54	2401.29	-28.85	52.41	33.23	98.20	17 52 55	1801.3	-27.41	43.90
100.00	8 59 18	4115.12	6.03	162.46	26.70	60.67	10 7 53	3515.1	2.07	155.90
110.00	18 39 32	2130.21	-32.21	31.13	32.53	102.11	19 15 2	1530.2	-30.21	22.49
110.00	9 49 9	3958.97	8.95	148.83	24.92	56.87	10 55 8	3359.0	4.53	142.53

DIFFERENTIAL CORRECTIONS

TDE .3627 TRA-1.2729 TC3 2.0020 BAU .5007
RDE -.3734 RRA -.1650 RC3 .0116 FAU .08443
FDE .0141 FRA .8054 FC3-3.9074 BSP 8463
BDE .5205 BRA 1.2836 BC3 2.0020 FSP 895

MID-COURSE EXECUTION ACCURACY

SGT 2506.4 SGR 544.1 SG3 307.3
RRT .1286 RRF -.1517 RTF -.8724
SGB 2564.8 R23 -.0344 R13 -.8726
SG1 2507.5 SG2 539.4 THA 1.68

ORBIT DETERMINATION ACCURACY

ST 712.9 SR 499.3 SS 254.3
CRT -.5676 CRS .1832 CST .6872
LSA 797.5 MSA 429.1 SSA 45.1
EL1 786.6 EL2 372.6 ALF 151.33

LAUNCH DATE DEC 3 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 416.694 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 34.411 GAL -.56 AZL 88.87 HCA 130.88 SMA 215.48 ECC .31581 INC 1.1312 V1 30.214
RP 241.51 LAP .86 LOP 201.76 VP 21.981 GAP 17.09 AZP 90.74 TAL 357.65 TAP 128.54 RCA 147.43 APO 283.53 V2 22.734
RC 156.092 GL 9.21 GP 2.29 ZAL 91.06 ZAP 168.14 ETS 167.61 ZAE 153.93 ETE 4.05 ZAC 92.14 ETC 255.87 CLP 168.36

PLANETOCENTRIC CONIC

C3 18.022 VHL 4.245 DLA 15.58 RAL 166.97 RAD 6567.7 VEL 11.807 PTH 2.09 VHP 8.275 DPA -.86 RAP 190.71 ECC 1.2966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 26	2696.41	-27.61	74.30	31.92	96.54	16 20 23	2096.4	-26.42	65.84
90.00	7 46 1	4327.29	4.14	179.09	25.85	61.96	8 58 8	3727.3	.35	172.45
100.00	17 5 21	2406.46	-28.90	52.79	31.74	98.00	17 45 27	1806.5	-27.49	44.27
100.00	8 58 48	4092.47	5.27	161.20	25.23	60.53	10 7 0	3492.5	1.31	154.66
110.00	18 32 39	2133.31	-32.26	31.36	31.05	101.98	19 8 12	1533.3	-30.27	22.71
110.00	9 47 59	3938.38	8.18	147.73	23.44	56.69	10 53 38	3338.4	3.75	141.45

DIFFERENTIAL CORRECTIONS

TDE .3403 TRA-1.2408 TC3 2.1231 BAU .5116
RDE -.3627 RRA -.1596 RC3 .0211 FAU .08768
FDE .0352 FRA .7927 FC3-4.2121 BSP 8661
BDE .4973 BRA 1.2511 BC3 2.1232 FSP 948

MID-COURSE EXECUTION ACCURACY

SGT 2546.2 SGR 538.5 SG3 323.6
RRT .1431 RRF -.1664 RTF -.8763
SGB 2602.5 R23 -.0356 R13 -.8765
SG1 2547.4 SG2 532.7 THA 1.81

ORBIT DETERMINATION ACCURACY

ST 697.0 SR 494.1 SS 252.6
CRT -.5510 CRS .2618 CST .6407
LSA 776.7 MSA 434.1 SSA 46.6
EL1 768.1 EL2 374.2 ALF 151.24

LAUNCH DATE DEC 3 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 419.692 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 34.337 GAL -.43 AZL 88.89 HCA 131.81 SMA 213.70 ECC .31007 INC 1.1116 V1 30.214
RP 241.22 LAP .83 LOP 202.69 VP 21.894 GAP 16.53 AZP 90.74 TAL 358.17 TAP 129.99 RCA 147.44 APO 279.97 V2 22.762
RC 158.408 GL 9.19 GP 2.37 ZAL 89.99 ZAP 167.51 ETS 167.78 ZAE 154.25 ETE 4.43 ZAC 92.29 ETC 255.87 CLP 167.74

PLANETOCENTRIC CONIC

C3 17.387 VHL 4.170 DLA 15.98 RAL 165.95 RAD 6567.7 VEL 11.780 PTH 2.08 VHP 8.080 DPA -.90 RAP 191.02 ECC 1.2861

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 27 34	2702.72	-27.66	74.76	30.43	96.31	16 12 37	2102.7	-26.50	66.28
90.00	7 45 43	4304.33	3.40	177.80	24.39	61.87	8 57 27	3704.3	-.39	171.17
100.00	16 57 48	2411.75	-28.95	53.17	30.25	97.81	17 37 59	1811.8	-27.56	44.64
100.00	8 58 10	4070.52	4.54	159.99	23.76	60.42	10 6 1	3470.5	.56	153.46
110.00	18 25 45	2136.56	-32.30	31.60	29.58	101.85	19 1 21	1536.6	-30.33	22.94
110.00	9 46 43	3918.48	7.44	146.67	21.97	56.54	10 52 1	3318.5	2.99	140.41

DIFFERENTIAL CORRECTIONS

TDE .3176 TRA-1.2086 TC3 2.2400 BAU .5207
RDE -.3525 RRA -.1544 RC3 .0315 FAU .09094
FDE .0584 FRA .7786 FC3-4.5281 BSP 8804
BDE .4745 BRA 1.2184 BC3 2.2402 FSP 1002

MID-COURSE EXECUTION ACCURACY

SGT 2581.5 SGR 533.0 SG3 340.2
RRT .1592 RRF -.1829 RTF -.8796
SGB 2635.9 R23 -.0373 R13 -.8799
SG1 2583.0 SG2 525.9 THA 1.96

ORBIT DETERMINATION ACCURACY

ST 679.8 SR 488.9 SS 252.4
CRT -.5326 CRS .3455 CST .5872
LSA 754.4 MSA 439.8 SSA 48.0
EL1 748.2 EL2 376.0 ALF 151.11

LAUNCH DATE DEC 3 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 422.744 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 34.266 GAL -.31 AZL 88.91 HCA 132.75 SMA 212.04 ECC .30461 INC 1.0913 V1 30.214
RP 240.93 LAP .80 LOP 203.62 VP 21.812 GAP 15.96 AZP 90.74 TAL 358.69 TAP 131.44 RCA 147.45 APO 276.62 V2 22.791
RC 160.729 GL 9.16 GP 2.46 ZAL 88.92 ZAP 166.87 ETS 167.93 ZAE 154.60 ETE 4.82 ZAC 92.44 ETC 255.86 CLP 167.10

PLANETOCENTRIC CONIC

C3 16.800 VHL 4.099 DLA 16.37 RAL 164.91 RAD 6567.7 VEL 11.755 PTH 2.07 VHP 7.891 DPA -.94 RAP 191.33 ECC 1.2765

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 44	2709.00	-27.71	75.22	28.96	96.09	16 4 53	2109.1	-26.58	66.73
90.00	7 45 17	4282.12	2.69	176.56	22.95	61.80	8 56 39	3682.1	-1.10	169.93
100.00	16 50 16	2417.11	-29.00	53.57	28.78	97.61	17 30 33	1817.1	-27.64	45.02
100.00	8 57 26	4049.33	3.82	158.82	22.32	60.33	10 4 55	3449.3	-.16	152.29
110.00	18 18 53	2139.88	-32.35	31.85	28.12	101.71	18 54 32	1539.9	-30.40	23.18
110.00	9 45 19	3899.32	6.72	145.65	20.53	56.40	10 50 18	3299.3	2.26	139.41

DIFFERENTIAL CORRECTIONS

TDE .2952 TRA-1.1713 TC3 2.3645 BAU .5312
RDE -.3428 RRA -.1493 RC3 .0434 FAU .09443
FDE .0838 FRA .7590 FC3-4.8661 BSP 8934
BDE .4524 BRA 1.1807 BC3 2.3649 FSP 1062

MID-COURSE EXECUTION ACCURACY

SGT 2615.2 SGR 527.5 SG3 357.8
RRT .1757 RRF -.2008 RTF -.8837
SGB 2667.9 R23 -.0398 R13 -.8840
SG1 2616.9 SG2 518.9 THA 2.11

ORBIT DETERMINATION ACCURACY

ST 660.1 SR 483.6 SS 253.4
CRT -.5146 CRS .4335 CST .5236
LSA 730.3 MSA 445.1 SSA 49.4
EL1 726.4 EL2 376.9 ALF 150.78

LAUNCH DATE DEC 3 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 425.844 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 34.198 GAL -.18 AZL 88.93 HCA 133.68 SMA 210.47 ECC .29940 INC 1.0705 V1 30.214
RP 240.64 LAP .77 LOP 204.56 VP 21.736 GAP 15.40 AZP 90.74 TAL 359.21 TAP 132.89 RCA 147.45 APO 273.48 V2 22.821
RC 163.052 GL 9.12 GP 2.56 ZAL 87.85 ZAP 166.21 ETS 168.05 ZAE 154.98 ETE 5.25 ZAC 92.60 ETC 255.85 CLP 166.45

PLANETOCENTRIC CONIC

C3 16.258 VHL 4.032 DLA 16.74 RAL 163.87 RAD 6567.7 VEL 11.732 PTH 2.07 VHP 7.706 DPA -.97 RAP 191.63 ECC 1.2676

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 57	2715.44	-27.75	75.68	27.49	95.86	15 57 12	2115.4	-26.65	67.18
90.00	7 44 43	4260.74	2.00	175.37	21.52	61.75	8 55 44	3660.7	-1.79	168.74
100.00	16 42 48	2422.45	-29.04	53.96	27.32	97.41	17 23 11	1822.5	-27.71	45.40
100.00	8 56 33	4028.95	3.13	157.70	20.89	60.26	10 3 42	3429.0	-.85	151.18
110.00	18 12 3	2143.23	-32.39	32.10	26.67	101.56	18 47 46	1543.2	-30.46	23.42
110.00	9 43 48	3880.94	6.02	144.68	19.10	56.29	10 48 28	3280.9	1.55	138.45

DIFFERENTIAL CORRECTIONS

TDE .2730 TRA-1.1382 TC3 2.4640 BAU .5357
RDE -.3335 RRA -.1443 RC3 .0562 FAU .09769
FDE .1084 FRA .7402 FC3-5.2020 BSP 9227
BDE .4310 BRA 1.1473 BC3 2.4647 FSP 1134

MID-COURSE EXECUTION ACCURACY

SGT 2636.6 SGR 522.0 SG3 374.9
RRT .1946 RRF -.2200 RTF -.8855
SGB 2687.8 R23 -.0417 R13 -.8859
SG1 2638.6 SG2 511.7 THA 2.29

ORBIT DETERMINATION ACCURACY

ST 641.0 SR 478.3 SS 256.3
CRT -.4934 CRS .5126 CST .4648
LSA 706.7 MSA 450.8 SSA 50.9
EL1 704.5 EL2 378.5 ALF 150.52

LAUNCH DATE DEC 3 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 428.991 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 34.132 GAL -.06 AZL 88.95 HCA 134.62 SMA 208.99 ECC .29444 INC 1.0488 V1 30.214
RP 240.34 LAP .75 LOP 205.49 VP 21.665 GAP 14.85 AZP 90.74 TAL 359.73 TAP 134.35 RCA 147.46 APO 270.53 V2 22.851
RC 165.375 GL 9.06 GP 2.66 ZAL 86.78 ZAP 165.54 ETS 168.16 ZAE 155.40 ETE 5.71 ZAC 92.76 ETC 255.85 CLP 165.78

PLANETOCENTRIC CONIC

C3 15.756 VHL 3.969 DLA 17.10 RAL 162.81 RAD 6567.6 VEL 11.711 PTH 2.06 VHP 7.526 DPA -.99 RAP 191.92 ECC 1.2593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 4 15	2721.73	-27.80	76.13	26.03	95.64	15 49 35	2121.7	-26.72	67.63
90.00	7 44 0	4240.19	1.34	174.22	20.11	61.71	8 54 40	3640.2	-2.46	167.59
100.00	16 35 23	2427.76	-29.09	54.34	25.87	97.21	17 15 51	1827.8	-27.79	45.78
100.00	8 55 31	4009.40	2.47	156.62	19.48	60.20	10 2 21	3409.4	-1.51	150.10
110.00	18 5 15	2146.56	-32.44	32.35	25.23	101.42	18 41 2	1546.6	-30.53	23.65
110.00	9 42 8	3863.36	5.36	143.76	17.69	56.19	10 46 32	3263.4	.88	137.53

DIFFERENTIAL CORRECTIONS

TDE .2612 TRA-1.0852 TC3 2.6233 BAU .5528
RDE -.3249 RRA -.1394 RC3 .0705 FAU .10144
FDE .1400 FRA .7131 FC3-5.5740 BSP 9005
BDE .4169 BRA 1.0941 BC3 2.6242 FSP 1194

MID-COURSE EXECUTION ACCURACY

SGT 2676.8 SGR 517.1 SG3 393.9
RRT .2058 RRF -.2414 RTF -.8936
SGB 2726.3 R23 -.0519 R13 -.8940
SG1 2678.9 SG2 505.7 THA 2.36

ORBIT DETERMINATION ACCURACY

ST 622.7 SR 473.2 SS 262.4
CRT -.4943 CRS .6043 CST .3620
LSA 688.1 MSA 452.2 SSA 51.7
EL1 687.7 EL2 372.5 ALF 149.68

LAUNCH DATE DEC 3 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 432.181 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 34.070 GAL .05 AZL 88.97 HCA 135.56 SMA 207.61 ECC .28973 INC 1.0265 V1 30.214
RP 240.04 LAP .72 LOP 206.43 VP 21.599 GAP 14.30 AZP 90.73 TAL .24 TAP 135.80 RCA 147.46 APO 267.76 V2 22.881
RC 167.697 GL 8.98 GP 2.77 ZAL 85.72 ZAP 164.86 ETS 168.24 ZAE 155.85 ETE 6.20 ZAC 92.92 ETC 255.84 CLP 165.11

PLANETOCENTRIC CONIC

C3 15.293 VHL 3.911 DLA 17.44 RAL 161.75 RAD 6567.6 VEL 11.691 PTH 2.06 VHP 7.350 DPA -1.00 RAP 192.20 ECC 1.2517

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 39	2727.76	-27.84	76.57	24.60	95.42	15 42 7	2127.8	-26.79	68.06
90.00	7 43 7	4220.70	.71	173.13	18.72	61.69	8 53 28	3620.7	-3.08	166.50
100.00	16 28 7	2432.82	-29.13	54.71	24.44	97.02	17 8 40	1832.8	-27.85	46.14
100.00	8 54 21	3990.87	1.85	155.61	18.09	60.16	10 0 52	3390.9	-2.14	149.09
110.00	17 58 36	2149.73	-32.48	32.59	23.81	101.29	18 34 25	1549.7	-30.59	23.88
110.00	9 40 21	3846.73	4.73	142.88	16.29	56.11	10 44 28	3246.7	.25	136.66

DIFFERENTIAL CORRECTIONS
TDE .2487 TRA-1.0209 TC3 2.8095 BAU .5747
RDE -.3161 RRA -.1338 RC3 .0894 FAU .10711
FDE .1545 FRA .6541 FC3-6.0636 BSP 8667
BDE .4022 BRA 1.0296 BC3 2.8109 FSP 1202

MID-COURSE EXECUTION ACCURACY
SGT 2723.8 SGR 511.5 SG3 419.3
RRT .2203 RRF -.2590 RTF -.9013
SGB 2771.4 R23 -.0549 R13 -.9017
SG1 2726.3 SG2 498.5 THA 2.45

ORBIT DETERMINATION ACCURACY
ST 598.7 SR 467.2 SS 255.8
CRT -.4993 CRS .6571 CST .2847
LSA 666.8 MSA 441.0 SSA 55.0
EL1 666.8 EL2 363.5 ALF 148.32

LAUNCH DATE DEC 3 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 435.411 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 34.011 GAL .17 AZL 89.00 HCA 136.50 SMA 206.30 ECC .28524 INC 1.0032 V1 30.214
RP 239.73 LAP .69 LOP 207.37 VP 21.538 GAP 13.76 AZP 90.73 TAL .75 TAP 137.25 RCA 147.45 APO 265.14 V2 22.912
RC 170.016 GL 8.89 GP 2.88 ZAL 84.66 ZAP 164.16 ETS 168.31 ZAE 156.33 ETE 6.74 ZAC 93.09 ETC 255.83 CLP 164.42

PLANETOCENTRIC CONIC

C3 14.064 VHL 3.855 DLA 17.76 RAL 160.68 RAD 6567.6 VEL 11.673 PTH 2.05 VHP 7.178 DPA -1.00 RAP 192.48 ECC 1.2446

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 49 12	2733.55	-27.87	76.99	23.18	95.21	15 34 46	2133.6	-26.86	68.47
90.00	7 42 4	4202.18	.11	172.10	17.35	61.68	8 52 6	3602.2	-3.68	165.47
100.00	16 20 58	2437.67	-29.17	55.07	23.02	96.83	17 1 35	1837.7	-27.92	46.49
100.00	8 53 0	3973.30	1.25	154.64	16.71	60.13	9 59 13	3373.3	-2.73	148.12
110.00	17 52 2	2152.74	-32.52	32.81	22.40	101.16	18 27 54	1552.7	-30.64	24.10
110.00	9 38 25	3830.99	4.13	142.05	14.92	56.04	10 42 16	3231.0	-.36	135.84

DIFFERENTIAL CORRECTIONS
TDE .2258 TRA-1.0315 TC3 2.8394 BAU .5646
RDE -.3079 RRA -.1298 RC3 .1058 FAU .10994
FDE .1796 FRA .6628 FC3-6.4033 BSP 9345
BDE .3818 BRA 1.0397 BC3 2.8413 FSP 1317

MID-COURSE EXECUTION ACCURACY
SGT 2738.1 SGR 507.0 SG3 436.5
RRT .2530 RRF -.2868 RTF -.8954
SGB 2784.6 R23 -.0546 R13 -.8959
SG1 2741.2 SG2 490.0 THA 2.77

ORBIT DETERMINATION ACCURACY
ST 591.7 SR 461.6 SS 269.9
CRT -.4542 CRS .7035 CST .2718
LSA 650.7 MSA 457.6 SSA 56.1
EL1 650.6 EL2 374.0 ALF 149.46

LAUNCH DATE DEC 3 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 438.678 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.954 GAL .28 AZL 89.02 HCA 137.45 SMA 205.07 ECC .28097 INC .9791 V1 30.214
RP 239.42 LAP .66 LOP 208.32 VP 21.482 GAP 13.23 AZP 90.72 TAL 1.26 TAP 138.71 RCA 147.45 APO 262.68 V2 22.943
RC 172.331 GL 8.77 GP 3.00 ZAL 83.60 ZAP 163.44 ETS 168.36 ZAE 156.84 ETE 7.33 ZAC 93.26 ETC 255.83 CLP 163.71

PLANETOCENTRIC CONIC

C3 14.469 VHL 3.804 DLA 18.05 RAL 159.62 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 7.010 DPA -.99 RAP 192.74 ECC 1.2381

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 41 56	2738.99	-27.90	77.38	21.77	95.02	15 27 35	2139.0	-26.92	68.86
90.00	7 40 50	4184.75	-.45	171.13	15.99	61.69	8 50 35	3584.8	-4.24	164.49
100.00	16 13 58	2442.20	-29.21	55.40	21.62	96.66	16 54 40	1842.2	-27.98	46.81
100.00	8 51 29	3956.77	.69	153.74	15.36	60.11	9 57 26	3356.8	-3.29	147.21
110.00	17 45 35	2155.53	-32.56	33.02	21.01	101.04	18 21 31	1555.5	-30.69	24.30
110.00	9 36 21	3816.21	3.57	141.28	13.56	55.98	10 39 57	3216.2	-.92	135.07

DIFFERENTIAL CORRECTIONS
TDE .2091 TRA -.9939 TC3 2.9800 BAU .5770
RDE -.3001 RRA -.1251 RC3 .1265 FAU .11473
FDE .2062 FRA .6314 FC3-6.8646 BSP 9370
BDE .3658 BRA 1.0017 BC3 2.9827 FSP 1386

MID-COURSE EXECUTION ACCURACY
SGT 2778.1 SGR 502.9 SG3 460.2
RRT .2775 RRF -.3140 RTF -.8999
SGB 2823.3 R23 -.0588 R13 -.9005
SG1 2781.7 SG2 482.5 THA 2.97

ORBIT DETERMINATION ACCURACY
ST 571.8 SR 456.0 SS 278.2
CRT -.4377 CRS .7576 CST .2077
LSA 630.7 MSA 459.5 SSA 57.9
EL1 629.4 EL2 372.5 ALF 148.77

LAUNCH DATE DEC 3 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 441.981 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.900 GAL .38 AZL 89.05 HCA 138.39 SMA 203.90 ECC .27690 INC .9541 V1 30.214
RP 239.11 LAP .63 LOP 209.27 VP 21.429 GAP 12.70 AZP 90.71 TAL 1.77 TAP 140.16 RCA 147.44 APO 260.37 V2 22.975
RC 174.639 GL 8.64 GP 3.13 ZAL 82.56 ZAP 162.71 ETS 168.40 ZAE 157.39 ETE 7.97 ZAC 93.43 ETC 255.82 CLP 162.99

PLANETOCENTRIC CONIC

C3 14.104 VHL 3.756 DLA 18.32 RAL 158.55 RAD 6567.6 VEL 11.640 PTH 2.04 VHP 6.846 DPA -.97 RAP 193.00 ECC 1.2321

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 34 51	2743.98	-27.93	77.75	20.38	94.84	15 20 35	2144.0	-26.97	69.21
90.00	7 39 23	4168.46	-.98	170.22	14.65	61.70	8 48 52	3568.5	-4.76	163.58
100.00	16 7 9	2446.33	-29.24	55.70	20.23	96.51	16 47 55	1846.3	-28.03	47.11
100.00	8 49 46	3941.34	.17	152.89	14.02	60.11	9 55 27	3341.3	-3.81	146.36
110.00	17 39 18	2158.02	-32.59	33.21	19.63	100.94	18 15 16	1558.0	-30.74	24.48
110.00	9 34 6	3802.42	3.04	140.56	12.22	55.94	10 37 29	3202.4	-1.45	134.35

DIFFERENTIAL CORRECTIONS
TDE .1948 TRA -.9878 TC3 3.1001 BAU .5852
RDE -.2928 RRA -.1205 RC3 .1484 FAU .11926
FDE .2346 FRA .5998 FC3-7.3207 BSP 9495
BDE .3516 BRA .9653 BC3 3.1036 FSP 1476

MID-COURSE EXECUTION ACCURACY
SGT 2807.0 SGR 499.4 SG3 483.3
RRT .3031 RRF -.3434 RTF -.9031
SGB 2851.1 R23 -.0647 R13 -.9037
SG1 2811.2 SG2 475.2 THA 3.18

ORBIT DETERMINATION ACCURACY
ST 553.5 SR 450.4 SS 289.1
CRT -.4238 CRS .8049 CST .1431
LSA 614.4 MSA 460.3 SSA 59.5
EL1 610.2 EL2 370.1 ALF 148.05

LAUNCH DATE DEC 3 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 445.317 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.848 GAL .49 AZL 89.07 HCA 139.34 SMA 202.81 ECC .27304 INC .9279 V1 30.214
RP 238.79 LAP .60 LOP 210.22 VP 21.382 GAP 12.17 AZP 90.70 TAL 2.26 TAP 141.61 RCA 147.43 APO 258.18 V2 23.007
RC 176.939 GL 8.50 GP 3.27 ZAL 81.52 ZAP 161.96 ETS 168.43 ZAE 157.96 ETE 8.68 ZAC 93.61 ETC 255.82 CLP 162.25

PLANETOCENTRIC CONIC

C3 13.767 VHL 3.710 DLA 18.57 RAL 157.48 RAD 6567.5 VEL 11.626 PTH 2.04 VHP 6.687 DPA -.93 RAP 193.25 ECC 1.2266

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 28 1	2748.40	-27.96	78.07	19.00	94.68	15 13 49	2148.4	-27.02	69.53
90.00	7 37 43	4153.42	-1.46	169.38	13.34	61.72	8 46 57	3553.4	-5.23	162.73
100.00	16 0 34	2449.95	-29.27	55.97	18.86	96.37	16 41 24	1850.0	-28.08	47.37
100.00	8 47 51	3927.11	-.32	152.11	12.70	60.11	9 53 18	3327.1	-4.29	145.58
110.00	17 33 12	2160.11	-32.62	33.37	18.27	100.85	18 9 12	1560.1	-30.78	24.63
110.00	9 31 42	3789.71	2.56	139.89	10.90	55.90	10 34 52	3189.7	-1.93	133.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1699 TRA -.9305 TC3 3.2010 BAU .5900 SGT 2830.1 SGR 496.8 SG3 508.2 ST 529.8 SR 444.9 SS 304.4
RDE -.2858 RRA -.1159 RC3 .1729 FAU .12418 RRT .3379 RRF -.3764 RTF -.9043 CRT -.3808 CRS .8479 CST .1061
FDE .2678 FRA .5658 FC3-7.8091 BSP 9735 SGB 2873.3 R23 -.0662 R13 -.9050 LSA 591.0 MSA 467.2 SSA 61.6
BDE .3325 BRA .9377 BC3 3.2057 FSP 1561 SG1 2835.2 SG2 466.7 THA 3.49 EL1 581.5 EL2 374.8 ALF 147.38

LAUNCH DATE DEC 3 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 448.685 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.798 GAL .59 AZL 89.10 HCA 140.29 SMA 201.77 ECC .26937 INC .9008 V1 30.214
RP 238.47 LAP .58 LOP 211.17 VP 21.338 GAP 11.66 AZP 90.69 TAL 2.76 TAP 143.05 RCA 147.42 APO 256.12 V2 23.040
RC 179.231 GL 8.33 GP 3.41 ZAL 80.50 ZAP 161.19 ETS 168.44 ZAE 158.56 ETE 9.46 ZAC 93.79 ETC 255.81 CLP 161.49

PLANETOCENTRIC CONIC

C3 13.456 VHL 3.668 DLA 18.79 RAL 156.42 RAD 6567.5 VEL 11.612 PTH 2.03 VHP 6.531 DPA -.88 RAP 193.49 ECC 1.2215

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 21 26	2752.19	-27.98	78.34	17.65	94.54	15 7 18	2152.2	-27.06	69.80
90.00	7 35 49	4139.66	-1.91	168.62	12.03	61.74	8 44 49	3539.7	-5.67	161.96
100.00	15 54 13	2453.01	-29.29	56.19	17.50	96.25	16 35 6	1853.0	-28.12	47.59
100.00	8 45 44	3914.08	-.76	151.39	11.39	60.12	9 50 58	3314.1	-4.73	144.86
110.00	17 27 18	2161.78	-32.64	33.49	16.92	100.77	18 3 20	1561.8	-30.81	24.75
110.00	9 29 8	3778.07	2.11	139.29	9.60	55.87	10 32 6	3178.1	-2.38	133.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1579 TRA -.8956 TC3 3.3022 BAU .5951 SGT 2848.4 SGR 494.7 SG3 533.5 ST 512.4 SR 439.1 SS 314.1
RDE -.2789 RRA -.1112 RC3 .1994 FAU .12917 RRT .3676 RRF -.4091 RTF -.9061 CRT -.3675 CRS .8762 CST .0556
FDE .2925 FRA .5251 FC3-8.3106 BSP 9750 SGB 2891.1 R23 -.0722 R13 -.9069 LSA 580.3 MSA 461.7 SSA 63.7
BDE .3205 BRA .9025 BC3 3.3082 FSP 1642 SG1 2854.4 SG2 459.1 THA 3.75 EL1 563.4 EL2 371.4 ALF 146.44

LAUNCH DATE DEC 3 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 452.083 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.750 GAL .68 AZL 89.13 HCA 141.25 SMA 200.79 ECC .26587 INC .8724 V1 30.214
RP 238.14 LAP .55 LOP 212.12 VP 21.299 GAP 11.15 AZP 90.68 TAL 3.24 TAP 144.49 RCA 147.41 APO 254.18 V2 23.073
RC 181.513 GL 8.14 GP 3.56 ZAL 79.50 ZAP 160.41 ETS 168.43 ZAE 159.19 ETE 10.32 ZAC 93.98 ETC 255.81 CLP 160.72

PLANETOCENTRIC CONIC

C3 13.169 VHL 3.629 DLA 18.98 RAL 155.36 RAD 6567.5 VEL 11.600 PTH 2.03 VHP 6.379 DPA -.82 RAP 193.72 ECC 1.2167

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 15 10	2755.24	-28.00	78.56	16.31	94.43	15 1 5	2155.2	-27.09	70.02
90.00	7 33 40	4127.26	-2.31	167.92	10.75	61.77	8 42 27	3527.3	-6.07	161.26
100.00	15 48 9	2455.40	-29.31	56.37	16.17	96.16	16 29 4	1855.4	-28.15	47.76
100.00	8 43 22	3902.33	-1.16	150.75	10.11	60.13	9 48 25	3302.3	-5.12	144.21
110.00	17 21 37	2162.93	-32.65	33.58	15.59	100.72	17 57 40	1562.9	-30.83	24.83
110.00	9 26 23	3767.56	1.71	138.74	8.32	55.85	10 29 10	3167.6	-2.78	132.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1420 TRA -.8632 TC3 3.4090 BAU .6015 SGT 2872.1 SGR 494.2 SG3 560.9 ST 492.7 SR 433.4 SS 328.9
RDE -.2724 RRA -.1065 RC3 .2288 FAU .13459 RRT .4021 RRF -.4455 RTF -.9084 CRT -.3419 CRS .9020 CST .0162
FDE .3231 FRA .4841 FC3-8.8477 BSP 9865 SGB 2914.3 R23 -.0776 R13 -.9093 LSA 570.6 MSA 457.1 SSA 65.6
BDE .3072 BRA .8697 BC3 3.4167 FSP 1737 SG1 2879.2 SG2 451.3 THA 4.06 EL1 541.6 EL2 370.5 ALF 145.30

LAUNCH DATE DEC 3 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 455.509 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.705 GAL .77 AZL 89.16 HCA 142.21 SMA 199.87 ECC .26255 INC .8428 V1 30.214
RP 237.81 LAP .52 LOP 213.08 VP 21.263 GAP 10.65 AZP 90.67 TAL 3.72 TAP 145.93 RCA 147.39 APO 252.35 V2 23.106
RC 183.786 GL 7.93 GP 3.73 ZAL 78.51 ZAP 159.60 ETS 168.42 ZAE 159.85 ETE 11.29 ZAC 94.18 ETC 255.80 CLP 159.93

PLANETOCENTRIC CONIC

C3 12.904 VHL 3.592 DLA 19.15 RAL 154.31 RAD 6567.5 VEL 11.588 PTH 2.03 VHP 6.230 DPA -.74 RAP 193.93 ECC 1.2124

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 9 12	2757.46	-28.01	78.73	14.98	94.35	14 55 10	2157.5	-27.11	70.17
90.00	7 31 15	4116.28	-2.66	167.31	9.48	61.80	8 39 51	3516.3	-6.41	160.64
100.00	15 42 22	2457.05	-29.32	56.49	14.85	96.10	16 23 19	1857.0	-28.17	47.88
100.00	8 40 46	3891.92	-1.51	150.18	8.84	60.14	9 45 38	3291.9	-5.47	143.63
110.00	17 16 11	2163.52	-32.66	33.62	14.27	100.70	17 52 15	1563.5	-30.84	24.87
110.00	9 23 27	3758.22	1.35	138.25	7.05	55.84	10 26 5	3158.2	-3.14	132.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1317 TRA -.8286 TC3 3.5121 BAU .6076 SGT 2892.8 SGR 494.7 SG3 589.3 ST 475.4 SR 427.5 SS 340.5
RDE -.2661 RRA -.1018 RC3 .2607 FAU .14021 RRT .4359 RRF -.4827 RTF -.9106 CRT -.3300 CRS .9201 CST -.0286
FDE .3490 FRA .4373 FC3-9.4062 BSP 9909 SGB 2934.8 R23 -.0846 R13 -.9117 LSA 567.0 MSA 445.7 SSA 67.7
BDE .2969 BRA .8348 BC3 3.5217 FSP 1832 SG1 2901.0 SG2 443.9 THA 4.37 EL1 524.3 EL2 366.0 ALF 143.93

LAUNCH DATE DEC 3 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 458.963 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.662 GAL .86 AZL 89.19 HCA 143.17 SMA 199.00 ECC .25940 INC .8117 V1 30.214
RP 237.48 LAP .49 LOP 214.04 VP 21.231 GAP 10.15 AZP 90.65 TAL 4.20 TAP 147.36 RCA 147.38 APO 250.61 V2 23.140
RC 186.049 GL 7.70 GP 3.90 ZAL 77.54 ZAP 158.77 ETS 168.39 ZAE 160.53 ETE 12.37 ZAC 94.38 ETC 255.80 CLP 159.12

PLANETOCENTRIC CONIC

C3 12.660 VHL 3.558 DLA 19.28 RAL 153.27 RAD 6567.5 VEL 11.578 PTH 2.02 VHP 6.085 DPA -.64 RAP 194.14 ECC 1.2084

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 3 36	2758.76	-28.01	78.82	13.68	94.31	14 49 35	2158.8	-27.12	70.27
90.00	7 28 33	4106.78	-2.97	166.78	8.24	61.83	8 36 59	3506.8	-6.71	160.10
100.00	15 36 55	2457.88	-29.33	56.55	13.55	96.07	16 17 52	1857.9	-28.18	47.94
100.00	8 37 55	3882.89	-1.82	149.68	7.60	60.16	9 42 38	3282.9	-5.77	143.13
110.00	17 11 1	2163.48	-32.66	33.62	12.97	100.70	17 47 4	1563.5	-30.84	24.87
110.00	9 20 19	3750.07	1.04	137.83	5.81	55.83	10 22 49	3150.1	-3.45	131.62

DIFFERENTIAL CORRECTIONS

TDE .1266 TRA -.7904 TC3 3.6276 BAU .6160
RDE -.2600 RRA -.0969 RC3 .2958 FAU .14622
FDE .3737 FRA .3859 FC3-9.9991 BSP 9792
BDE .2892 BRA .7963 BC3 3.6396 FSP 1926

MID-COURSE EXECUTION ACCURACY

SGT 2919.5 SGR 496.9 SG3 619.6
RRT .4694 RRF -.5216 RTF -.9139
SGB 2961.5 R23 -.0937 R13 -.9151
SG1 2929.0 SG2 437.3 THA 4.67

ORBIT DETERMINATION ACCURACY

ST 459.6 SR 421.6 SS 351.4
CRT -.3345 CRS .9336 CST -.0855
LSA 568.6 MSA 429.3 SSA 69.8
EL1 511.3 EL2 357.1 ALF 142.23

LAUNCH DATE DEC 3 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 462.440 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.621 GAL .95 AZL 89.22 HCA 144.13 SMA 198.17 ECC .25640 INC .7792 V1 30.214
RP 237.15 LAP .46 LOP 215.00 VP 21.203 GAP 9.66 AZP 90.63 TAL 4.66 TAP 148.79 RCA 147.36 APO 248.98 V2 23.174
RC 188.300 GL 7.45 GP 4.09 ZAL 76.59 ZAP 157.92 ETS 168.35 ZAE 161.23 ETE 13.59 ZAC 94.59 ETC 255.79 CLP 158.29

PLANETOCENTRIC CONIC

C3 12.435 VHL 3.526 DLA 19.38 RAL 152.25 RAD 6567.5 VEL 11.568 PTH 2.02 VHP 5.944 DPA -.52 RAP 194.34 ECC 1.2046

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 58 25	2758.99	-28.02	78.84	12.40	94.30	14 44 24	2159.0	-27.12	70.28
90.00	7 25 32	4098.89	-3.22	166.34	7.01	61.85	8 33 51	3498.9	-6.96	159.65
100.00	15 31 50	2457.76	-29.33	56.54	12.26	96.07	16 12 48	1857.8	-28.17	47.93
100.00	8 34 48	3875.36	-2.07	149.27	6.37	60.17	9 39 24	3275.4	-6.02	142.71
110.00	17 6 9	2162.68	-32.65	33.56	11.69	100.74	17 42 12	1562.7	-30.83	24.81
110.00	9 16 59	3743.20	.78	137.47	4.59	55.82	10 19 22	3143.2	-3.71	131.26

DIFFERENTIAL CORRECTIONS

TDE .1068 TRA -.7669 TC3 3.6874 BAU .6155
RDE -.2542 RRA -.0920 RC3 .3337 FAU .15226
FDE .4040 FRA .3349 FC-10.6003 BSP 10083
BDE .2757 BRA .7724 BC3 3.7025 FSP 2041

MID-COURSE EXECUTION ACCURACY

SGT 2922.0 SGR 501.1 SG3 650.3
RRT .5121 RRF -.5626 RTF -.9134
SGB 2964.7 R23 -.0985 R13 -.9148
SG1 2933.5 SG2 428.7 THA 5.13

ORBIT DETERMINATION ACCURACY

ST 439.6 SR 415.8 SS 367.2
CRT -.2860 CRS .9450 CST -.0886
LSA 564.5 MSA 420.9 SSA 72.1
EL1 486.1 EL2 360.3 ALF 140.51

LAUNCH DATE DEC 3 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 465.942 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.581 GAL 1.03 AZL 89.25 HCA 145.09 SMA 197.39 ECC .25356 INC .7450 V1 30.214
RP 236.81 LAP .43 LOP 215.96 VP 21.178 GAP 9.18 AZP 90.61 TAL 5.11 TAP 150.21 RCA 147.34 APO 247.44 V2 23.209
RC 190.540 GL 7.17 GP 4.28 ZAL 75.66 ZAP 157.05 ETS 168.30 ZAE 161.95 ETE 14.97 ZAC 94.81 ETC 255.78 CLP 157.43

PLANETOCENTRIC CONIC

C3 12.227 VHL 3.497 DLA 19.45 RAL 151.23 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 5.807 DPA -.39 RAP 194.52 ECC 1.2012

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 53 38	2758.13	-28.01	78.77	11.13	94.33	14 39 36	2158.1	-27.12	70.22
90.00	7 22 13	4092.60	-3.42	165.99	5.80	61.87	8 30 25	3492.6	-7.16	159.30
100.00	15 27 7	2456.65	-29.32	56.46	11.00	96.11	16 8 4	1856.7	-28.16	47.85
100.00	8 31 24	3869.31	-2.28	148.94	5.16	60.19	9 35 54	3269.3	-6.23	142.38
110.00	17 1 35	2161.14	-32.63	33.44	10.42	100.80	17 37 36	1561.1	-30.80	24.70
110.00	9 13 26	3737.59	.57	137.17	3.38	55.82	10 15 44	3137.6	-3.92	130.97

DIFFERENTIAL CORRECTIONS

TDE .0973 TRA -.7364 TC3 3.7637 BAU .6183
RDE -.2485 RRA -.0870 RC3 .3751 FAU .15864
FDE .4291 FRA .2777 FC-11.2325 BSP 10156
BDE .2669 BRA .7415 BC3 3.7823 FSP 2154

MID-COURSE EXECUTION ACCURACY

SGT 2931.0 SGR 507.4 SG3 682.7
RRT .5506 RRF -.6036 RTF -.9146
SGB 2974.6 R23 -.1070 R13 -.9162
SG1 2944.6 SG2 421.6 THA 5.56

ORBIT DETERMINATION ACCURACY

ST 423.1 SR 409.8 SS 379.1
CRT -.2704 CRS .9519 CST -.1185
LSA 565.8 MSA 406.1 SSA 74.4
EL1 469.7 EL2 355.3 ALF 138.37

LAUNCH DATE DEC 3 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 469.468 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.543 GAL 1.11 AZL 89.29 HCA 146.06 SMA 196.65 ECC .25086 INC .7089 V1 30.214
RP 236.46 LAP .40 LOP 216.93 VP 21.157 GAP 8.70 AZP 90.59 TAL 5.56 TAP 151.62 RCA 147.32 APO 245.98 V2 23.244
RC 192.768 GL 6.87 GP 4.50 ZAL 74.76 ZAP 156.16 ETS 168.24 ZAE 162.69 ETE 16.54 ZAC 95.04 ETC 255.78 CLP 156.56

PLANETOCENTRIC CONIC

C3 12.036 VHL 3.469 DLA 19.48 RAL 150.23 RAD 6567.5 VEL 11.551 PTH 2.02 VHP 5.673 DPA -.23 RAP 194.70 ECC 1.1981

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 49 17	2756.07	-28.00	78.62	9.88	94.40	14 35 13	2156.1	-27.10	70.07
90.00	7 18 33	4087.99	-3.57	165.73	4.60	61.89	8 26 41	3488.0	-7.30	159.04
100.00	15 22 49	2454.47	-29.30	56.30	9.75	96.20	16 3 43	1854.5	-28.13	47.69
100.00	8 27 43	3864.81	-2.43	148.69	3.97	60.20	9 32 7	3264.8	-6.38	142.13
110.00	16 57 20	2158.75	-32.60	33.26	9.17	100.90	17 33 19	1558.7	-30.75	24.53
110.00	9 9 41	3733.30	.40	136.95	2.20	55.82	10 11 54	3133.3	-4.09	130.74

DIFFERENTIAL CORRECTIONS

TDE .0896 TRA -.7046 TC3 3.8405 BAU .6216
RDE -.2429 RRA -.0816 RC3 .4205 FAU .16546
FDE .4520 FRA .2137 FC-11.9014 BSP 10193
BDE .2589 BRA .7093 BC3 3.8634 FSP 2272

MID-COURSE EXECUTION ACCURACY

SGT 2940.4 SGR 516.3 SG3 717.1
RRT .5893 RRF -.6447 RTF -.9160
SGB 2985.4 R23 -.1162 R13 -.9179
SG1 2956.4 SG2 414.8 THA 6.03

ORBIT DETERMINATION ACCURACY

ST 406.7 SR 403.6 SS 389.4
CRT -.2606 CRS .9558 CST -.1517
LSA 567.5 MSA 389.8 SSA 77.0
EL1 454.9 EL2 348.4 ALF 135.83

LAUNCH DATE DEC 3 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 473.015 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.508 GAL 1.19 AZL 89.33 HCA 147.03 SMA 195.95 ECC .24829 INC .6712 V1 30.214
RP 236.12 LAP .37 LOP 217.90 VP 21.139 GAP 8.23 AZP 90.56 TAL 5.99 TAP 153.03 RCA 147.30 APO 244.60 V2 23.279
RC 194.983 GL 6.54 GP 4.72 ZAL 73.87 ZAP 155.24 ETS 168.17 ZAE 163.45 ETE 18.34 ZAC 95.28 ETC 255.77 CLP 155.66

PLANETOCENTRIC CONIC

C3 11.859 VHL 3.444 DLA 19.47 RAL 149.24 RAD 6567.5 VEL 11.543 PTH 2.01 VHP 5.542 DPA -.06 RAP 194.86 ECC 1.1952

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 45 25	2752.71	-27.98	78.38	8.65	94.53	14 31 17	2152.7	-27.06	69.84
90.00	7 14 33	4085.11	-3.66	165.57	3.42	61.90	8 22 38	3485.1	-7.39	158.87
100.00	15 18 56	2451.14	-29.28	56.06	8.51	96.32	15 59 47	1851.1	-28.09	47.45
100.00	8 23 42	3861.91	-2.53	148.53	2.79	60.20	9 28 4	3261.9	-6.47	141.97
110.00	16 53 26	2155.45	-32.56	33.02	7.93	101.04	17 29 22	1555.5	-30.69	24.29
110.00	9 5 41	3730.37	.29	136.80	1.03	55.82	10 7 52	3130.4	-4.20	130.59

DIFFERENTIAL CORRECTIONS
TDE .0866 TRA -.6711 TC3 3.9187 BAU .6257
RDE -.2375 RRA -.0760 RC3 .4701 FAU .17260
FDE .4719 FRA .1449 FC-12.6006 BSP 10168
BDE .2528 BRA .6754 BC3 3.9468 FSP 2394

MID-COURSE EXECUTION ACCURACY
SGT 2950.9 SGR 528.1 SG3 753.2
RRT .6262 RRF -.6851 RTF -.9179
SGB 2997.8 R23 -.1271 R13 -.9200
SG1 2969.7 SG2 409.2 THA 6.52

ORBIT DETERMINATION ACCURACY
ST 391.8 SR 397.2 SS 397.8
CRT -.2687 CRS .9570 CST -.1990
LSA 569.9 MSA 372.1 SSA 79.8
EL1 444.5 EL2 337.3 ALF 133.54

LAUNCH DATE DEC 3 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 476.583 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.473 GAL 1.26 AZL 89.37 HCA 148.01 SMA 195.29 ECC .24586 INC .6309 V1 30.214
RP 235.77 LAP .33 LOP 218.88 VP 21.124 GAP 7.77 AZP 90.54 TAL 6.42 TAP 154.42 RCA 147.28 APO 243.30 V2 23.315
RC 197.185 GL 6.19 GP 4.97 ZAL 73.02 ZAP 154.29 ETS 168.08 ZAE 164.21 ETE 20.41 ZAC 95.53 ETC 255.77 CLP 154.74

PLANETOCENTRIC CONIC

C3 11.696 VHL 3.420 DLA 19.43 RAL 148.27 RAD 6567.4 VEL 11.536 PTH 2.01 VHP 5.415 DPA .14 RAP 195.01 ECC 1.1925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 42 2	2747.95	-27.96	78.03	7.44	94.70	14 27 50	2148.0	-27.01	69.50
90.00	7 10 10	4084.07	-3.70	165.51	2.26	61.91	8 18 14	3484.1	-7.43	158.81
100.00	15 15 30	2446.55	-29.24	55.72	7.30	96.50	15 56 17	1846.5	-28.03	47.12
100.00	8 19 23	3860.70	-2.57	148.46	1.64	60.21	9 23 44	3260.7	-6.51	141.90
110.00	16 49 55	2151.16	-32.50	32.69	6.71	101.23	17 25 46	1551.2	-30.61	23.98
110.00	9 1 28	3728.85	.23	136.72	359.89	55.82	10 3 36	3128.9	-4.25	130.51

DIFFERENTIAL CORRECTIONS
TDE .0794 TRA -.6457 TC3 3.9663 BAU .6256
RDE -.2321 RRA -.0703 RC3 .5238 FAU .17992
FDE .4901 FRA .0752 FC-13.3177 BSP 10249
BDE .2453 BRA .6496 BC3 4.0008 FSP 2524

MID-COURSE EXECUTION ACCURACY
SGT 2948.5 SGR 543.3 SG3 790.3
RRT .6640 RRF -.7244 RTF -.9179
SGB 2998.1 R23 -.1381 R13 -.9204
SG1 2970.9 SG2 403.1 THA 7.11

ORBIT DETERMINATION ACCURACY
ST 377.8 SR 390.7 SS 405.3
CRT -.2570 CRS .9562 CST -.2236
LSA 569.5 MSA 358.5 SSA 82.6
EL1 431.3 EL2 330.8 ALF 131.28

LAUNCH DATE DEC 3 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 480.172 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.441 GAL 1.34 AZL 89.41 HCA 148.98 SMA 194.66 ECC .24355 INC .5882 V1 30.214
RP 235.42 LAP .30 LOP 219.85 VP 21.112 GAP 7.31 AZP 90.50 TAL 6.83 TAP 155.81 RCA 147.25 APO 242.07 V2 23.351
RC 199.372 GL 5.80 GP 5.23 ZAL 72.18 ZAP 153.32 ETS 167.99 ZAE 164.98 ETE 22.81 ZAC 95.79 ETC 255.76 CLP 153.80

PLANETOCENTRIC CONIC

C3 11.545 VHL 3.398 DLA 19.34 RAL 147.31 RAD 6567.4 VEL 11.530 PTH 2.01 VHP 5.291 DPA .37 RAP 195.14 ECC 1.1900

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 39 10	2741.74	-27.92	77.58	6.24	94.92	14 24 51	2141.7	-26.95	69.05
90.00	7 5 25	4084.87	-3.67	165.55	1.12	61.90	8 13 29	3484.9	-7.40	158.86
100.00	15 12 32	2440.64	-29.20	55.29	6.10	96.72	15 53 13	1840.6	-27.96	46.70
100.00	8 14 43	3861.20	-2.55	148.49	.50	60.21	9 19 4	3261.2	-6.50	141.93
110.00	16 46 46	2145.84	-32.43	32.29	5.49	101.45	17 22 31	1545.8	-30.51	23.60
110.00	8 56 59	3728.77	.23	136.71	358.76	55.82	9 59 8	3128.8	-4.26	130.50

DIFFERENTIAL CORRECTIONS
TDE .0779 TRA -.6148 TC3 4.0233 BAU .6275
RDE -.2266 RRA -.0641 RC3 .5829 FAU .18771
FDE .5035 FRA -.0042 FC-14.0754 BSP 10210
BDE .2397 BRA .6182 BC3 4.0653 FSP 2655

MID-COURSE EXECUTION ACCURACY
SGT 2949.6 SGR 562.2 SG3 829.7
RRT .6987 RRF -.7617 RTF -.9191
SGB 3002.7 R23 -.1504 R13 -.9220
SG1 2976.1 SG2 398.6 THA 7.73

ORBIT DETERMINATION ACCURACY
ST 364.2 SR 383.9 SS 409.7
CRT -.2711 CRS .9528 CST -.2719
LSA 569.2 MSA 341.4 SSA 86.1
EL1 422.6 EL2 318.4 ALF 129.50

LAUNCH DATE DEC 3 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 483.780 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.410 GAL 1.40 AZL 89.46 HCA 149.96 SMA 194.07 ECC .24136 INC .5436 V1 30.214
RP 235.06 LAP .27 LOP 220.83 VP 21.103 GAP 6.86 AZP 90.47 TAL 7.23 TAP 157.19 RCA 147.23 APO 240.91 V2 23.387
RC 201.544 GL 5.38 GP 5.52 ZAL 71.38 ZAP 152.32 ETS 167.88 ZAE 165.74 ETE 25.59 ZAC 96.07 ETC 255.75 CLP 152.83

PLANETOCENTRIC CONIC

C3 11.406 VHL 3.377 DLA 19.21 RAL 146.37 RAD 6567.4 VEL 11.524 PTH 2.01 VHP 5.171 DPA .63 RAP 195.27 ECC 1.1877

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 36 50	2733.95	-27.87	77.02	5.06	95.20	14 22 24	2134.0	-26.86	68.50
90.00	7 0 15	4087.62	-3.58	165.71	359.99	61.89	8 8 23	3487.6	-7.31	159.01
100.00	15 10 3	2433.32	-29.14	54.75	4.91	97.00	15 50 37	1833.3	-27.86	46.18
100.00	8 9 42	3863.49	-2.47	148.62	359.38	60.20	9 14 6	3263.5	-6.42	142.05
110.00	16 44 1	2139.37	-32.34	31.81	4.30	101.73	17 19 40	1539.4	-30.39	23.14
110.00	8 52 15	3730.20	.28	136.79	357.66	55.82	9 54 25	3130.2	-4.20	130.58

DIFFERENTIAL CORRECTIONS
TDE .0749 TRA -.5893 TC3 4.0566 BAU .6264
RDE -.2213 RRA -.0577 RC3 .6466 FAU .19559
FDE .5161 FRA -.0844 FC-14.8454 BSP 10275
BDE .2336 BRA .5921 BC3 4.1079 FSP 2805

MID-COURSE EXECUTION ACCURACY
SGT 2940.3 SGR 585.2 SG3 869.8
RRT .7316 RRF -.7965 RTF -.9191
SGB 2998.0 R23 -.1640 R13 -.9225
SG1 2971.9 SG2 394.7 THA 8.43

ORBIT DETERMINATION ACCURACY
ST 351.8 SR 377.0 SS 414.1
CRT -.2771 CRS .9480 CST -.3095
LSA 567.9 MSA 326.9 SSA 89.4
EL1 413.3 EL2 308.3 ALF 128.00

LAUNCH DATE DEC 3 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 487.406 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.380 GAL 1.47 AZL 89.50 HCA 150.94 SMA 193.51 ECC .23929 INC .4954 V1 30.214
RP 234.71 LAP .24 LOP 221.81 VP 21.097 GAP 6.42 AZP 90.43 TAL 7.62 TAP 158.56 RCA 147.21 APO 239.82 V2 23.424
RC 203.699 GL 4.93 GP 5.82 ZAL 70.60 ZAP 151.29 ETS 167.76 ZAE 166.49 ETE 28.84 ZAC 96.36 ETC 255.74 CLP 151.83

PLANETOCENTRIC CONIC

C3 11.278 VHL 3.358 DLA 19.04 RAL 145.45 RAD 6567.4 VEL 11.518 PTH 2.01 VHP 5.054 DPA .91 RAP 195.38 ECC 1.1856

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 35 3	2724.53	-27.81	76.34	3.89	95.54	14 20 28	2124.5	-26.76	67.83
90.00	6 54 41	4092.37	-3.43	165.97	358.88	61.87	8 2 53	3492.4	-7.17	159.28
100.00	15 8 5	2424.51	-29.06	54.11	3.73	97.33	15 48 30	1824.5	-27.74	45.55
100.00	8 4 20	3867.62	-2.33	148.84	358.27	60.19	9 8 47	3267.6	-6.28	142.28
110.00	16 41 40	2131.71	-32.23	31.24	3.11	102.05	17 17 12	1531.7	-30.24	22.59
110.00	8 47 14	3733.19	.40	136.94	356.57	55.82	9 49 27	3133.2	-4.09	130.73

DIFFERENTIAL CORRECTIONS

TDE .0757 TRA -.5618 TC3 4.0870 BAU .6256
RDE -.2157 RRA -.0506 RC3 .7167 FAU .20395
FDE .5197 FRA -.1752 FC-15.6558 BSP 10271
BDE .2286 BRA .5641 BC3 4.1493 FSP 2952

MID-COURSE EXECUTION ACCURACY

SGT 2929.2 SGR 612.8 SG3 912.2
RRT .7612 RRF -.8284 RTF -.9193
SGB 2992.6 R23 -.1785 R13 -.9234
SG1 2966.8 SG2 392.3 THA 9.21

ORBIT DETERMINATION ACCURACY

ST 340.6 SR 369.3 SS 413.0
CRT -.3023 CRS .9397 CST -.3645
LSA 563.8 MSA 310.3 SSA 93.8
EL1 406.9 EL2 294.7 ALF 127.49

LAUNCH DATE DEC 3 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 491.050 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.352 GAL 1.53 AZL 89.56 HCA 151.93 SMA 192.98 ECC .23732 INC .4440 V1 30.214
RP 234.35 LAP .21 LOP 222.80 VP 21.093 GAP 5.99 AZP 90.39 TAL 7.99 TAP 159.92 RCA 147.18 APO 238.78 V2 23.461
RC 205.837 GL 4.44 GP 6.15 ZAL 69.85 ZAP 150.22 ETS 167.63 ZAE 167.20 ETE 32.64 ZAC 96.68 ETC 255.74 CLP 150.81

PLANETOCENTRIC CONIC

C3 11.160 VHL 3.341 DLA 18.81 RAL 144.55 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 4.941 DPA 1.23 RAP 195.48 ECC 1.1837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 33 51	2713.37	-27.74	75.53	2.74	95.94	14 19 4	2113.4	-26.63	67.04
90.00	6 48 40	4099.18	-3.21	166.35	357.78	61.85	7 57 0	3499.2	-6.95	159.67
100.00	15 6 39	2414.12	-28.97	53.35	2.57	97.72	15 46 53	1814.1	-27.60	44.81
100.00	7 58 33	3873.66	-2.13	149.18	357.18	60.18	9 3 7	3273.7	-6.08	142.62
110.00	16 39 46	2122.76	-32.10	30.57	1.92	102.42	17 15 9	1522.8	-30.06	21.96
110.00	8 41 55	3737.79	.57	137.19	355.49	55.82	9 44 13	3137.8	-3.91	130.98

DIFFERENTIAL CORRECTIONS

TDE .0772 TRA -.5364 TC3 4.1107 BAU .6246
RDE -.2101 RRA -.0430 RC3 .7935 FAU .21270
FDE .5193 FRA -.2700 FC-16.5000 BSP 10234
BDE .2238 BRA .5382 BC3 4.1866 FSP 3104

MID-COURSE EXECUTION ACCURACY

SGT 2916.4 SGR 645.7 SG3 956.5
RRT .7882 RRF -.8571 RTF -.9194
SGB 2987.0 R23 -.1937 R13 -.9242
SG1 2961.3 SG2 391.4 THA 10.08

ORBIT DETERMINATION ACCURACY

ST 330.7 SR 361.4 SS 410.4
CRT -.3310 CRS .9289 CST -.4198
LSA 558.6 MSA 294.2 SSA 98.7
EL1 401.1 EL2 281.1 ALF 127.48

LAUNCH DATE DEC 3 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 494.711 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.325 GAL 1.59 AZL 89.61 HCA 152.92 SMA 192.48 ECC .23546 INC .3893 V1 30.214
RP 233.98 LAP .18 LOP 223.79 VP 21.092 GAP 5.56 AZP 90.35 TAL 8.35 TAP 161.27 RCA 147.16 APO 237.80 V2 23.498
RC 207.958 GL 3.91 GP 6.51 ZAL 69.13 ZAP 149.13 ETS 167.48 ZAE 167.87 ETE 37.08 ZAC 97.01 ETC 255.73 CLP 149.75

PLANETOCENTRIC CONIC

C3 11.051 VHL 3.324 DLA 18.54 RAL 143.66 RAD 6567.4 VEL 11.508 PTH 2.00 VHP 4.831 DPA 1.58 RAP 195.57 ECC 1.1819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 33 14	2700.38	-27.64	74.59	1.59	96.40	14 18 14	2100.4	-26.47	66.12
90.00	6 42 13	4108.13	-2.92	166.85	356.70	61.82	7 50 41	3508.1	-6.67	160.18
100.00	15 5 45	2402.05	-28.85	52.47	1.42	98.17	15 45 47	1802.0	-27.42	43.96
100.00	7 52 23	3881.70	-1.86	149.62	356.11	60.16	8 57 5	3281.7	-5.81	143.06
110.00	16 38 19	2112.42	-31.95	29.81	.75	102.85	17 13 31	1512.4	-29.85	21.22
110.00	8 36 18	3744.09	.81	137.51	354.44	55.83	9 38 42	3144.1	-3.68	131.31

DIFFERENTIAL CORRECTIONS

TDE .0799 TRA -.5121 TC3 4.1204 BAU .6224
RDE -.2042 RRA -.0349 RC3 .8772 FAU .22167
FDE .5134 FRA -.3709 FC-17.3648 BSP 10189
BDE .2193 BRA .5133 BC3 4.2127 FSP 3262

MID-COURSE EXECUTION ACCURACY

SGT 2896.7 SGR 684.1 SG3 1002.1
RRT .8116 RRF -.8824 RTF -.9191
SGB 2976.3 R23 -.2098 R13 -.9248
SG1 2950.4 SG2 392.4 THA 11.05

ORBIT DETERMINATION ACCURACY

ST 322.1 SR 352.9 SS 405.5
CRT -.3671 CRS .9148 CST -.4791
LSA 551.9 MSA 277.7 SSA 104.4
EL1 396.4 EL2 266.7 ALF 128.00

LAUNCH DATE DEC 3 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 498.388 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.299 GAL 1.64 AZL 89.67 HCA 153.91 SMA 192.01 ECC .23369 INC .3298 V1 30.214
RP 233.62 LAP .15 LOP 224.78 VP 21.094 GAP 5.14 AZP 90.30 TAL 8.70 TAP 162.61 RCA 147.14 APO 236.88 V2 23.536
RC 210.060 GL 3.33 GP 6.90 ZAL 68.44 ZAP 148.00 ETS 167.33 ZAE 168.46 ETE 42.25 ZAC 97.37 ETC 255.71 CLP 148.67

PLANETOCENTRIC CONIC

C3 10.951 VHL 3.309 DLA 18.20 RAL 142.79 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 4.724 DPA 1.97 RAP 195.65 ECC 1.1802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 33 14	2685.46	-27.53	73.51	.45	96.92	14 17 59	2085.5	-26.28	65.07
90.00	6 35 17	4119.32	-2.56	167.48	355.64	61.79	7 43 56	3519.3	-6.32	160.81
100.00	15 5 25	2380.19	-28.72	51.46	.27	98.68	15 45 13	1788.2	-27.22	42.98
100.00	7 45 47	3891.82	-1.51	150.17	355.05	60.14	8 50 39	3291.8	-5.47	143.63
110.00	16 37 20	2100.61	-31.77	28.93	359.58	103.34	17 12 20	1500.6	-29.61	20.39
110.00	8 30 21	3752.18	1.12	137.94	353.40	55.83	9 32 53	3152.2	-3.37	131.73

DIFFERENTIAL CORRECTIONS

TDE .0861 TRA -.4886 TC3 4.1188 BAU .6195
RDE -.1977 RRA -.0258 RC3 .9691 FAU .23099
FDE .4947 FRA -.4801 FC-18.2604 BSP 10175
BDE .2157 BRA .4893 BC3 4.2312 FSP 3433

MID-COURSE EXECUTION ACCURACY

SGT 2871.7 SGR 728.6 SG3 1049.6
RRT .8314 RRF -.9043 RTF -.9185
SGB 2962.6 R23 -.2266 R13 -.9254
SG1 2936.1 SG2 396.0 THA 12.13

ORBIT DETERMINATION ACCURACY

ST 316.7 SR 343.2 SS 394.4
CRT -.4205 CRS .8940 CST -.5495
LSA 542.1 MSA 259.3 SSA 112.1
EL1 394.4 EL2 250.0 ALF 129.59

LAUNCH DATE DEC 3 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 502.082 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.275 GAL 1.70 AZL 89.73 HCA 154.90 SMA 191.56 ECC .23202 INC .2672 V1 30.214
RP 233.25 LAP .11 LOP 225.77 VP 21.098 GAP 4.72 AZP 90.24 TAL 9.04 AP 163.94 RCA 147.11 APO 236.00 V2 23.574
RC 212.144 GL 2.70 GP 7.32 ZAL 67.78 ZAP 146.83 ETS 167.15 ZAE 168.96 ETE 48.19 ZAC 97.75 ETC 255.70 CLP 147.56

PLANETOCENTRIC CONIC

C3 10.860 VHL 3.295 DLA 17.81 RAL 141.94 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 4.621 DPA 2.40 RAP 195.71 ECC 1.1787

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 33 51	2668.49	-27.38	72.29	359.32	97.52	14 18 20	2068.5	-26.06	63.88
90.00	6 27 51	4132.85	-2.13	168.24	354.58	61.76	7 36 44	3532.9	-5.89	161.57
100.00	15 5 40	2372.44	-28.55	50.32	359.12	99.26	15 45 12	1772.4	-26.97	41.87
100.00	7 38 43	3904.14	-1.10	150.85	354.01	60.13	8 43 48	3304.1	-5.06	144.31
110.00	16 36 50	2087.19	-31.55	27.95	358.41	103.89	17 11 37	1487.2	-29.32	19.45
110.00	8 24 3	3762.15	1.50	138.46	352.39	55.85	9 26 45	3162.1	-2.99	132.25

DIFFERENTIAL CORRECTIONS
TDE .0931 TRA -.4669 TC3 4.1072 BAU .6162
RDE -.1910 RRA -.0161 RC3 1.0697 FAU .24058
FDE .4703 FRA -.5934 FC-19.1790 BSP 10116
BDE .2124 BRA .4671 BC3 4.2442 FSP 3608

MID-COURSE EXECUTION ACCURACY
SGT 2842.7 SGR 779.8 SG3 1098.4
RRT .8480 RRF -.9230 RTF -.9176
SGB 2947.7 R23 -.2433 R13 -.9260
SG1 2920.1 SG2 402.4 THA 13.35

ORBIT DETERMINATION ACCURACY
ST 313.4 SR 332.8 SS 382.5
CRT -.4770 CRS .8675 CST -.6151
LSA 531.8 MSA 240.5 SSA 121.1
EL1 393.2 EL2 233.1 ALF 131.40

LAUNCH DATE DEC 3 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 505.791 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.252 GAL 1.75 AZL 89.80 HCA 155.90 SMA 191.13 ECC .23044 INC .1981 V1 30.214
RP 232.88 LAP .08 LOP 226.77 VP 21.105 GAP 4.31 AZP 90.18 TAL 9.36 TAP 165.26 RCA 147.09 APO 235.18 V2 23.612
RC 214.210 GL 2.01 GP 7.78 ZAL 67.16 ZAP 145.62 ETS 166.97 ZAE 169.31 ETE 54.91 ZAC 98.17 ETC 255.69 CLP 146.41

PLANETOCENTRIC CONIC

C3 10.776 VHL 3.283 DLA 17.35 RAL 141.10 RAD 6567.4 VEL 11.496 PTH 2.00 VHP 4.522 DPA 2.88 RAP 195.77 ECC 1.1773

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 35 8	2649.35	-27.20	70.92	358.19	98.19	14 19 17	2049.3	-25.79	62.54
90.00	6 19 53	4148.84	-1.61	169.13	353.55	61.73	7 29 2	3548.8	-5.38	162.47
100.00	15 6 31	2354.65	-28.35	49.04	357.98	99.91	15 45 46	1754.7	-26.69	40.63
100.00	7 31 11	3918.77	-.60	151.65	352.98	60.11	8 36 30	3318.8	-4.57	145.12
110.00	16 36 50	2072.05	-31.30	26.84	357.24	104.50	17 11 23	1472.1	-28.99	18.40
110.00	8 17 21	3774.14	1.96	139.08	351.38	55.87	9 20 15	3174.1	-2.53	132.88

DIFFERENTIAL CORRECTIONS
TDE .1014 TRA -.4461 TC3 4.0799 BAU .6119
RDE -.1835 RRA -.0052 RC3 1.1800 FAU .25042
FDE .4336 FRA -.7169 FC-20.1180 BSP 10048
BDE .2096 BRA .4461 BC3 4.2471 FSP 3785

MID-COURSE EXECUTION ACCURACY
SGT 2805.7 SGR 838.4 SG3 1148.7
RRT .8615 RRF -.9387 RTF -.9163
SGB 2928.2 R23 -.2597 R13 -.9266
SG1 2899.1 SG2 412.0 THA 14.74

ORBIT DETERMINATION ACCURACY
ST 312.5 SR 321.1 SS 367.4
CRT -.5391 CRS .8294 CST -.6748
LSA 519.3 MSA 219.9 SSA 132.9
EL1 393.1 EL2 215.0 ALF 133.56

LAUNCH DATE DEC 3 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 509.516 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.230 GAL 1.80 AZL 89.88 HCA 156.90 SMA 190.73 ECC .22894 INC .1235 V1 30.214
RP 232.51 LAP .05 LOP 227.77 VP 21.113 GAP 3.91 AZP 90.11 TAL 9.66 TAP 166.56 RCA 147.07 APO 234.40 V2 23.650
RC 216.258 GL 1.27 GP 8.28 ZAL 66.56 ZAP 144.38 ETS 166.77 ZAE 169.50 ETE 62.29 ZAC 98.62 ETC 255.67 CLP 145.23

PLANETOCENTRIC CONIC

C3 10.701 VHL 3.271 DLA 16.82 RAL 140.27 RAD 6567.4 VEL 11.493 PTH 2.00 VHP 4.426 DPA 3.42 RAP 195.81 ECC 1.1761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 37 5	2627.88	-26.98	69.39	357.05	98.93	14 20 53	2027.9	-25.47	61.04
90.00	6 11 21	4167.45	-1.01	170.17	352.52	61.70	7 20 48	3567.5	-4.79	163.52
100.00	15 8 0	2334.68	-28.11	47.60	356.83	100.62	15 46 55	1734.7	-26.35	39.24
100.00	7 23 7	3935.88	-.02	152.59	351.97	60.11	8 28 43	3335.9	-4.00	146.06
110.00	16 37 23	2055.04	-31.00	25.60	356.07	105.18	17 11 38	1455.0	-28.61	17.22
110.00	8 10 14	3788.29	2.50	139.82	350.40	55.90	9 13 22	3188.3	-1.99	133.62

DIFFERENTIAL CORRECTIONS
TDE .1137 TRA -.4265 TC3 4.0457 BAU .6080
RDE -.1748 RRA .0069 RC3 1.3020 FAU .26064
FDE .3795 FRA -.8478 FC-21.0867 BSP 9988
BDE .2085 BRA .4265 BC3 4.2500 FSP 3973

MID-COURSE EXECUTION ACCURACY
SGT 2766.7 SGR 905.3 SG3 1200.8
RRT .8720 RRF -.9517 RTF -.9147
SGB 2911.0 R23 -.2751 R13 -.9274
SG1 2879.7 SG2 425.8 THA 16.29

ORBIT DETERMINATION ACCURACY
ST 317.4 SR 307.3 SS 348.3
CRT -.6133 CRS .7712 CST -.7209
LSA 505.5 MSA 196.5 SSA 149.6
EL1 396.8 EL2 194.1 ALF 136.52

LAUNCH DATE DEC 3 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 513.254 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.209 GAL 1.84 AZL 89.96 HCA 157.91 SMA 190.36 ECC .22752 INC .0350 V1 30.214
RP 232.14 LAP .02 LOP 228.78 VP 21.124 GAP 3.52 AZP 90.04 TAL 9.95 TAP 167.86 RCA 147.05 APO 233.67 V2 23.689
RC 218.287 GL .45 GP 8.83 ZAL 66.00 ZAP 143.09 ETS 166.55 ZAE 169.47 ETE 70.10 ZAC 99.11 ETC 255.65 CLP 144.02

PLANETOCENTRIC CONIC

C3 10.634 VHL 3.261 DLA 16.21 RAL 139.46 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 4.334 DPA 4.00 RAP 195.85 ECC 1.1750

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 39 45	2603.90	-26.72	67.68	355.91	99.74	14 23 9	2003.9	-25.10	59.39
90.00	6 2 12	4188.86	-.32	171.36	351.52	61.68	7 12 1	3588.9	-4.10	164.72
100.00	15 10 10	2312.35	-27.81	46.01	355.68	101.42	15 48 42	1712.3	-25.96	37.70
100.00	7 14 29	3955.65	.65	153.67	350.97	60.11	8 20 25	3355.6	-3.33	147.15
110.00	16 38 29	2035.97	-30.66	24.23	354.89	105.92	17 12 25	1436.0	-28.17	15.91
110.00	8 2 38	3804.79	3.13	140.68	349.43	55.94	9 6 3	3204.8	-1.36	134.48

DIFFERENTIAL CORRECTIONS
TDE .1255 TRA -.4084 TC3 3.9954 BAU .6036
RDE -.1651 RRA .0205 RC3 1.4363 FAU .27106
FDE .3127 FRA -.9890 FC-22.0688 BSP 9895
BDE .2074 BRA .4089 BC3 4.2457 FSP 4157

MID-COURSE EXECUTION ACCURACY
SGT 2719.7 SGR 981.4 SG3 1254.2
RRT .8800 RRF -.9624 RTF -.9126
SGB 2891.3 R23 -.2887 R13 -.9284
SG1 2857.1 SG2 443.6 THA 18.07

ORBIT DETERMINATION ACCURACY
ST 324.1 SR 291.7 SS 331.3
CRT -.6804 CRS .6882 CST -.7293
LSA 490.7 MSA 173.5 SSA 170.4
EL1 400.2 EL2 173.1 ALF 139.40

LAUNCH DATE DEC 3 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 517.007 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	33.190	GAL	1.88	AZL	90.04	HCA	158.91	SMA	190.00	ECC	.22618	INC	.0448	V1	30.214
RP	231.76	LAP	-.02	LOP	229.78	VP	21.137	GAP	3.13	AZP	89.96	TAL	10.23	TAP	169.14	RCA	147.03	APO	232.97	V2	23.728
RC	220.299	GL	-.45	GP	9.44	ZAL	65.47	ZAP	141.76	ETS	166.31	ZAE	169.21	ETE	78.02	ZAC	99.65	ETC	255.63	CLP	142.77

PLANETOCENTRIC CONIC

C3	10.575	VHL	3.252	DLA	15.51	RAL	138.66	RAD	6567.4	VEL	11.488	PTH	2.00	VHP	4.246	DPA	4.66	RAP	195.89	ECC	1.1740

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 43 9	2577.21	-26.40	65.79	354.77	100.64	14 26 7	1977.2	-24.66	57.55
90.00	5 52 24	4213.31	.47	172.72	350.52	61.69	7 2 37	3613.3	-3.32	166.09
100.00	15 13 1	2287.44	-27.47	44.24	354.53	102.28	15 51 8	1687.4	-25.50	35.99
100.00	7 5 14	3978.31	1.42	154.92	349.99	60.14	8 11 32	3378.3	-2.56	148.40
110.00	16 40 11	2014.66	-30.25	22.70	353.70	106.74	17 13 46	1414.7	-27.66	14.46
110.00	7 54 32	3823.86	3.86	141.68	348.47	56.01	8 58 16	3223.9	-.63	135.47

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1402	TRA	-.3925	TC3	3.9274	BAU	.5987	SGT	2664.7	SGR	1066.7	SG3	1307.5	ST	336.5	SR	273.6	SS	317.8
RDE	-.1539	RRA	.0356	RC3	1.5832	FAU	.28143	RRT	.8853	RRF	-.9709	RTF	-.9098	CRT	-.7474	CRS	.5693	CST	-.6817
FDE	.2280	FRA	-1.1343	FC	-23.0396	BSP	9818	SGB	2870.3	R23	-.3004	R13	-.9296	LSA	476.4	MSA	200.9	SSA	147.5
BDE	.2082	BRA	.3941	BC3	4.2345	FSP	4354	SG1	2832.0	SG2	466.8	THA	20.08	EL1	406.8	EL2	150.4	ALF	142.79

LAUNCH DATE DEC 3 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 520.773 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	33.171	GAL	1.92	AZL	90.14	HCA	159.92	SMA	189.66	ECC	.22492	INC	.1421	V1	30.214
RP	231.38	LAP	-.05	LOP	230.79	VP	21.152	GAP	2.75	AZP	89.87	TAL	10.49	TAP	170.42	RCA	147.01	APO	232.32	V2	23.768
RC	222.292	GL	-1.45	GP	10.11	ZAL	64.99	ZAP	140.38	ETS	166.05	ZAE	168.70	ETE	85.67	ZAC	100.25	ETC	255.61	CLP	141.48

PLANETOCENTRIC CONIC

C3	10.526	VHL	3.244	DLA	14.71	RAL	137.86	RAD	6567.4	VEL	11.485	PTH	2.00	VHP	4.162	DPA	5.38	RAP	195.92	ECC	1.1732

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 47 21	2547.55	-26.01	63.71	353.61	101.61	14 29 48	1947.6	-24.15	55.53
90.00	5 41 52	4241.07	1.36	174.27	349.54	61.71	6 52 33	3641.1	-2.43	167.64
100.00	15 16 36	2259.71	-27.05	42.28	353.35	103.23	15 54 16	1659.7	-24.96	34.10
100.00	6 55 17	4004.15	2.30	156.34	349.03	60.19	8 2 1	3404.2	-1.69	149.81
110.00	16 42 32	1990.85	-29.77	21.01	352.50	107.63	17 15 42	1390.9	-27.07	12.86
110.00	7 45 51	3845.77	4.69	142.83	347.54	56.10	8 49 57	3245.8	.21	136.61

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1568	TRA	-.3781	TC3	3.8491	BAU	.5948	SGT	2606.0	SGR	1164.1	SG3	1362.4	ST	353.8	SR	251.9	SS	314.2
RDE	-.1404	RRA	.0528	RC3	1.7466	FAU	.29212	RRT	.8885	RRF	-.9777	RTF	-.9065	CRT	-.8088	CRS	.4020	CST	-.5490
FDE	.1191	FRA	-1.2916	FC	-24.0266	BSP	9756	SGB	2854.2	R23	-.3089	R13	-.9313	LSA	462.2	MSA	242.4	SSA	122.4
BDE	.2104	BRA	.3818	BC3	4.2268	FSP	4554	SG1	2810.8	SG2	495.4	THA	22.38	EL1	415.6	EL2	126.1	ALF	146.58

LAUNCH DATE DEC 3 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 524.553 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	33.153	GAL	1.96	AZL	90.25	HCA	160.94	SMA	189.35	ECC	.22372	INC	.2482	V1	30.214
RP	231.01	LAP	-.08	LOP	231.81	VP	21.169	GAP	2.38	AZP	89.76	TAL	10.74	TAP	171.68	RCA	146.99	APO	231.71	V2	23.807
RC	224.266	GL	-2.55	GP	10.86	ZAL	64.54	ZAP	138.95	ETS	165.78	ZAE	167.93	ETE	92.75	ZAC	100.90	ETC	255.58	CLP	140.16

PLANETOCENTRIC CONIC

C3	10.487	VHL	3.238	DLA	13.79	RAL	137.07	RAD	6567.4	VEL	11.484	PTH	2.00	VHP	4.083	DPA	6.18	RAP	195.95	ECC	1.1726

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 52 22	2514.62	-25.54	61.41	352.44	102.67	14 34 17	1914.6	-23.54	53.31
90.00	5 30 30	4272.52	2.38	176.03	348.59	61.77	6 41 43	3672.5	-1.41	169.40
100.00	15 20 59	2228.85	-26.55	40.12	352.17	104.26	15 58 8	1628.8	-24.33	32.03
100.00	6 44 35	4033.53	3.29	157.95	348.08	60.27	7 51 48	3433.5	-.69	151.43
110.00	16 45 33	1964.27	-29.21	19.15	351.28	108.61	17 18 17	1364.3	-26.39	11.10
110.00	7 36 31	3870.87	5.64	144.15	346.62	56.23	8 41 1	3270.9	1.17	137.92

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1749	TRA	-.3659	TC3	3.7534	BAU	.5916	SGT	2539.7	SGR	1274.5	SG3	1417.8	ST	375.7	SR	226.3	SS	329.7
RDE	-.1241	RRA	.0726	RC3	1.9275	FAU	.30286	RRT	.8894	RRF	-.9831	RTF	-.9022	CRT	-.8609	CRS	.2060	CST	-.3283
FDE	-.0162	FRA	-1.4596	FC	-25.0018	BSP	9680	SGB	2841.5	R23	-.3141	R13	-.9336	LSA	449.3	MSA	298.8	SSA	99.0
BDE	.2145	BRA	.3730	BC3	4.2194	FSP	4746	SG1	2791.7	SG2	530.0	THA	25.02	EL1	426.7	EL2	101.4	ALF	150.78

LAUNCH DATE DEC 3 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 528.346 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	33.136	GAL	1.99	AZL	90.37	HCA	161.96	SMA	189.05	ECC	.22259	INC	.3683	V1	30.214
RP	230.62	LAP	-.11	LOP	232.82	VP	21.187	GAP	2.02	AZP	89.65	TAL	10.97	TAP	172.92	RCA	146.97	APO	231.13	V2	23.847
RC	226.222	GL	-3.78	GP	11.68	ZAL	64.14	ZAP	137.46	ETS	165.48	ZAE	166.92	ETE	99.06	ZAC	101.63	ETC	255.55	CLP	138.80

PLANETOCENTRIC CONIC

C3	10.461	VHL	3.234	DLA	12.74	RAL	136.28	RAD	6567.4	VEL	11.483	PTH	2.00	VHP	4.009	DPA	7.07	RAP	195.99	ECC	1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 58 18	2478.05	-24.97	58.89	351.25	103.81	14 39 37	1878.0	-22.82	50.87
90.00	5 18 14	4308.10	3.52	178.02	347.65	61.88	6 30 2	3708.1	-.27	171.38
100.00	15 26 14	2194.49	-25.95	37.75	350.96	105.38	16 2 48	1594.5	-23.59	29.74
100.00	6 32 59	4066.88	4.41	159.79	347.15	60.41	7 40 46	3466.9	.44	153.26
110.00	16 49 18	1934.56	-28.54	17.09	350.04	109.66	17 21 32	1334.6	-25.60	9.15
110.00	7 26 25	3899.57	6.73	145.67	345.72	56.41	8 31 24	3299.6	2.27	139.42

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1957	TRA	-.3540	TC3	3.6424	BAU	.5899	SGT	2466.8	SGR	1399.2	SG3	1472.8	ST	403.0	SR	196.1	SS	372.5
RDE	-.1041	RRA	.0955	RC3	2.1273	FAU	.31346	RRT	.8885	RRF	-.9873	RTF	-.8974	CRT	-.8996	CRS	.0365	CST	-.0572
FDE	-.1824	FRA	-1.6405	FC	-25.9407	BSP	9598	SGB	2836.0	R23	-.3142	R13	-.9370	LSA	442.9	MSA	370.7	SSA	78.1
BDE	.2217	BRA	.3667	BC3	4.2181	FSP	4936	SG1	2778.1	SG2	570.0	THA	28.03	EL1	441.3	EL2	78.2	ALF	155.55

LAUNCH DATE DEC 3 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 532.152 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	33.121	GAL	2.02	AZL	90.50	HCA	162.98	SMA	188.77	ECC	.22152	INC	.5017
RP	230.24	LAP	-.15	LOP	233.85	VP	21.208	GAP	1.66	AZP	89.52	TAL	11.18	TAP	174.16	RCA	146.95	APO	230.58
RC	228.159	GL	-5.15	GP	12.61	ZAL	63.78	ZAP	135.91	ETS	165.15	ZAE	165.67	ETE	104.51	ZAC	102.45	ETC	255.51

V1	30.214	V2	23.887	CLP	137.39														

PLANETOCENTRIC CONIC

C3	10.451	VHL	3.233	DLA	11.54	RAL	135.47	RAD	6567.4	VEL	11.482	PTH	2.00	VHP	3.940	DPA	8.07	RAP	196.03

ECC	1.1720	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	14 5 14	2437.35	-24.28	56.10	350.03	105.04	14 45 52	1837.4	-21.98	48.19							
		90.00	5 4 54	4348.38	4.81	180.27	346.73	62.06	6 17 22	3748.4	1.04	173.63							
		100.00	15 32 25	2156.19	-25.23	35.13	349.73	106.58	16 8 21	1556.2	-22.72	27.23							
		100.00	6 20 24	4104.78	5.68	161.89	346.25	60.60	7 28 49	3504.8	1.72	155.34							
		110.00	16 53 52	1901.32	-27.76	14.82	348.78	110.80	17 25 33	1301.3	-24.68	7.00							
		110.00	7 15 27	3932.41	7.96	147.41	344.85	56.65	8 20 59	3332.4	3.52	141.14							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2170	TRA	-.3458	TC3	3.5101	BAU	.5900	SGT	2385.3	SGR	1540.4	SG3	1526.5	ST	433.4	SR	162.2	SS	445.5
RDE	-.0795	RRA	.1218	RC3	2.3479	FAU	.32379	RRT	.8853	RRF	-.9906	RTF	-.8910	CRT	-.9037	CRS	-.0285	CST	.1927
FDE	-.3816	FRA	-1.8288	FC	-26.8226	BSP	9600	SGB	2839.5	R23	-.3098	R13	-.9414	LSA	490.5	MSA	410.2	SSA	61.4
BDE	.2311	BRA	.3667	BC3	4.2230	FSP	5132	SG1	2771.8	SG2	616.4	THA	31.49	EL1	458.1	EL2	65.7	ALF	160.90

LAUNCH DATE DEC 3 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 535.971 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	33.106	GAL	2.05	AZL	90.65	HCA	164.00	SMA	188.50	ECC	.22052	INC	.6527
RP	229.86	LAP	-.18	LOP	234.87	VP	21.230	GAP	1.30	AZP	89.37	TAL	11.38	TAP	175.38	RCA	146.93	APO	230.07
RC	230.076	GL	-6.70	GP	13.64	ZAL	63.48	ZAP	134.30	ETS	164.80	ZAE	164.20	ETE	109.11	ZAC	103.37	ETC	255.46

V1	30.214	V2	23.927	CLP	135.95														

PLANETOCENTRIC CONIC

C3	10.460	VHL	3.234	DLA	10.17	RAL	134.66	RAD	6567.4	VEL	11.483	PTH	2.00	VHP	3.876	DPA	9.18	RAP	196.09

ECC	1.1722	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	14 13 16	2392.01	-23.44	53.04	348.79	106.36	14 53 8	1792.0	-20.98	45.24							
		90.00	4 50 21	4394.10	6.26	182.85	345.85	62.33	6 3 35	3794.1	2.51	176.18							
		100.00	15 39 38	2113.41	-24.37	32.24	348.48	107.87	16 14 52	1513.4	-21.70	24.46							
		100.00	6 6 39	4147.92	7.12	164.28	345.38	60.89	7 15 47	3547.9	3.18	157.71							
		110.00	16 59 19	1864.06	-26.83	12.32	347.49	112.02	17 30 23	1264.1	-23.61	4.64							
		110.00	7 3 28	3970.04	9.36	149.42	344.02	56.97	8 9 38	3370.0	4.95	143.11							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2514	TRA	-.3280	TC3	3.4032	BAU	.5991	SGT	2322.2	SGR	1707.9	SG3	1585.3	ST	483.9	SR	127.4	SS	565.6
RDE	-.0460	RRA	.1555	RC3	2.6016	FAU	.33498	RRT	.8832	RRF	-.9931	RTF	-.8872	CRT	-.7757	CRS	.1240	CST	.4302
FDE	-.6500	FRA	-2.0591	FC	-27.7244	BSP	9371	SGB	2882.7	R23	-.2945	R13	-.9487	LSA	635.1	MSA	405.9	SSA	45.9
BDE	.2556	BRA	.3630	BC3	4.2837	FSP	5256	SG1	2805.4	SG2	662.9	THA	35.27	EL1	494.1	EL2	78.7	ALF	168.15

LAUNCH DATE DEC 3 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 539.800 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	33.092	GAL	2.08	AZL	90.82	HCA	165.03	SMA	188.25	ECC	.21957	INC	.8241
RP	229.47	LAP	-.21	LOP	235.90	VP	21.254	GAP	.96	AZP	89.20	TAL	11.57	TAP	176.60	RCA	146.92	APO	229.59
RC	231.973	GL	-8.45	GP	14.81	ZAL	63.24	ZAP	132.62	ETS	164.42	ZAE	162.51	ETE	112.90	ZAC	104.41	ETC	255.40

V1	30.214	V2	23.968	CLP	134.46														

PLANETOCENTRIC CONIC

C3	10.495	VHL	3.240	DLA	8.59	RAL	133.82	RAD	6567.4	VEL	11.484	PTH	2.00	VHP	3.820	DPA	10.43	RAP	196.18

ECC	1.1727	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	14 22 33	2341.20	-22.43	49.67	347.53	107.76	15 1 35	1741.2	-19.79	41.99							
		90.00	4 34 22	4446.25	7.90	185.81	345.02	62.72	5 48 28	3846.3	4.18	179.10							
		100.00	15 48 4	2065.40	-23.33	29.05	347.20	109.24	16 22 30	1465.4	-20.49	21.41							
		100.00	5 51 32	4197.29	8.74	167.05	344.56	61.30	7 1 29	3597.3	4.85	160.43							
		110.00	17 5 49	1822.09	-25.73	9.55	346.18	113.32	17 36 11	1222.1	-22.35	2.03							
		110.00	6 50 16	4013.36	10.96	151.76	343.23	57.42	7 57 10	3413.4	6.59	145.40							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2714	TRA	-.3298	TC3	3.2103	BAU	.6038	SGT	2214.7	SGR	1887.8	SG3	1630.7	ST	515.3	SR	117.3	SS	696.6
RDE	-.0075	RRA	.1907	RC3	2.8656	FAU	.34359	RRT	.8740	RRF	-.9950	RTF	-.8756	CRT	-.3480	CRS	.5366	CST	.5574
FDE	-.9265	FRA	-2.2575	FC	-28.3426	BSP	9591	SGB	2910.1	R23	-.2800	R13	-.9549	LSA	777.8	MSA	397.9	SSA	36.5
BDE	.2715	BRA	.3810	BC3	4.3032	FSP	5457	SG1	2819.5	SG2	720.5	THA	39.80	EL1	517.0	EL2	109.6	ALF	175.26

LAUNCH DATE DEC 3 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 543.642 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	33.078	GAL	2.10	AZL	91.02	HCA	166.06	SMA	188.02	ECC	.21867	INC	1.0214
RP	229.09	LAP	-.25	LOP	236.93	VP	21.279	GAP	.62	AZP	89.01	TAL	11.74	TAP	177.79	RCA	146.90	APO	229.13
RC	233.848	GL	-10.44	GP	16.14	ZAL	63.09	ZAP	130.86	ETS	164.00	ZAE	160.61	ETE	115.99	ZAC	105.59	ETC	255.33

V1	30.214	V2	24.009	CLP	132.93														

PLANETOCENTRIC CONIC

C3	10.565	VHL	3.250	DLA	6.76	RAL	132.94	RAD	6567.4	VEL	11.487	PTH	2.00	VHP	3.771	DPA	11.84	RAP	196.31

ECC	1.1739	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	14 33 18	2284.08	-21.19	45.93	346.25	109.23	15 11 22	1684.1	-18.38	38.39							
		90.00	4 16 38	4506.06	9.75	189.23	344.24	63.28	5 31 45	3906.1	6.09	182.46							
		100.00	15 57 52	2011.32	-22.07	25.53	345.91	110.69	16 31 23	1411.3	-19.06	18.03							
		100.00	5 34 46	4254.10	10.58	170.26	343.81	61.88	6 45 40	3654.1	6.74	163.58							
		110.00	17 13 29	1774.67	-24.42	6.49	344.84	114.70	17 43 4	1174.7	-20.88	359.13							
		110.00	6 35 38	4063.46	12.78	154.50	342.51	58.02	7 43 21	3463.5	8.47	148.06							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2940	TRA	-.3319	TC3	3.0036	BAU	.6152	SGT	2104.3	SGR	2093.2	SG3	1671.1	ST	550.6	SR	156.9	SS	857.8
RDE	.0418	RRA	.2331	RC3	3.1544	FAU	.35119	RRT	.8623	RRF	-.9964	RTF	-.8622	CRT	.2297	CRS	.8730	CST	.6526
FDE	-1.2541	FRA	-2.4693	FC	-28.7781	BSP	9855	SGB	2968.1	R23	-.2572	R13	-.9626	LSA	954.2	MSA	390.1	SSA	28.8
BDE	.2969	BRA	.4056	BC3	4.3557	FSP	5638	SG1	2864.1	SG2	778.7	THA	44.82	EL1	551.9	EL2	152.4	ALF	4.05

LAUNCH DATE DEC 3 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 547.495 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.066 GAL 2.12 AZL 91.25 HCA 167.09 SMA 187.80 ECC .21783 INC 1.2490 V1 30.214
RP 228.70 LAP -.28 LOP 237.96 VP 21.306 GAP .28 AZP 88.78 TAL 11.89 TAP 178.98 RCA 146.89 APO 228.71 V2 24.049
RC 235.703 GL -12.73 GP 17.66 ZAL 63.03 ZAP 129.02 ETS 163.55 ZAE 158.48 ETE 118.44 ZAC 106.95 ETC 255.24 CLP 131.35

PLANETOCENTRIC CONIC

C3 10.683 VHL 3.268 DLA 4.64 RAL 132.02 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 3.732 DPA 13.44 RAP 196.49 ECC 1.1758

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 45 46	2219.47	-19.69	41.79	344.97	110.77	15 22 45	1619.5	-16.69	34.40
90.00	3 56 48	4575.18	11.84	193.23	343.57	64.09	5 13 4	3975.2	8.26	186.38
100.00	16 9 17	1950.08	-20.55	21.62	344.61	112.20	16 41 47	1350.1	-17.36	14.28
100.00	5 15 58	4319.81	12.67	174.03	343.14	62.70	6 27 58	3719.8	8.91	167.26
110.00	17 22 32	1720.85	-22.85	3.11	343.50	116.15	17 51 12	1120.9	-19.14	355.92
110.00	6 19 13	4121.80	14.86	157.74	341.88	58.86	7 27 55	3521.8	10.63	151.19

DIFFERENTIAL CORRECTIONS
TDE .3206 TRA -.3346 TC3 2.7808 BAU .6355
RDE .1085 RRA .2862 RC3 3.4739 FAU .35805
FDE-1.6622 FRA-2.7079 FC-29.0162 BSP 10165
BDE .3385 BRA .4403 BC3 4.4498 FSP 5759

MID-COURSE EXECUTION ACCURACY
SGT 1991.7 SGR 2333.8 SG3 1708.3
RRT .8474 RRF -.9974 RTF -.8460
SGB 3068.1 R23 -.2267 R13 -.9713
SG1 2952.0 SG2 836.1 THA 50.32

ORBIT DETERMINATION ACCURACY
ST 591.7 SR 252.3 SS 1062.3
CRT .5627 CRS .9732 CST .7267
LSA 1181.1 MSA 383.1 SSA 22.5
EL1 610.7 EL2 202.1 ALF 15.20

LAUNCH DATE DEC 3 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 551.358 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.054 GAL 2.14 AZL 91.52 HCA 168.13 SMA 187.60 ECC .21704 INC 1.5168 V1 30.214
RP 228.31 LAP -.31 LOP 239.00 VP 21.334 GAP -.04 AZP 88.51 TAL 12.03 TAP 180.16 RCA 146.88 APO 228.31 V2 24.090
RC 237.537 GL -15.39 GP 19.41 ZAL 63.08 ZAP 127.07 ETS 163.06 ZAE 156.11 ETE 120.35 ZAC 108.53 ETC 255.12 CLP 129.72

PLANETOCENTRIC CONIC

C3 10.870 VHL 3.297 DLA 2.16 RAL 131.02 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 3.704 DPA 15.26 RAP 196.75 ECC 1.1789

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 19	2145.85	-17.84	37.18	343.69	112.36	15 36 5	1545.8	-14.66	29.95
90.00	3 34 20	4655.88	14.19	197.99	343.03	65.24	4 51 55	4055.9	10.73	191.02
100.00	16 22 40	1880.23	-18.69	17.26	343.31	113.76	16 54 0	1280.2	-15.32	10.09
100.00	4 54 40	4396.73	15.02	178.53	342.62	63.85	6 7 57	3796.7	11.39	171.62
110.00	17 33 13	1659.40	-20.95	359.34	342.16	117.65	18 0 52	1059.4	-17.08	352.35
110.00	6 0 36	4190.33	17.24	161.63	341.39	60.01	7 10 26	3590.3	13.12	154.94

DIFFERENTIAL CORRECTIONS
TDE .3477 TRA -.3408 TC3 2.5306 BAU .6652
RDE .1965 RRA .3514 RC3 3.8140 FAU .36281
FDE-2.1378 FRA-2.9575 FC-28.8959 BSP 10635
BDE .3994 BRA .4896 BC3 4.5772 FSP 5845

MID-COURSE EXECUTION ACCURACY
SGT 1871.1 SGR 2610.5 SG3 1735.1
RRT .8272 RRF -.9982 RTF -.8248
SGB 3211.8 R23 -.1911 R13 -.9797
SG1 3086.3 SG2 889.2 THA 56.15

ORBIT DETERMINATION ACCURACY
ST 631.9 SR 394.8 SS 1300.4
CRT .7115 CRS .9939 CST .7787
LSA 1450.5 MSA 377.0 SSA 17.5
EL1 702.0 EL2 249.8 ALF 27.78

LAUNCH DATE DEC 3 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 555.234 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.043 GAL 2.15 AZL 91.84 HCA 169.17 SMA 187.40 ECC .21629 INC 1.8367 V1 30.214
RP 227.92 LAP -.35 LOP 240.04 VP 21.363 GAP -.36 AZP 88.20 TAL 12.15 TAP 181.32 RCA 146.87 APO 227.94 V2 24.132
RC 239.350 GL -18.48 GP 21.45 ZAL 63.30 ZAP 125.00 ETS 162.53 ZAE 153.47 ETE 121.77 ZAC 110.37 ETC 254.96 CLP 128.04

PLANETOCENTRIC CONIC

C3 11.158 VHL 3.340 DLA -.74 RAL 129.93 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 3.691 DPA 17.35 RAP 197.10 ECC 1.1836

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 30	2061.16	-15.57	32.00	342.47	113.95	15 51 51	1461.2	-12.21	24.94
90.00	3 8 26	4751.31	16.83	203.75	342.70	66.89	4 27 38	4151.3	13.56	196.61
100.00	16 38 30	1799.89	-16.42	12.38	342.06	115.34	17 8 30	1199.9	-12.87	5.38
100.00	4 30 8	4487.82	17.68	183.99	342.31	65.50	5 44 55	3887.8	14.22	176.90
110.00	17 45 57	1588.75	-18.66	355.14	340.85	119.17	18 12 26	988.8	-14.63	348.34
110.00	5 39 10	4271.72	19.94	166.39	341.12	61.64	6 50 22	3671.7	15.99	159.49

DIFFERENTIAL CORRECTIONS
TDE .3768 TRA -.3504 TC3 2.2551 BAU .7065
RDE .3147 RRA .4325 RC3 4.1649 FAU .36461
FDE-2.6910 FRA-3.2126 FC-28.2894 BSP 11286
BDE .4909 BRA .5566 BC3 4.7362 FSP 5885

MID-COURSE EXECUTION ACCURACY
SGT 1746.1 SGR 2929.8 SG3 1747.0
RRT .8005 RRF -.9987 RTF -.7971
SGB 3410.6 R23 -.1533 R13 -.9869
SG1 3280.0 SG2 934.8 THA 62.03

ORBIT DETERMINATION ACCURACY
ST 672.5 SR 589.9 SS 1574.1
CRT .7879 CRS .9985 CST .8167
LSA 1771.8 MSA 372.2 SSA 13.5
EL1 846.7 EL2 288.5 ALF 40.26

LAUNCH DATE DEC 3 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 559.120 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.033 GAL 2.17 AZL 92.23 HCA 170.21 SMA 187.23 ECC .21559 INC 2.2250 V1 30.214
RP 227.53 LAP -.38 LOP 241.09 VP 21.394 GAP -.68 AZP 87.81 TAL 12.26 TAP 182.47 RCA 146.86 APO 227.59 V2 24.173
RC 241.142 GL -22.11 GP 23.82 ZAL 63.72 ZAP 122.79 ETS 161.95 ZAE 150.52 ETE 122.77 ZAC 112.52 ETC 254.75 CLP 126.30

PLANETOCENTRIC CONIC

C3 11.600 VHL 3.406 DLA -4.18 RAL 128.71 RAD 6567.4 VEL 11.532 PTH 2.01 VHP 3.699 DPA 19.76 RAP 197.59 ECC 1.1909

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 10	1962.57	-12.76	26.12	341.36	115.49	16 10 53	1362.6	-9.23	19.23
90.00	2 38 0	4866.01	19.75	210.90	342.70	69.28	3 59 6	4266.0	16.75	203.51
100.00	16 57 33	1706.49	-13.62	6.86	340.93	116.87	17 26 0	1106.5	-9.90	.04
100.00	4 1 18	4597.33	20.63	190.78	342.33	67.88	5 17 55	3997.3	17.45	183.43
110.00	18 1 18	1506.89	-15.88	350.43	339.64	120.68	18 26 25	906.9	-11.69	343.82
110.00	5 14 2	4369.69	22.99	172.36	341.20	63.98	6 26 52	3769.7	19.30	165.16

DIFFERENTIAL CORRECTIONS
TDE .4061 TRA -.3641 TC3 1.9567 BAU .7630
RDE .4760 RRA .5359 RC3 4.5142 FAU .36286
FDE-3.3226 FRA-3.4726 FC-27.0816 BSP 12145
BDE .6256 BRA .6479 BC3 4.9200 FSP 5848

MID-COURSE EXECUTION ACCURACY
SGT 1618.7 SGR 3303.5 SG3 1740.6
RRT .7649 RRF -.9991 RTF -.7607
SGB 3678.8 R23 -.1168 R13 -.9923
SG1 3548.4 SG2 970.8 THA 67.70

ORBIT DETERMINATION ACCURACY
ST 708.7 SR 850.4 SS 1880.8
CRT .8308 CRS .9997 CST .8432
LSA 2151.0 MSA 368.2 SSA 10.5
EL1 1060.8 EL2 316.1 ALF 51.22

LAUNCH DATE DEC 3 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 563.017 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.024 GAL 2.18 AZL 92.71 HCA 171.26 SMA 187.06 ECC .21494 INC 2.7083 V1 30.214
RP 227.14 LAP -.41 LOP 242.13 VP 21.426 GAP -.99 AZP 87.32 TAL 12.35 TAP 183.61 RCA 146.85 APO 227.27 V2 24.214
RC 242.914 GL -26.41 GP 26.63 ZAL 64.41 ZAP 120.41 ETS 161.35 ZAE 147.20 ETE 123.42 ZAC 115.08 ETC 254.47 CLP 124.49

PLANETOCENTRIC CONIC

C3 12.284 VHL 3.505 DLA -8.25 RAL 127.30 RAD 6567.5 VEL 11.562 PTH 2.02 VHP 3.734 DPA 22.58 RAP 198.28 ECC 1.2022

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 42	1845.84	-9.25	19.34	340.50	116.88	16 34 28	1245.8	-5.57	12.60
90.00	2 1 12	5006.87	22.87	220.05	343.21	72.83	3 24 38	4406.9	20.30	212.32
100.00	17 21 3	1596.29	-10.14	.52	340.03	118.27	17 47 39	996.3	-6.28	353.86
100.00	3 26 32	4731.64	23.82	199.47	342.87	71.39	4 45 23	4131.6	21.06	191.77
110.00	18 20 12	1411.11	-12.48	345.08	338.64	122.08	18 43 43	811.1	-8.15	338.66
110.00	4 43 52	4489.60	26.36	180.04	341.82	67.40	5 58 42	3889.6	23.06	172.44

DIFFERENTIAL CORRECTIONS
TDE .4433 TRA -.3756 TC3 1.6521 BAU .8372
RDE .6999 RRA .6709 RC3 4.8228 FAU .35551
FDE-4.0268 FRA-3.7277 FC-25.0540 BSP 13212
BDE .8285 BRA .7689 BC3 5.0979 FSP 5717

MID-COURSE EXECUTION ACCURACY
SGT 1500.4 SGR 3737.2 SG3 1705.6
RRT .7235 RRF -.9994 RTF -.7188
SGB 4027.1 R23 -.0853 R13 -.9958
SG1 3903.1 SG2 991.8 THA 72.65

ORBIT DETERMINATION ACCURACY
ST 749.0 SR 1195.8 SS 2212.1
CRT .8606 CRS .9999 CST .8654
LSA 2598.3 MSA 364.7 SSA 8.0
EL1 1371.2 EL2 332.7 ALF 59.70

LAUNCH DATE DEC 3 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 566.921 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.015 GAL 2.18 AZL 93.32 HCA 172.31 SMA 186.91 ECC .21432 INC 3.3213 V1 30.214
RP 226.75 LAP -.44 LOP 243.19 VP 21.459 GAP -1.29 AZP 86.71 TAL 12.43 TAP 184.73 RCA 146.85 APO 226.96 V2 24.256
RC 244.666 GL -31.52 GP 29.96 ZAL 65.46 ZAP 117.83 ETS 160.72 ZAE 143.43 ETE 123.76 ZAC 118.13 ETC 254.07 CLP 122.61

PLANETOCENTRIC CONIC

C3 13.371 VHL 3.657 DLA -13.09 RAL 125.62 RAD 6567.5 VEL 11.608 PTH 2.03 VHP 3.810 DPA 25.88 RAP 199.23 ECC 1.2200

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 45	1703.61	-4.79	11.28	340.12	117.94	17 5 9	1103.6	-1.01	4.63
90.00	1 14 46	5185.48	25.92	232.24	344.50	78.19	2 41 11	4585.5	24.04	224.07
100.00	17 51 18	1463.12	-5.76	353.06	339.59	119.38	18 15 41	863.1	-1.80	346.51
100.00	2 42 54	4901.20	27.01	211.06	344.23	76.68	4 4 36	4301.2	24.91	202.89
110.00	18 44 14	1297.34	-8.29	338.93	338.04	123.28	19 5 51	697.3	-3.86	332.65
110.00	4 6 28	4639.75	29.87	190.31	343.33	72.55	5 23 47	4039.7	27.19	182.14

DIFFERENTIAL CORRECTIONS
TDE .4676 TRA -.4085 TC3 1.2810 BAU .9297
RDE 1.0172 RRA .8499 RC3 5.0407 FAU .34108
FDE-4.7821 FRA-3.9544 FC-22.0846 BSP 14673
BDE 1.1196 BRA .9430 BC3 5.2009 FSP 5454

MID-COURSE EXECUTION ACCURACY
SGT 1358.8 SGR 4242.6 SG3 1633.5
RRT .6458 RRF -.9996 RTF -.6399
SGB 4454.9 R23 -.0585 R13 -.9979
SG1 4337.8 SG2 1014.7 THA 77.63

ORBIT DETERMINATION ACCURACY
ST 759.2 SR 1649.6 SS 2550.2
CRT .8704 CRS 1.0000 CST .8717
LSA 3109.4 MSA 364.0 SSA 6.1
EL1 1782.6 EL2 346.0 ALF 67.27

LAUNCH DATE DEC 3 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 570.834 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.007 GAL 2.19 AZL 94.13 HCA 173.36 SMA 186.76 ECC .21374 INC 4.1309 V1 30.214
RP 226.36 LAP -.48 LOP 244.24 VP 21.494 GAP -1.58 AZP 85.90 TAL 12.49 TAP 185.85 RCA 146.84 APO 226.68 V2 24.297
RC 246.398 GL -37.61 GP 33.95 ZAL 67.00 ZAP 114.98 ETS 160.10 ZAE 139.12 ETE 123.88 ZAC 121.79 ETC 253.49 CLP 120.61

PLANETOCENTRIC CONIC

C3 15.164 VHL 3.894 DLA -18.85 RAL 123.55 RAD 6567.6 VEL 11.685 PTH 2.06 VHP 3.949 DPA 29.77 RAP 200.57 ECC 1.2496

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 22	1519.63	1.13	1.00	340.76	118.30	17 48 42	919.6	4.91	354.35
90.00	0 11 38	5425.04	28.12	249.39	346.83	86.50	1 42 3	4825.0	27.34	240.81
100.00	18 33 13	1294.25	-.06	343.77	340.10	119.89	18 54 47	694.2	3.91	337.24
100.00	1 44 28	5125.65	29.48	227.25	346.71	84.84	3 9 54	4525.6	28.46	218.60
110.00	19 16 30	1158.63	-3.05	331.62	338.23	124.06	19 35 49	558.6	1.44	325.41
110.00	3 17 41	4834.03	32.98	204.58	346.19	80.45	4 38 15	4234.0	31.31	195.75

DIFFERENTIAL CORRECTIONS
TDE .4919 TRA -.4504 TC3 .9040 BAU 1.0456
RDE 1.4724 RRA 1.0931 RC3 5.0777 FAU .31653
FDE-5.5092 FRA-4.1120 FC-18.0709 BSP 16544
BDE 1.5524 BRA 1.1822 BC3 5.1575 FSP 5055

MID-COURSE EXECUTION ACCURACY
SGT 1228.7 SGR 4818.8 SG3 1508.1
RRT .5341 RRF -.9997 RTF -.5268
SGB 4973.0 R23 -.0385 R13 -.9990
SG1 4865.4 SG2 1028.9 THA 81.88

ORBIT DETERMINATION ACCURACY
ST 753.9 SR 2228.8 SS 2845.8
CRT .8709 CRS 1.0000 CST .8703
LSA 3674.4 MSA 365.0 SSA 4.7
EL1 2325.9 EL2 355.1 ALF 73.18

LAUNCH DATE DEC 3 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 574.754 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.999 GAL 2.19 AZL 95.25 HCA 174.41 SMA 186.63 ECC .21321 INC 5.2472 V1 30.214
RP 225.97 LAP -.51 LOP 245.30 VP 21.529 GAP -1.88 AZP 84.78 TAL 12.54 TAP 186.95 RCA 146.84 APO 226.42 V2 24.339
RC 248.110 GL -44.84 GP 38.72 ZAL 69.13 ZAP 111.82 ETS 159.58 ZAE 134.15 ETE 123.89 ZAC 126.17 ETC 252.64 CLP 118.45

PLANETOCENTRIC CONIC

C3 18.303 VHL 4.278 DLA -25.66 RAL 120.88 RAD 6567.7 VEL 11.819 PTH 2.09 VHP 4.193 DPA 34.36 RAP 202.44 ECC 1.3012

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 28	1225.33	10.43	344.37	343.98	116.48	19 7 53	625.3	13.90	337.41
90.00	22 22 18	5805.60	26.58	276.99	349.59	100.14	23 59 3	5205.6	27.71	268.51
100.00	19 43 21	1044.89	8.31	329.99	342.86	118.82	20 0 46	444.9	12.09	323.24
100.00	0 13 2	5461.27	28.94	252.08	350.02	97.81	1 44 3	4861.3	29.72	243.36
110.00	20 5 2	976.84	3.89	322.13	340.15	123.99	20 21 19	376.8	8.33	315.85
110.00	2 7 50	5102.09	34.09	225.35	350.57	92.64	3 32 52	4502.1	34.08	216.11

DIFFERENTIAL CORRECTIONS
TDE .5141 TRA -.5102 TC3 .5353 BAU 1.1946
RDE 2.1534 RRA 1.4463 RC3 4.8526 FAU .28065
FDE-6.1132 FRA-4.1729 FC-13.2748 BSP 18608
BDE 2.2139 BRA 1.5336 BC3 4.8821 FSP 4395

MID-COURSE EXECUTION ACCURACY
SGT 1121.7 SGR 5493.1 SG3 1323.0
RRT .3665 RRF -.9998 RTF -.3574
SGB 5606.5 R23 -.0244 R13 -.9995
SG1 5509.1 SG2 1040.7 THA 85.56

ORBIT DETERMINATION ACCURACY
ST 725.2 SR 2957.8 SS 3044.2
CRT .8582 CRS 1.0000 CST .8564
LSA 4290.1 MSA 369.5 SSA 3.6
EL1 3023.5 EL2 364.2 ALF 77.94

LAUNCH DATE DEC 3 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 578.683 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.992 GAL 2.20 AZL 96.89 HCA 175.46 SMA 186.51 ECC .21271 INC 6.8871 V1 30.214
RP 225.58 LAP -.54 LOP 246.37 VP 21.566 GAP -2.16 AZP 83.13 TAL 12.59 TAP 188.05 RCA 146.84 APO 226.18 V2 24.381
RC 249.803 GL -53.34 GP 44.40 ZAL 71.97 ZAP 108.27 ETS 159.33 ZAE 128.40 ETE 124.02 ZAC 131.33 ETC 251.37 CLP 116.02

PLANETOCENTRIC CONIC

C3 24.292 VHL 4.929 DLA -33.58 RAL 117.21 RAD 6568.0 VEL 12.069 PTH 2.16 VHP 4.625 DPA 39.73 RAP 205.08 ECC 1.3998

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.15	17 57 36	1394.21	21.67	2.62	350.44	116.30	18 20 50	794.2	25.02	355.12
108.85	22 42 54	5772.65	21.68	272.81	350.44	116.29	24 19 7	5172.7	25.03	265.31
71.15	17 57 36	1394.21	21.67	2.62	350.44	116.30	18 20 50	794.2	25.02	355.12
108.85	22 42 54	5772.65	21.68	272.81	350.44	116.29	24 19 7	5172.7	25.03	265.31
110.00	22 1 13	612.22	17.20	302.28	347.90	120.00	22 11 26	12.2	21.06	295.28
110.00	23 38 28	5602.65	26.29	261.89	352.74	112.68	25 11 50	5002.6	29.12	253.85

DIFFERENTIAL CORRECTIONS
TDE .5470 TRA -.5862 TC3 .2325 BAU 1.3893
RDE 3.1955 RRA 1.9838 RC3 4.2717 FAU .23093
FDE-6.3399 FRA-4.0365 FC3-8.2299 BSP 20766
BDE 3.2420 BRA 2.0686 BC3 4.2780 FSP 3466

MID-COURSE EXECUTION ACCURACY
SGT 1061.1 SGR 6260.3 SG3 1064.7
RRT .1601 RRF -.9998 RTF -.1483
SGB 6349.6 R23 -.0165 R13 -.9997
SG1 6262.7 SG2 1047.0 THA 88.40

ORBIT DETERMINATION ACCURACY
ST 681.6 SR 3808.5 SS 3022.8
CRT .8318 CRS 1.0000 CST .8288
LSA 4895.4 MSA 377.2 SSA 2.8
EL1 3850.9 EL2 374.2 ALF 81.45

LAUNCH DATE DEC 3 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 582.611 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.985 GAL 2.20 AZL 99.53 HCA 176.52 SMA 186.40 ECC .21225 INC 9.5232 V1 30.214
RP 225.19 LAP -.58 LOP 247.43 VP 21.603 GAP -2.44 AZP 80.49 TAL 12.62 TAP 189.14 RCA 146.83 APO 225.96 V2 24.423
RC 251.477 GL -63.20 GP 50.93 ZAL 75.54 ZAP 104.30 ETS 159.71 ZAE 121.89 ETE 124.66 ZAC 137.17 ETC 249.47 CLP 113.07

PLANETOCENTRIC CONIC

C3 37.344 VHL 6.111 DLA -42.54 RAL 111.73 RAD 6568.5 VEL 12.598 PTH 2.29 VHP 5.432 DPA 45.82 RAP 208.73 ECC 1.6146

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.82	16 22 44	1714.72	22.55	29.43	354.80	127.08	16 51 19	1114.7	27.21	22.67
123.18	23 34 1	5667.32	22.57	264.81	354.82	127.07	25 8 28	5067.3	27.22	258.05
56.82	16 22 44	1714.72	22.55	29.43	354.80	127.08	16 51 19	1114.7	27.21	22.67
123.18	23 34 1	5667.32	22.57	264.81	354.82	127.07	25 8 28	5067.3	27.22	258.05
56.82	16 22 44	1714.72	22.55	29.43	354.80	127.08	16 51 19	1114.7	27.21	22.67
123.18	23 34 1	5667.32	22.57	264.81	354.82	127.07	25 8 28	5067.3	27.22	258.05

DIFFERENTIAL CORRECTIONS
TDE .5581 TRA -.7371 TC3 -.0197 BAU 1.6738
RDE 4.8485 RRA 2.8885 RC3 3.3526 FAU .16876
FDE-5.7984 FRA-3.5861 FC3-3.9124 BSP 22085
BDE 4.8806 BRA 2.9810 BC3 3.3527 FSP 2226

MID-COURSE EXECUTION ACCURACY
SGT 1074.4 SGR 7139.0 SG3 739.4
RRT -.1522 RRF -.9997 RTF .1686
SGB 7219.4 R23 -.0132 R13 -.9998
SG1 7140.9 SG2 1061.6 THA 91.34

ORBIT DETERMINATION ACCURACY
ST 594.2 SR 4679.4 SS 2631.8
CRT .7440 CRS 1.0000 CST .7382
LSA 5386.9 MSA 397.1 SSA 2.2
EL1 4700.4 EL2 395.2 ALF 84.56

LAUNCH DATE DEC 3 1964 FLIGHT TIME 278.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 614.773 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.952 GAL 2.06 AZL 80.92 HCA 185.30 SMA 185.82 ECC .20940 INC 9.0754 V1 30.214
RP 222.08 LAP -.83 LOP 256.10 VP 21.931 GAP -4.44 AZP 99.04 TAL 11.94 TAP 197.24 RCA 146.91 APO 224.73 V2 24.758
RC 264.145 GL 62.36 GP -42.94 ZAL 75.74 ZAP 97.35 ETS 185.41 ZAE 121.83 ETE 211.93 ZAC 45.21 ETC 251.08 CLP 100.06

PLANETOCENTRIC CONIC

C3 34.378 VHL 5.863 DLA 73.06 RAL 184.09 RAD 6568.4 VEL 12.480 PTH 2.26 VHP 4.126 DPA -35.61 RAP 156.73 ECC 1.5658

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
14.36	10 8 12	4397.27	-45.92	240.81	123.50	18.29	11 21 29	3797.3	-53.45	237.02
14.36	4 27 0	4732.60	-23.95	247.06	45.62	13.82	5 45 52	4132.6	-31.70	245.24
19.33	7 27 43	4555.41	-34.21	239.02	82.15	20.63	8 43 39	3955.4	-41.64	235.68
160.67	18 10 17	2784.82	-34.20	85.32	82.13	20.63	18 56 42	2184.8	-41.63	81.98
19.33	7 27 43	4555.41	-34.21	239.02	82.15	20.63	8 43 39	3955.4	-41.64	235.68
160.67	18 10 17	2784.82	-34.20	85.32	82.13	20.63	18 56 42	2184.8	-41.63	81.98

DIFFERENTIAL CORRECTIONS
TDE 2.5904 TRA .1848 TC3-1.0663 BAU 1.5412
RDE 4.1084 RRA 1.0536 RC3-3.1793 FAU .30829
FDE 9.6415 FRA 2.4454 FC3-7.7637 BSP 23940
BDE 4.8569 BRA 1.0697 BC3 3.3533 FSP 4630

MID-COURSE EXECUTION ACCURACY
SGT 2890.5 SGR 6518.9 SG3 1335.4
RRT .9029 RRF .9998 RTF .9024
SGB 7131.0 R23 .0681 R13 .9974
SG1 7037.5 SG2 1150.9 THA 67.55

ORBIT DETERMINATION ACCURACY
ST 2538.4 SR 4153.7 SS 3472.7
CRT .9829 CRS-1.0000 CST -.9834
LSA 5964.8 MSA 421.7 SSA 3.5
EL1 4851.5 EL2 400.1 ALF 58.77

LAUNCH DATE DEC 3 1964 FLIGHT TIME 280.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 618.801 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.950 GAL 2.04 AZL 82.20 HCA 186.39 SMA 185.78 ECC .20918 INC 7.8039 V1 30.214
RP 221.70 LAP -.87 LOP 257.20 VP 21.974 GAP -4.66 AZP 97.76 TAL 11.82 TAP 198.21 RCA 146.92 APO 224.64 V2 24.799
RC 265.639 GL 57.91 GP -38.32 ZAL 74.26 ZAP 96.53 ETS 183.82 ZAE 122.94 ETE 207.80 ZAC 49.50 ETC 252.44 CLP 98.33

PLANETOCENTRIC CONIC

C3 27.851 VHL 5.277 DLA 69.85 RAL 174.11 RAD 6568.1 VEL 12.216 PTH 2.20 VHP 3.766 DPA -31.37 RAP 158.99 ECC 1.4584

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
23.03	6 55 43	4493.40	-36.75	233.38	68.22	25.46	8 10 36	3893.4	-43.88	229.03
156.97	17 22 40	2741.11	-36.74	83.51	68.20	25.46	18 8 21	2141.1	-43.88	79.17
23.03	6 55 43	4493.40	-36.75	233.38	68.22	25.46	8 10 36	3893.4	-43.88	229.03
156.97	17 22 40	2741.11	-36.74	83.51	68.20	25.46	18 8 21	2141.1	-43.88	79.17
23.03	6 55 43	4493.40	-36.75	233.38	68.22	25.46	8 10 36	3893.4	-43.88	229.03
156.97	17 22 40	2741.11	-36.74	83.51	68.20	25.46	18 8 21	2141.1	-43.88	79.17

DIFFERENTIAL CORRECTIONS
TDE 2.5092 TRA .0793 TC3-1.4060 BAU 1.3958
RDE 3.6864 RRA .7747 RC3-3.4750 FAU .36610
FDE11.5624 FRA 2.3933 FC-11.3801 BSP 22399
BDE 4.4593 BRA .7788 BC3 3.7487 FSP 5675

MID-COURSE EXECUTION ACCURACY
SGT 3112.2 SGR 5952.6 SG3 1636.5
RRT .9153 RRF .9997 RTF .9145
SGB 6717.1 R23 .0855 R13 .9961
SG1 6621.9 SG2 1127.0 THA 63.60

ORBIT DETERMINATION ACCURACY
ST 2725.6 SR 4070.2 SS 4152.4
CRT .9882 CRS-1.0000 CST -.9886
LSA 6410.7 MSA 375.7 SSA 4.1
EL1 4886.2 EL2 348.0 ALF 56.31

LAUNCH DATE DEC 3 1964 FLIGHT TIME 282.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 622.842 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.948 GAL 2.01 AZL 83.10 HCA 187.49 SMA 185.75 ECC .20898 INC 6.9001 V1 30.214
RP 221.32 LAP -.90 LOP 258.31 VP 22.019 GAP -4.89 AZP 96.84 TAL 11.69 TAP 199.18 RCA 146.93 APO 224.56 V2 24.841
RC 267.114 GL 54.21 GP -34.43 ZAL 73.11 ZAP 95.35 ETS 182.40 ZAE 123.22 ETE 203.92 ZAC 53.08 ETC 253.39 CLP 96.49

PLANETOCENTRIC CONIC

C3 23.787 VHL 4.877 DLA 66.86 RAL 167.99 RAD 6568.0 VEL 12.048 PTH 2.15 VHP 3.533 DPA -27.66 RAP 160.52 ECC 1.3915

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
26.51	6 38 56	4444.07	-38.19	227.93	58.36	30.00	7 53 0	3844.1	-44.99	222.71
153.49	16 50 40	2712.49	-38.18	81.80	58.35	29.99	17 35 52	2112.5	-44.98	76.57
26.51	6 38 56	4444.07	-38.19	227.93	58.36	30.00	7 53 0	3844.1	-44.99	222.71
153.49	16 50 40	2712.49	-38.18	81.80	58.35	29.99	17 35 52	2112.5	-44.98	76.57
26.51	6 38 56	4444.07	-38.19	227.93	58.36	30.00	7 53 0	3844.1	-44.99	222.71
153.49	16 50 40	2712.49	-38.18	81.80	58.35	29.99	17 35 52	2112.5	-44.98	76.57

DIFFERENTIAL CORRECTIONS
TDE 2.4252 TRA .0056 TC3-1.7865 BAU 1.2905
RDE 3.1715 RRA .5879 RC3-3.6436 FAU .41297
FDE12.4794 FRA 2.2625 FC-15.0305 BSP 21139
BDE 3.9925 BRA .5880 BC3 4.0580 FSP 6520

MID-COURSE EXECUTION ACCURACY
SGT 3339.9 SGR 5440.8 SG3 1884.3
RRT .9266 RRF .9997 RTF .9258
SGB 6384.2 R23 .1031 R13 .9943
SG1 6291.1 SG2 1086.0 THA 59.36

ORBIT DETERMINATION ACCURACY
ST 2849.6 SR 3764.4 SS 4520.0
CRT .9903 CRS-1.0000 CST -.9907
LSA 6526.7 MSA 351.9 SSA 4.7
EL1 4710.8 EL2 315.8 ALF 52.95

LAUNCH DATE DEC 3 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 626.894 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.946 GAL 1.98 AZL 83.77 HCA 188.60 SMA 185.72 ECC .20880 INC 6.2251 V1 30.214
RP 220.94 LAP -.93 LOP 259.42 VP 22.063 GAP -5.11 AZP 96.16 TAL 11.53 TAP 200.13 RCA 146.94 APO 224.50 V2 24.883
RC 268.570 GL 51.08 GP -31.14 ZAL 72.22 ZAP 93.93 ETS 181.17 ZAE 122.87 ETE 200.43 ZAC 56.09 ETC 254.10 CLP 94.60

PLANETOCENTRIC CONIC

C3 21.056 VHL 4.589 DLA 64.18 RAL 163.98 RAD 6567.9 VEL 11.935 PTH 2.12 VHP 3.375 DPA -24.44 RAP 161.55 ECC 1.3465

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
29.65	6 30 6	4403.55	-38.92	222.95	51.00	34.04	7 43 30	3803.5	-45.39	217.00
150.35	16 27 30	2693.87	-38.92	80.32	50.98	34.04	17 12 24	2093.9	-45.38	74.37
29.65	6 30 6	4403.55	-38.92	222.95	51.00	34.04	7 43 30	3803.5	-45.39	217.00
150.35	16 27 30	2693.87	-38.92	80.32	50.98	34.04	17 12 24	2093.9	-45.38	74.37
29.65	6 30 6	4403.55	-38.92	222.95	51.00	34.04	7 43 30	3803.5	-45.39	217.00
150.35	16 27 30	2693.87	-38.92	80.32	50.98	34.04	17 12 24	2093.9	-45.38	74.37

DIFFERENTIAL CORRECTIONS
TDE 2.3745 TRA -.0419 TC3-2.1866 BAU 1.2098
RDE 2.7214 RRA .4653 RC3-3.6999 FAU .44843
FDE12.8605 FRA 2.1338 FC-18.4376 BSP 20419
BDE 3.6117 BRA .4672 BC3 4.2977 FSP 7255

MID-COURSE EXECUTION ACCURACY
SGT 3582.1 SGR 4985.5 SG3 2083.7
RRT .9367 RRF .9996 RTF .9357
SGB 6139.0 R23 .1209 R13 .9922
SG1 6051.4 SG2 1033.4 THA 54.88

ORBIT DETERMINATION ACCURACY
ST 2965.7 SR 3423.0 SS 4715.3
CRT .9916 CRS-1.0000 CST -.9920
LSA 6529.4 MSA 336.7 SSA 5.3
EL1 4519.7 EL2 290.5 ALF 49.13

LAUNCH DATE DEC 3 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 630.957 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.945 GAL 1.95 AZL 84.30 HCA 189.71 SMA 185.70 ECC .20864 INC 5.7010 V1 30.214
RP 220.56 LAP -.96 LOP 260.53 VP 22.108 GAP -5.32 AZP 95.62 TAL 11.36 TAP 201.07 RCA 146.96 APO 224.45 V2 24.924
RC 270.009 GL 48.43 GP -28.35 ZAL 71.55 ZAP 92.36 ETS 180.12 ZAE 122.06 ETE 197.37 ZAC 58.62 ETC 254.63 CLP 92.68

PLANETOCENTRIC CONIC

C3 19.114 VHL 4.372 DLA 61.81 RAL 161.23 RAD 6567.8 VEL 11.853 PTH 2.10 VHP 3.264 DPA -21.63 RAP 162.23 ECC 1.3146

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
32.46	6 25 48	4369.30	-39.21	218.48	45.30	37.57	7 38 38	3769.3	-45.36	211.96
147.54	16 9 48	2682.03	-39.20	79.11	45.29	37.57	16 54 30	2082.0	-45.35	72.59
32.46	6 25 48	4369.30	-39.21	218.48	45.30	37.57	7 38 38	3769.3	-45.36	211.96
147.54	16 9 48	2682.03	-39.20	79.11	45.29	37.57	16 54 30	2082.0	-45.35	72.59
32.46	6 25 48	4369.30	-39.21	218.48	45.30	37.57	7 38 38	3769.3	-45.36	211.96
147.54	16 9 48	2682.03	-39.20	79.11	45.29	37.57	16 54 30	2082.0	-45.35	72.59

DIFFERENTIAL CORRECTIONS
TDE 2.3419 TRA -.0816 TC3-2.6169 BAU 1.1572
RDE 2.3440 RRA .3754 RC3-3.6959 FAU .47689
FDE12.8916 FRA 1.9840 FC-21.5995 BSP 19844
BDE 3.3134 BRA .3841 BC3 4.5286 FSP 7803

MID-COURSE EXECUTION ACCURACY
SGT 3834.9 SGR 4578.7 SG3 2240.4
RRT .9447 RRF .9994 RTF .9435
SGB 5972.5 R23 .1382 R13 .9899
SG1 5891.9 SG2 977.7 THA 50.34

ORBIT DETERMINATION ACCURACY
ST 3070.6 SR 3089.3 SS 4790.3
CRT .9924 CRS-1.0000 CST -.9928
LSA 6466.3 MSA 327.1 SSA 6.0
EL1 4347.4 EL2 269.3 ALF 45.17

LAUNCH DATE DEC 3 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 635.030 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.944 GAL 1.92 AZL 84.72 HCA 190.82 SMA 185.69 ECC .20850 INC 5.2821 V1 30.214
RP 220.18 LAP -.99 LOP 261.65 VP 22.154 GAP -5.53 AZP 95.19 TAL 11.18 TAP 202.00 RCA 146.98 APO 224.41 V2 24.965
RC 271.430 GL 46.14 GP -25.96 ZAL 71.06 ZAP 90.68 ETS 179.22 ZAE 120.92 ETE 194.70 ZAC 60.76 ETC 255.06 CLP 90.76

PLANETOCENTRIC CONIC

C3 17.670 VHL 4.204 DLA 59.70 RAL 159.27 RAD 6567.7 VEL 11.792 PTH 2.08 VHP 3.186 DPA -19.17 RAP 162.66 ECC 1.2908

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.97	6 24 16	4339.64	-39.22	214.49	40.80	40.64	7 36 36	3739.6	-45.07	207.53
145.03	15 55 45	2674.90	-39.21	78.16	40.78	40.63	16 40 20	2074.9	-45.06	71.21
34.97	6 24 16	4339.64	-39.22	214.49	40.80	40.64	7 36 36	3739.6	-45.07	207.53
145.03	15 55 45	2674.90	-39.21	78.16	40.78	40.63	16 40 20	2074.9	-45.06	71.21
34.97	6 24 16	4339.64	-39.22	214.49	40.80	40.64	7 36 36	3739.6	-45.07	207.53
145.03	15 55 45	2674.90	-39.21	78.16	40.78	40.63	16 40 20	2074.9	-45.06	71.21

DIFFERENTIAL CORRECTIONS
TDE 2.3249 TRA -.1140 TC3-3.0692 BAU 1.1260
RDE 2.0339 RRA .3087 RC3-3.6469 FAU .49914
FDE12.7142 FRA 1.8330 FC-24.4547 BSP 19470
BDE 3.0890 BRA .3291 BC3 4.7665 FSP 8198

MID-COURSE EXECUTION ACCURACY
SGT 4098.1 SGR 4216.8 SG3 2362.3
RRT .9513 RRF .9993 RTF .9500
SGB 5880.2 R23 .1534 R13 .9874
SG1 5808.2 SG2 917.2 THA 45.86

ORBIT DETERMINATION ACCURACY
ST 3171.1 SR 2785.1 SS 4790.4
CRT .9929 CRS-1.0000 CST -.9934
LSA 6376.4 MSA 319.7 SSA 6.8
EL1 4213.1 EL2 249.7 ALF 41.27

LAUNCH DATE DEC 3 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 639.113 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.944 GAL 1.89 AZL 85.06 HCA 191.94 SMA 185.68 ECC .20837 INC 4.9395 V1 30.214
RP 219.81 LAP -1.02 LOP 262.77 VP 22.199 GAP -5.73 AZP 94.83 TAL 10.97 TAP 202.91 RCA 146.99 APO 224.38 V2 25.006
RC 272.833 GL 44.17 GP -23.90 ZAL 70.71 ZAP 88.94 ETS 178.46 ZAE 119.53 ETE 192.41 ZAC 62.60 ETC 255.40 CLP 88.84

PLANETOCENTRIC CONIC

C3 16.558 VHL 4.069 DLA 57.83 RAL 157.87 RAD 6567.7 VEL 11.745 PTH 2.07 VHP 3.130 DPA -16.99 RAP 162.92 ECC 1.2725

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.22	6 24 29	4313.50	-39.06	210.93	37.19	43.29	7 36 22	3713.5	-44.64	203.64
142.78	15 44 19	2671.03	-39.05	77.43	37.17	43.28	16 28 50	2071.0	-44.63	70.14
37.22	6 24 29	4313.50	-39.06	210.93	37.19	43.29	7 36 22	3713.5	-44.64	203.64
142.78	15 44 19	2671.03	-39.05	77.43	37.17	43.28	16 28 50	2071.0	-44.63	70.14
37.22	6 24 29	4313.50	-39.06	210.93	37.19	43.29	7 36 22	3713.5	-44.64	203.64
142.78	15 44 19	2671.03	-39.05	77.43	37.17	43.28	16 28 50	2071.0	-44.63	70.14

DIFFERENTIAL CORRECTIONS

TDE 2.3213 TRA -.1386 TC3-3.5350 BAU 1.1110
RDE 1.7811 RRA .2616 RC3-3.5628 FAU .51562
FDE12.4241 FRA 1.7116 FC-26.9601 BSP 19302
BDE 2.9259 BRA .2961 BC3 5.0189 FSP 8511

MID-COURSE EXECUTION ACCURACY

SGT 4369.7 SGR 3895.6 SG3 2455.8
RRT .9567 RRF .9990 RTF .9552
SGB 5854.0 R23 .1661 R13 .9851
SG1 5791.1 SG2 855.6 THA 41.57

ORBIT DETERMINATION ACCURACY

ST 3271.5 SR 2518.1 SS 4748.1
CRT .9932 CRS-1.0000 CST -.9938
LSA 6284.0 MSA 314.7 SSA 7.6
EL1 4121.9 EL2 232.2 ALF 37.54

LAUNCH DATE DEC 3 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 643.206 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.944 GAL 1.85 AZL 85.35 HCA 193.06 SMA 185.68 ECC .20827 INC 4.6543 V1 30.214
RP 219.44 LAP -1.05 LOP 263.89 VP 22.245 GAP -5.93 AZP 94.53 TAL 10.76 TAP 203.82 RCA 147.01 APO 224.36 V2 25.047
RC 274.220 GL 42.44 GP -22.10 ZAL 70.48 ZAP 87.16 ETS 177.81 ZAE 117.98 ETE 190.43 ZAC 64.18 ETC 255.69 CLP 86.94

PLANETOCENTRIC CONIC

C3 15.674 VHL 3.959 DLA 56.15 RAL 156.85 RAD 6567.6 VEL 11.707 PTH 2.06 VHP 3.090 DPA -15.06 RAP 163.04 ECC 1.2580

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.25	6 25 54	4290.05	-38.78	207.74	34.26	45.61	7 37 24	3690.0	-44.12	200.19
140.75	15 34 48	2669.53	-38.77	76.89	34.24	45.60	16 19 18	2069.5	-44.11	69.35
39.25	6 25 54	4290.05	-38.78	207.74	34.26	45.61	7 37 24	3690.0	-44.12	200.19
140.75	15 34 48	2669.53	-38.77	76.89	34.24	45.60	16 19 18	2069.5	-44.11	69.35
39.25	6 25 54	4290.05	-38.78	207.74	34.26	45.61	7 37 24	3690.0	-44.12	200.19
140.75	15 34 48	2669.53	-38.77	76.89	34.24	45.60	16 19 18	2069.5	-44.11	69.35

DIFFERENTIAL CORRECTIONS

TDE 2.3287 TRA -.1555 TC3-4.0073 BAU 1.1088
RDE 1.5728 RRA .2271 RC3-3.4550 FAU .52726
FDE12.0621 FRA 1.6119 FC-29.1220 BSP 19538
BDE 2.8101 BRA .2753 BC3 5.2911 FSP 8740

MID-COURSE EXECUTION ACCURACY

SGT 4646.4 SGR 3607.4 SG3 2524.9
RRT .9613 RRF .9988 RTF .9597
SGB 5882.4 R23 .1755 R13 .9832
SG1 5828.8 SG2 792.1 THA 37.55

ORBIT DETERMINATION ACCURACY

ST 3373.6 SR 2284.5 SS 4676.7
CRT .9935 CRS-1.0000 CST -.9941
LSA 6194.8 MSA 309.6 SSA 8.4
EL1 4068.7 EL2 215.1 ALF 34.04

LAUNCH DATE DEC 3 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 647.305 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.944 GAL 1.81 AZL 85.59 HCA 194.19 SMA 185.69 ECC .20819 INC 4.4124 V1 30.214
RP 219.07 LAP -1.08 LOP 265.02 VP 22.291 GAP -6.13 AZP 94.28 TAL 10.53 TAP 204.71 RCA 147.03 APO 224.35 V2 25.088
RC 275.589 GL 40.93 GP -20.51 ZAL 70.36 ZAP 85.37 ETS 177.26 ZAE 116.31 ETE 188.73 ZAC 65.56 ETC 255.94 CLP 85.05

PLANETOCENTRIC CONIC

C3 14.956 VHL 3.867 DLA 54.64 RAL 156.13 RAD 6567.6 VEL 11.676 PTH 2.05 VHP 3.064 DPA -13.33 RAP 163.06 ECC 1.2461

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.10	6 28 12	4268.70	-38.45	204.86	31.86	47.64	7 39 21	3668.7	-43.56	197.12
138.90	15 26 47	2669.77	-38.43	76.51	31.85	47.63	16 11 16	2069.8	-43.55	68.77
41.10	6 28 12	4268.70	-38.45	204.86	31.86	47.64	7 39 21	3668.7	-43.56	197.12
138.90	15 26 47	2669.77	-38.43	76.51	31.85	47.63	16 11 16	2069.8	-43.55	68.77
41.10	6 28 12	4268.70	-38.45	204.86	31.86	47.64	7 39 21	3668.7	-43.56	197.12
138.90	15 26 47	2669.77	-38.43	76.51	31.85	47.63	16 11 16	2069.8	-43.55	68.77

DIFFERENTIAL CORRECTIONS

TDE 2.3428 TRA -.1672 TC3-4.4886 BAU 1.1165
RDE 1.4042 RRA .2066 RC3-3.3218 FAU .53327
FDE11.6984 FRA 1.5767 FC-30.8695 BSP 19935
BDE 2.7314 BRA .2658 BC3 5.5841 FSP 8977

MID-COURSE EXECUTION ACCURACY

SGT 4927.9 SGR 3348.0 SG3 2572.9
RRT .9646 RRF .9984 RTF .9631
SGB 5957.6 R23 .1823 R13 .9816
SG1 5912.0 SG2 735.9 THA 33.83

ORBIT DETERMINATION ACCURACY

ST 3475.0 SR 2087.9 SS 4603.2
CRT .9936 CRS-1.0000 CST -.9943
LSA 6126.1 MSA 310.0 SSA 9.3
EL1 4048.9 EL2 202.5 ALF 30.92

LAUNCH DATE DEC 3 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 651.417 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.945 GAL 1.77 AZL 85.79 HCA 195.32 SMA 185.70 ECC .20812 INC 4.2048 V1 30.214
RP 218.70 LAP -1.11 LOP 266.15 VP 22.338 GAP -6.32 AZP 94.06 TAL 10.28 TAP 205.60 RCA 147.05 APO 224.35 V2 25.128
RC 276.940 GL 39.58 GP -19.11 ZAL 70.33 ZAP 83.57 ETS 176.79 ZAE 114.56 ETE 187.27 ZAC 66.77 ETC 256.16 CLP 83.19

PLANETOCENTRIC CONIC

C3 14.359 VHL 3.789 DLA 53.27 RAL 155.64 RAD 6567.6 VEL 11.651 PTH 2.05 VHP 3.048 DPA -11.77 RAP 163.02 ECC 1.2363

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.79	6 31 7	4249.02	-38.07	202.24	29.90	49.43	7 41 56	3649.0	-42.99	194.35
137.21	15 19 54	2671.33	-38.06	76.26	29.88	49.42	16 4 26	2071.3	-42.98	68.37
42.79	6 31 7	4249.02	-38.07	202.24	29.90	49.43	7 41 56	3649.0	-42.99	194.35
137.21	15 19 54	2671.33	-38.06	76.26	29.88	49.42	16 4 26	2071.3	-42.98	68.37
42.79	6 31 7	4249.02	-38.07	202.24	29.90	49.43	7 41 56	3649.0	-42.99	194.35
137.21	15 19 54	2671.33	-38.06	76.26	29.88	49.42	16 4 26	2071.3	-42.98	68.37

DIFFERENTIAL CORRECTIONS

TDE 2.3541 TRA -.1798 TC3-4.9882 BAU 1.1381
RDE 1.2536 RRA .1837 RC3-3.2041 FAU .53966
FDE11.2234 FRA 1.4818 FC-32.5373 BSP 20233
BDE 2.6671 BRA .2571 BC3 5.9286 FSP 8986

MID-COURSE EXECUTION ACCURACY

SGT 5212.3 SGR 3115.4 SG3 2606.5
RRT .9678 RRF .9979 RTF .9662
SGB 6072.4 R23 .1856 R13 .9805
SG1 6034.5 SG2 677.0 THA 30.47

ORBIT DETERMINATION ACCURACY

ST 3564.0 SR 1902.1 SS 4482.3
CRT .9938 CRS-1.0000 CST -.9945
LSA 6026.4 MSA 305.0 SSA 10.3
EL1 4035.4 EL2 187.4 ALF 28.01

LAUNCH DATE DEC 3 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 655.536 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.946 GAL 1.72 AZL 85.98 HCA 196.45 SMA 185.71 ECC .20807 INC 4.0246 V1 30.214
RP 218.34 LAP -1.14 LOP 267.28 VP 22.384 GAP -6.50 AZP 93.86 TAL 10.02 TAP 206.47 RCA 147.07 APO 224.35 V2 25.168
RC 278.273 GL 38.39 GP -17.86 ZAL 70.39 ZAP 81.77 ETS 176.38 ZAE 112.75 ETE 186.00 ZAC 67.84 ETC 256.35 CLP 81.35

PLANETOCENTRIC CONIC

C3 13.854 VHL 3.722 DLA 52.02 RAL 155.33 RAD 6567.5 VEL 11.629 PTH 2.04 VHP 3.039 DPA -10.36 RAP 162.93 ECC 1.2280

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.35	6 34 33	4230.70	-37.67	199.84	28.28	51.02	7 45 4	3630.7	-42.41	191.83
135.65	15 14 0	2673.88	-37.66	76.11	28.27	51.01	15 58 34	2073.9	-42.40	68.11
44.35	6 34 33	4230.70	-37.67	199.84	28.28	51.02	7 45 4	3630.7	-42.41	191.83
135.65	15 14 0	2673.88	-37.66	76.11	28.27	51.01	15 58 34	2073.9	-42.40	68.11
44.35	6 34 33	4230.70	-37.67	199.84	28.28	51.02	7 45 4	3630.7	-42.41	191.83
135.65	15 14 0	2673.88	-37.66	76.11	28.27	51.01	15 58 34	2073.9	-42.40	68.11

DIFFERENTIAL CORRECTIONS
TDE 2.3723 TRA -.1848 TC3-5.4851 BAU 1.1644
RDE 1.1306 RRA .1702 RC3-3.0718 FAU .54170
FDE10.7815 FRA 1.4451 FC-33.8508 BSP 20781
BDE 2.6280 BRA .2512 BC3 6.2867 FSP 9029

MID-COURSE EXECUTION ACCURACY
SGT 5497.5 SGR 2905.0 SG3 2625.6
RRT .9703 RRF .9973 RTF .9687
SGB 6217.8 R23 .1864 R13 .9798
SG1 6186.4 SG2 624.5 THA 27.45

ORBIT DETERMINATION ACCURACY
ST 3656.5 SR 1746.4 SS 4372.0
CRT .9938 CRS -.9999 CST -.9946
LSA 5953.4 MSA 302.8 SSA 11.2
EL1 4048.4 EL2 175.2 ALF 25.44

LAUNCH DATE DEC 3 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 659.663 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.947 GAL 1.67 AZL 86.13 HCA 197.59 SMA 185.73 ECC .20804 INC 3.8667 V1 30.214
RP 217.98 LAP -1.17 LOP 268.42 VP 22.431 GAP -6.68 AZP 93.69 TAL 9.74 TAP 207.33 RCA 147.09 APO 224.37 V2 25.208
RC 279.589 GL 37.32 GP -16.74 ZAL 70.51 ZAP 79.99 ETS 176.04 ZAE 110.91 ETE 184.91 ZAC 68.80 ETC 256.52 CLP 79.55

PLANETOCENTRIC CONIC

C3 13.420 VHL 3.663 DLA 50.87 RAL 155.16 RAD 6567.5 VEL 11.611 PTH 2.03 VHP 3.038 DPA -9.07 RAP 162.80 ECC 1.2209

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.79	6 38 22	4213.48	-37.26	197.62	26.95	52.46	7 48 36	3613.5	-41.84	189.52
134.21	15 8 52	2677.20	-37.25	76.06	26.94	52.44	15 53 29	2077.2	-41.83	67.96
45.79	6 38 22	4213.48	-37.26	197.62	26.95	52.46	7 48 36	3613.5	-41.84	189.52
134.21	15 8 52	2677.20	-37.25	76.06	26.94	52.44	15 53 29	2077.2	-41.83	67.96
45.79	6 38 22	4213.48	-37.26	197.62	26.95	52.46	7 48 36	3613.5	-41.84	189.52
134.21	15 8 52	2677.20	-37.25	76.06	26.94	52.44	15 53 29	2077.2	-41.83	67.96

DIFFERENTIAL CORRECTIONS
TDE 2.3928 TRA -.1847 TC3-5.9828 BAU 1.1954
RDE 1.0257 RRA .1610 RC3-2.9331 FAU .54055
FDE10.3373 FRA 1.4318 FC-34.8714 BSP 21446
BDE 2.6034 BRA .2450 BC3 6.6631 FSP 9042

MID-COURSE EXECUTION ACCURACY
SGT 5781.8 SGR 2711.3 SG3 2630.2
RRT .9723 RRF .9966 RTF .9708
SGB 6386.0 R23 .1848 R13 .9794
SG1 6359.9 SG2 576.6 THA 24.73

ORBIT DETERMINATION ACCURACY
ST 3747.3 SR 1610.1 SS 4257.9
CRT .9938 CRS -.9999 CST -.9947
LSA 5888.4 MSA 301.1 SSA 12.2
EL1 4075.3 EL2 164.2 ALF 23.16

LAUNCH DATE DEC 3 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 663.800 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.948 GAL 1.62 AZL 86.27 HCA 198.73 SMA 185.76 ECC .20803 INC 3.7269 V1 30.214
RP 217.62 LAP -1.20 LOP 269.57 VP 22.477 GAP -6.86 AZP 93.53 TAL 9.45 TAP 208.19 RCA 147.11 APO 224.40 V2 25.248
RC 280.887 GL 36.36 GP -15.73 ZAL 70.70 ZAP 78.24 ETS 175.74 ZAE 109.06 ETE 183.96 ZAC 69.65 ETC 256.67 CLP 77.77

PLANETOCENTRIC CONIC

C3 13.042 VHL 3.611 DLA 49.81 RAL 155.13 RAD 6567.5 VEL 11.594 PTH 2.03 VHP 3.043 DPA -7.90 RAP 162.66 ECC 1.2146

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.15	6 42 32	4197.15	-36.85	195.56	25.86	53.75	7 52 29	3597.1	-41.28	187.39
132.85	15 4 24	2681.15	-36.84	76.07	25.85	53.74	15 49 5	2081.2	-41.27	67.90
47.15	6 42 32	4197.15	-36.85	195.56	25.86	53.75	7 52 29	3597.1	-41.28	187.39
132.85	15 4 24	2681.15	-36.84	76.07	25.85	53.74	15 49 5	2081.2	-41.27	67.90
47.15	6 42 32	4197.15	-36.85	195.56	25.86	53.75	7 52 29	3597.1	-41.28	187.39
132.85	15 4 24	2681.15	-36.84	76.07	25.85	53.74	15 49 5	2081.2	-41.27	67.90

DIFFERENTIAL CORRECTIONS
TDE 2.4128 TRA -.1806 TC3-6.4836 BAU 1.2311
RDE .9352 RRA .1549 RC3-2.7966 FAU .53763
FDE 9.8891 FRA 1.4377 FC-35.6888 BSP 22161
BDE 2.5877 BRA .2379 BC3 7.0610 FSP 9007

MID-COURSE EXECUTION ACCURACY
SGT 6064.7 SGR 2535.1 SG3 2625.1
RRT .9737 RRF .9957 RTF .9725
SGB 6573.2 R23 .1813 R13 .9792
SG1 6551.4 SG2 534.8 THA 22.30

ORBIT DETERMINATION ACCURACY
ST 3833.0 SR 1489.4 SS 4139.0
CRT .9938 CRS -.9999 CST -.9947
LSA 5826.7 MSA 300.3 SSA 13.2
EL1 4109.3 EL2 154.7 ALF 21.15

LAUNCH DATE DEC 3 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 667.944 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.950 GAL 1.57 AZL 86.40 HCA 199.88 SMA 185.78 ECC .20803 INC 3.6021 V1 30.214
RP 217.27 LAP -1.22 LOP 270.71 VP 22.524 GAP -7.03 AZP 93.39 TAL 9.15 TAP 209.03 RCA 147.13 APO 224.43 V2 25.287
RC 282.167 GL 35.49 GP -14.82 ZAL 70.95 ZAP 76.50 ETS 175.48 ZAE 107.20 ETE 183.14 ZAC 70.43 ETC 256.81 CLP 76.03

PLANETOCENTRIC CONIC

C3 12.708 VHL 3.565 DLA 48.81 RAL 155.19 RAD 6567.5 VEL 11.580 PTH 2.03 VHP 3.052 DPA -6.83 RAP 162.50 ECC 1.2091

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.42	6 47 0	4181.50	-36.43	193.62	24.98	54.93	7 56 41	3581.5	-40.72	185.39
131.58	15 0 28	2685.67	-36.42	76.16	24.97	54.92	15 45 14	2085.7	-40.71	67.93
48.42	6 47 0	4181.50	-36.43	193.62	24.98	54.93	7 56 41	3581.5	-40.72	185.39
131.58	15 0 28	2685.67	-36.42	76.16	24.97	54.92	15 45 14	2085.7	-40.71	67.93
48.42	6 47 0	4181.50	-36.43	193.62	24.98	54.93	7 56 41	3581.5	-40.72	185.39
131.58	15 0 28	2685.67	-36.42	76.16	24.97	54.92	15 45 14	2085.7	-40.71	67.93

DIFFERENTIAL CORRECTIONS
TDE 2.4310 TRA -.1743 TC3-6.9909 BAU 1.2711
RDE .8564 RRA .1500 RC3-2.6646 FAU .53347
FDE 9.4382 FRA 1.4454 FC-36.3421 BSP 22886
BDE 2.5774 BRA .2300 BC3 7.4815 FSP 8929

MID-COURSE EXECUTION ACCURACY
SGT 6347.5 SGR 2374.4 SG3 2612.0
RRT .9748 RRF .9946 RTF .9741
SGB 6777.1 R23 .1759 R13 .9792
SG1 6758.8 SG2 497.7 THA 20.15

ORBIT DETERMINATION ACCURACY
ST 3912.1 SR 1382.8 SS 4015.4
CRT .9937 CRS -.9999 CST -.9947
LSA 5766.1 MSA 299.2 SSA 14.2
EL1 4146.4 EL2 146.1 ALF 19.37

LAUNCH DATE DEC 3 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 672.095 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.952 GAL 1.52 AZL 86.51 HCA 201.03 SMA 185.82 ECC .20805 INC 3.4903 V1 30.214
RP 216.91 LAP -1.25 LOP 271.86 VP 22.571 GAP -7.20 AZP 93.26 TAL 8.83 TAP 209.86 RCA 147.16 APO 224.48 V2 25.327
RC 283.431 GL 34.70 GP -13.98 ZAL 71.25 ZAP 74.80 ETS 175.26 ZAE 105.35 ETE 182.42 ZAC 71.13 ETC 256.94 CLP 74.33

PLANETOCENTRIC CONIC

C3 12.411 VHL 3.523 DLA 47.88 RAL 155.36 RAD 6567.5 VEL 11.567 PTH 2.02 VHP 3.066 DPA -5.85 RAP 162.35 ECC 1.2043

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.63	6 51 44	4166.46	-36.02	191.79	24.27	56.02	8 1 10	3566.5	-40.18	183.52
130.37	14 57 3	2690.61	-36.01	76.29	24.26	56.01	15 41 53	2090.6	-40.18	68.02
49.63	6 51 44	4166.46	-36.02	191.79	24.27	56.02	8 1 10	3566.5	-40.18	183.52
130.37	14 57 3	2690.61	-36.01	76.29	24.26	56.01	15 41 53	2090.6	-40.18	68.02
49.63	6 51 44	4166.46	-36.02	191.79	24.27	56.02	8 1 10	3566.5	-40.18	183.52
130.37	14 57 3	2690.61	-36.01	76.29	24.26	56.01	15 41 53	2090.6	-40.18	68.02

DIFFERENTIAL CORRECTIONS
TDE 2.4592 TRA -.1540 TC3-7.4691 BAU 1.3076
RDE .7934 RRA .1529 RC3-2.5141 FAU .52370
FDE 9.0689 FRA 1.5451 FC-36.5313 BSP 23928
BDE 2.5840 BRA .2170 BC3 7.8809 FSP 8990

MID-COURSE EXECUTION ACCURACY
SGT 6620.5 SGR 2222.6 SG3 2583.5
RRT .9748 RRF .9933 RTF .9752
SGB 6983.7 R23 .1697 R13 .9792
SG1 6967.8 SG2 471.0 THA 18.21

ORBIT DETERMINATION ACCURACY
ST 4004.3 SR 1296.2 SS 3924.3
CRT .9935 CRS -.9999 CST -.9945
LSA 5746.5 MSA 303.7 SSA 14.9
EL1 4206.5 EL2 140.2 ALF 17.85

LAUNCH DATE DEC 3 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 676.257 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.954 GAL 1.46 AZL 86.61 HCA 202.18 SMA 185.85 ECC .20809 INC 3.3891 V1 30.214
RP 216.57 LAP -1.28 LOP 273.02 VP 22.618 GAP -7.37 AZP 93.14 TAL 8.49 TAP 210.68 RCA 147.18 APO 224.53 V2 25.365
RC 284.679 GL 33.98 GP -13.22 ZAL 71.61 ZAP 73.13 ETS 175.08 ZAE 103.50 ETE 181.79 ZAC 71.77 ETC 257.05 CLP 72.66

PLANETOCENTRIC CONIC

C3 12.144 VHL 3.485 DLA 47.00 RAL 155.60 RAD 6567.5 VEL 11.556 PTH 2.02 VHP 3.085 DPA -4.95 RAP 162.19 ECC 1.1999

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.78	6 56 44	4151.78	-35.61	190.04	23.71	57.02	8 5 56	3551.8	-39.66	181.74
129.22	14 53 58	2696.06	-35.60	76.48	23.70	57.01	15 38 54	2096.1	-39.65	68.18
50.78	6 56 44	4151.78	-35.61	190.04	23.71	57.02	8 5 56	3551.8	-39.66	181.74
129.22	14 53 58	2696.06	-35.60	76.48	23.70	57.01	15 38 54	2096.1	-39.65	68.18
50.78	6 56 44	4151.78	-35.61	190.04	23.71	57.02	8 5 56	3551.8	-39.66	181.74
129.22	14 53 58	2696.06	-35.60	76.48	23.70	57.01	15 38 54	2096.1	-39.65	68.18

DIFFERENTIAL CORRECTIONS
TDE 2.4716 TRA -.1426 TC3-7.9837 BAU 1.3532
RDE .7308 RRA .1490 RC3-2.3944 FAU .51792
FDE 8.6021 FRA 1.5505 FC-36.9217 BSP 24619
BDE 2.5774 BRA .2063 BC3 8.3350 FSP 8793

MID-COURSE EXECUTION ACCURACY
SGT 6898.8 SGR 2087.5 SG3 2557.5
RRT .9753 RRF .9917 RTF .9763
SGB 7207.7 R23 .1610 R13 .9794
SG1 7194.1 SG2 442.6 THA 16.51

ORBIT DETERMINATION ACCURACY
ST 4068.4 SR 1207.4 SS 3786.6
CRT .9934 CRS -.9999 CST -.9945
LSA 5679.5 MSA 301.4 SSA 16.0
EL1 4241.7 EL2 132.6 ALF 16.44

LAUNCH DATE DEC 3 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 680.427 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.956 GAL 1.40 AZL 86.70 HCA 203.34 SMA 185.90 ECC .20815 INC 3.2973 V1 30.214
RP 216.22 LAP -1.31 LOP 274.17 VP 22.664 GAP -7.53 AZP 93.03 TAL 8.15 TAP 211.49 RCA 147.20 APO 224.59 V2 25.404
RC 285.910 GL 33.32 GP -12.52 ZAL 72.01 ZAP 71.49 ETS 174.91 ZAE 101.68 ETE 181.24 ZAC 72.36 ETC 257.16 CLP 71.02

PLANETOCENTRIC CONIC

C3 11.902 VHL 3.450 DLA 46.16 RAL 155.91 RAD 6567.5 VEL 11.545 PTH 2.02 VHP 3.106 DPA -4.13 RAP 162.05 ECC 1.1959

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.89	7 1 57	4137.52	-35.20	188.37	23.29	57.96	8 10 54	3537.5	-39.14	180.04
128.11	14 51 16	2701.84	-35.19	76.71	23.28	57.94	15 36 18	2101.8	-39.13	68.38
51.89	7 1 57	4137.52	-35.20	188.37	23.29	57.96	8 10 54	3537.5	-39.14	180.04
128.11	14 51 16	2701.84	-35.19	76.71	23.28	57.94	15 36 18	2101.8	-39.13	68.38
51.89	7 1 57	4137.52	-35.20	188.37	23.29	57.96	8 10 54	3537.5	-39.14	180.04
128.11	14 51 16	2701.84	-35.19	76.71	23.28	57.94	15 36 18	2101.8	-39.13	68.38

DIFFERENTIAL CORRECTIONS
TDE 2.4859 TRA -.1239 TC3-8.4855 BAU 1.3978
RDE .6770 RRA .1477 RC3-2.2722 FAU .50985
FDE 8.1632 FRA 1.5833 FC-37.0847 BSP 25446
BDE 2.5764 BRA .1928 BC3 8.7844 FSP 8649

MID-COURSE EXECUTION ACCURACY
SGT 7170.3 SGR 1961.5 SG3 2523.4
RRT .9752 RRF .9898 RTF .9773
SGB 7433.8 R23 .1513 R13 .9797
SG1 7421.9 SG2 419.4 THA 14.99

ORBIT DETERMINATION ACCURACY
ST 4133.2 SR 1130.3 SS 3657.0
CRT .9933 CRS -.9998 CST -.9944
LSA 5625.3 MSA 300.3 SSA 17.1
EL1 4283.1 EL2 125.9 ALF 15.21

LAUNCH DATE DEC 3 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 684.604 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.959 GAL 1.34 AZL 86.79 HCA 204.50 SMA 185.94 ECC .20822 INC 3.2133 V1 30.214
RP 215.88 LAP -1.33 LOP 275.34 VP 22.711 GAP -7.69 AZP 92.92 TAL 7.78 TAP 212.28 RCA 147.22 APO 224.66 V2 25.442
RC 287.127 GL 32.71 GP -11.88 ZAL 72.46 ZAP 69.89 ETS 174.78 ZAE 99.88 ETE 180.76 ZAC 72.90 ETC 257.25 CLP 69.43

PLANETOCENTRIC CONIC

C3 11.682 VHL 3.418 DLA 45.36 RAL 156.30 RAD 6567.4 VEL 11.536 PTH 2.01 VHP 3.131 DPA -3.37 RAP 161.92 ECC 1.1923

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.96	7 7 25	4123.46	-34.79	186.75	22.98	58.83	8 16 9	3523.5	-38.62	178.40
127.04	14 48 51	2708.06	-34.78	76.98	22.97	58.82	15 33 59	2108.1	-38.62	68.64
52.96	7 7 25	4123.46	-34.79	186.75	22.98	58.83	8 16 9	3523.5	-38.62	178.40
127.04	14 48 51	2708.06	-34.78	76.98	22.97	58.82	15 33 59	2108.1	-38.62	68.64
52.96	7 7 25	4123.46	-34.79	186.75	22.98	58.83	8 16 9	3523.5	-38.62	178.40
127.04	14 48 51	2708.06	-34.78	76.98	22.97	58.82	15 33 59	2108.1	-38.62	68.64

DIFFERENTIAL CORRECTIONS
TDE 2.4964 TRA -.1032 TC3-8.9937 BAU 1.4444
RDE .6297 RRA .1472 RC3-2.1552 FAU .50115
FDE 7.7392 FRA 1.6225 FC-37.1399 BSP 26199
BDE 2.5746 BRA .1798 BC3 9.2483 FSP 8458

MID-COURSE EXECUTION ACCURACY
SGT 7441.1 SGR 1846.1 SG3 2485.9
RRT .9746 RRF .9876 RTF .9782
SGB 7666.7 R23 .1405 R13 .9800
SG1 7656.2 SG2 401.7 THA 13.63

ORBIT DETERMINATION ACCURACY
ST 4189.7 SR 1061.8 SS 3529.9
CRT .9932 CRS -.9998 CST -.9942
LSA 5572.3 MSA 300.0 SSA 18.1
EL1 4320.4 EL2 120.3 ALF 14.14

LAUNCH DATE DEC 3 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 688.789 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.962 GAL 1.27 AZL 86.86 HCA 205.67 SMA 185.99 ECC .20831 INC 3.1364 V1 30.214
RP 215.54 LAP -1.36 LOP 276.50 VP 22.757 GAP -7.84 AZP 92.83 TAL 7.41 TAP 213.07 RCA 147.25 APO 224.73 V2 25.480
RC 288.329 GL 32.15 GP -11.28 ZAL 72.95 ZAP 68.33 ETS 174.66 ZAE 98.11 ETE 180.34 ZAC 73.40 ETC 257.34 CLP 67.88

PLANETOCENTRIC CONIC

C3 11.480 VHL 3.388 DLA 44.59 RAL 156.74 RAD 6567.4 VEL 11.527 PTH 2.01 VHP 3.159 DPA -2.67 RAP 161.80 ECC 1.1889

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.00	7 13 9	4109.51	-34.39	185.17	22.78	59.66	8 21 38	3509.5	-38.12	176.81
126.00	14 46 40	2714.73	-34.38	77.30	22.77	59.64	15 31 54	2114.7	-38.11	68.94
54.00	7 13 9	4109.51	-34.39	185.17	22.78	59.66	8 21 38	3509.5	-38.12	176.81
126.00	14 46 40	2714.73	-34.38	77.30	22.77	59.64	15 31 54	2114.7	-38.11	68.94
54.00	7 13 9	4109.51	-34.39	185.17	22.78	59.66	8 21 38	3509.5	-38.12	176.81
126.00	14 46 40	2714.73	-34.38	77.30	22.77	59.64	15 31 54	2114.7	-38.11	68.94

DIFFERENTIAL CORRECTIONS
TDE 2.5081 TRA -.0742 TC3-9.4856 BAU 1.4890
RDE .5882 RRA .1485 RC3-2.0375 FAU .49067
FDE 7.3334 FRA 1.6855 FC-37.0042 BSP 27070
BDE 2.5762 BRA .1660 BC3 9.7020 FSP 8303

MID-COURSE EXECUTION ACCURACY
SGT 7703.0 SGR 1737.9 SG3 2441.6
RRT .9735 RRF .9849 RTF .9788
SGB 7896.6 R23 .1294 R13 .9803
SG1 7887.1 SG2 388.4 THA 12.42

ORBIT DETERMINATION ACCURACY
ST 4246.1 SR 1001.2 SS 3406.9
CRT .9930 CRS -.9998 CST -.9940
LSA 5527.0 MSA 300.6 SSA 19.1
EL1 4361.0 EL2 115.1 ALF 13.19

LAUNCH DATE DEC 3 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 692.981 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.965 GAL 1.21 AZL 86.93 HCA 206.83 SMA 186.04 ECC .20842 INC 3.0653 V1 30.214
RP 215.21 LAP -1.38 LOP 277.67 VP 22.803 GAP -7.99 AZP 92.74 TAL 7.02 TAP 213.85 RCA 147.27 APO 224.82 V2 25.517
RC 289.516 GL 31.63 GP -10.73 ZAL 73.49 ZAP 66.80 ETS 174.56 ZAE 96.36 ETE 179.97 ZAC 73.87 ETC 257.41 CLP 66.36

PLANETOCENTRIC CONIC

C3 11.293 VHL 3.361 DLA 43.84 RAL 157.24 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 3.190 DPA -2.03 RAP 161.71 ECC 1.1859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.02	7 19 7	4095.64	-33.98	183.63	22.68	60.44	8 27 22	3495.6	-37.62	175.26
124.98	14 44 41	2721.81	-33.97	77.66	22.67	60.43	15 30 3	2121.8	-37.61	69.29
55.02	7 19 7	4095.64	-33.98	183.63	22.68	60.44	8 27 22	3495.6	-37.62	175.26
124.98	14 44 41	2721.81	-33.97	77.66	22.67	60.43	15 30 3	2121.8	-37.61	69.29
55.02	7 19 7	4095.64	-33.98	183.63	22.68	60.44	8 27 22	3495.6	-37.62	175.26
124.98	14 44 41	2721.81	-33.97	77.66	22.67	60.43	15 30 3	2121.8	-37.61	69.29

DIFFERENTIAL CORRECTIONS
TDE 2.5157 TRA -.0439 TC3-9.9795 BAU 1.5345
RDE .5515 RRA .1495 RC3-1.9240 FAU .47954
FDE 6.9412 FRA 1.7408 FC-36.7612 BSP 27882
BDE 2.5755 BRA .1558 BC310.1633 FSP 8122

MID-COURSE EXECUTION ACCURACY
SGT 7962.2 SGR 1637.4 SG3 2393.5
RRT .9718 RRF .9817 RTF .9795
SGB 8128.8 R23 .1173 R13 .9806
SG1 8120.0 SG2 378.7 THA 11.33

ORBIT DETERMINATION ACCURACY
ST 4294.0 SR 947.0 SS 3285.7
CRT .9929 CRS -.9997 CST -.9937
LSA 5480.9 MSA 300.8 SSA 20.1
EL1 4395.8 EL2 110.4 ALF 12.36

LAUNCH DATE DEC 3 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 697.181 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.968 GAL 1.14 AZL 87.00 HCA 208.01 SMA 186.10 ECC .20854 INC 2.9997 V1 30.214
RP 214.88 LAP -1.41 LOP 278.84 VP 22.849 GAP -8.14 AZP 92.65 TAL 6.61 TAP 214.62 RCA 147.29 APO 224.91 V2 25.554
RC 290.691 GL 31.15 GP -10.22 ZAL 74.07 ZAP 65.31 ETS 174.47 ZAE 94.64 ETE 179.64 ZAC 74.31 ETC 257.48 CLP 64.89

PLANETOCENTRIC CONIC

C3 11.121 VHL 3.335 DLA 43.11 RAL 157.79 RAD 6567.4 VEL 11.511 PTH 2.01 VHP 3.223 DPA -1.44 RAP 161.64 ECC 1.1830

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.02	7 25 20	4081.75	-33.57	182.11	22.66	61.19	8 33 21	3481.7	-37.12	173.73
123.98	14 42 53	2729.36	-33.56	78.07	22.65	61.17	15 28 22	2129.4	-37.11	69.69
56.02	7 25 20	4081.75	-33.57	182.11	22.66	61.19	8 33 21	3481.7	-37.12	173.73
123.98	14 42 53	2729.36	-33.56	78.07	22.65	61.17	15 28 22	2129.4	-37.11	69.69
56.02	7 25 20	4081.75	-33.57	182.11	22.66	61.19	8 33 21	3481.7	-37.12	173.73
123.98	14 42 53	2729.36	-33.56	78.07	22.65	61.17	15 28 22	2129.4	-37.11	69.69

DIFFERENTIAL CORRECTIONS
TDE 2.5207 TRA -.0075 TC-10.4691 BAU 1.5798
RDE .5185 RRA .1515 RC3-1.8170 FAU .46845
FDE 6.5571 FRA 1.8098 FC-36.4674 BSP 28700
BDE 2.5735 BRA .1516 BC310.6256 FSP 7924

MID-COURSE EXECUTION ACCURACY
SGT 8216.6 SGR 1545.7 SG3 2345.0
RRT .9695 RRF .9780 RTF .9800
SGB 8360.7 R23 .1057 R13 .9809
SG1 8352.4 SG2 372.5 THA 10.36

ORBIT DETERMINATION ACCURACY
ST 4335.9 SR 898.0 SS 3163.9
CRT .9927 CRS -.9997 CST -.9934
LSA 5433.7 MSA 302.1 SSA 21.1
EL1 4426.6 EL2 106.0 ALF 11.62

LAUNCH DATE DEC 3 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 701.388 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.972 GAL 1.07 AZL 87.06 HCA 209.18 SMA 186.16 ECC .20868 INC 2.9387 V1 30.214
RP 214.56 LAP -1.43 LOP 280.02 VP 22.895 GAP -8.28 AZP 92.57 TAL 6.19 TAP 215.37 RCA 147.31 APO 225.01 V2 25.590
RC 291.851 GL 30.70 GP -9.75 ZAL 74.69 ZAP 63.86 ETS 174.40 ZAE 92.96 ETE 179.35 ZAC 74.72 ETC 257.54 CLP 63.45

PLANETOCENTRIC CONIC

C3 10.961 VHL 3.311 DLA 42.40 RAL 158.40 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 3.259 DPA -.91 RAP 161.59 ECC 1.1804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.02	7 31 48	4067.77	-33.16	180.61	22.72	61.90	8 39 36	3467.8	-36.62	172.23
122.98	14 41 13	2737.40	-33.15	78.51	22.71	61.89	15 26 50	2137.4	-36.62	70.13
57.02	7 31 48	4067.77	-33.16	180.61	22.72	61.90	8 39 36	3467.8	-36.62	172.23
122.98	14 41 13	2737.40	-33.15	78.51	22.71	61.89	15 26 50	2137.4	-36.62	70.13
57.02	7 31 48	4067.77	-33.16	180.61	22.72	61.90	8 39 36	3467.8	-36.62	172.23
122.98	14 41 13	2737.40	-33.15	78.51	22.71	61.89	15 26 50	2137.4	-36.62	70.13

DIFFERENTIAL CORRECTIONS
TDE 2.5229 TRA .0328 TC-10.9522 BAU 1.6245
RDE .4889 RRA .1535 RC3-1.7126 FAU .45663
FDE 6.1829 FRA 1.8785 FC-36.0643 BSP 29524
BDE 2.5698 BRA .1570 BC311.0853 FSP 7731

MID-COURSE EXECUTION ACCURACY
SGT 8465.3 SGR 1459.9 SG3 2292.7
RRT .9666 RRF .9736 RTF .9804
SGB 8590.3 R23 .0941 R13 .9811
SG1 8582.4 SG2 369.0 THA 9.48

ORBIT DETERMINATION ACCURACY
ST 4371.6 SR 853.6 SS 3042.2
CRT .9926 CRS -.9996 CST -.9930
LSA 5385.3 MSA 303.3 SSA 22.0
EL1 4452.9 EL2 101.9 ALF 10.97

LAUNCH DATE DEC 3 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 705.603 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.975 GAL .99 AZL 87.12 HCA 210.36 SMA 106.22 ECC .20884 INC 2.8819 V1 30.214
RP 214.24 LAP -1.46 LOP 281.20 VP 22.940 GAP -8.42 AZP 92.49 TAL 5.76 TAP 216.12 RCA 147.33 APO 225.11 V2 25.626
RC 292.998 GL 30.27 GP -9.31 ZAL 75.34 ZAP 62.45 ETS 174.34 ZAE 91.31 ETE 179.10 ZAC 75.11 ETC 257.59 CLP 62.05

PLANETOCENTRIC CONIC

C3 10.813 VHL 3.288 DLA 41.70 RAL 159.04 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 3.297 DPA -.42 RAP 161.56 ECC 1.1780

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.01	7 38 35	4053.52	-32.75	179.10	22.85	62.59	8 46 8	3453.5	-36.13	170.72
121.99	14 39 37	2746.07	-32.74	79.01	22.84	62.57	15 25 23	2146.1	-36.12	70.63
58.01	7 38 35	4053.52	-32.75	179.10	22.85	62.59	8 46 8	3453.5	-36.13	170.72
121.99	14 39 37	2746.07	-32.74	79.01	22.84	62.57	15 25 23	2146.1	-36.12	70.63
58.01	7 38 35	4053.52	-32.75	179.10	22.85	62.59	8 46 8	3453.5	-36.13	170.72
121.99	14 39 37	2746.07	-32.74	79.01	22.84	62.57	15 25 23	2146.1	-36.12	70.63

DIFFERENTIAL CORRECTIONS

TDE 2.5231 TRA .0782 TC-11.4273 BAU 1.6683
RDE .4627 RRA .1558 RC3-1.6117 FAU .44436
FDE 5.8268 FRA 1.9512 FC-35.5763 BSP 30351
BDE 2.5652 BRA .1743 BC311.5403 FSP 7536

MID-COURSE EXECUTION ACCURACY

SGT 8708.7 SGR 1380.5 SG3 2230.5
RRT .9829 RRF .9806 RTF .9808
SGB 8817.4 RZS .0830 R13 .9814
SG1 8809.7 SG2 368.1 THA 8.69

ORBIT DETERMINATION ACCURACY

ST 4402.4 SR 814.2 SS 2924.6
CRT .9925 CRS -.9996 CST -.9925
LSA 5338.9 HSA 304.6 SSA 22.9
EL1 4476.0 EL2 97.9 ALF 10.41

LAUNCH DATE DEC 3 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 709.825 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.979 GAL .92 AZL 87.17 HCA 211.54 SMA 106.29 ECC .20902 INC 2.8287 V1 30.214
RP 213.93 LAP -1.48 LOP 282.38 VP 22.985 GAP -8.56 AZP 92.41 TAL 5.31 TAP 216.85 RCA 147.35 APO 225.22 V2 25.662
RC 294.131 GL 29.87 GP -8.89 ZAL 76.04 ZAP 61.08 ETS 174.29 ZAE 89.69 ETE 178.88 ZAC 75.48 ETC 257.64 CLP 60.69

PLANETOCENTRIC CONIC

C3 10.676 VHL 3.267 DLA 41.01 RAL 159.74 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 3.337 DPA .03 RAP 161.56 ECC 1.1757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.00	7 45 38	4038.03	-32.33	177.59	23.05	63.25	8 52 57	3438.0	-35.63	169.22
121.00	14 38 4	2755.34	-32.32	79.56	23.04	63.24	15 24 0	2155.3	-35.62	71.18
59.00	7 45 38	4038.03	-32.33	177.59	23.05	63.25	8 52 57	3438.0	-35.63	169.22
121.00	14 38 4	2755.34	-32.32	79.56	23.04	63.24	15 24 0	2155.3	-35.62	71.18
59.00	7 45 38	4038.03	-32.33	177.59	23.05	63.25	8 52 57	3438.0	-35.63	169.22
121.00	14 38 4	2755.34	-32.32	79.56	23.04	63.24	15 24 0	2155.3	-35.62	71.18

DIFFERENTIAL CORRECTIONS

TDE 2.5171 TRA .1266 TC-11.9019 BAU 1.7124
RDE .4384 RRA .1580 RC3-1.5158 FAU .43217
FDE 5.4676 FRA 2.0194 FC-35.0467 BSP 31126
BDE 2.5550 BRA .2025 BC311.9060 FSP 7532

MID-COURSE EXECUTION ACCURACY

SGT 8947.6 SGR 1306.5 SG3 2183.1
RRT .9585 RRF .9626 RTF .9811
SGB 9042.5 RZS .0723 R13 .9816
SG1 9034.9 SG2 360.8 THA 7.98

ORBIT DETERMINATION ACCURACY

ST 4421.0 SR 777.2 SS 2800.6
CRT .9924 CRS -.9995 CST -.9920
LSA 5281.9 HSA 306.5 SSA 23.9
EL1 4487.8 EL2 94.0 ALF 9.90

LAUNCH DATE DEC 3 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 714.053 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.983 GAL .84 AZL 87.22 HCA 212.73 SMA 106.36 ECC .20922 INC 2.7789 V1 30.214
RP 213.62 LAP -1.50 LOP 283.57 VP 23.030 GAP -8.70 AZP 92.34 TAL 4.85 TAP 217.58 RCA 147.37 APO 225.34 V2 25.697
RC 295.251 GL 29.49 GP -8.51 ZAL 76.78 ZAP 59.74 ETS 174.24 ZAE 88.10 ETE 178.68 ZAC 75.83 ETC 257.68 CLP 59.37

PLANETOCENTRIC CONIC

C3 10.548 VHL 3.248 DLA 40.33 RAL 160.47 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 3.378 DPA .44 RAP 161.59 ECC 1.1736

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.00	7 53 1	4024.15	-31.90	176.07	23.32	63.90	9 0 5	3424.2	-35.12	167.70
120.00	14 36 33	2765.32	-31.89	80.16	23.31	63.89	15 22 38	2165.3	-35.11	71.79
60.00	7 53 1	4024.15	-31.90	176.07	23.32	63.90	9 0 5	3424.2	-35.12	167.70
120.00	14 36 33	2765.32	-31.89	80.16	23.31	63.89	15 22 38	2165.3	-35.11	71.79
60.00	7 53 1	4024.15	-31.90	176.07	23.32	63.90	9 0 5	3424.2	-35.12	167.70
120.00	14 36 33	2765.32	-31.89	80.16	23.31	63.89	15 22 38	2165.3	-35.11	71.79

DIFFERENTIAL CORRECTIONS

TDE 2.5115 TRA .1810 TC-12.3648 BAU 1.7551
RDE .4176 RRA .1606 RC3-1.4228 FAU .41960
FDE 5.1428 FRA 2.0943 FC-34.4402 BSP 31915
BDE 2.5459 BRA .2420 BC312.4464 FSP 7124

MID-COURSE EXECUTION ACCURACY

SGT 9182.1 SGR 1239.0 SG3 2127.3
RRT .9531 RRF .9559 RTF .9815
SGB 9265.3 RZS .0624 R13 .9818
SG1 9257.9 SG2 372.0 THA 7.34

ORBIT DETERMINATION ACCURACY

ST 4439.0 SR 745.7 SS 2689.3
CRT .9925 CRS -.9993 CST -.9914
LSA 5234.2 HSA 308.5 SSA 24.7
EL1 4500.3 EL2 90.2 ALF 9.47

LAUNCH DATE DEC 3 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 718.289 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.987 GAL .76 AZL 87.27 HCA 213.92 SMA 106.43 ECC .20943 INC 2.7321 V1 30.214
RP 213.31 LAP -1.52 LOP 284.76 VP 23.075 GAP -8.83 AZP 92.27 TAL 4.37 TAP 218.29 RCA 147.38 APO 225.47 V2 25.731
RC 296.356 GL 29.13 GP -8.15 ZAL 77.56 ZAP 58.44 ETS 174.21 ZAE 86.54 ETE 178.50 ZAC 76.16 ETC 257.71 CLP 58.08

PLANETOCENTRIC CONIC

C3 10.429 VHL 3.229 DLA 39.64 RAL 161.24 RAD 6567.4 VEL 11.481 PTH 2.00 VHP 3.422 DPA .81 RAP 161.64 ECC 1.1716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.01	8 0 44	4008.79	-31.47	174.52	23.64	64.53	9 7 33	3408.8	-34.61	166.16
118.99	14 35 0	2776.11	-31.46	80.83	23.63	64.51	15 21 16	2176.1	-34.60	72.47
61.01	8 0 44	4008.79	-31.47	174.52	23.64	64.53	9 7 33	3408.8	-34.61	166.16
118.99	14 35 0	2776.11	-31.46	80.83	23.63	64.51	15 21 16	2176.1	-34.60	72.47
61.01	8 0 44	4008.79	-31.47	174.52	23.64	64.53	9 7 33	3408.8	-34.61	166.16
118.99	14 35 0	2776.11	-31.46	80.83	23.63	64.51	15 21 16	2176.1	-34.60	72.47

DIFFERENTIAL CORRECTIONS

TDE 2.5011 TRA .2395 TC-12.8166 BAU 1.7966
RDE .3982 RRA .1629 RC3-1.3325 FAU .40676
FDE 4.8149 FRA 2.1612 FC-33.7658 BSP 32716
BDE 2.5326 BRA .2897 BC312.8857 FSP 6928

MID-COURSE EXECUTION ACCURACY

SGT 9408.5 SGR 1175.1 SG3 2068.9
RRT .9467 RRF .9480 RTF .9818
SGB 9481.6 RZS .0529 R13 .9820
SG1 9474.2 SG2 375.8 THA 6.75

ORBIT DETERMINATION ACCURACY

ST 4447.4 SR 715.9 SS 2571.5
CRT .9925 CRS -.9991 CST -.9906
LSA 5177.6 HSA 310.0 SSA 25.6
EL1 4503.8 EL2 86.2 ALF 9.08

LAUNCH DATE DEC 3 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 722.531 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.992 GAL .67 AZL 87.31 HCA 215.11 SMA 186.50 ECC .20967 INC 2.6880 V1 30.214
RP 213.04 LAP -1.55 LOP 285.95 VP 23.119 GAP -8.96 AZP 92.20 TAL 3.88 TAP 219.00 RCA 147.40 APO 225.61 V2 25.765
RC 297.448 GL 28.79 GP -7.81 ZAL 78.37 ZAP 57.18 ETS 174.18 ZAE 85.02 ETE 178.35 ZAC 76.48 ETC 257.73 CLP 56.83

PLANETOCENTRIC CONIC

C3 10.319 VHL 3.212 DLA 38.96 RAL 162.06 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 3.468 DPA 1.14 RAP 161.72 ECC 1.1698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.04	8 8 49	3992.84	-31.03	172.94	24.02	65.14	9 15 22	3392.8	-34.09	164.59
117.96	14 33 24	2787.79	-31.02	81.56	24.01	65.13	15 19 51	2187.8	-34.08	73.21
62.04	8 8 49	3992.84	-31.03	172.94	24.02	65.14	9 15 22	3392.8	-34.09	164.59
117.96	14 33 24	2787.79	-31.02	81.56	24.01	65.13	15 19 51	2187.8	-34.08	73.21
62.04	8 8 49	3992.84	-31.03	172.94	24.02	65.14	9 15 22	3392.8	-34.09	164.59
117.96	14 33 24	2787.79	-31.02	81.56	24.01	65.13	15 19 51	2187.8	-34.08	73.21

DIFFERENTIAL CORRECTIONS
TDE 2.4872 TRA .3032 TC-13.2628 BAU 1.8378
RDE .3811 RRA .1655 RC3-1.2468 FAU .39417
FDE 4.5067 FRA 2.2346 FC-33.0691 BSP 33465
BDE 2.5162 BRA .3455 BC313.3213 FSP 6719

MID-COURSE EXECUTION ACCURACY
SGT 9631.7 SGR 1117.1 SG3 2012.0
RRT .9392 RRF .9391 RTF .9820
SGB 9696.3 R23 .0447 R13 .9822
SG1 9688.8 SG2 381.4 THA 6.23

ORBIT DETERMINATION ACCURACY
ST 4448.4 SR 689.7 SS 2459.4
CRT .9927 CRS -.9988 CST -.9898
LSA 5120.0 MSA 312.6 SSA 26.4
EL1 4500.8 EL2 82.3 ALF 8.75

LAUNCH DATE DEC 3 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 726.780 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 32.996 GAL .59 AZL 87.35 HCA 216.31 SMA 186.58 ECC .20992 INC 2.6463 V1 30.214
RP 212.72 LAP -1.57 LOP 287.15 VP 23.162 GAP -9.08 AZP 92.13 TAL 3.38 TAP 219.69 RCA 147.41 APO 225.75 V2 25.798
RC 298.526 GL 28.46 GP -7.50 ZAL 79.22 ZAP 55.95 ETS 174.16 ZAE 83.53 ETE 178.21 ZAC 76.78 ETC 257.75 CLP 55.61

PLANETOCENTRIC CONIC

C3 10.218 VHL 3.197 DLA 38.28 RAL 162.90 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 3.515 DPA 1.44 RAP 161.83 ECC 1.1682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.09	8 17 19	3976.16	-30.57	171.32	24.45	65.75	9 23 35	3376.2	-33.57	162.98
116.91	14 31 40	2800.51	-30.56	82.38	24.45	65.73	15 18 21	2200.5	-33.56	74.04
63.09	8 17 19	3976.16	-30.57	171.32	24.45	65.75	9 23 35	3376.2	-33:57	162.98
116.91	14 31 40	2800.51	-30.56	82.38	24.45	65.73	15 18 21	2200.5	-33.56	74.04
63.09	8 17 19	3976.16	-30.57	171.32	24.45	65.75	9 23 35	3376.2	-33.57	162.98
116.91	14 31 40	2800.51	-30.56	82.38	24.45	65.73	15 18 21	2200.5	-33.56	74.04

DIFFERENTIAL CORRECTIONS
TDE 2.4692 TRA .3713 TC-13.7009 BAU 1.8784
RDE .3654 RRA .1682 RC3-1.1644 FAU .38164
FDE 4.2034 FRA 2.3065 FC-32.3347 BSP 34221
BDE 2.4961 BRA .4076 BC313.7503 FSP 6520

MID-COURSE EXECUTION ACCURACY
SGT 9850.4 SGR 1063.3 SG3 1954.7
RRT .9304 RRF .9289 RTF .9822
SGB 9907.6 R23 .0373 R13 .9823
SG1 9900.1 SG2 387.8 THA 5.74

ORBIT DETERMINATION ACCURACY
ST 4441.0 SR 665.4 SS 2345.4
CRT .9929 CRS -.9984 CST -.9887
LSA 5056.3 MSA 315.8 SSA 27.3
EL1 4489.9 EL2 78.4 ALF 8.46

LAUNCH DATE DEC 3 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 731.035 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.001 GAL .50 AZL 87.39 HCA 217.51 SMA 186.66 ECC .21019 INC 2.6068 V1 30.214
RP 212.43 LAP -1.59 LOP 288.35 VP 23.205 GAP -9.21 AZP 92.07 TAL 2.86 TAP 220.37 RCA 147.43 APO 225.89 V2 25.831
RC 299.592 GL 28.14 GP -7.20 ZAL 80.11 ZAP 54.76 ETS 174.14 ZAE 82.07 ETE 178.09 ZAC 77.08 ETC 257.76 CLP 54.43

PLANETOCENTRIC CONIC

C3 10.125 VHL 3.182 DLA 37.59 RAL 163.79 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 3.564 DPA 1.70 RAP 161.96 ECC 1.1666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.17	8 26 15	3958.61	-30.11	169.64	24.94	66.34	9 32 13	3358.6	-33.03	161.31
115.83	14 29 47	2814.40	-30.10	83.28	24.93	66.33	15 16 41	2214.4	-33.02	74.95
64.17	8 26 15	3958.61	-30.11	169.64	24.94	66.34	9 32 13	3358.6	-33.03	161.31
115.83	14 29 47	2814.40	-30.10	83.28	24.93	66.33	15 16 41	2214.4	-33.02	74.95
64.17	8 26 15	3958.61	-30.11	169.64	24.94	66.34	9 32 13	3358.6	-33.03	161.31
115.83	14 29 47	2814.40	-30.10	83.28	24.93	66.33	15 16 41	2214.4	-33.02	74.95

DIFFERENTIAL CORRECTIONS
TDE 2.4481 TRA .4457 TC-14.1295 BAU 1.9183
RDE .3513 RRA .1711 RC3-1.0862 FAU .36945
FDE 3.9144 FRA 2.3838 FC-31.5889 BSP 34950
BDE 2.4732 BRA .4774 BC314.1712 FSP 6311

MID-COURSE EXECUTION ACCURACY
SGT10065.5 SGR 1014.5 SG3 1899.2
RRT .9204 RRF .9176 RTF .9823
SGB10116.5 R23 .0310 R13 .9824
SG110108.8 SG2 395.0 THA 5.31

ORBIT DETERMINATION ACCURACY
ST 4426.8 SR 643.6 SS 2234.9
CRT .9932 CRS -.9977 CST -.9874
LSA 4990.2 MSA 320.1 SSA 28.1
EL1 4472.7 EL2 74.3 ALF 8.22

LAUNCH DATE DEC 3 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 735.293 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.005 GAL .41 AZL 87.43 HCA 218.71 SMA 186.74 ECC .21048 INC 2.5692 V1 30.214
RP 212.15 LAP -1.61 LOP 289.55 VP 23.248 GAP -9.33 AZP 92.01 TAL 2.33 TAP 221.04 RCA 147.44 APO 226.05 V2 25.863
RC 300.645 GL 27.83 GP -6.92 ZAL 81.04 ZAP 53.60 ETS 174.12 ZAE 80.64 ETE 177.98 ZAC 77.36 ETC 257.77 CLP 53.29

PLANETOCENTRIC CONIC

C3 10.040 VHL 3.169 DLA 36.90 RAL 164.70 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 3.614 DPA 1.94 RAP 162.12 ECC 1.1652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.28	8 35 41	3939.98	-29.63	167.88	25.47	66.93	9 41 21	3340.0	-32.48	159.57
114.72	14 27 40	2829.67	-29.62	84.28	25.47	66.91	15 14 49	2229.7	-32.47	75.97
65.28	8 35 41	3939.98	-29.63	167.88	25.47	66.93	9 41 21	3340.0	-32.48	159.57
114.72	14 27 40	2829.67	-29.62	84.28	25.47	66.91	15 14 49	2229.7	-32.47	75.97
65.28	8 35 41	3939.98	-29.63	167.88	25.47	66.93	9 41 21	3340.0	-32.48	159.57
114.72	14 27 40	2829.67	-29.62	84.28	25.47	66.91	15 14 49	2229.7	-32.47	75.97

DIFFERENTIAL CORRECTIONS
TDE 2.4365 TRA .5364 TC-14.4935 BAU 1.9501
RDE .3402 RRA .1748 RC3-1.0022 FAU .35495
FDE 3.6723 FRA 2.4791 FC-30.6056 BSP 36028
BDE 2.4601 BRA .5641 BC314.5281 FSP 6209

MID-COURSE EXECUTION ACCURACY
SGT10258.9 SGR 968.5 SG3 1836.3
RRT .9082 RRF .9045 RTF .9824
SGB10304.5 R23 .0262 R13 .9825
SG110296.6 SG2 403.9 THA 4.91

ORBIT DETERMINATION ACCURACY
ST 4429.2 SR 626.8 SS 2146.6
CRT .9937 CRS -.9969 CST -.9861
LSA 4951.0 MSA 324.3 SSA 28.5
EL1 4472.8 EL2 69.6 ALF 8.01

LAUNCH DATE DEC 3 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 739.562 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.010 GAL .31 AZL 87.47 HCA 219.92 SMA 186.83 ECC .21080 INC 2.5335 V1 30.214
RP 211.87 LAP -1.63 LOP 290.76 VP 23.290 GAP -9.45 AZP 91.94 TAL 1.79 TAP 221.70 RCA 147.45 APO 226.21 V2 25.895
RC 301.687 GL 27.53 GP -6.66 ZAL 82.00 ZAP 52.47 ETS 174.11 ZAE 79.24 ETE 177.89 ZAC 77.64 ETC 257.77 CLP 52.17

PLANETOCENTRIC CONIC

C3 9.964 VHL 3.157 DLA 36.20 RAL 165.65 RAD 6567.4 VEL 11.461 PTH 1.99 VHP 3.666 DPA 2.14 RAP 162.31 ECC 1.1640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.44	8 45 38	3920.20	-29.14	166.05	26.05	67.50	9 50 58	3320.2	-31.92	157.76
113.56	14 25 16	2846.42	-29.13	85.39	26.05	67.49	15 12 42	2246.4	-31.91	77.10
66.44	8 45 38	3920.20	-29.14	166.05	26.05	67.50	9 50 58	3320.2	-31.92	157.76
113.56	14 25 16	2846.42	-29.13	85.39	26.05	67.49	15 12 42	2246.4	-31.91	77.10
66.44	8 45 38	3920.20	-29.14	166.05	26.05	67.50	9 50 58	3320.2	-31.92	157.76
113.56	14 25 16	2846.42	-29.13	85.39	26.05	67.49	15 12 42	2246.4	-31.91	77.10

DIFFERENTIAL CORRECTIONS
TDE 2.4010 TRA .6138 TC-14.9125 BAU 1.9904
RDE .3278 RRA .1765 RC3 -.9309 FAU .34329
FDE 3.3825 FRA 2.5270 FC-29.8269 BSP 36572
BDE 2.4232 BRA .6387 BC314.9415 FSP 5965

MID-COURSE EXECUTION ACCURACY
SGT10465.8 SGR 925.7 SG3 1780.3
RRT .8953 RRF .8900 RTF .9825
SGB10506.6 R23 .0201 R13 .9826
SG110498.6 SG2 411.1 THA 4.53

ORBIT DETERMINATION ACCURACY
ST 4386.7 SR 607.0 SS 2026.1
CRT .9941 CRS -.9956 CST -.9843
LSA 4858.9 MSA 327.5 SSA 29.4
EL1 4428.0 EL2 65.2 ALF 7.83

LAUNCH DATE DEC 3 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 743.835 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.015 GAL .21 AZL 87.50 HCA 221.13 SMA 186.92 ECC .21113 INC 2.4995 V1 30.214
RP 211.60 LAP -1.64 LOP 291.97 VP 23.332 GAP -9.57 AZP 91.88 TAL 1.23 TAP 222.35 RCA 147.45 APO 226.38 V2 25.926
RC 302.717 GL 27.24 GP -6.41 ZAL 83.00 ZAP 51.38 ETS 174.10 ZAE 77.88 ETE 177.80 ZAC 77.91 ETC 257.76 CLP 51.09

PLANETOCENTRIC CONIC

C3 9.896 VHL 3.146 DLA 35.49 RAL 166.63 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 3.719 DPA 2.32 RAP 162.52 ECC 1.1629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.65	8 56 13	3890.88	-28.63	164.11	26.68	68.07	10 1 12	3298.9	-31.34	155.84
112.35	14 22 28	2865.01	-28.62	86.64	26.68	68.06	15 10 13	2265.0	-31.33	78.37
67.65	8 56 13	3890.88	-28.63	164.11	26.68	68.07	10 1 12	3298.9	-31.34	155.84
112.35	14 22 28	2865.01	-28.62	86.64	26.68	68.06	15 10 13	2265.0	-31.33	78.37
67.65	8 56 13	3890.88	-28.63	164.11	26.68	68.07	10 1 12	3298.9	-31.34	155.84
112.35	14 22 28	2865.01	-28.62	86.64	26.68	68.06	15 10 13	2265.0	-31.33	78.37

DIFFERENTIAL CORRECTIONS
TDE 2.3631 TRA .6955 TC-15.3166 BAU 2.0297
RDE .3169 RRA .1776 RC3 -.8620 FAU .33174
FDE 3.1121 FRA 2.5591 FC-29.0212 BSP 37136
BDE 2.3843 BRA .7179 BC315.3408 FSP 5730

MID-COURSE EXECUTION ACCURACY
SGT10668.2 SGR 886.1 SG3 1724.3
RRT .8811 RRF .8736 RTF .9829
SGB10705.0 R23 .0133 R13 .9829
SG110696.8 SG2 417.9 THA 4.19

ORBIT DETERMINATION ACCURACY
ST 4338.9 SR 589.6 SS 1911.2
CRT .9947 CRS -.9938 CST -.9825
LSA 4766.3 MSA 328.3 SSA 30.3
EL1 4378.4 EL2 60.2 ALF 7.70

LAUNCH DATE DEC 3 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 748.114 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.021 GAL .11 AZL 87.53 HCA 222.34 SMA 187.01 ECC .21149 INC 2.4670 V1 30.214
RP 211.33 LAP -1.66 LOP 293.18 VP 23.373 GAP -9.68 AZP 91.82 TAL .65 TAP 222.99 RCA 147.46 APO 226.56 V2 25.956
RC 303.736 GL 26.95 GP -6.18 ZAL 84.04 ZAP 50.32 ETS 174.09 ZAE 76.54 ETE 177.73 ZAC 78.17 ETC 257.75 CLP 50.04

PLANETOCENTRIC CONIC

C3 9.837 VHL 3.136 DLA 34.77 RAL 167.63 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 3.774 DPA 2.47 RAP 162.76 ECC 1.1619

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.93	9 7 30	3875.76	-28.11	162.05	27.35	68.64	10 12 6	3275.8	-30.75	153.79
111.07	14 19 12	2885.75	-28.10	88.04	27.35	68.62	15 7 18	2285.7	-30.74	79.79
68.93	9 7 30	3875.76	-28.11	162.05	27.35	68.64	10 12 6	3275.8	-30.75	153.79
111.07	14 19 12	2885.75	-28.10	88.04	27.35	68.62	15 7 18	2285.7	-30.74	79.79
68.93	9 7 30	3875.76	-28.11	162.05	27.35	68.64	10 12 6	3275.8	-30.75	153.79
111.07	14 19 12	2885.75	-28.10	88.04	27.35	68.62	15 7 18	2285.7	-30.74	79.79

DIFFERENTIAL CORRECTIONS
TDE 2.3204 TRA .7866 TC-15.7096 BAU 2.0686
RDE .3066 RRA .1798 RC3 -.7983 FAU .32113
FDE 2.8394 FRA 2.6153 FC-28.2624 BSP 37726
BDE 2.3406 BRA .8069 BC315.7299 FSP 5508

MID-COURSE EXECUTION ACCURACY
SGT10869.0 SGR 851.1 SG3 1673.2
RRT .8657 RRF .8560 RTF .9828
SGB10902.3 R23 .0077 R13 .9828
SG110894.0 SG2 425.0 THA 3.88

ORBIT DETERMINATION ACCURACY
ST 4281.6 SR 573.1 SS 1792.7
CRT .9952 CRS -.9911 CST -.9796
LSA 4664.9 MSA 334.7 SSA 31.1
EL1 4319.4 EL2 55.3 ALF 7.59

LAUNCH DATE DEC 3 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 752.400 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.026 GAL .01 AZL 87.56 HCA 223.55 SMA 187.10 ECC .21187 INC 2.4359 V1 30.214
RP 211.08 LAP -1.68 LOP 294.40 VP 23.413 GAP -9.80 AZP 91.77 TAL .07 TAP 223.62 RCA 147.46 APO 226.74 V2 25.986
RC 304.746 GL 26.66 GP -5.96 ZAL 85.11 ZAP 49.28 ETS 174.09 ZAE 75.23 ETE 177.67 ZAC 78.42 ETC 857.74 CLP 49.01

PLANETOCENTRIC CONIC

C3 9.786 VHL 3.128 DLA 34.04 RAL 168.67 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 3.829 DPA 2.60 RAP 163.02 ECC 1.1611

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.28	9 19 38	3850.43	-27.57	159.83	28.06	69.20	10 23 48	3250.4	-30.14	151.60
109.72	14 15 19	2909.03	-27.56	89.63	28.06	69.18	15 3 49	2309.0	-30.13	81.40
70.28	9 19 38	3850.43	-27.57	159.83	28.06	69.20	10 23 48	3250.4	-30.14	151.60
109.72	14 15 19	2909.03	-27.56	89.63	28.06	69.18	15 3 49	2309.0	-30.13	81.40
110.00	14 41 7	2830.38	-29.36	84.22	28.79	71.64	15 28 17	2230.4	-31.58	75.72
110.00	13 53 1	2977.07	-25.80	94.15	27.26	66.75	14 42 38	2377.1	-28.71	86.18

DIFFERENTIAL CORRECTIONS
TDE 2.2526 TRA 1.0024 TC-16.1284 BAU 2.1124
RDE .2926 RRA .2069 RC3 -.7491 FAU .31428
FDE 2.4563 FRA 3.3145 FC-27.8027 BSP 38206
BDE 2.2716 BRA 1.0235 BC316.1458 FSP 5261

MID-COURSE EXECUTION ACCURACY
SGT11124.5 SGR 846.2 SG3 1676.4
RRT .8449 RRF .8474 RTF .9744
SGB11156.6 R23 .0426 R13 .9745
SG111147.5 SG2 451.7 THA 3.68

ORBIT DETERMINATION ACCURACY
ST 4189.9 SR 553.4 SS 1665.6
CRT .9948 CRS -.9763 CST -.9567
LSA 4519.9 MSA 453.3 SSA 31.3
EL1 4226.0 EL2 56.0 ALF 7.49

LAUNCH DATE DEC 3 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 756.686 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.031 GAL -.09 AZL 87.59 HCA 224.77 SMA 187.19 ECC .21228 INC 2.4061 V1 30.214
RP 210.82 LAP -1.69 LOP 295.62 VP 23.453 GAP -9.91 AZP 91.71 TAL 359.46 TAP 224.24 RCA 147.46 APO 226.93 V2 26.015
RC 305.746 GL 26.38 GP -5.75 ZAL 86.22 ZAP 48.28 ETS 174.08 ZAE 73.94 ETE 177.61 ZAC 78.67 ETC 257.72 CLP 48.02

PLANETOCENTRIC CONIC

C3 9.744 VHL 3.122 DLA 33.29 RAL 169.72 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 3.886 DPA 2.70 RAP 163.31 ECC 1.1604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.72	9 32 45	3822.32	-27.01	157.41	28.82	69.76	10 36 27	3222.3	-29.51	149.20
108.28	14 10 39	2935.44	-27.00	91.45	28.81	69.74	14 59 35	2335.4	-29.50	83.24
71.72	9 32 45	3822.32	-27.01	157.41	28.82	69.76	10 36 27	3222.3	-29.51	149.20
108.28	14 10 39	2935.44	-27.00	91.45	28.81	69.74	14 59 35	2335.4	-29.50	83.24
110.00	15 20 20	2721.74	-31.43	76.45	30.39	75.81	16 5 42	2121.7	-33.06	67.60
110.00	13 22 14	3084.02	-22.75	100.95	26.80	63.77	14 13 38	2484.0	-26.08	93.38

DIFFERENTIAL CORRECTIONS
TDE 2.2445 TRA .9906 TC-16.4081 BAU 2.1393
RDE .2936 RRA .1848 RC3 -.6688 FAU .29779
FDE 2.4439 FRA 2.7430 FC-26.4575 BSP 39280
BDE 2.2637 BRA 1.0077 BC316.4217 FSP 5275

MID-COURSE EXECUTION ACCURACY
SGT11253.4 SGR 793.4 SG3 1567.7
RRT .8266 RRF .8168 RTF .9833
SGB11281.3 R23 .0048 R13 .9833
SG111272.5 SG2 445.7 THA 3.34

ORBIT DETERMINATION ACCURACY
ST 4182.5 SR 552.7 SS 1632.4
CRT .9966 CRS -.9840 CST -.9744
LSA 4510.5 MSA 343.3 SSA 32.3
EL1 4218.6 EL2 45.2 ALF 7.50

LAUNCH DATE DEC 3 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 760.980 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.037 GAL -.20 AZL 87.62 HCA 225.99 SMA 187.29 ECC .21271 INC 2.3774 V1 30.214
RP 210.58 LAP -1.71 LOP 296.84 VP 23.492 GAP -10.02 AZP 91.65 TAL 358.85 TAP 224.84 RCA 147.45 APO 227.13 V2 26.043
RC 306.737 GL 26.09 GP -5.55 ZAL 87.36 ZAP 47.30 ETS 174.08 ZAE 72.69 ETE 177.56 ZAC 78.91 ETC 257.69 CLP 47.05

PLANETOCENTRIC CONIC

C3 9.711 VHL 3.116 DLA 32.53 RAL 170.81 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 3.945 DPA 2.78 RAP 163.62 ECC 1.1598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.28	9 47 3	3790.78	-26.44	154.76	29.61	70.31	10 50 14	3190.8	-28.87	146.57
106.72	14 4 59	2965.65	-26.42	93.54	29.61	70.30	14 54 25	2365.6	-28.86	85.35
73.28	9 47 3	3790.78	-26.44	154.76	29.61	70.31	10 50 14	3190.8	-28.87	146.57
106.72	14 4 59	2965.65	-26.42	93.54	29.61	70.30	14 54 25	2365.6	-28.86	85.35
110.00	15 45 46	2654.86	-32.44	71.49	31.53	78.58	16 30 1	2054.9	-33.67	62.48
110.00	13 5 26	3149.57	-20.72	104.96	26.87	62.18	13 57 56	2549.6	-24.27	97.62

DIFFERENTIAL CORRECTIONS
TDE 2.1846 TRA 1.0972 TC-16.7162 BAU 2.1717
RDE .2850 RRA .1863 RC3 -.6030 FAU .28506
FDE 2.1722 FRA 2.7810 FC-25.4120 BSP 39792
BDE 2.2031 BRA 1.1129 BC316.7271 FSP 5044

MID-COURSE EXECUTION ACCURACY
SGT11419.5 SGR 762.2 SG3 1505.4
RRT .8034 RRF .7914 RTF .9829
SGB11444.9 R23 .0008 R13 .9829
SG111435.9 SG2 453.2 THA 3.07

ORBIT DETERMINATION ACCURACY
ST 4092.1 SR 538.1 SS 1504.5
CRT .9971 CRS -.9766 CST -.9685
LSA 4378.7 MSA 352.7 SSA 33.0
EL1 4127.1 EL2 40.4 ALF 7.47

LAUNCH DATE DEC 3 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 765.278 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.043 GAL -.31 AZL 87.65 HCA 227.22 SMA 187.39 ECC .21316 INC 2.3499 V1 30.214
RP 210.34 LAP -1.72 LOP 298.06 VP 23.531 GAP -10.13 AZP 91.60 TAL 358.22 TAP 225.44 RCA 147.45 APO 227.33 V2 26.071
RC 307.719 GL 25.80 GP -5.37 ZAL 88.53 ZAP 46.36 ETS 174.08 ZAE 71.46 ETE 177.51 ZAC 79.15 ETC 257.66 CLP 46.12

PLANETOCENTRIC CONIC

C3 9.688 VHL 3.113 DLA 31.76 RAL 171.91 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 4.004 DPA 2.84 RAP 163.96 ECC 1.1594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.99	10 2 55	3754.58	-25.84	151.76	30.45	70.87	11 5 30	3154.6	-28.21	143.60
105.01	13 57 57	3000.91	-25.83	95.90	30.44	70.85	14 47 58	2400.9	-28.20	87.83
74.99	10 2 55	3754.58	-25.84	151.76	30.45	70.87	11 5 30	3154.6	-28.21	143.60
105.01	13 57 57	3000.91	-25.83	95.90	30.44	70.85	14 47 58	2400.9	-28.20	87.83
110.00	16 6 59	2600.81	-33.10	67.41	32.54	80.92	16 50 20	2000.8	-34.00	58.29
110.00	12 53 4	3202.67	-19.00	108.12	27.15	61.03	13 46 26	2602.7	-22.71	100.95

DIFFERENTIAL CORRECTIONS
TDE 2.1339 TRA 1.2099 TC-17.0249 BAU 2.2062
RDE .2798 RRA .1878 RC3 -.5473 FAU .27494
FDE 1.9784 FRA 2.8171 FC-24.5684 BSP 40341
BDE 2.1522 BRA 1.2244 BC317.0337 FSP 4828

MID-COURSE EXECUTION ACCURACY
SGT11602.3 SGR 739.4 SG3 1457.0
RRT .7809 RRF .7672 RTF .9832
SGB11625.9 R23 -.0029 R13 .9832
SG111616.7 SG2 461.3 THA 2.85

ORBIT DETERMINATION ACCURACY
ST 4018.5 SR 529.4 SS 1418.9
CRT .9976 CRS -.9688 CST -.9641
LSA 4279.4 MSA 356.7 SSA 33.6
EL1 4053.1 EL2 36.4 ALF 7.49

LAUNCH DATE DEC 3 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 769.581 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.048 GAL -.43 AZL 87.68 HCA 228.44 SMA 187.49 ECC .21364 INC 2.3234 V1 30.214
RP 210.10 LAP -1.74 LOP 299.29 VP 23.569 GAP -10.23 AZP 91.54 TAL 357.58 TAP 226.02 RCA 147.43 APO 227.55 V2 26.098
RC 308.691 GL 25.51 GP -5.19 ZAL 89.74 ZAP 45.44 ETS 174.08 ZAE 70.25 ETE 177.47 ZAC 79.38 ETC 257.63 CLP 45.20

PLANETOCENTRIC CONIC

C3 9.675 VHL 3.110 DLA 30.97 RAL 173.04 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 4.065 DPA 2.88 RAP 164.31 ECC 1.1592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.91	10 20 50	3712.11	-25.23	148.32	31.32	71.42	11 22 42	3112.1	-27.53	140.18
103.09	13 49 1	3042.83	-25.22	98.93	31.32	71.41	14 39 44	2442.8	-27.52	90.79
76.91	10 20 50	3712.11	-25.23	148.32	31.32	71.42	11 22 42	3112.1	-27.53	140.18
103.09	13 49 1	3042.83	-25.22	98.93	31.32	71.41	14 39 44	2442.8	-27.52	90.79
110.00	16 25 56	2553.64	-33.55	63.80	33.49	83.01	17 8 29	1953.6	-34.15	54.61
110.00	12 43 6	3249.30	-17.44	110.83	27.56	60.12	13 37 16	2649.3	-21.28	103.81

DIFFERENTIAL CORRECTIONS
TDE 2.0756 TRA 1.3298 TC-17.3163 BAU 2.2407
RDE .2748 RRA .1895 RC3 -.4928 FAU .26479
FDE 1.7791 FRA 2.8568 FC-23.6944 BSP 40959
BDE 2.0937 BRA 1.3432 BC317.3234 FSP 4665

MID-COURSE EXECUTION ACCURACY
SGT11782.3 SGR 718.2 SG3 1408.3
RRT .7563 RRF .7411 RTF .9833
SGB11804.1 R23 -.0059 R13 .9833
SG111794.8 SG2 469.4 THA 2.64

ORBIT DETERMINATION ACCURACY
ST 3931.5 SR 520.8 SS 1329.3
CRT .9978 CRS -.9577 CST -.9577
LSA 4166.7 MSA 364.0 SSA 34.2
EL1 3965.7 EL2 34.4 ALF 7.53

LAUNCH DATE DEC 3 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 773.887 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.054 GAL -.54 AZL 87.70 HCA 229.67 SMA 187.59 ECC .21415 INC 2.2978 V1 30.214
RP 209.88 LAP -1.75 LOP 300.52 VP 23.606 GAP -10.34 AZP 91.49 TAL 356.92 TAP 226.59 RCA 147.42 APO 227.77 V2 26.124
RC 309.654 GL 25.22 GP -5.03 ZAL 90.98 ZAP 44.54 ETS 174.07 ZAE 69.07 ETE 177.44 ZAC 79.62 ETC 257.60 CLP 44.32

PLANETOCENTRIC CONIC

C3 9.672 VHL 3.110 DLA 30.16 RAL 174.19 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 4.127 DPA 2.89 RAP 164.69 ECC 1.1592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.16	10 41 52	3659.86	-24.60	144.18	32.23	71.97	11 42 52	3059.9	-26.83	136.07
100.84	13 37 9	3094.96	-24.59	102.60	32.23	71.96	14 28 44	2495.0	-26.82	94.49
79.16	10 41 52	3659.86	-24.60	144.18	32.23	71.97	11 42 52	3059.9	-26.83	136.07
100.84	13 37 9	3094.96	-24.59	102.60	32.23	71.96	14 28 44	2495.0	-26.82	94.49
110.00	16 43 27	2510.87	-33.85	60.50	34.40	84.94	17 25 18	1910.9	-34.18	51.27
110.00	12 34 44	3291.95	-15.98	113.27	28.08	59.37	13 29 36	2691.9	-19.92	106.37

DIFFERENTIAL CORRECTIONS
TDE 2.0172 TRA 1.4580 TC-17.5532 BAU 2.2704
RDE .2707 RRA .1910 RC3 -.4368 FAU .25374
FDE 1.5949 FRA 2.8949 FC-22.7119 BSP 41626
BDE 2.0353 BRA 1.4705 BC317.5587 FSP 4499

MID-COURSE EXECUTION ACCURACY
SGT11944.3 SGR 690.7 SG3 1359.8
RRT .7290 RRF .7127 RTF .9834
SGB11964.7 R23 -.0078 R13 .9834
SG111955.1 SG2 477.8 THA 2.45

ORBIT DETERMINATION ACCURACY
ST 3845.4 SR 513.5 SS 1247.4
CRT .9976 CRS -.9435 CST -.9503
LSA 4058.0 MSA 371.7 SSA 34.6
EL1 3879.4 EL2 35.4 ALF 7.59

LAUNCH DATE DEC 3 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 778.199 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.060 GAL -.66 AZL 87.73 HCA 230.90 SMA 187.70 ECC .21469 INC 2.2731 V1 30.214
RP 209.66 LAP -1.76 LOP 301.75 VP 23.642 GAP -10.44 AZP 91.43 TAL 356.25 TAP 227.15 RCA 147.40 APO 227.99 V2 26.149
RC 310.607 GL 24.93 GP -4.87 ZAL 92.26 ZAP 43.67 ETS 174.07 ZAE 67.91 ETE 177.41 ZAC 79.84 ETC 257.56 CLP 43.45

PLANETOCENTRIC CONIC

C3 9.680 VHL 3.111 DLA 29.34 RAL 175.35 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 4.190 DPA 2.89 RAP 165.09 ECC 1.1593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.98	11 8 17	3590.44	-23.94	138.80	33.18	72.52	12 8 7	2990.4	-26.11	130.72
98.02	13 20 2	3164.70	-23.93	107.55	33.18	72.51	14 12 47	2564.7	-26.10	99.46
100.00	14 23 47	2960.47	-27.18	93.40	34.16	77.06	15 13 7	2360.5	-28.69	84.92
100.00	12 47 13	3269.90	-20.78	114.11	31.95	68.01	13 41 43	2669.9	-23.58	106.43
110.00	16 59 58	2471.22	-34.05	57.42	35.29	86.75	17 41 9	1871.2	-34.12	48.18
110.00	12 27 31	3331.92	-14.58	115.53	28.69	58.73	13 23 3	2731.9	-18.61	108.73

DIFFERENTIAL CORRECTIONS
TDE 1.9465 TRA 1.5836 TC-17.8091 BAU 2.8052
RDE .2669 RRA .1922 RC3 -.3871 FAU .24430
FDE 1.4077 FRA 2.9189 FC-21.8500 BSP 42119
BDE 1.9647 BRA 1.5952 BC317.8133 FSP 4326

MID-COURSE EXECUTION ACCURACY
SGT12117.9 SGR 681.4 SG3 1309.2
RRT .7011 RRF .6830 RTF .9835
SGB12137.1 R23 -.0107 R13 .9835
SG112127.4 SG2 485.5 THA 2.26

ORBIT DETERMINATION ACCURACY
ST 3737.3 SR 506.4 SS 1162.4
CRT .9968 CRS -.9240 CST -.9404
LSA 3927.9 MSA 380.6 SSA 35.1
EL1 3771.2 EL2 40.4 ALF 7.69

LAUNCH DATE DEC 3 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 782.513 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.066 GAL -.79 AZL 87.75 HCA 232.14 SMA 187.80 ECC .21525 INC 2.2492 V1 30.214
RP 209.44 LAP -1.78 LOP 302.99 VP 23.678 GAP -10.55 AZP 91.38 TAL 355.58 TAP 227.70 RCA 147.38 APO 228.23 V2 26.174
RC 311.551 GL 24.62 GP -4.72 ZAL 93.56 ZAP 42.82 ETS 174.07 ZAE 66.77 ETE 177.38 ZAC 80.07 ETC 257.52 CLP 42.61

PLANETOCENTRIC CONIC

C3 9.699 VHL 3.114 DLA 28.50 RAL 176.54 RAD 6567.4 VEL 11.449 PTH 1.99 VHP 4.254 DPA 2.87 RAP 165.52 ECC 1.1596

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
86.62	11 50 41	3469.30	-23.27	129.66	34.17	73.07	12 48 30	2869.3	-25.37	121.61
93.38	12 47 4	3286.62	-23.26	116.29	34.16	73.05	13 41 50	2686.6	-25.36	108.23
100.00	14 56 41	2869.21	-28.41	86.89	35.52	80.27	15 44 30	2269.2	-29.46	78.25
100.00	12 23 45	3361.94	-18.32	119.84	32.19	65.96	13 19 47	2761.9	-21.42	112.41
110.00	17 15 44	2433.91	-34.15	54.51	36.18	88.47	17 56 18	1833.9	-33.99	45.27
110.00	12 21 11	3370.01	-13.22	117.64	29.38	58.19	13 17 21	2770.0	-17.33	110.94

DIFFERENTIAL CORRECTIONS
TDE 1.8752 TRA 1.7213 TC-18.0148 BAU 2.3363
RDE .2638 RRA .1936 RC3 -.3367 FAU .23418
FDE 1.2311 FRA 2.9527 FC-20.9032 BSP 42683
BDE 1.8936 BRA 1.7322 BC318.0180 FSP 4165

MID-COURSE EXECUTION ACCURACY
SGT12279.8 SGR 666.1 SG3 1260.5
RRT .6709 RRF .6518 RTF .9834
SGB12297.8 R23 -.0121 R13 .9834
SG112287.9 SG2 493.7 THA 2.09

ORBIT DETERMINATION ACCURACY
ST 3630.9 SR 500.4 SS 1085.5
CRT .9951 CRS -.8981 CST -.9279
LSA 3802.2 MSA 392.7 SSA 35.5
EL1 3664.9 EL2 49.1 ALF 7.81

LAUNCH DATE DEC 3 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 786.830 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.072 GAL -.91 AZL 87.77 HCA 233.38 SMA 187.91 ECC .21585 INC 2.2260 V1 30.214
RP 209.24 LAP -1.79 LOP 304.22 VP 23.713 GAP -10.65 AZP 91.33 TAL 354.86 TAP 228.24 RCA 147.35 APO 228.47 V2 26.198
RC 312.486 GL 24.32 GP -4.58 ZAL 94.89 ZAP 42.00 ETS 174.07 ZAE 65.66 ETE 177.36 ZAC 80.29 ETC 257.47 CLP 41.80

PLANETOCENTRIC CONIC

C3 9.730 VHL 3.119 DLA 27.65 RAL 177.73 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 4.319 DPA 2.84 RAP 165.96 ECC 1.1601

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 17 43	3202.58	-26.06	110.92	36.14	78.50	14 11 5	2602.6	-27.38	102.51
90.00	11 29 34	3554.60	-19.19	134.38	33.95	68.77	12 28 49	2954.6	-21.90	126.76
100.00	15 22 1	2801.87	-29.08	82.00	36.70	82.76	16 8 43	2201.9	-29.78	73.27
100.00	12 7 57	3430.55	-16.37	124.00	32.68	64.63	13 5 8	2830.6	-19.65	116.75
110.00	17 30 56	2398.44	-34.18	51.74	37.07	90.11	18 10 54	1798.4	-33.79	42.52
110.00	12 15 32	3406.74	-11.89	119.66	30.14	57.71	13 12 19	2806.7	-16.07	113.05

DIFFERENTIAL CORRECTIONS
TDE 1.8000 TRA 1.8622 TC-18.1983 BAU 2.3676
RDE .2615 RRA .1945 RC3 -.2894 FAU .22460
FDE 1.0662 FRA 2.9734 FC-19.9910 BSP 43245
BDE 1.8189 BRA 1.8723 BC318.2006 FSP 4014

MID-COURSE EXECUTION ACCURACY
SGT12439.3 SGR 652.6 SG3 1213.9
RRT .6399 RRF .6193 RTF .9835
SGB12456.4 R23 -.0143 R13 .9834
SG112446.3 SG2 501.2 THA 1.93

ORBIT DETERMINATION ACCURACY
ST 3519.9 SR 495.3 SS 1015.0
CRT .9923 CRS -.8659 CST -.9135
LSA 3674.3 MSA 404.1 SSA 35.8
EL1 3554.0 EL2 60.9 ALF 7.95

LAUNCH DATE DEC 3 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 791.151 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.079 GAL -1.04 AZL 87.80 HCA 234.62 SMA 188.02 ECC .21647 INC 2.2035 V1 30.214
RP 209.04 LAP -1.80 LOP 305.46 VP 23.747 GAP -10.75 AZP 91.28 TAL 354.15 TAP 228.76 RCA 147.32 APO 228.73 V2 26.221
RC 313.411 GL 24.00 GP -4.44 ZAL 96.25 ZAP 41.20 ETS 174.06 ZAE 64.56 ETE 177.34 ZAC 80.52 ETC 257.43 CLP 41.00

PLANETOCENTRIC CONIC

C3 9.774 VHL 3.126 DLA 26.78 RAL 178.94 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 4.386 DPA 2.78 RAP 166.42 ECC 1.1608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 50 22	3111.47	-27.13	104.47	37.49	81.56	14 42 13	2511.5	-28.02	95.92
90.00	11 6 35	3647.48	-16.80	140.15	34.34	66.86	12 7 22	3047.5	-19.79	132.75
100.00	15 43 59	2745.18	-29.50	77.84	37.81	84.92	16 29 44	2145.2	-29.89	69.06
100.00	11 55 39	3489.00	-14.63	127.47	33.31	63.64	12 53 48	2889.0	-18.06	120.35
110.00	17 45 40	2364.46	-34.15	49.09	37.97	91.68	18 25 4	1764.5	-33.54	39.90
110.00	12 10 28	3442.48	-10.59	121.60	30.96	57.31	13 7 50	2842.5	-14.82	115.06

DIFFERENTIAL CORRECTIONS
TDE 1.7213 TRA 2.0097 TC-18.3510 BAU 2.3980
RDE .2598 RRA .1954 RC3 -.2437 FAU .21529
FDE .9112 FRA 2.9932 FC-19.0701 BSP 43788
BDE 1.7408 BRA 2.0192 BC318.3526 FSP 3860

MID-COURSE EXECUTION ACCURACY
SGT12594.7 SGR 641.0 SG3 1167.9
RRT .6077 RRF .5859 RTF .9835
SGB12611.0 R23 -.0159 R13 .9834
SG112600.7 SG2 508.8 THA 1.77

ORBIT DETERMINATION ACCURACY
ST 3406.3 SR 491.2 SS 952.2
CRT .9878 CRS -.8253 CST -.8964
LSA 3546.2 MSA 417.1 SSA 36.1
EL1 3440.7 EL2 75.6 ALF 8.11

LAUNCH DATE DEC 3 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 795.474 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.085 GAL -1.17 AZL 87.82 HCA 235.86 SMA 188.13 ECC .21713 INC 2.1816 V1 30.214
RP 208.85 LAP -1.81 LOP 306.71 VP 23.780 GAP -10.85 AZP 91.22 TAL 353.42 TAP 229.28 RCA 147.28 APO 228.98 V2 26.243
RC 314.329 GL 23.68 GP -4.31 ZAL 97.64 ZAP 40.42 ETS 174.06 ZAE 63.49 ETE 177.32 ZAC 80.74 ETC 257.38 CLP 40.23

PLANETOCENTRIC CONIC

C3 9.830 VHL 3.135 DLA 25.89 RAL 180.17 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 4.453 DPA 2.71 RAP 166.90 ECC 1.1618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 16 3	3042.75	-27.72	99.53	38.70	83.97	15 6 45	2442.7	-28.27	90.91
90.00	10 50 39	3718.49	-14.85	144.45	34.95	65.61	11 52 38	3118.5	-18.02	137.21
100.00	16 3 57	2694.87	-29.74	74.12	38.88	86.86	16 48 52	2094.9	-29.86	65.31
100.00	11 45 26	3541.60	-13.02	130.55	34.04	62.85	12 44 28	2941.6	-16.56	123.54
110.00	18 0 0	2331.75	-34.05	46.54	38.88	93.19	18 38 52	1731.8	-33.24	37.39
110.00	12 5 52	3477.48	-9.29	123.49	31.84	56.96	13 3 50	2877.5	-13.58	117.01

DIFFERENTIAL CORRECTIONS
TDE 1.6383 TRA 2.1642 TC-18.4768 BAU 2.4284
RDE .2588 RRA .1962 RC3 -.2002 FAU .20618
FDE .7647 FRA 3.0120 FC-18.1580 BSP 44313
BDE 1.6586 BRA 2.1731 BC318.4778 FSP 3711

MID-COURSE EXECUTION ACCURACY
SGT12748.6 SGR 631.1 SG3 1123.3
RRT .5745 RRF .5519 RTF .9834
SGB12764.2 R23 -.0171 R13 .9834
SG112753.8 SG2 516.3 THA 1.63

ORBIT DETERMINATION ACCURACY
ST 3289.9 SR 487.9 SS 897.3
CRT .9813 CRS -.7749 CST -.8763
LSA 3417.4 MSA 432.0 SSA 36.3
EL1 3324.6 EL2 92.9 ALF 8.29

LAUNCH DATE DEC 3 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 799.799 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.091 GAL -1.31 AZL 87.84 HCA 237.10 SMA 188.25 ECC .21783 INC 2.1604 V1 30.214
RP 208.67 LAP -1.81 LOP 307.95 VP 23.813 GAP -10.95 AZP 91.17 TAL 352.68 TAP 229.78 RCA 147.24 APO 229.25 V2 26.264
RC 315.238 GL 23.35 GP -4.19 ZAL 99.05 ZAP 39.66 ETS 174.06 ZAE 62.44 ETE 177.31 ZAC 80.96 ETC 257.33 CLP 39.48

PLANETOCENTRIC CONIC

C3 9.901 VHL 3.147 DLA 24.99 RAL 181.40 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 4.522 DPA 2.63 RAP 167.40 ECC 1.1629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 38 26	2984.55	-28.06	95.31	39.84	86.06	15 28 11	2384.6	-28.31	86.65
90.00	10 38 6	3779.52	-13.10	148.08	35.68	64.67	11 41 5	3179.5	-16.41	140.96
100.00	16 22 33	2648.90	-29.86	70.71	39.94	88.65	17 6 42	2048.9	-29.73	61.90
100.00	11 36 40	3590.41	-11.49	133.36	34.86	62.21	12 36 30	2990.4	-15.12	126.45
110.00	18 14 1	2300.14	-33.91	44.08	39.80	94.63	18 52 22	1700.1	-32.89	34.99
110.00	12 1 41	3511.94	-8.01	125.33	32.77	56.66	13 0 13	2911.9	-12.34	118.91

DIFFERENTIAL CORRECTIONS
TDE 1.5515 TRA 2.3236 TC-18.5726 BAU 2.4584
RDE .2583 RRA .1967 RC3 -.1593 FAU .19753
FDE .6227 FRA 3.0231 FC-17.2723 BSP 44853
BDE 1.5729 BRA 2.3319 BC318.5732 FSP 3571

MID-COURSE EXECUTION ACCURACY
SGT12898.8 SGR 622.4 SG3 1080.2
RRT .5412 RRF .5170 RTF .9834
SGB12913.8 R23 -.0192 R13 .9834
SG112903.2 SG2 523.2 THA 1.50

ORBIT DETERMINATION ACCURACY
ST 3172.6 SR 485.0 SS 848.0
CRT .9720 CRS -.7126 CST -.8523
LSA 3288.9 MSA 449.0 SSA 36.3
EL1 3207.5 EL2 112.7 ALF 8.46

LAUNCH DATE DEC 3 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 804.127 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.098 GAL -1.45 AZL 87.86 HCA 238.35 SMA 188.36 ECC .21855 INC 2.1397 V1 30.214
RP 208.49 LAP -1.82 LOP 309.20 VP 23.844 GAP -11.05 AZP 91.12 TAL 351.92 TAP 230.27 RCA 147.20 APO 229.53 V2 26.285
RC 316.140 GL 23.01 GP -4.08 ZAL 100.49 ZAP 38.92 ETS 174.05 ZAE 61.41 ETE 177.29 ZAC 81.18 ETC 257.28 CLP 38.74

PLANETOCENTRIC CONIC

C3 9.986 VHL 3.160 DLA 24.07 RAL 182.64 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 4.591 DPA 2.53 RAP 167.91 ECC 1.1643

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 58 50	2932.80	-28.25	91.53	40.97	87.95	15 47 43	2332.8	-28.23	82.87
90.00	10 27 36	3834.68	-11.47	151.31	36.52	63.93	11 31 31	3234.7	-14.89	144.30
100.00	16 40 9	2606.15	-29.89	67.53	40.99	90.32	17 23 35	2006.2	-29.53	58.74
100.00	11 28 58	3636.56	-10.01	135.99	35.75	61.69	12 29 35	3036.6	-13.72	129.16
110.00	18 27 45	2269.48	-33.71	41.71	40.75	96.02	19 5 35	1669.5	-32.51	32.68
110.00	11 57 51	3545.99	-6.73	127.14	33.76	56.41	12 56 57	2946.0	-11.10	120.77

DIFFERENTIAL CORRECTIONS
TDE 1.4611 TRA 2.4904 TC-18.6352 BAU 2.4879
RDE .2585 RRA .1972 RC3 -.1199 FAU .18893
FDE .4918 FRA 3.0350 FC-16.3792 BSP 45383
BDE 1.4838 BRA 2.4982 BC318.6356 FSP 3433

MID-COURSE EXECUTION ACCURACY
SGT13043.6 SGR 615.4 SG3 1037.8
RRT .5070 RRF .4819 RTF .9833
SGB13060.1 R23 -.0203 R13 .9833
SG113049.3 SG2 530.3 THA 1.37

ORBIT DETERMINATION ACCURACY
ST 3056.8 SR 483.2 SS 809.2
CRT .9592 CRS -.6403 CST -.8267
LSA 3164.2 MSA 467.5 SSA 36.3
EL1 3091.8 EL2 135.1 ALF 8.64

LAUNCH DATE DEC 3 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 808.456 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.105 GAL -1.59 AZL 87.88 HCA 239.60 SMA 188.48 ECC .21932 INC 2.1195 V1 30.214
RP 208.32 LAP -1.83 LOP 310.45 VP 23.875 GAP -11.16 AZP 91.07 TAL 351.15 TAP 230.75 RCA 147.14 APO 229.82 V2 26.304
RC 317.035 GL 22.67 GP -3.97 ZAL 101.95 ZAP 38.20 ETS 174.04 ZAE 60.39 ETE 177.28 ZAC 81.39 ETC 257.22 CLP 38.03

PLANETOCENTRIC CONIC

C3 10.086 VHL 3.176 DLA 23.14 RAL 183.89 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 4.662 DPA 2.41 RAP 168.45 ECC 1.1660

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 51	2885.50	-28.32	88.07	42.08	89.68	16 5 57	2285.5	-28.06	79.42
90.00	10 18 33	3885.97	-9.92	154.28	37.43	63.34	11 23 19	3286.0	-13.42	147.35
100.00	16 56 58	2565.93	-29.84	64.54	42.05	91.90	17 39 44	1965.9	-29.26	55.78
100.00	11 22 7	3680.78	-8.57	138.48	36.71	61.25	12 23 27	3080.8	-12.34	131.73
110.00	18 41 14	2239.71	-33.48	39.42	41.71	97.36	19 18 34	1639.7	-32.10	30.46
110.00	11 54 20	3579.76	-5.45	128.92	34.80	56.20	12 54 0	2979.8	-9.86	122.60

DIFFERENTIAL CORRECTIONS
TDE 1.3674 TRA 2.6640 TC-18.6613 BAU 2.5164
RDE .2592 RRA .1974 RC3 -.0823 FAU .18045
FDE .3677 FRA 3.0422 FC-15.4881 BSP 45912
BDE 1.3917 BRA 2.6713 BC318.6615 FSP 3304

MID-COURSE EXECUTION ACCURACY
SGT13187.3 SGR 609.5 SG3 995.8
RRT .4725 RRF .4464 RTF .9832
SGB13201.4 R23 -.0214 R13 .9832
SG113190.4 SG2 537.0 THA 1.25

ORBIT DETERMINATION ACCURACY
ST 2944.5 SR 481.9 SS 778.3
CRT .9418 CRS -.5571 CST -.7995
LSA 3044.5 MSA 487.9 SSA 36.1
EL1 2979.4 EL2 160.0 ALF 8.79

LAUNCH DATE DEC 3 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 812.786 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.111 GAL -1.73 AZL 87.90 HCA 240.85 SMA 188.60 ECC .22012 INC 2.0998 V1 30.214
RP 208.16 LAP -1.83 LOP 311.70 VP 23.904 GAP -11.26 AZP 91.02 TAL 350.37 TAP 231.21 RCA 147.08 APO 230.11 V2 26.323
RC 317.924 GL 22.31 GP -3.86 ZAL 103.42 ZAP 37.50 ETS 174.04 ZAE 59.40 ETE 177.27 ZAC 81.61 ETC 257.17 CLP 37.33

PLANETOCENTRIC CONIC

C3 10.203 VHL 3.194 DLA 22.20 RAL 185.14 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 4.734 DPA 2.28 RAP 168.99 ECC 1.1679

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 51	2841.56	-28.29	84.86	43.19	91.29	16 23 12	2241.6	-27.81	76.23
90.00	10 10 33	3934.53	-8.43	157.06	38.41	62.87	11 16 8	3334.5	-12.00	150.21
100.00	17 13 10	2527.76	-29.72	61.71	43.12	93.38	17 55 17	1927.8	-28.93	52.99
100.00	11 15 55	3723.55	-7.16	140.88	37.73	60.90	12 17 59	3123.6	-10.99	134.18
110.00	18 54 30	2210.75	-33.20	37.20	42.69	98.65	19 31 20	1610.7	-31.65	28.32
110.00	11 51 5	3613.33	-4.18	130.69	35.89	56.04	12 51 18	3013.3	-8.61	124.40

DIFFERENTIAL CORRECTIONS
TDE 1.2702 TRA 2.8425 TC-18.6578 BAU 2.5451
RDE .2606 RRA .1974 RC3 -.0469 FAU .17229
FDE .2536 FRA 3.0435 FC-14.6189 BSP 46412
BDE 1.2967 BRA 2.8494 BC318.6579 FSP 3172

MID-COURSE EXECUTION ACCURACY
SGT13326.3 SGR 604.7 SG3 955.1
RRT .4378 RRF .4110 RTF .9831
SGB13340.0 R23 -.0224 R13 .9831
SG113329.0 SG2 543.6 THA 1.14

ORBIT DETERMINATION ACCURACY
ST 2837.0 SR 481.4 SS 755.8
CRT .9190 CRS -.4675 CST -.7743
LSA 2931.1 MSA 508.7 SSA 35.9
EL1 2871.4 EL2 187.5 ALF 8.90

LAUNCH DATE DEC 3 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 817.117 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.118 GAL -1.88 AZL 87.92 HCA 242.10 SMA 188.72 ECC .22096 INC 2.0805 V1 30.214
RP 208.01 LAP -1.84 LOP 312.95 VP 23.933 GAP -11.36 AZP 90.97 TAL 349.57 TAP 231.67 RCA 147.02 APO 230.42 V2 26.341
RC 318.808 GL 21.95 GP -3.76 ZAL 104.92 ZAP 36.82 ETS 174.03 ZAE 58.42 ETE 177.26 ZAC 81.83 ETC 257.11 CLP 36.66

PLANETOCENTRIC CONIC

C3 10.337 VHL 3.215 DLA 21.24 RAL 186.40 RAD 6567.4 VEL 11.477 PTH 2.00 VHP 4.807 DPA 2.14 RAP 169.56 ECC 1.1701

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 53 2	2800.25	-28.19	81.84	44.31	92.80	16 39 42	2200.3	-27.50	73.24
90.00	10 3 24	3981.07	-6.97	159.71	39.46	62.49	11 9 45	3381.1	-10.60	152.91
100.00	17 28 50	2491.35	-29.54	59.02	44.21	94.79	18 10 21	1891.3	-28.56	50.35
100.00	11 10 17	3765.21	-5.78	143.19	38.81	60.62	12 13 3	3165.2	-9.65	136.55
110.00	19 7 32	2182.55	-32.89	35.06	43.70	99.88	19 43 54	1582.5	-31.18	26.25
110.00	11 48 5	3646.77	-2.91	132.44	37.03	55.93	12 48 51	3046.8	-7.36	126.18

DIFFERENTIAL CORRECTIONS
TDE 1.1694 TRA 3.0281 TC-18.6205 BAU 2.5733
RDE .2626 RRA .1972 RC3 -.0138 FAU .16440
FDE .1443 FRA 3.0420 FC-13.7689 BSP 46929
BDE 1.1986 BRA 3.0345 BC318.6205 FSP 3046

MID-COURSE EXECUTION ACCURACY
SGT13462.0 SGR 601.0 SG3 915.5
RRT .4035 RRF .3756 RTF .9830
SGB13475.4 R23 -.0237 R13 .9830
SG113464.2 SG2 549.8 THA 1.03

ORBIT DETERMINATION ACCURACY
ST 2736.6 SR 481.4 SS 740.8
CRT .8894 CRS -.3701 CST -.7503
LSA 2825.9 MSA 531.8 SSA 35.6
EL1 2770.1 EL2 217.4 ALF 8.95

LAUNCH DATE DEC 3 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 821.448 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.125 GAL -2.03 AZL 87.94 HCA 243.35 SMA 188.84 ECC .22185 INC 2.0616 V1 30.214
RP 207.86 LAP -1.84 LOP 314.21 VP 23.961 GAP -11.46 AZP 90.93 TAL 348.76 TAP 232.11 RCA 146.94 APO 230.73 V2 26.357
RC 319.685 GL 21.58 GP -3.66 ZAL 106.43 ZAP 36.16 ETS 174.02 ZAE 57.45 ETE 177.25 ZAC 82.04 ETC 257.05 CLP 36.00

PLANETOCENTRIC CONIC

C3 10.489 VHL 3.239 DLA 20.28 RAL 187.66 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 4.881 DPA 1.99 RAP 170.14 ECC 1.1726

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 34	2761.13	-28.03	78.99	45.44	94.22	16 55 35	2161.1	-27.15	70.44
90.00	9 56 56	4026.08	-5.55	162.25	40.57	62.19	11 4 2	3426.1	-9.23	155.51
100.00	17 44 3	2456.45	-29.32	56.45	45.31	96.12	18 24 59	1856.4	-28.16	47.83
100.00	11 5 8	3805.99	-4.41	145.45	39.95	60.41	12 8 34	3206.0	-8.32	138.84
110.00	19 20 22	2155.09	-32.55	32.99	44.74	101.06	19 56 17	1555.1	-30.69	24.27
110.00	11 45 18	3680.12	-1.63	134.18	38.21	55.85	12 46 38	3080.1	-6.10	127.94

DIFFERENTIAL CORRECTIONS
TDE 1.0654 TRA 3.2205 TC-18.5510 BAU 2.6013
RDE .2651 RRA .1968 RC3 .0174 FAU .15670
FDE .0422 FRA 3.0375 FC-12.9337 BSP 47441
BDE 1.0979 BRA 3.2265 BC318.5510 FSP 2927

MID-COURSE EXECUTION ACCURACY
SGT13595.2 SGR 598.1 SG3 876.9
RRT .3692 RRF .3404 RTF .9828
SGB13608.4 R23 -.0248 R13 .9827
SG113597.0 SG2 555.8 THA .93

ORBIT DETERMINATION ACCURACY
ST 2646.3 SR 482.0 SS 733.2
CRT .8520 CRS -.2700 CST -.7310
LSA 2731.7 MSA 555.8 SSA 35.2
EL1 2678.2 EL2 249.4 ALF 8.90

LAUNCH DATE DEC 3 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 825.779 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.131 GAL -2.19 AZL 87.96 HCA 244.61 SMA 188.96 ECC .22277 INC 2.0432 V1 30.214
RP 207.73 LAP -1.85 LOP 315.46 VP 23.988 GAP -11.56 AZP 90.88 TAL 347.93 TAP 232.54 RCA 146.86 APO 231.05 V2 26.373
RC 320.558 GL 21.19 GP -3.57 ZAL 107.95 ZAP 35.51 ETS 174.01 ZAE 56.51 ETE 177.24 ZAC 82.26 ETC 256.99 CLP 35.36

PLANETOCENTRIC CONIC

C3 10.660 VHL 3.265 DLA 19.31 RAL 188.92 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 4.956 DPA 1.82 RAP 170.74 ECC 1.1754

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 25 32	2723.88	-27.81	76.29	46.58	95.56	17 10 56	2123.9	-26.75	67.78
90.00	9 51 1	4069.89	-4.15	164.71	41.73	61.96	10 58 51	3469.9	-7.87	158.01
100.00	17 58 52	2422.91	-29.05	53.90	46.42	97.39	18 39 15	1822.9	-27.72	45.44
100.00	11 0 22	3846.09	-3.06	147.06	41.13	60.25	12 4 28	3246.1	-7.00	141.09
110.00	19 33 1	2128.34	-32.19	30.90	45.79	102.19	20 8 30	1528.3	-30.17	22.35
110.00	11 42 42	3713.42	-.36	135.91	38.44	55.82	12 44 36	3113.4	-4.84	129.70

DIFFERENTIAL CORRECTIONS

TDE .9585 TRA 3.4210 TC-18.4475 BAU 2.6290
RDE .2682 RRA .1962 RC3 .0465 FAU .14020
FDE -.0526 FRA 3.0298 FC-12.1177 BSP 47949
BDE .9953 BRA 3.4267 BC318.4476 FSP 2809

MID-COURSE EXECUTION ACCURACY

SGT13725.9 SGR 596.2 SG3 839.3
RRT .3355 RRF .3058 RTF .9825
SGB13738.8 RZ3 -.0259 R13 .9825
SG113727.3 SG2 561.6 THA .84

ORBIT DETERMINATION ACCURACY

ST 2569.4 SR 483.1 SS 731.9
CRT .8056 CRS -.1711 CST -.7186
LSA 2652.1 MSA 579.7 SSA 34.6
EL1 2599.1 EL2 283.0 ALF 8.72

LAUNCH DATE DEC 3 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 830.110 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.138 GAL -2.35 AZL 87.97 HCA 245.86 SMA 189.08 ECC .22374 INC 2.0251 V1 30.214
RP 207.60 LAP -1.85 LOP 316.72 VP 24.014 GAP -11.66 AZP 90.83 TAL 347.09 TAP 232.96 RCA 146.78 APO 231.39 V2 26.388
RC 321.425 GL 20.81 GP -3.48 ZAL 109.48 ZAP 34.88 ETS 174.00 ZAE 55.58 ETE 177.24 ZAC 82.48 ETC 256.94 CLP 34.73

PLANETOCENTRIC CONIC

C3 10.851 VHL 3.294 DLA 18.32 RAL 190.18 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 5.033 DPA 1.65 RAP 171.35 ECC 1.1786

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 2	2688.26	-27.55	73.72	47.75	96.83	17 25 51	2088.3	-26.32	65.26
90.00	9 45 35	4112.75	-2.78	167.11	42.95	61.81	10 54 7	3512.7	-6.52	160.44
100.00	18 13 20	2390.61	-28.74	51.64	47.56	98.59	18 53 11	1790.6	-27.25	43.15
100.00	10 55 58	3885.63	-1.72	149.83	42.36	60.15	12 0 43	3285.6	-5.68	143.28
110.00	19 45 30	2102.30	-31.79	29.06	46.88	103.27	20 20 32	1502.3	-29.64	20.51
110.00	11 40 18	3746.71	.91	137.65	40.71	55.83	12 42 45	3146.7	-3.58	131.44

DIFFERENTIAL CORRECTIONS

TDE .8489 TRA 3.6273 TC-18.3123 BAU 2.6565
RDE .2719 RRA .1953 RC3 .0737 FAU .14187
FDE -.1397 FRA 3.0186 FC-11.3194 BSP 48435
BDE .8914 BRA 3.6326 BC318.3124 FSP 2694

MID-COURSE EXECUTION ACCURACY

SGT13852.8 SGR 595.0 SG3 802.5
RRT .3022 RRF .2718 RTF .9822
SGB13865.6 RZ3 -.0267 R13 .9822
SG113854.0 SG2 567.1 THA .74

ORBIT DETERMINATION ACCURACY

ST 2507.3 SR 484.9 SS 735.6
CRT .7499 CRS -.0766 CST -.7144
LSA 2588.2 MSA 602.4 SSA 34.1
EL1 2534.0 EL2 317.4 ALF 8.38

LAUNCH DATE DEC 3 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 834.439 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.145 GAL -2.51 AZL 87.99 HCA 247.12 SMA 189.21 ECC .22476 INC 2.0073 V1 30.214
RP 207.48 LAP -1.85 LOP 317.98 VP 24.039 GAP -11.77 AZP 90.78 TAL 346.24 TAP 233.36 RCA 146.68 APO 231.73 V2 26.402
RC 322.286 GL 20.41 GP -3.40 ZAL 111.02 ZAP 34.27 ETS 173.99 ZAE 54.66 ETE 177.23 ZAC 82.69 ETC 256.88 CLP 34.12

PLANETOCENTRIC CONIC

C3 11.063 VHL 3.326 DLA 17.34 RAL 191.44 RAD 6567.4 VEL 11.509 PTH 2.00 VHP 5.110 DPA 1.46 RAP 171.97 ECC 1.1821

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 56 7	2654.12	-27.25	71.26	48.93	98.02	17 40 21	2054.1	-25.86	62.87
90.00	9 40 33	4154.84	-1.42	169.46	44.21	61.72	10 49 47	3554.8	-5.19	162.81
100.00	18 27 29	2359.47	-29.40	49.38	48.73	99.73	19 6 49	1759.5	-26.77	40.96
100.00	10 51 52	3924.72	-.40	151.90	43.64	60.11	11 57 16	3324.7	-4.37	145.44
110.00	19 57 47	2076.96	-31.38	27.20	48.00	104.30	20 32 24	1477.0	-29.10	18.74
110.00	11 38 3	3779.99	2.19	139.39	42.03	55.88	12 41 3	3180.0	-2.31	133.18

DIFFERENTIAL CORRECTIONS

TDE .7365 TRA 3.8413 TC-18.1472 BAU 2.6841
RDE .2761 RRA .1942 RC3 .0966 FAU .13485
FDE -.2203 FRA 3.0032 FC-10.5524 BSP 48829
BDE .7866 BRA 3.8462 BC318.1475 FSP 2583

MID-COURSE EXECUTION ACCURACY

SGT13978.4 SGR 594.5 SG3 766.9
RRT .2697 RRF .2384 RTF .9819
SGB13991.0 RZ3 -.0278 R13 .9819
SG113979.3 SG2 572.4 THA .66

ORBIT DETERMINATION ACCURACY

ST 2462.8 SR 487.2 SS 743.0
CRT .6846 CRS .0122 CST -.7181
LSA 2542.7 MSA 623.1 SSA 33.4
EL1 2485.7 EL2 351.8 ALF 7.87

LAUNCH DATE DEC 3 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 838.768 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.152 GAL -2.68 AZL 88.01 HCA 248.38 SMA 189.33 ECC .22582 INC 1.9898 V1 30.214
RP 207.36 LAP -1.85 LOP 318.24 VP 24.064 GAP -11.87 AZP 90.73 TAL 345.37 TAP 233.75 RCA 146.58 APO 232.00 V2 26.416
RC 323.141 GL 20.01 GP -3.32 ZAL 112.97 ZAP 33.67 ETS 173.98 ZAE 53.76 ETE 177.22 ZAC 82.91 ETC 256.82 CLP 33.52

PLANETOCENTRIC CONIC

C3 11.298 VHL 3.361 DLA 16.34 RAL 192.70 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 5.189 DPA 1.26 RAP 172.61 ECC 1.1899

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 49	2621.33	-26.01	68.82	50.14	99.15	17 54 30	2021.3	-25.37	60.59
90.00	9 35 52	4196.30	-.08	171.77	45.52	61.68	10 45 48	3596.3	-3.07	165.14
100.00	18 41 20	2329.42	-28.04	47.22	49.91	100.81	19 20 10	1729.4	-26.26	38.87
100.00	10 48 2	3963.44	.82	154.10	44.97	60.12	11 54 5	3363.4	-3.07	147.58
110.00	20 9 54	2052.33	-30.96	25.41	49.14	105.28	20 44 6	1452.3	-28.55	17.03
110.00	11 35 58	3813.29	3.46	141.13	43.38	55.97	12 39 31	3213.3	-1.03	134.92

DIFFERENTIAL CORRECTIONS

TDE .6212 TRA 4.0621 TC-17.9493 BAU 2.7112
RDE .2810 RRA .1928 RC3 .1217 FAU .12792
FDE -.2952 FRA 2.9845 FC3-9.8025 BSP 49423
BDE .6818 BRA 4.0667 BC317.9497 FSP 2477

MID-COURSE EXECUTION ACCURACY

SGT14099.3 SGR 594.5 SG3 732.0
RRT .2377 RRF .2057 RTF .9814
SGB14111.8 RZ3 -.0288 R13 .9814
SG114100.0 SG2 577.4 THA .58

ORBIT DETERMINATION ACCURACY

ST 2436.9 SR 489.9 SS 753.1
CRT .6105 CRS .0949 CST -.7284
LSA 2516.7 MSA 641.1 SSA 32.7
EL1 2455.7 EL2 385.0 ALF 7.17

LAUNCH DATE DEC 3 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 843.094 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.159 GAL -2.85 AZL 88.03 HCA 249.64 SMA 189.46 ECC .22693 INC 1.9726 V1 30.214
RP 207.28 LAP -1.85 LOP 320.50 VP 24.087 GAP -11.97 AZP 90.69 TAL 344.49 TAP 234.13 RCA 146.46 APO 232.45 V2 26.428
RC 323.990 GL 19.59 GP -3.25 ZAL 114.12 ZAP 33.09 ETS 173.97 ZAE 52.88 ETE 177.22 ZAC 83.13 ETC 256.76 CLP 32.94

PLANETOCENTRIC CONIC

C3 11.557 VHL 3.399 DLA 15.35 RAL 193.95 RAD 6567.4 VEL 11.530 PTH 2.01 VHP 5.269 DPA 1.05 RAP 173.26 ECC 1.1902

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 10	2589.79	-26.55	66.68	51.37	100.22	18 8 20	1989.8	-24.87	58.42
90.00	9 31 30	4237.23	1.24	174.06	46.88	61.71	10 42 7	3637.2	-2.55	167.43
100.00	18 54 54	2300.41	-27.65	45.16	51.13	101.83	19 33 15	1700.4	-25.74	36.88
100.00	10 44 27	4001.84	2.22	156.21	46.34	60.18	11 51 9	3401.8	-1.77	149.69
110.00	20 21 50	2028.41	-30.51	23.68	50.31	106.21	20 55 30	1428.4	-27.99	15.40
110.00	11 34 0	3846.61	4.72	142.87	44.78	56.11	12 38 7	3246.6	.24	136.66

DIFFERENTIAL CORRECTIONS

TDE .5039 TRA 4.2901 TC-17.7221 BAU 2.7382
RDE .2864 RRA .1912 RC3 .1426 FAU .12124
FDE -.3636 FRA 2.9618 FC3-9.0824 BSP 49909
BDE .5796 BRA 4.2944 BC317.7226 FSP 2373

MID-COURSE EXECUTION ACCURACY

SGT14217.1 SGR 595.0 SG3 698.2
RRT .2066 RRF .1737 RTF .9809
SGB14229.6 R23 -.0298 R13 .9809
SG114217.6 SG2 582.2 THA .50

ORBIT DETERMINATION ACCURACY

ST 2431.4 SR 493.0 SS 764.7
CRT .5292 CRS .1699 CST -.7443
LSA 2511.9 MSA 655.1 SSA 32.0
EL1 2445.8 EL2 415.8 ALF 6.31

LAUNCH DATE DEC 3 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 847.418 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.167 GAL -3.03 AZL 88.04 HCA 250.91 SMA 189.59 ECC .22810 INC 1.9557 V1 30.214
RP 207.16 LAP -1.85 LOP 321.77 VP 24.109 GAP -12.08 AZP 90.64 TAL 343.59 TAP 234.50 RCA 146.34 APO 232.83 V2 26.439
RC 324.833 GL 19.18 GP -3.17 ZAL 115.68 ZAP 32.52 ETS 173.95 ZAE 52.00 ETE 177.21 ZAC 83.35 ETC 256.70 CLP 32.38

PLANETOCENTRIC CONIC

C3 11.840 VHL 3.441 DLA 14.36 RAL 195.20 RAD 6567.5 VEL 11.542 PTH 2.01 VHP 5.350 DPA .83 RAP 173.93 ECC 1.1949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 30 12	2550.45	-26.17	64.54	52.62	101.22	18 21 52	1959.5	-24.36	56.34
90.00	9 27 24	4277.71	2.55	176.32	48.29	61.79	10 38 42	3677.7	-1.25	169.69
100.00	19 8 13	2272.41	-27.24	43.17	52.36	102.80	19 46 5	1672.4	-25.21	34.97
100.00	10 41 5	4030.98	3.51	158.31	47.75	60.30	11 48 25	3440.0	-.47	151.78
110.00	20 33 36	2005.22	-30.06	22.03	51.51	107.10	21 7 2	1405.2	-27.43	13.83
110.00	11 32 11	3879.94	5.99	144.63	46.21	56.28	12 36 51	3279.9	1.52	138.40

DIFFERENTIAL CORRECTIONS

TDE .3849 TRA 4.5289 TC-17.4669 BAU 2.7650
RDE .2924 RRA .1893 RC3 .1616 FAU .11470
FDE -.4253 FRA 2.9361 FC3-8.3868 BSP 50398
BDE .4834 BRA 4.5308 BC317.4677 FSP 2272

MID-COURSE EXECUTION ACCURACY

SGT14333.3 SGR 596.0 SG3 665.2
RRT .1763 RRF .1427 RTF .9804
SGB14345.7 R23 -.0309 R13 .9803
SG114333.7 SG2 586.7 THA .42

ORBIT DETERMINATION ACCURACY

ST 2447.3 SR 496.6 SS 776.7
CRT .4432 CRS .2368 CST -.7642
LSA 2529.2 MSA 664.4 SSA 31.2
EL1 2457.5 EL2 443.3 ALF 5.31

LAUNCH DATE DEC 3 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 851.739 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.174 GAL -3.21 AZL 88.06 HCA 252.17 SMA 189.72 ECC .22932 INC 1.9391 V1 30.214
RP 207.08 LAP -1.85 LOP 323.03 VP 24.130 GAP -12.19 AZP 90.59 TAL 342.68 TAP 234.85 RCA 146.21 APO 233.22 V2 26.449
RC 325.671 GL 18.76 GP -3.10 ZAL 117.23 ZAP 31.96 ETS 173.94 ZAE 51.14 ETE 177.20 ZAC 83.57 ETC 256.64 CLP 31.83

PLANETOCENTRIC CONIC

C3 12.150 VHL 3.486 DLA 13.36 RAL 196.44 RAD 6567.5 VEL 11.556 PTH 2.02 VHP 5.433 DPA .59 RAP 174.61 ECC 1.2000

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 56	2530.26	-25.77	62.50	53.90	102.17	18 35 7	1930.3	-23.83	54.36
90.00	9 23 34	4317.80	3.83	178.56	49.73	61.92	10 35 32	3717.8	.05	171.92
100.00	19 21 16	2245.41	-26.82	41.28	53.63	103.71	19 58 41	1645.4	-24.67	33.14
100.00	10 37 56	4077.88	4.78	160.40	49.21	60.46	11 45 54	3477.9	.81	153.86
110.00	20 45 12	1982.75	-29.60	20.44	52.73	107.93	21 18 15	1382.8	-26.86	12.32
110.00	11 30 29	3913.30	7.24	146.39	47.69	56.50	12 35 42	3313.3	2.79	140.14

DIFFERENTIAL CORRECTIONS

TDE .2628 TRA 4.7694 TC-17.1882 BAU 2.7922
RDE .2990 RRA .1870 RC3 .1787 FAU .10837
FDE -.4816 FRA 2.9053 FC3-7.7215 BSP 50859
BDE .3980 BRA 4.7730 BC317.1891 FSP 2171

MID-COURSE EXECUTION ACCURACY

SGT14446.3 SGR 597.4 SG3 633.1
RRT .1467 RRF .1123 RTF .9797
SGB14458.6 R23 -.0320 R13 .9797
SG114446.6 SG2 590.9 THA .35

ORBIT DETERMINATION ACCURACY

ST 2481.7 SR 500.5 SS 788.3
CRT .3543 CRS .2974 CST -.7859
LSA 2565.6 MSA 669.3 SSA 30.5
EL1 2488.3 EL2 466.8 ALF 4.24

LAUNCH DATE DEC 3 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 856.056 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.181 GAL -3.39 AZL 88.08 HCA 253.44 SMA 189.85 ECC .23059 INC 1.9226 V1 30.214
RP 207.00 LAP -1.84 LOP 324.30 VP 24.150 GAP -12.30 AZP 90.55 TAL 341.76 TAP 235.19 RCA 146.07 APO 233.62 V2 26.459
RC 326.503 GL 18.33 GP -3.04 ZAL 118.78 ZAP 31.42 ETS 173.92 ZAE 50.30 ETE 177.20 ZAC 83.79 ETC 256.59 CLP 31.29

PLANETOCENTRIC CONIC

C3 12.488 VHL 3.534 DLA 12.37 RAL 197.67 RAD 6567.5 VEL 11.570 PTH 2.02 VHP 5.516 DPA .35 RAP 175.29 ECC 1.2055

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 23	2502.16	-25.35	60.55	55.20	103.06	18 48 5	1902.2	-23.30	52.48
90.00	9 19 57	4357.55	5.10	180.79	51.22	62.11	10 32 34	3757.5	1.33	174.14
100.00	19 34 4	2219.37	-26.39	39.46	54.91	104.58	20 11 4	1619.4	-24.13	31.39
100.00	10 34 57	4115.57	6.04	162.48	50.71	60.67	11 43 32	3515.6	2.09	155.93
110.00	20 56 38	1961.04	-29.14	18.92	53.99	108.72	21 29 19	1361.0	-26.30	10.88
110.00	11 28 53	3846.67	8.49	148.17	49.21	56.76	12 34 40	3346.7	4.06	141.89

DIFFERENTIAL CORRECTIONS

TDE .1387 TRA 5.0190 TC-16.8865 BAU 2.8195
RDE .3061 RRA .1845 RC3 .1937 FAU .10226
FDE -.5324 FRA 2.8715 FC3-7.0890 BSP 51336
BDE .3361 BRA 5.0233 BC316.8877 FSP 2075

MID-COURSE EXECUTION ACCURACY

SGT14557.6 SGR 599.1 SG3 602.1
RRT .1180 RRF .0827 RTF .9790
SGB14569.9 R23 -.0333 R13 .9790
SG114557.7 SG2 594.9 THA .28

ORBIT DETERMINATION ACCURACY

ST 2535.2 SR 504.8 SS 799.3
CRT .2656 CRS .3517 CST -.8077
LSA 2621.2 MSA 670.2 SSA 29.7
EL1 2538.9 EL2 485.9 ALF 3.14

LAUNCH DATE DEC 3 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 860.369 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.188 GAL -3.58 AZL 88.09 HCA 254.70 SMA 189.98 ECC .23192 INC 1.9063 V1 30.214
RP 206.93 LAP -1.84 LOP 325.56 VP 24.169 GAP -12.41 AZP 90.50 TAL 340.82 TAP 235.52 RCA 145.92 APO 234.04 V2 26.467
RC 327.330 GL 17.90 GP -2.97 ZAL 120.33 ZAP 30.90 ETS 173.91 ZAE 49.47 ETE 177.19 ZAC 84.01 ETC 256.53 CLP 30.77

PLANETOCENTRIC CONIC

C3 12.856 VHL 3.586 DLA 11.38 RAL 198.89 RAD 6567.5 VEL 11.586 PTH 2.03 VHP 5.602 DPA .11 RAP 176.00 ECC 1.2116

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 34	2475.14	-24.92	58.69	56.53	103.90	19 0 49	1875.1	-22.76	50.68
90.00	9 16 32	4396.99	6.35	183.01	52.75	62.35	10 29 49	3797.0	2.60	176.34
100.00	19 46 39	2194.29	-25.95	37.73	56.23	105.39	20 23 13	1594.3	-23.58	29.73
100.00	10 32 8	4153.07	7.29	164.57	52.25	60.93	11 41 21	3553.1	3.36	157.99
110.00	21 7 53	1940.08	-28.67	17.47	55.27	109.47	21 40 13	1340.1	-25.75	9.51
110.00	11 27 23	3980.04	9.73	149.96	50.76	57.07	12 33 43	3380.0	5.33	143.64

DIFFERENTIAL CORRECTIONS
TDE .0129 TRA 5.2778 TC-16.5616 BAU 2.8467
RDE .3138 RRA .1817 RC3 .2070 FAU .09628
FDE -.5781 FRA 2.8335 FC3-6.4837 BSP 51784
BDE .3141 BRA 5.2809 BC316.5629 FSP 1982

MID-COURSE EXECUTION ACCURACY
SGT14664.9 SGR 601.0 SG3 571.8
RRT .0902 RRF .0538 RTF .9781
SGB14677.2 R23 -.0346 R13 .9781
SG114665.0 SG2 598.6 THA .21

ORBIT DETERMINATION ACCURACY
ST 2605.4 SR 509.3 SS 808.8
CRT .1794 CRS .4004 CST -.8284
LSA 2693.6 MSA 667.6 SSA 28.9
EL1 2607.1 EL2 500.7 ALF 2.08

LAUNCH DATE DEC 3 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 864.677 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.196 GAL -3.77 AZL 88.11 HCA 255.97 SMA 190.11 ECC .23332 INC 1.8903 V1 30.214
RP 206.86 LAP -1.83 LOP 326.83 VP 24.187 GAP -12.53 AZP 90.46 TAL 339.87 TAP 235.84 RCA 145.75 APO 234.47 V2 26.474
RC 328.152 GL 17.46 GP -2.91 ZAL 121.87 ZAP 30.38 ETS 173.89 ZAE 48.65 ETE 177.18 ZAC 84.23 ETC 256.47 CLP 30.26

PLANETOCENTRIC CONIC

C3 13.255 VHL 3.641 DLA 10.40 RAL 200.11 RAD 6567.5 VEL 11.603 PTH 2.03 VHP 5.688 DPA -.15 RAP 176.71 ECC 1.2181

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 32 29	2449.17	-24.48	56.91	57.88	104.69	19 13 18	1849.2	-22.23	48.96
90.00	9 13 18	4436.14	7.59	185.23	54.33	62.64	10 27 14	3836.1	3.86	178.53
100.00	19 58 59	2170.16	-25.50	36.08	57.57	106.15	20 35 10	1570.2	-23.04	28.14
100.00	10 29 29	4190.38	8.52	166.66	53.82	61.24	11 39 19	3590.4	4.61	160.05
110.00	21 18 58	1919.90	-28.20	16.08	56.58	110.17	21 50 58	1319.9	-25.20	8.20
110.00	11 26 0	4013.41	10.96	151.76	52.35	57.42	12 32 53	3413.4	6.59	145.40

DIFFERENTIAL CORRECTIONS
TDE -.1152 TRA 5.5444 TC-16.2197 BAU 2.8745
RDE .3221 RRA .1785 RC3 .2185 FAU .09050
FDE -.6184 FRA 2.7926 FC3-5.9110 BSP 52233
BDE .3421 BRA 5.5473 BC316.2212 FSP 1889

MID-COURSE EXECUTION ACCURACY
SGT14772.1 SGR 603.2 SG3 542.6
RRT .0631 RRF .0259 RTF .9771
SGB14784.4 R23 -.0360 R13 .9771
SG114772.2 SG2 602.0 THA .15

ORBIT DETERMINATION ACCURACY
ST 2691.0 SR 514.1 SS 816.6
CRT .0972 CRS .4438 CST -.8476
LSA 2780.9 MSA 662.1 SSA 28.1
EL1 2691.5 EL2 511.6 ALF 1.10

LAUNCH DATE DEC 3 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 868.980 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.203 GAL -3.97 AZL 88.13 HCA 257.24 SMA 190.24 ECC .23478 INC 1.8744 V1 30.214
RP 206.81 LAP -1.83 LOP 328.10 VP 24.204 GAP -12.64 AZP 90.41 TAL 338.90 TAP 236.14 RCA 145.58 APO 234.91 V2 26.480
RC 328.970 GL 17.03 GP -2.85 ZAL 123.40 ZAP 29.88 ETS 173.87 ZAE 47.84 ETE 177.18 ZAC 84.45 ETC 256.42 CLP 29.76

PLANETOCENTRIC CONIC

C3 13.687 VHL 3.700 DLA 9.42 RAL 201.31 RAD 6567.5 VEL 11.622 PTH 2.04 VHP 5.776 DPA -.42 RAP 177.43 ECC 1.2253

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 9	2424.23	-24.04	55.21	59.26	105.43	19 25 33	1824.2	-21.69	47.33
90.00	9 10 15	4475.03	8.80	187.45	55.94	62.98	10 24 50	3875.0	5.10	180.72
100.00	20 11 7	2146.98	-25.05	34.50	58.93	106.86	20 46 54	1547.0	-22.51	26.63
100.00	10 26 58	4227.52	9.73	168.75	55.44	61.60	11 37 25	3627.5	5.86	162.10
110.00	21 29 52	1900.50	-27.74	14.76	57.91	110.83	22 1 33	1300.5	-24.65	6.95
110.00	11 24 42	4046.76	12.18	153.58	53.98	57.81	12 32 8	3446.8	7.84	147.17

DIFFERENTIAL CORRECTIONS
TDE -.2443 TRA 5.8177 TC-15.8617 BAU 2.9027
RDE .3309 RRA .1750 RC3 .2284 FAU .08488
FDE -.6537 FRA 2.7470 FC3-5.3689 BSP 52656
BDE .4113 BRA 5.8204 BC315.8634 FSP 1799

MID-COURSE EXECUTION ACCURACY
SGT14876.2 SGR 605.5 SG3 514.1
RRT .0369 RRF -.0015 RTF .9760
SGB14888.5 R23 -.0376 R13 .9760
SG114876.2 SG2 605.1 THA .09

ORBIT DETERMINATION ACCURACY
ST 2788.3 SR 519.1 SS 822.0
CRT .0209 CRS .4828 CST -.8644
LSA 2879.2 MSA 654.9 SSA 27.4
EL1 2788.3 EL2 519.0 ALF .23

LAUNCH DATE DEC 3 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 873.277 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.210 GAL -4.17 AZL 88.14 HCA 258.50 SMA 190.38 ECC .23630 INC 1.8586 V1 30.214
RP 206.77 LAP -1.82 LOP 329.37 VP 24.220 GAP -12.76 AZP 90.37 TAL 337.92 TAP 236.43 RCA 145.39 APO 235.36 V2 26.486
RC 329.784 GL 16.59 GP -2.80 ZAL 124.91 ZAP 29.39 ETS 173.85 ZAE 47.05 ETE 177.17 ZAC 84.68 ETC 256.37 CLP 29.27

PLANETOCENTRIC CONIC

C3 14.154 VHL 3.762 DLA 8.46 RAL 202.50 RAD 6567.6 VEL 11.642 PTH 2.04 VHP 5.865 DPA -.69 RAP 178.16 ECC 1.2329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 34	2400.32	-23.60	53.60	60.66	106.12	19 37 35	1800.3	-21.16	45.78
90.00	9 7 21	4513.67	9.98	189.67	57.59	63.36	10 22 34	3913.7	6.33	182.89
100.00	20 23 1	2124.74	-24.61	33.00	60.32	107.53	20 58 26	1524.7	-21.98	25.19
100.00	10 24 35	4264.49	10.92	170.85	57.10	62.00	11 35 39	3664.5	7.09	164.16
110.00	21 40 37	1881.90	-27.28	13.51	59.27	111.44	22 11 59	1281.9	-24.12	5.77
110.00	11 23 29	4080.09	13.38	155.41	55.65	58.25	12 31 29	3480.1	9.09	148.95

DIFFERENTIAL CORRECTIONS
TDE -.3751 TRA 6.1000 TC-15.4872 BAU 2.9309
RDE .3403 RRA .1711 RC3 .2366 FAU .07941
FDE -.6844 FRA 2.6975 FC3-4.8574 BSP 53084
BDE .5064 BRA 6.1024 BC315.4890 FSP 1710

MID-COURSE EXECUTION ACCURACY
SGT14977.7 SGR 608.0 SG3 486.4
RRT .0115 RRF -.0281 RTF .9748
SGB14990.1 R23 -.0394 R13 .9748
SG114977.7 SG2 608.0 THA .03

ORBIT DETERMINATION ACCURACY
ST 2896.2 SR 524.3 SS 825.1
CRT -.0495 CRS .5181 CST -.8789
LSA 2987.4 MSA 646.4 SSA 26.6
EL1 2896.3 EL2 523.6 ALF 179.47

LAUNCH DATE DEC 3 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 877.566 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.218 GAL -4.37 AZL 88.16 HCA 259.77 SMA 190.51 ECC .23789 INC 1.8430 V1 30.214
RP 206.73 LAP -1.81 LOP 330.64 VP 24.235 GAP -12.88 AZP 90.33 TAL 336.93 TAP 236.70 RCA 145.19 APO 235.83 V2 26.490
RC 330.595 GL 16.15 GP -2.74 ZAL 126.42 ZAP 28.92 ETS 173.83 ZAE 46.27 ETE 177.16 ZAC 84.90 ETC 256.32 CLP 28.80

PLANETOCENTRIC CONIC

C3 14.658 VHL 3.829 DLA 7.50 RAL 203.69 RAD 6567.6 VEL 11.664 PTH 2.05 VHP 3.956 DPA -.97 RAP 178.91 ECC 1.2412

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 45	2377.41	-23.16	52.07	62.08	106.77	19 49 23	1777.4	-20.64	44.30
90.00	9 4 35	4552.08	11.15	191.89	59.28	63.80	10 20 27	3952.1	7.54	185.07
100.00	20 34 42	2103.43	-24.16	31.57	61.74	108.16	21 9 46	1503.4	-21.45	23.82
100.00	10 22 19	4301.28	12.08	172.96	58.79	62.45	11 34 1	3701.3	8.30	166.22
110.00	21 51 11	1864.11	-26.84	12.32	60.65	112.02	22 22 15	1264.1	-23.61	4.64
110.00	11 22 20	4113.37	14.56	157.26	57.36	58.73	12 30 54	3513.4	10.32	150.74

DIFFERENTIAL CORRECTIONS

TDE -.5084 TRA 6.3894 TC-15.1023 BAU 2.9598
RDE .3502 RRA .1669 RC3 .2433 FAU .07410
FDE -.7107 FRA 2.6442 FC3-4.3766 BSP 53484
BDE .6173 BRA 6.3916 BC315.1043 FSP 1624

MID-COURSE EXECUTION ACCURACY

SGT15077.2 SGR 610.7 SG3 459.6
RRT -.0133 RRF -.0542 RTF .9733
SGB15089.5 R23 .0412 R13 -.9733
SG115077.2 SG2 610.6 THA 179.97

ORBIT DETERMINATION ACCURACY

ST 3011.8 SR 529.6 SS 825.8
CRT -.1141 CRS .5501 CST -.8915
LSA 3102.7 NSA 637.1 SSA 25.9
EL1 3012.4 EL2 526.0 ALF 178.81

LAUNCH DATE DEC 3 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 881.849 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.225 GAL -4.58 AZL 88.17 HCA 261.04 SMA 190.65 ECC .23955 INC 1.8275 V1 30.214
RP 206.70 LAP -1.81 LOP 331.90 VP 24.249 GAP -13.01 AZP 90.28 TAL 335.92 TAP 236.96 RCA 144.98 APO 236.32 V2 26.493
RC 331.403 GL 15.72 GP -2.69 ZAL 127.91 ZAP 28.45 ETS 173.81 ZAE 45.50 ETE 177.15 ZAC 85.13 ETC 256.27 CLP 28.34

PLANETOCENTRIC CONIC

C3 15.200 VHL 3.899 DLA 6.56 RAL 204.85 RAD 6567.6 VEL 11.687 PTH 2.06 VHP 6.049 DPA -1.26 RAP 179.66 ECC 1.2502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 43	2355.50	-22.72	50.61	63.53	107.37	20 0 58	1755.5	-20.13	42.90
90.00	9 1 58	4590.24	12.28	194.11	61.01	64.28	10 18 28	3990.2	8.72	187.24
100.00	20 46 11	2083.07	-23.72	30.22	63.18	108.74	21 20 54	1483.1	-20.94	22.52
100.00	10 20 11	4337.91	13.23	175.08	60.53	62.95	11 32 29	3737.9	9.50	168.28
110.00	28 1 34	1847.13	-26.40	11.19	62.06	112.55	22 32 21	1247.1	-23.11	3.58
110.00	11 21 17	4146.60	15.73	159.13	59.10	59.25	12 30 23	3546.6	11.54	152.54

DIFFERENTIAL CORRECTIONS

TDE -.6428 TRA 6.6862 TC-14.7096 BAU 2.9897
RDE .3607 RRA .1624 RC3 .2486 FAU .06896
FDE -.7327 FRA 2.5868 FC3-3.9274 BSP 53860
BDE .7370 BRA 6.6882 BC314.7117 FSP 1539

MID-COURSE EXECUTION ACCURACY

SGT15174.9 SGR 613.4 SG3 433.6
RRT -.0374 RRF -.0797 RTF .9717
SGB15187.3 R23 .0433 R13 -.9717
SG115174.9 SG2 612.9 THA 179.91

ORBIT DETERMINATION ACCURACY

ST 3132.9 SR 535.0 SS 823.9
CRT -.1724 CRS .5792 CST -.9019
LSA 3222.7 NSA 627.6 SSA 25.2
EL1 3134.3 EL2 526.7 ALF 178.27

LAUNCH DATE DEC 3 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 886.122 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.233 GAL -4.80 AZL 88.19 HCA 262.31 SMA 190.79 ECC .24128 INC 1.8121 V1 30.214
RP 206.68 LAP -1.80 LOP 333.17 VP 24.261 GAP -13.13 AZP 90.24 TAL 334.91 TAP 237.21 RCA 144.75 APO 236.82 V2 26.495
RC 332.208 GL 15.28 GP -2.64 ZAL 129.39 ZAP 28.00 ETS 173.79 ZAE 44.74 ETE 177.14 ZAC 85.35 ETC 256.22 CLP 27.89

PLANETOCENTRIC CONIC

C3 15.785 VHL 3.973 DLA 5.63 RAL 206.01 RAD 6567.6 VEL 11.712 PTH 2.06 VHP 6.143 DPA -1.56 RAP 180.43 ECC 1.2598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 27	2334.57	-22.29	49.23	65.00	107.93	20 12 21	1734.6	-19.63	41.57
90.00	8 59 28	4628.18	13.39	196.35	62.77	64.82	10 16 36	4028.2	9.89	189.42
100.00	20 57 27	2063.63	-23.29	28.94	64.64	109.29	21 31 51	1463.6	-20.45	21.29
100.00	10 18 8	4374.36	14.35	177.21	62.30	63.49	11 31 3	3774.4	10.67	170.34
110.00	22 11 47	1830.98	-25.97	10.13	63.50	113.05	22 42 18	1231.0	-22.62	2.57
110.00	11 20 18	4179.77	16.88	161.02	60.88	59.82	12 29 57	3579.8	12.74	154.36

DIFFERENTIAL CORRECTIONS

TDE -.7780 TRA 6.9929 TC-14.3075 BAU 3.0197
RDE .3717 RRA .1574 RC3 .2525 FAU .06394
FDE -.7502 FRA 2.5262 FC3-3.5071 BSP 54240
BDE .8622 BRA 6.9947 BC314.3098 FSP 1457

MID-COURSE EXECUTION ACCURACY

SGT15270.8 SGR 616.1 SG3 408.3
RRT -.0604 RRF -.1044 RTF .9698
SGB15283.2 R23 .0455 R13 -.9698
SG115270.8 SG2 615.0 THA 179.86

ORBIT DETERMINATION ACCURACY

ST 3258.4 SR 540.4 SS 819.4
CRT -.2246 CRS .6056 CST -.9106
LSA 3346.3 NSA 618.1 SSA 24.6
EL1 3260.7 EL2 526.2 ALF 177.81

LAUNCH DATE DEC 3 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 890.387 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.240 GAL -5.02 AZL 88.20 HCA 263.58 SMA 190.92 ECC .24310 INC 1.7968 V1 30.214
RP 206.67 LAP -1.79 LOP 334.44 VP 24.273 GAP -13.27 AZP 90.20 TAL 333.87 TAP 237.45 RCA 144.51 APO 237.34 V2 26.497
RC 333.009 GL 14.85 GP -2.59 ZAL 130.85 ZAP 27.56 ETS 173.77 ZAE 43.99 ETE 177.13 ZAC 85.58 ETC 256.18 CLP 27.45

PLANETOCENTRIC CONIC

C3 16.413 VHL 4.051 DLA 4.71 RAL 207.16 RAD 6567.7 VEL 11.739 PTH 2.07 VHP 6.238 DPA -1.86 RAP 181.20 ECC 1.2701

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 58	2314.62	-21.86	47.92	66.50	108.46	20 23 32	1714.6	-19.14	40.30
90.00	8 57 5	4665.88	14.47	198.59	64.57	65.39	10 14 50	4065.9	11.03	191.60
100.00	21 8 31	2045.11	-22.87	27.72	66.12	109.79	21 42 36	1445.1	-19.96	20.13
100.00	10 16 12	4410.62	15.44	179.35	64.10	64.08	11 29 43	3810.6	11.83	172.42
110.00	22 21 50	1815.64	-25.56	9.13	64.95	113.51	22 52 6	1215.6	-22.16	1.63
110.00	11 19 23	4212.86	18.00	162.93	62.70	60.44	12 29 35	3612.9	13.93	156.19

DIFFERENTIAL CORRECTIONS

TDE -.9144 TRA 7.3069 TC-13.9000 BAU 3.0505
RDE .3832 RRA .1521 RC3 .2552 FAU .05908
FDE -.7642 FRA 2.4612 FC3-3.1161 BSP 54584
BDE .9915 BRA 7.3085 BC313.9023 FSP 1376

MID-COURSE EXECUTION ACCURACY

SGT15363.3 SGR 618.9 SG3 383.9
RRT -.0832 RRF -.1287 RTF .9676
SGB15375.7 R23 .0482 R13 -.9676
SG115363.4 SG2 616.8 THA 179.81

ORBIT DETERMINATION ACCURACY

ST 3385.7 SR 545.9 SS 812.4
CRT -.2714 CRS .6301 CST -.9176
LSA 3471.2 NSA 609.1 SSA 23.9
EL1 3389.0 EL2 524.9 ALF 177.43

LAUNCH DATE DEC 3 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 894.642 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.248 GAL -5.25 AZL 88.22 HCA 264.85 SMA 191.06 ECC .24499 INC 1.7816 V1 30.214
RP 206.67 LAP -1.77 LOP 335.71 VP 24.284 GAP -13.40 AZP 90.16 TAL 332.83 TAP 237.67 RCA 144.26 APO 237.87 V2 26.497
RC 333.807 GL 14.42 GP -2.55 ZAL 132.29 ZAP 27.13 ETS 173.75 ZAE 43.25 ETE 177.12 ZAC 85.81 ETC 256.13 CLP 27.02

PLANETOCENTRIC CONIC

C3 17.087 VHL 4.134 DLA 3.81 RAL 208.29 RAD 6567.7 VEL 11.767 PTH 2.08 VHP 6.336 DPA -2.17 RAP 181.99 ECC 1.2812

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 16	2295.63	-21.45	46.68	68.01	108.94	20 34 31	1695.6	-18.67	39.11
90.00	8 54 48	4703.36	15.52	200.84	66.41	66.02	10 13 12	4103.4	12.15	193.78
100.00	21 19 23	2027.52	-22.46	26.58	67.63	110.26	21 53 11	1427.5	-19.50	19.03
100.00	10 14 22	4446.70	16.50	181.50	65.95	64.71	11 28 29	3846.7	12.96	174.50
110.00	22 31 43	1801.14	-25.16	8.19	66.43	113.94	23 1 44	1201.1	-21.71	.74
110.00	11 18 31	4245.85	19.09	164.86	64.55	61.09	12 29 17	3645.8	15.09	158.03

DIFFERENTIAL CORRECTIONS
TDE-1.0527 TRA 7.6291 TC-13.4912 BAU 3.0824
RDE .3953 RRA .1464 RC3 .2567 FAU .05435
FDE -.7738 FRA 2.3920 FC3-2.7536 BSP 54912
BDE 1.1244 BRA 7.6305 BC313.4937 FSP 1296

MID-COURSE EXECUTION ACCURACY
SGT15454.7 SGR 621.8 SG3 360.1
RRT -.1053 RRF -.1525 RTF .9651
SGB15467.2 R23 .0510 R13 -.9651
SG115454.9 SG2 618.3 THA 179.76

ORBIT DETERMINATION ACCURACY
ST 3514.2 SR 551.3 SS 802.4
CRT -.3136 CRS .6525 CST -.9235
LSA 3596.8 MSA 600.2 SSA 23.3
EL1 3518.6 EL2 522.9 ALF 177.12

LAUNCH DATE DEC 3 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 898.885 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.256 GAL -5.48 AZL 88.23 HCA 266.12 SMA 191.20 ECC .24696 INC 1.7664 V1 30.214
RP 206.68 LAP -1.76 LOP 336.98 VP 24.293 GAP -13.54 AZP 90.12 TAL 331.77 TAP 237.88 RCA 143.98 APO 238.42 V2 26.496
RC 334.601 GL 13.99 GP -2.50 ZAL 133.71 ZAP 26.72 ETS 173.73 ZAE 42.52 ETE 177.10 ZAC 86.04 ETC 256.09 CLP 26.61

PLANETOCENTRIC CONIC

C3 17.810 VHL 4.220 DLA 2.92 RAL 209.41 RAD 6567.7 VEL 11.798 PTH 2.09 VHP 6.435 DPA -2.49 RAP 182.78 ECC 1.2931

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 21	2277.59	-21.05	45.51	69.55	109.39	20 45 19	1677.6	-18.21	37.99
90.00	8 52 38	4740.60	16.54	203.10	68.28	66.68	10 11 39	4140.6	13.25	195.97
100.00	21 30 3	2010.83	-22.06	25.50	69.15	110.70	22 3 34	1410.8	-19.05	18.00
100.00	10 12 37	4482.59	17.53	183.67	67.82	65.39	11 27 19	3882.6	14.06	176.59
110.00	22 41 26	1787.45	-24.78	7.31	67.92	114.34	23 11 13	1187.5	-21.28	359.91
110.00	11 17 44	4278.74	20.16	166.81	66.44	61.79	12 29 3	3678.7	16.24	159.89

DIFFERENTIAL CORRECTIONS
TDE-1.1914 TRA 7.9616 TC-13.0797 BAU 3.1149
RDE .4079 RRA .1402 RC3 .2572 FAU .04973
FDE -.7796 FRA 2.3191 FC3-2.4174 BSP 55222
BDE 1.2593 BRA 7.9629 BC313.0822 FSP 1219

MID-COURSE EXECUTION ACCURACY
SGT15544.6 SGR 624.6 SG3 337.1
RRT -.1267 RRF -.1757 RTF .9622
SGB15557.1 R23 .0541 R13 -.9623
SG115544.8 SG2 619.6 THA 179.71

ORBIT DETERMINATION ACCURACY
ST 3642.7 SR 556.7 SS 789.9
CRT -.3512 CRS .6731 CST -.9281
LSA 3721.8 MSA 591.8 SSA 22.8
EL1 3648.0 EL2 520.5 ALF 176.86

LAUNCH DATE DEC 3 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 903.117 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.263 GAL -5.72 AZL 88.25 HCA 267.39 SMA 191.34 ECC .24902 INC 1.7513 V1 30.214
RP 206.69 LAP -1.75 LOP 338.25 VP 24.302 GAP -13.68 AZP 90.08 TAL 330.69 TAP 238.08 RCA 143.70 APO 238.99 V2 26.494
RC 335.390 GL 13.57 GP -2.46 ZAL 135.12 ZAP 26.31 ETS 173.70 ZAE 41.81 ETE 177.09 ZAC 86.27 ETC 256.05 CLP 26.20

PLANETOCENTRIC CONIC

C3 18.585 VHL 4.311 DLA 2.05 RAL 210.51 RAD 6567.8 VEL 11.831 PTH 2.10 VHP 6.536 DPA -2.81 RAP 183.58 ECC 1.3059

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 18 14	2260.49	-20.66	44.41	71.10	109.81	20 55 55	1660.5	-17.77	36.93
90.00	8 50 33	4777.61	17.52	205.37	70.19	67.40	10 10 11	4177.6	14.31	198.17
100.00	21 40 32	1995.04	-21.68	24.48	70.70	111.10	22 13 47	1395.0	-18.62	17.02
100.00	10 10 57	4518.29	18.53	185.85	69.74	66.11	11 26 15	3918.3	15.14	178.69
110.00	22 50 58	1774.59	-24.42	6.49	69.44	114.70	23 20 33	1174.6	-20.88	359.13
110.00	11 17 0	4311.50	21.21	168.78	68.37	62.54	12 28 52	3711.5	17.36	161.77

DIFFERENTIAL CORRECTIONS
TDE-1.3316 TRA 8.3016 TC-12.6703 BAU 3.1487
RDE .4210 RRA .1337 RC3 .2568 FAU .04525
FDE -.7823 FRA 2.2424 FC3-2.1077 BSP 55503
BDE 1.3966 BRA 8.3027 BC312.6729 FSP 1142

MID-COURSE EXECUTION ACCURACY
SGT15632.1 SGR 627.4 SG3 314.8
RRT -.1475 RRF -.1986 RTF .9589
SGB15644.7 R23 .0576 R13 -.9589
SG115632.4 SG2 620.5 THA 179.66

ORBIT DETERMINATION ACCURACY
ST 3769.6 SR 562.1 SS 775.2
CRT -.3850 CRS .6926 CST -.9317
LSA 3845.1 MSA 583.9 SSA 22.2
EL1 3775.9 EL2 517.9 ALF 176.65

LAUNCH DATE DEC 3 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 907.335 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.271 GAL -5.96 AZL 88.26 HCA 268.65 SMA 191.49 ECC .25117 INC 1.7362 V1 30.214
RP 206.72 LAP -1.74 LOP 339.52 VP 24.309 GAP -13.83 AZP 90.04 TAL 329.61 TAP 238.26 RCA 143.39 APO 239.58 V2 26.491
RC 336.176 GL 13.15 GP -2.42 ZAL 136.50 ZAP 25.91 ETS 173.68 ZAE 41.10 ETE 177.07 ZAC 86.50 ETC 256.02 CLP 25.81

PLANETOCENTRIC CONIC

C3 19.415 VHL 4.406 DLA 1.19 RAL 211.60 RAD 6567.8 VEL 11.866 PTH 2.10 VHP 6.638 DPA -3.14 RAP 184.40 ECC 1.3195

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 28 56	2244.31	-20.28	43.37	72.68	110.20	21 6 20	1644.3	-17.35	35.93
90.00	8 48 34	4814.38	18.47	207.65	72.13	68.15	10 8 49	4214.4	15.34	200.37
100.00	21 50 49	1980.15	-21.31	23.53	72.26	111.47	22 23 50	1380.1	-18.21	16.11
100.00	10 9 22	4553.78	19.49	188.04	71.68	66.88	11 25 16	3953.8	16.19	180.80
110.00	23 0 20	1762.55	-24.07	5.72	70.97	115.04	23 29 43	1162.6	-20.50	358.40
110.00	11 16 20	4344.14	22.22	170.78	70.33	63.33	12 28 44	3744.1	18.46	163.66

DIFFERENTIAL CORRECTIONS
TDE-1.4734 TRA 8.6495 TC-12.2629 BAU 3.1836
RDE .4346 RRA .1267 RC3 .2555 FAU .04090
FDE -.7815 FRA 2.1611 FC3-1.8237 BSP 55745
BDE 1.5361 BRA 8.6504 BC312.2656 FSP 1066

MID-COURSE EXECUTION ACCURACY
SGT15716.5 SGR 630.2 SG3 293.2
RRT -.1678 RRF -.2212 RTF .9550
SGB15729.2 R23 .0615 R13 -.9550
SG115716.9 SG2 621.3 THA 179.61

ORBIT DETERMINATION ACCURACY
ST 3894.3 SR 567.3 SS 757.9
CRT -.4155 CRS .7109 CST -.9344
LSA 3966.0 MSA 576.5 SSA 21.7
EL1 3901.6 EL2 515.0 ALF 176.47

LAUNCH DATE DEC 3 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 911.540 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.279 GAL -6.21 AZL 88.28 HCA 269.92 SMA 191.63 ECC .25341 INC 1.7211 V1 30.214
RP 206.75 LAP -1.72 LOP 340.79 VP 24.316 GAP -13.98 AZP 90.00 TAL 328.51 TAP 238.43 RCA 143.07 APO 240.19 V2 26.488
RC 336.957 GL 12.74 GP -2.38 ZAL 137.86 ZAP 25.53 ETS 173.66 ZAE 40.41 ETE 177.06 ZAC 86.73 ETC 255.98 CLP 25.43

PLANETOCENTRIC CONIC

C3 20.302 VHL 4.506 DLA .36 RAL 212.68 RAD 6567.8 VEL 11.903 PTH 2.11 VHP 6.743 DPA -3.47 RAP 185.22 ECC 1.3341

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 39 25	2229.04	-19.92	42.40	74.27	110.55	21 16 34	1629.0	-16.94	34.99
90.00	8 46 41	4850.91	19.38	209.95	74.10	68.94	10 7 32	4250.9	16.35	202.59
100.00	22 0 55	1966.13	-20.96	22.63	73.84	111.82	22 33 42	1366.1	-17.81	15.25
100.00	10 7 51	4589.06	20.42	190.25	73.66	67.68	11 24 20	3989.1	17.22	182.92
110.00	23 9 33	1751.32	-23.75	5.01	72.52	115.34	23 38 44	1151.3	-20.14	357.73
110.00	11 15 43	4376.64	23.20	172.79	72.33	64.16	12 28 40	3776.6	19.53	165.57

DIFFERENTIAL CORRECTIONS
TDE-1.6146 TRA 9.0074 TC-11.8588 BAU 3.2195
RDE .4486 RRA .1193 RC3 .2535 FAU .03663
FDE -.7771 FRA 2.0762 FC3-1.5621 BSP 55973
BDE 1.6758 BRA 9.0082 BC311.8615 FSP 993

MID-COURSE EXECUTION ACCURACY
SGT15799.2 SGR 633.0 SG3 272.2
RRT -.1875 RRF -.2431 RTF .9504
SGB15811.9 R23 .0658 R13 -.9504
SG115799.7 SG2 621.7 THA 179.57

ORBIT DETERMINATION ACCURACY
ST 4015.7 SR 572.3 SS 738.3
CRT -.4426 CRS .7280 CST -.9363
LSA 4083.3 MSA 569.6 SSA 21.2
EL1 4023.8 EL2 512.2 ALF 176.33

LAUNCH DATE DEC 3 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 915.729 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.287 GAL -6.47 AZL 88.29 HCA 271.19 SMA 191.77 ECC .25575 INC 1.7061 V1 30.214
RP 206.79 LAP -1.71 LOP 342.06 VP 24.321 GAP -14.14 AZP 89.96 TAL 327.40 TAP 238.59 RCA 142.73 APO 240.82 V2 26.483
RC 337.733 GL 12.33 GP -2.34 ZAL 139.20 ZAP 25.16 ETS 173.63 ZAE 39.72 ETE 177.04 ZAC 86.96 ETC 255.95 CLP 25.05

PLANETOCENTRIC CONIC

C3 21.252 VHL 4.610 DLA -.46 RAL 213.74 RAD 6567.9 VEL 11.943 PTH 2.13 VHP 6.850 DPA -3.81 RAP 186.05 ECC 1.3498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 49 43	2214.66	-19.57	41.49	75.88	110.88	21 26 38	1614.7	-16.56	34.11
90.00	8 44 52	4887.20	20.25	212.25	76.10	69.78	10 6 19	4287.2	17.32	204.81
100.00	22 10 51	1952.96	-20.62	21.80	75.44	112.13	22 43 24	1353.0	-17.44	14.45
100.00	10 6 25	4624.13	21.31	192.48	75.67	68.53	11 23 29	4024.1	18.20	185.06
110.00	23 18 36	1740.88	-23.44	4.36	74.09	115.62	23 47 37	1140.9	-19.80	357.11
110.00	11 15 9	4408.98	24.14	174.83	74.36	65.03	12 28 38	3809.0	20.57	167.50

DIFFERENTIAL CORRECTIONS
TDE-1.7579 TRA 9.3744 TC-11.4619 BAU 3.2573
RDE .4632 RRA .1115 RC3 .2508 FAU .03249
FDE -.7701 FRA 1.9873 FC3-1.3234 BSP 56159
BDE 1.8179 BRA 9.3751 BC311.4647 FSP 921

MID-COURSE EXECUTION ACCURACY
SGT15881.1 SGR 635.7 SG3 252.0
RRT -.2068 RRF -.2648 RTF .9449
SGB15893.8 R23 .0707 R13 -.9449
SG115881.7 SG2 621.9 THA 179.53

ORBIT DETERMINATION ACCURACY
ST 4134.3 SR 577.2 SS 716.7
CRT -.4671 CRS .7446 CST -.9373
LSA 4197.8 MSA 563.1 SSA 20.8
EL1 4143.2 EL2 509.3 ALF 176.21

LAUNCH DATE DEC 3 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 919.902 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.294 GAL -6.73 AZL 88.31 HCA 272.46 SMA 191.92 ECC .25819 INC 1.6910 V1 30.214
RP 206.84 LAP -1.69 LOP 343.33 VP 24.326 GAP -14.30 AZP 89.93 TAL 326.27 TAP 238.73 RCA 142.37 APO 241.47 V2 26.477
RC 338.506 GL 11.93 GP -2.31 ZAL 140.52 ZAP 24.79 ETS 173.61 ZAE 39.05 ETE 177.02 ZAC 87.20 ETC 255.93 CLP 24.69

PLANETOCENTRIC CONIC

C3 22.267 VHL 4.719 DLA -1.26 RAL 214.79 RAD 6567.9 VEL 11.985 PTH 2.14 VHP 6.959 DPA -4.16 RAP 186.89 ECC 1.3665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 59 50	2201.15	-19.24	40.63	77.50	111.19	21 36 31	1601.1	-16.19	33.28
90.00	8 43 8	4923.24	21.08	214.57	78.14	70.65	10 5 11	4323.2	18.25	207.04
100.00	22 20 35	1940.65	-20.31	21.02	77.05	112.42	22 52 56	1340.6	-17.09	13.71
100.00	10 5 3	4658.97	22.16	194.72	77.71	69.41	11 22 42	4059.0	19.16	187.21
110.00	23 27 29	1731.23	-23.15	3.75	75.68	115.88	23 56 20	1131.2	-19.48	356.54
110.00	11 14 39	4441.16	25.05	176.89	76.42	65.94	12 28 40	3841.2	21.59	169.45

DIFFERENTIAL CORRECTIONS
TDE-1.9011 TRA 9.7513 TC-11.0688 BAU 3.2958
RDE .4782 RRA .1032 RC3 .2475 FAU .02843
FDE -.7596 FRA 1.8945 FC3-1.1052 BSP 56354
BDE 1.9604 BRA 9.7519 BC311.0715 FSP 851

MID-COURSE EXECUTION ACCURACY
SGT15959.6 SGR 638.3 SG3 232.4
RRT -.2254 RRF -.2860 RTF .9383
SGB15972.4 R23 .0761 R13 -.9384
SG115960.3 SG2 621.9 THA 179.48

ORBIT DETERMINATION ACCURACY
ST 4248.5 SR 581.9 SS 692.9
CRT -.4890 CRS .7602 CST -.9377
LSA 4307.9 MSA 557.0 SSA 20.3
EL1 4258.2 EL2 506.5 ALF 176 '1

LAUNCH DATE DEC 3 1964 FLIGHT TIME 424.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 924.058 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.302 GAL -7.00 AZL 88.32 HCA 273.73 SMA 192.06 ECC .26073 INC 1.6759 V1 30.214
RP 206.90 LAP -1.67 LOP 344.60 VP 24.329 GAP -14.46 AZP 89.89 TAL 325.14 TAP 238.86 RCA 141.98 APO 242.14 V2 26.470
RC 339.274 GL 11.54 GP -2.27 ZAL 141.81 ZAP 24.44 ETS 173.58 ZAE 38.38 ETE 177.00 ZAC 87.43 ETC 255.90 CLP 24.34

PLANETOCENTRIC CONIC

C3 23.351 VHL 4.832 DLA -2.04 RAL 215.83 RAD 6567.9 VEL 12.030 PTH 2.15 VHP 7.070 DPA -4.51 RAP 187.74 ECC 1.3843

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 9 46	2188.48	-18.93	39.84	79.14	111.46	21 46 14	1588.5	-15.84	32.52
90.00	8 41 28	4959.03	21.87	216.90	80.20	71.55	10 4 7	4359.0	19.15	209.28
100.00	22 30 9	1929.15	-20.01	20.30	78.68	112.69	23 2 18	1329.2	-16.76	13.01
100.00	10 3 45	4693.59	22.97	196.97	79.78	70.33	11 21 59	4093.6	20.08	189.36
110.00	23 36 13	1722.35	-22.89	3.20	77.27	116.11	24 4 55	1122.3	-19.19	356.01
110.00	11 14 11	4473.16	25.92	178.96	78.52	66.89	12 28 44	3873.2	22.57	171.41

DIFFERENTIAL CORRECTIONS
TDE-2.0452 TRA10.1377 TC-10.6832 BAU 3.3359
RDE .4937 RRA .0944 RC3 .2436 FAU .02446
FDE -.7465 FRA 1.7972 FC3 -.9070 BSP 56501
BDE 2.1040 BRA10.1382 BC310.6860 FSP 782

MID-COURSE EXECUTION ACCURACY
SGT16035.9 SGR 640.9 SG3 213.4
RRT -.2436 RRF -.3069 RTF .9304
SGB16048.7 R23 .0824 R13 -.9304
SG116036.7 SG2 621.5 THA 179.44

ORBIT DETERMINATION ACCURACY
ST 4358.6 SR 586.4 SS 667.3
CRT -.5088 CRS .7756 CST -.9373
LSA 4413.8 MSA 551.3 SSA 19.9
EL1 4368.9 EL2 503.6 ALF 176.03

LAUNCH DATE DEC 3 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 928.194 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.310 GAL -7.28 AZL 88.34 HCA 274.99 SMA 192.21 ECC .26338 INC 1.6608 V1 30.214
RP 206.97 LAP -1.65 LOP 345.86 VP 24.331 GAP -14.64 AZP 89.86 TAL 323.99 TAP 238.98 RCA 141.58 APO 242.83 V2 26.462
RC 340.039 GL 11.15 GP -2.24 ZAL 143.09 ZAP 24.10 ETS 173.56 ZAE 37.73 ETE 176.98 ZAC 87.67 ETC 255.88 CLP 24.00

PLANETOCENTRIC CONIC

C3 24.508 VHL 4.951 DLA -2.80 RAL 216.85 RAD 6568.0 VEL 12.078 PTH 2.16 VHP 7.183 DPA -4.86 RAP 188.59 ECC 1.4033

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 19 31	2176.64	-18.63	39.09	80.80	111.72	21 55 47	1576.6	-15.52	31.80
90.00	8 39 52	4994.56	22.62	219.24	82.28	72.49	10 3 7	4394.6	20.01	211.53
100.00	22 39 33	1918.47	-19.72	19.63	80.32	112.93	23 11 31	1318.5	-16.45	12.37
100.00	10 2 31	4727.97	23.74	199.23	81.88	71.28	11 21 19	4128.0	20.97	191.53
110.00	23 44 48	1714.22	-22.65	2.69	78.89	116.32	24 13 22	1114.2	-18.93	355.53
110.00	11 13 46	4504.98	26.75	181.06	80.64	67.88	12 28 51	3905.0	23.52	173.40

DIFFERENTIAL CORRECTIONS
TDE-2.1895 TRA10.5340 TC-10.3052 BAU 3.3774
RDE .5097 RRA .0852 RC3 .2394 FAU .02059
FDE -.7306 FRA 1.6961 FC3 -.7272 BSP 56618
BDE 2.2480 BRA10.5343 BC310.3080 FSP 715

MID-COURSE EXECUTION ACCURACY
SGT16109.7 SGR 643.3 SG3 195.0
RRT -.2613 RRF -.3273 RTF .9206
SGB16122.5 R23 .0896 R13 -.9206
SG116110.6 SG2 621.0 THA 179.40

ORBIT DETERMINATION ACCURACY
ST 4463.7 SR 590.7 SS 639.9
CRT -.5266 CRS .7906 CST -.9361
LSA 4514.9 MSA 546.1 SSA 19.4
EL1 4474.7 EL2 500.9 ALF 175.96

LAUNCH DATE DEC 3 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 932.310 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.318 GAL -7.56 AZL 88.35 HCA 276.26 SMA 192.35 ECC .26615 INC 1.6456 V1 30.214
RP 207.04 LAP -1.64 LOP 347.13 VP 24.332 GAP -14.82 AZP 89.82 TAL 322.82 TAP 239.08 RCA 141.16 APO 243.55 V2 26.453
RC 340.800 GL 10.77 GP -2.21 ZAL 144.34 ZAP 23.76 ETS 173.53 ZAE 37.08 ETE 176.96 ZAC 87.90 ETC 255.86 CLP 23.67

PLANETOCENTRIC CONIC

C3 25.743 VHL 5.074 DLA -3.55 RAL 217.86 RAD 6568.0 VEL 12.129 PTH 2.17 VHP 7.299 DPA -5.22 RAP 189.46 ECC 1.4237

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 29 6	2165.61	-18.35	38.40	82.46	111.95	22 5 11	1565.6	-15.21	31.13
90.00	8 38 21	5029.82	23.32	221.58	84.39	73.47	10 2 11	4429.8	20.83	213.79
100.00	22 48 47	1908.56	-19.46	19.02	81.98	113.15	23 20 35	1308.6	-16.16	11.78
100.00	10 1 21	4762.10	24.47	201.51	84.01	72.27	11 20 43	4162.1	21.81	193.72
110.00	23 53 13	1706.83	-22.42	2.24	80.51	116.50	24 21 40	1106.8	-18.68	355.10
110.00	11 13 24	4536.60	27.55	183.18	82.80	68.91	12 29 1	3936.6	24.43	175.40

DIFFERENTIAL CORRECTIONS
TDE-2.3354 TRA10.9397 TC3-9.9381 BAU 3.4212
RDE .5261 RRA .0755 RC3 .2347 FAU .01679
FDE -.7121 FRA 1.5906 FC3 -.5646 BSP 56688
BDE 2.3939 BRA10.9399 BC3 9.9409 FSP 648

MID-COURSE EXECUTION ACCURACY
SGT16182.0 SGR 645.7 SG3 177.4
RRT -.2786 RRF -.3473 RTF .9084
SGB16194.9 R23 .0977 R13 -.9084
SG116183.0 SG2 620.1 THA 179.36

ORBIT DETERMINATION ACCURACY
ST 4564.5 SR 594.7 SS 610.9
CRT -.5429 CRS .8054 CST -.9342
LSA 4611.8 MSA 541.0 SSA 19.1
EL1 4576.0 EL2 498.1 ALF 175.91

LAUNCH DATE DEC 3 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 6 1966

HELIOCENTRIC CONIC DISTANCE 936.405 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.326 GAL -7.85 AZL 88.37 HCA 277.52 SMA 192.50 ECC .26903 INC 1.6304 V1 30.214
RP 207.13 LAP -1.62 LOP 348.39 VP 24.333 GAP -15.00 AZP 89.79 TAL 321.65 TAP 239.17 RCA 140.71 APO 244.29 V2 26.444
RC 341.558 GL 10.40 GP -2.17 ZAL 145.57 ZAP 23.44 ETS 173.51 ZAE 36.45 ETE 176.93 ZAC 88.14 ETC 255.85 CLP 23.35

PLANETOCENTRIC CONIC

C3 27.060 VHL 5.202 DLA -4.27 RAL 218.86 RAD 6568.1 VEL 12.183 PTH 2.19 VHP 7.417 DPA -5.58 RAP 190.33 ECC 1.4453

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 31	2155.35	-18.09	37.77	84.14	112.16	22 14 26	1555.3	-14.92	30.52
90.00	8 36 54	5064.83	23.98	223.94	86.53	74.47	10 1 18	4464.8	21.62	216.06
100.00	22 57 51	1899.41	-19.21	18.45	83.64	113.35	23 29 30	1299.4	-15.89	11.23
100.00	10 0 14	4795.99	25.15	203.79	86.16	73.29	11 20 10	4196.0	22.62	195.91
110.00	0 5 26	1700.15	-22.22	1.83	82.15	116.87	0 33 46	1100.2	-18.46	354.71
110.00	11 13 5	4568.02	28.30	185.32	84.99	69.97	12 29 13	3968.0	25.31	177.42

DIFFERENTIAL CORRECTIONS
TDE-2.4807 TRA11.3572 TC3-9.5777 BAU 3.4660
RDE .5429 RRA .0654 RC3 .2298 FAU .01305
FDE -.6909 FRA 1.4811 FC3 -.4175 BSP 56775
BDE 2.5394 BRA11.3574 BC3 9.5805 FSP 585

MID-COURSE EXECUTION ACCURACY
SGT16251.5 SGR 648.0 SG3 160.3
RRT -.2953 RRF -.3665 RTF .8929
SGB16264.4 R23 .1072 R13 -.8929
SG116252.6 SG2 619.0 THA 179.32

ORBIT DETERMINATION ACCURACY
ST 4660.1 SR 598.4 SS 580.3
CRT -.5574 CRS .8203 CST -.9312
LSA 4703.6 MSA 536.3 SSA 18.7
EL1 4672.2 EL2 495.5 ALF 175.86

LAUNCH DATE DEC 3 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 8 1966

HELIOCENTRIC CONIC DISTANCE 940.476 EARTH TO MARS

RL 147.46 LAL -.00 LOL 70.87 VL 33.334 GAL -8.15 AZL 88.38 HCA 278.78 SMA 192.65 ECC .27203 INC 1.6151 V1 30.214
RP 207.22 LAP -1.60 LOP 349.66 VP 24.332 GAP -15.19 AZP 89.75 TAL 320.46 TAP 239.25 RCA 140.24 APO 245.06 V2 26.433
RC 342.314 GL 10.04 GP -2.14 ZAL 146.78 ZAP 23.13 ETS 173.49 ZAE 35.82 ETE 176.91 ZAC 88.38 ETC 255.84 CLP 23.03

PLANETOCENTRIC CONIC

C3 28.466 VHL 5.335 DLA -4.98 RAL 219.84 RAD 6568.1 VEL 12.241 PTH 2.20 VHP 7.538 DPA -5.95 RAP 191.22 ECC 1.4685

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 46	2145.84	-17.84	37.18	85.83	112.36	22 23 31	1545.8	-14.66	29.95
90.00	8 35 30	5099.56	24.59	226.30	88.69	75.50	10 0 29	4499.6	22.36	218.34
100.00	23 6 45	1891.00	-18.99	17.93	85.32	113.53	23 38 16	1291.0	-15.64	10.73
100.00	9 59 11	4829.63	25.79	206.09	88.33	74.34	11 19 41	4229.6	23.39	198.11
110.00	0 13 34	1694.17	-22.03	1.46	83.79	116.82	0 41 48	1094.2	-18.26	354.36
110.00	11 12 48	4599.23	29.01	187.47	87.20	71.07	12 29 27	3999.2	26.15	179.45

DIFFERENTIAL CORRECTIONS
TDE-2.6261 TRA11.7856 TC3-9.2273 BAU 3.5126
RDE .5601 RRA .0547 RC3 .2246 FAU .00939
FDE -.6672 FRA 1.3673 FC3 -.2855 BSP 56806
BDE 2.6852 BRA11.7858 BC3 9.2300 FSP 522

MID-COURSE EXECUTION ACCURACY
SGT16318.8 SGR 650.1 SG3 144.0
RRT -.3116 RRF -.3848 RTF .8729
SGB16331.7 R23 .1183 R13 -.8730
SG116320.1 SG2 617.7 THA 179.29

ORBIT DETERMINATION ACCURACY
ST 4750.5 SR 601.8 SS 548.4
CRT -.5705 CRS .8352 CST -.9272
LSA 4790.3 MSA 531.8 SSA 18.3
EL1 4763.0 EL2 492.9 ALF 175.82

LAUNCH DATE DEC 3 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 10 1966

HELIOCENTRIC CONIC DISTANCE 944.522 EARTH TO MARS

RL	147.46	LAL	-.00	LOL	70.87	VL	33.342	GAL	-8.45	AZL	88.40	HCA	280.05	SMA	192.80	ECC	.27516	INC	1.5997	V1	30.214
RP	207.32	LAP	-1.58	LOP	350.92	VP	24.330	GAP	-15.39	AZP	89.72	TAL	319.26	TAP	239.31	RCA	139.75	APO	245.85	V2	26.421
RC	343.066	GL	9.68	GP	-2.12	ZAL	147.96	ZAP	22.83	ETS	173.46	ZAE	35.21	ETE	176.88	ZAC	88.62	ETC	255.83	CLP	22.73

PLANETOCENTRIC CONIC

C3	29.964	VHL	5.474	DLA	-5.67	RAL	220.82	RAD	6568.2	VEL	12.302	PTH	2.22	VHP	7.661	DPA	-6.32	RAP	192.11	ECC	1.4931

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 56 51	2137.06	-17.61	36.63	87.53	112.54	22 32 28	1537.1	-14.41	29.42
90.00	8 34 10	5134.01	25.16	228.66	90.86	76.56	9 59 44	4534.0	23.06	220.62
100.00	23 15 31	1883.30	-18.78	17.45	87.01	113.70	23 46 54	1283.3	-15.41	10.27
100.00	9 58 11	4863.00	26.38	208.39	90.52	75.41	11 19 14	4263.0	24.12	200.32
110.00	0 21 33	1688.85	-21.87	1.13	85.45	116.95	0 49 42	1088.9	-18.08	354.05
110.00	11 12 34	4630.21	29.67	189.63	89.44	72.19	12 29 44	4030.2	26.95	181.50

DIFFERENTIAL CORRECTIONS

TDE	-2.7727	TRA	12.2237	TC3	-8.8883	BAU	3.5616
RDE	.5777	RRA	.0436	RC3	.2191	FAU	.00579
FDE	-.6413	FRA	1.2492	FC3	-.1672	BSP	56784
BDE	2.8323	BRA	12.2238	BC3	8.8910	FSP	461

MID-COURSE EXECUTION ACCURACY

SGT	16383.7	SGR	652.2	SG3	128.5		
RRT	-.3275	RRF	-.4017	RTF	.8466		
SGB	16396.6	R23	.1313	R13	-.8467		
SG1	16385.1	SG2	616.1	THA	179.25		

ORBIT DETERMINATION ACCURACY

ST	4836.0	SR	604.9	SS	515.2		
CRT	-.5825	CRS	.8506	CST	-.9218		
LSA	4872.3	MSA	527.5	SSA	17.9		
EL1	4848.9	EL2	490.4	ALF	175.79		

LAUNCH DATE DEC 4 1964 FLIGHT TIME 140.00 ARRIVAL DATE APR 23 1965

HELIOCENTRIC CONIC DISTANCE 380.346 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	35.989	GAL	-2.62	AZL	88.65	HCA	116.60	SMA	262.74	ECC	.44078	INC	1.3521	V1	30.219
RP	245.12	LAP	1.21	LOP	188.49	VP	24.036	GAP	25.89	AZP	90.61	TAL	351.42	TAP	108.02	RCA	146.93	APO	378.56	V2	22.374
RC	124.216	GL	8.19	GP	1.46	ZAL	103.54	ZAP	176.20	ETS	156.06	ZAE	153.78	ETE	.19	ZAC	90.21	ETC	256.05	CLP	176.49

PLANETOCENTRIC CONIC

C3	35.421	VHL	5.952	DLA	9.28	RAL	179.22	RAD	6568.4	VEL	12.522	PTH	2.27	VHP	11.755	DPA	.53	RAP	185.70	ECC	1.5829

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 14 17	2647.45	-27.18	70.78	53.96	98.25	17 58 24	2047.5	-25.76	62.41
90.00	7 37 1	4707.87	15.65	201.11	48.19	66.10	8 55 29	4107.9	12.29	194.05
100.00	18 40 10	2370.46	-28.53	50.18	53.73	99.33	19 19 40	1770.5	-26.94	41.73
100.00	8 53 49	4460.10	16.89	182.31	47.60	64.96	10 8 9	3860.1	13.37	175.28
110.00	19 58 45	2124.55	-32.13	30.71	52.93	102.35	20 34 9	1524.5	-30.10	22.08
110.00	9 51 43	4278.78	20.17	166.81	45.87	61.80	11 3 2	3678.8	16.24	159.89

DIFFERENTIAL CORRECTIONS

TDE	.6370	TRA	-1.6494	TC3	.7339	BAU	.3479
RDE	-.5764	RRA	-.2584	RC3	-.0329	FAU	.05392
FDE	-.1555	FRA	.7998	FC3	-1.3180	BSP	5992
BDE	.8591	BRA	1.6695	BC3	.7347	FSP	405

MID-COURSE EXECUTION ACCURACY

SGT	1930.7	SGR	610.8	SG3	151.9		
RRT	.0264	RRF	-.0485	RTF	-.8004		
SGB	2025.1	R23	-.0251	R13	-.8005		
SG1	1930.8	SG2	610.5	THA	.53		

ORBIT DETERMINATION ACCURACY

ST	780.8	SR	560.1	SS	286.2		
CRT	-.6947	CRS	-.4147	CST	.9363		
LSA	926.4	MSA	382.2	SSA	32.0		
EL1	894.2	EL2	351.8	ALF	147.99		

LAUNCH DATE DEC 4 1964 FLIGHT TIME 142.00 ARRIVAL DATE APR 25 1965

HELIOCENTRIC CONIC DISTANCE 381.739 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	35.845	GAL	-2.44	AZL	88.66	HCA	117.50	SMA	257.48	ECC	.42911	INC	1.3379	V1	30.219
RP	244.91	LAP	1.19	LOP	189.39	VP	23.840	GAP	25.27	AZP	90.62	TAL	351.86	TAP	109.36	RCA	146.99	APO	367.96	V2	22.396
RC	126.220	GL	8.30	GP	1.51	ZAL	102.72	ZAP	175.71	ETS	158.14	ZAE	153.48	ETE	.43	ZAC	90.34	ETC	256.04	CLP	175.99

PLANETOCENTRIC CONIC

C3	33.517	VHL	5.789	DLA	9.71	RAL	178.51	RAD	6568.3	VEL	12.445	PTH	2.25	VHP	11.472	DPA	.41	RAP	186.08	ECC	1.5516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 59	2647.50	-27.18	70.79	52.39	98.25	17 52 7	2047.5	-25.76	62.41
90.00	7 37 36	4679.94	14.87	199.43	46.54	65.62	8 55 36	4079.9	11.46	192.42
100.00	18 34 7	2369.75	-28.52	50.13	52.16	99.36	19 13 36	1769.7	-26.93	41.68
100.00	8 54 10	4432.93	16.10	180.68	45.95	64.47	10 8 3	3832.9	12.53	173.70
110.00	19 53 13	2122.19	-32.10	30.53	51.36	102.45	20 28 35	1522.2	-30.05	21.92
110.00	9 51 33	4253.33	19.34	165.30	44.20	61.25	11 2 26	3653.3	15.35	158.45

DIFFERENTIAL CORRECTIONS

TDE	.6120	TRA	-1.6263	TC3	.7979	BAU	.3578
RDE	-.5578	RRA	-.2501	RC3	-.0325	FAU	.05564
FDE	-.1495	FRA	.8018	FC3	-1.4373	BSP	6275
BDE	.8281	BRA	1.6454	BC3	.7986	FSP	426

MID-COURSE EXECUTION ACCURACY

SGT	1971.4	SGR	607.7	SG3	160.2		
RRT	.0342	RRF	-.0513	RTF	-.8046		
SGB	2063.0	R23	-.0210	R13	-.8046		
SG1	1971.6	SG2	607.3	THA	.67		

ORBIT DETERMINATION ACCURACY

ST	779.4	SR	557.2	SS	285.1		
CRT	-.6850	CRS	-.3966	CST	.9337		
LSA	921.4	MSA	386.2	SSA	33.0		
EL1	889.7	EL2	355.7	ALF	148.27		

LAUNCH DATE DEC 4 1964 FLIGHT TIME 144.00 ARRIVAL DATE APR 27 1965

HELIOCENTRIC CONIC DISTANCE 383.330 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 35.708 GAL -2.27 AZL 88.68 HCA 118.41 SMA 252.65 ECC .41800 INC 1.3235 V1 30.219
RP 244.68 LAP 1.16 LOP 190.30 VP 23.654 GAP 24.65 AZP 90.63 TAL 352.31 TAP 110.71 RCA 147.04 APO 358.26 V2 22.418
RC 128.267 GL 8.41 GP 1.55 ZAL 101.87 ZAP 175.21 ETS 159.78 ZAE 153.23 ETE .67 ZAC 90.47 ETC 256.02 CLP 175.47

PLANETOCENTRIC CONIC

C3 31.752 VHL 5.635 DLA 10.14 RAL 177.76 RAD 6568.3 VEL 12.374 PTH 2.23 VHP 11.196 DPA .29 RAP 186.45 ECC 1.5226

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 30	2648.17	-27.19	70.84	50.82	98.23	17 45 38	2048.2	-25.77	62.46
90.00	7 38 10	4652.00	14.08	197.76	44.89	65.18	8 55 42	4052.0	10.62	190.79
100.00	18 27 53	2369.63	-28.52	50.11	50.58	99.36	19 7 23	1769.6	-26.93	41.67
100.00	8 54 29	4405.78	15.29	179.06	44.30	64.00	10 7 55	3805.8	11.67	172.14
110.00	19 47 31	2120.38	-32.07	30.40	49.79	102.52	20 22 51	1520.4	-30.01	21.79
110.00	9 51 19	4227.79	18.50	163.80	42.54	60.73	11 1 47	3627.8	14.46	157.02

DIFFERENTIAL CORRECTIONS
TDE .5896 TRA-1.5999 TC3 .8686 BAU .3690
RDE -.5400 RRA -.2421 RC3 -.0318 FAU .05738
FDE -.1418 FRA .8035 FC3-1.5644 BSP 6508
BDE .7995 BRA 1.6181 BC3 .8692 FSP 450

MID-COURSE EXECUTION ACCURACY
SGT 2012.2 SGR 604.4 SG3 168.8
RRT .0403 RRF -.0551 RTF -.8098
SGB 2101.0 R23 -.0193 R13 -.8099
SG1 2012.3 SG2 603.8 THA .76

ORBIT DETERMINATION ACCURACY
ST 778.5 SR 554.1 SS 283.0
CRT -.6768 CRS -.3735 CST .9284
LSA 916.6 MSA 389.7 SSA 33.9
EL1 885.8 EL2 358.5 ALF 148.56

LAUNCH DATE DEC 4 1964 FLIGHT TIME 146.00 ARRIVAL DATE APR 29 1965

HELIOCENTRIC CONIC DISTANCE 385.098 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 35.576 GAL -2.09 AZL 88.69 HCA 119.31 SMA 248.22 ECC .40741 INC 1.3089 V1 30.219
RP 244.46 LAP 1.14 LOP 191.20 VP 23.476 GAP 24.03 AZP 90.64 TAL 352.76 TAP 112.08 RCA 147.10 APO 349.35 V2 22.440
RC 130.354 GL 8.51 GP 1.60 ZAL 101.00 ZAP 174.71 ETS 161.11 ZAE 153.03 ETE .91 ZAC 90.60 ETC 256.01 CLP 174.95

PLANETOCENTRIC CONIC

C3 30.114 VHL 5.488 DLA 10.59 RAL 176.99 RAD 6568.2 VEL 12.308 PTH 2.22 VHP 10.928 DPA .17 RAP 186.82 ECC 1.4956

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 54 49	2649.45	-27.20	70.93	49.24	98.18	17 38 58	2049.5	-25.79	62.54
90.00	7 38 41	4624.13	13.28	196.11	43.25	64.76	8 55 45	4024.1	9.77	189.19
100.00	18 21 26	2370.10	-28.52	50.15	49.01	99.34	19 0 56	1770.1	-26.94	41.71
100.00	8 54 45	4378.71	14.48	177.46	42.65	63.56	10 7 44	3778.7	10.81	170.59
110.00	19 41 39	2119.10	-32.05	30.30	48.22	102.58	20 16 58	1519.1	-29.99	21.70
110.00	9 51 2	4202.47	17.65	162.33	40.89	60.24	11 1 4	3602.5	13.55	155.61

DIFFERENTIAL CORRECTIONS
TDE .5683 TRA-1.5716 TC3 .9448 BAU .3806
RDE -.5228 RRA -.2344 RC3 -.0308 FAU .05919
FDE -.1328 FRA .8047 FC3-1.7015 BSP 6717
BDE .7722 BRA 1.5890 BC3 .9453 FSP 477

MID-COURSE EXECUTION ACCURACY
SGT 2052.8 SGR 600.9 SG3 177.8
RRT .0459 RRF -.0598 RTF -.8154
SGB 2138.9 R23 -.0188 R13 -.8155
SG1 2053.0 SG2 600.2 THA .84

ORBIT DETERMINATION ACCURACY
ST 777.1 SR 550.9 SS 280.3
CRT -.6692 CRS -.3461 CST .9210
LSA 911.2 MSA 392.9 SSA 34.8
EL1 881.5 EL2 360.8 ALF 148.83

LAUNCH DATE DEC 4 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 387.026 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 35.450 GAL -1.92 AZL 88.71 HCA 120.22 SMA 244.15 ECC .39732 INC 1.2939 V1 30.219
RP 244.23 LAP 1.12 LOP 192.11 VP 23.307 GAP 23.41 AZP 90.65 TAL 353.23 TAP 113.45 RCA 147.14 APO 341.15 V2 22.463
RC 132.477 GL 8.61 GP 1.65 ZAL 100.09 ZAP 174.19 ETS 162.21 ZAE 152.88 ETE 1.15 ZAC 90.73 ETC 255.99 CLP 174.43

PLANETOCENTRIC CONIC

C3 28.597 VHL 5.348 DLA 11.03 RAL 176.19 RAD 6568.1 VEL 12.246 PTH 2.20 VHP 10.667 DPA .06 RAP 187.19 ECC 1.4706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 57	2651.34	-27.22	71.06	47.66	98.12	17 32 8	2051.3	-25.82	62.68
90.00	7 39 10	4596.35	12.46	194.47	41.62	64.37	8 55 46	3996.4	8.91	187.59
100.00	18 14 49	2371.15	-28.54	50.23	47.43	99.31	18 54 21	1771.1	-26.95	41.78
100.00	8 54 58	4351.78	13.66	175.89	41.02	63.15	10 7 30	3751.8	9.95	169.06
110.00	19 35 37	2118.36	-32.04	30.25	46.65	102.61	20 10 55	1518.4	-29.97	21.64
110.00	9 50 41	4177.33	16.79	160.88	39.25	59.78	11 0 18	3577.3	12.65	154.22

DIFFERENTIAL CORRECTIONS
TDE .5475 TRA-1.5424 TC3 1.0263 BAU .3925
RDE -.5063 RRA -.2269 RC3 -.0294 FAU .06106
FDE -.1222 FRA .8052 FC3-1.8486 BSP 6878
BDE .7457 BRA 1.5590 BC3 1.0268 FSP 506

MID-COURSE EXECUTION ACCURACY
SGT 2093.8 SGR 597.1 SG3 187.3
RRT .0514 RRF -.0652 RTF -.8212
SGB 2177.3 R23 -.0193 R13 -.8213
SG1 2094.0 SG2 596.3 THA .91

ORBIT DETERMINATION ACCURACY
ST 774.8 SR 547.5 SS 276.8
CRT -.6617 CRS -.3133 CST .9109
LSA 904.7 MSA 396.2 SSA 35.7
EL1 876.6 EL2 362.8 ALF 149.08

LAUNCH DATE DEC 4 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 389.097 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 35.330 GAL -1.76 AZL 88.72 HCA 121.13 SMA 240.39 ECC .38771 INC 1.2787 V1 30.219
RP 243.99 LAP 1.09 LOP 193.02 VP 23.147 GAP 22.80 AZP 90.66 TAL 353.71 TAP 114.84 RCA 147.19 APO 333.59 V2 22.486
RC 134.631 GL 8.69 GP 1.70 ZAL 99.17 ZAP 173.66 ETS 163.12 ZAE 152.77 ETE 1.39 ZAC 90.86 ETC 255.98 CLP 173.89

PLANETOCENTRIC CONIC

C3 27.190 VHL 5.214 DLA 11.48 RAL 175.36 RAD 6568.1 VEL 12.189 PTH 2.19 VHP 10.412 DPA -.05 RAP 187.55 ECC 1.4475

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 54	2653.81	-27.25	71.24	46.08	98.03	17 25 8	2053.8	-25.85	62.85
90.00	7 39 36	4568.74	11.65	192.86	40.00	64.01	8 55 45	3968.7	8.06	186.02
100.00	18 8 3	2372.76	-28.55	50.34	45.86	99.25	18 47 36	1772.8	-26.98	41.89
100.00	8 55 8	4325.02	12.83	174.33	39.39	62.77	10 7 13	3725.0	9.08	167.55
110.00	19 29 25	2118.13	-32.04	30.23	45.08	102.62	20 4 44	1518.1	-29.97	21.63
110.00	9 50 15	4152.41	15.93	159.46	37.62	59.35	10 59 28	3552.4	11.75	152.86

DIFFERENTIAL CORRECTIONS
TDE .5264 TRA-1.5117 TC3 1.1127 BAU .4046
RDE -.4904 RRA -.2196 RC3 -.0276 FAU .06302
FDE -.1107 FRA .8046 FC3-2.0065 BSP 7060
BDE .7194 BRA 1.5276 BC3 1.1131 FSP 537

MID-COURSE EXECUTION ACCURACY
SGT 2134.0 SGR 593.2 SG3 197.2
RRT .0572 RRF -.0713 RTF -.8271
SGB 2214.9 R23 -.0200 R13 -.8272
SG1 2134.3 SG2 592.1 THA .99

ORBIT DETERMINATION ACCURACY
ST 770.9 SR 543.9 SS 272.9
CRT -.6538 CRS -.2766 CST .8989
LSA 896.5 MSA 399.4 SSA 36.6
EL1 870.2 EL2 364.6 ALF 149.28

LAUNCH DATE DEC 4 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 391.298 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 35.215 GAL -1.59 AZL 88.74 HCA 122.04 SMA 236.91 ECC .37855 INC 1.2631 V1 30.219
RP 243.75 LAP 1.07 LOP 193.93 VP 22.995 GAP 22.19 AZP 90.67 TAL 354.19 TAP 116.23 RCA 147.23 APO 326.59 V2 22.510
RC 136.814 GL 8.77 GP 1.76 ZAL 98.22 ZAP 173.13 ETS 163.89 ZAE 152.71 ETE 1.64 ZAC 91.00 ETC 255.96 CLP 173.35

PLANETOCENTRIC CONIC

C3 25.886 VHL 5.088 DLA 11.94 RAL 174.51 RAD 6568.0 VEL 12.135 PTH 2.17 VHP 10.165 DPA -.16 RAP 187.91 ECC 1.4260

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 42	2656.85	-27.27	71.46	44.51	97.93	17 17 59	2056.9	-25.90	63.06
90.00	7 39 59	4541.33	10.82	191.26	38.39	63.67	8 55 41	3941.3	7.20	184.46
100.00	18 1 7	2374.92	-28.58	50.50	44.28	99.17	18 40 42	1774.9	-27.01	42.05
100.00	8 55 15	4298.49	12.00	172.80	37.78	62.41	10 6 54	3698.5	8.21	166.06
110.00	19 23 6	2118.41	-32.04	30.25	43.51	102.61	19 58 24	1518.4	-29.97	21.65
110.00	9 49 46	4127.77	15.07	158.07	36.01	58.95	10 58 34	3527.8	10.85	151.52

DIFFERENTIAL CORRECTIONS
TDE .5047 TRA-1.4811 TC3 1.2034 BAU .4165
RDE -.4752 RRA -.2126 RC3 -.0252 FAU .06506
FDE -.0977 FRA .8032 FC3-2.1760 BSP 7207
BDE .6932 BRA 1.4963 BC3 1.2036 FSP 569

MID-COURSE EXECUTION ACCURACY
SGT 2174.5 SGR 589.0 SG3 207.5
RRT .0638 RRF -.0782 RTF -.8328
SGB 2252.9 R23 -.0209 R13 -.8329
SG1 2174.9 SG2 587.7 THA 1.07

ORBIT DETERMINATION ACCURACY
ST 765.5 SR 540.1 SS 268.4
CRT -.6449 CRS -.2335 CST .8839
LSA 886.5 MSA 403.0 SSA 37.6
EL1 862.2 EL2 366.5 ALF 149.44

LAUNCH DATE DEC 4 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 393.617 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 35.106 GAL -1.43 AZL 88.75 HCA 122.96 SMA 233.69 ECC .36982 INC 1.2472 V1 30.219
RP 243.50 LAP 1.05 LOP 194.85 VP 22.850 GAP 21.58 AZP 90.68 TAL 354.68 TAP 117.64 RCA 147.26 APO 320.11 V2 22.535
RC 139.022 GL 8.85 GP 1.81 ZAL 97.25 ZAP 172.58 ETS 164.54 ZAE 152.70 ETE 1.90 ZAC 91.14 ETC 255.95 CLP 172.80

PLANETOCENTRIC CONIC

C3 24.678 VHL 4.968 DLA 12.39 RAL 173.63 RAD 6568.0 VEL 12.085 PTH 2.16 VHP 9.923 DPA -.26 RAP 188.27 ECC 1.4061

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 26 21	2660.44	-27.31	71.71	42.93	97.80	17 10 41	2060.4	-25.95	63.31
90.00	7 40 19	4514.17	10.00	189.69	36.79	63.37	8 55 34	3914.2	6.34	182.92
100.00	17 54 3	2377.60	-28.61	50.69	42.72	99.07	18 33 40	1777.6	-27.06	42.23
100.00	8 55 19	4272.24	11.16	171.30	36.18	62.09	10 6 31	3672.2	7.34	164.59
110.00	19 16 38	2119.17	-32.05	30.31	41.95	102.57	19 51 57	1519.2	-29.99	21.70
110.00	9 49 12	4103.44	14.21	156.71	34.40	58.58	10 57 36	3503.4	9.95	150.20

DIFFERENTIAL CORRECTIONS
TDE .4842 TRA-1.4496 TC3 1.2988 BAU .4286
RDE -.4606 RRA -.2058 RC3 -.0223 FAU .06724
FDE -.0842 FRA .8005 FC3-2.3587 BSP 7361
BDE .6682 BRA 1.4642 BC3 1.2990 FSP 604

MID-COURSE EXECUTION ACCURACY
SGT 2215.3 SGR 584.6 SG3 218.5
RRT .0702 RRF -.0855 RTF -.8384
SGB 2291.1 R23 -.0223 R13 -.8385
SG1 2215.7 SG2 583.0 THA 1.14

ORBIT DETERMINATION ACCURACY
ST 759.6 SR 536.2 SS 263.9
CRT -.6364 CRS -.1874 CST .8661
LSA 876.2 MSA 406.2 SSA 38.6
EL1 853.9 EL2 367.9 ALF 149.59

LAUNCH DATE DEC 4 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 396.043 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 35.000 GAL -1.28 AZL 88.77 HCA 123.87 SMA 230.70 ECC .36151 INC 1.2308 V1 30.219
RP 243.25 LAP 1.02 LOP 195.76 VP 22.713 GAP 20.97 AZP 90.69 TAL 355.18 TAP 119.05 RCA 147.30 APO 314.10 V2 22.560
RC 141.251 GL 8.91 GP 1.87 ZAL 96.25 ZAP 172.03 ETS 165.10 ZAE 152.72 ETE 2.16 ZAC 91.27 ETC 255.94 CLP 172.25

PLANETOCENTRIC CONIC

C3 23.559 VHL 4.854 DLA 12.85 RAL 172.72 RAD 6568.0 VEL 12.039 PTH 2.15 VHP 9.688 DPA -.35 RAP 188.62 ECC 1.3877

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 18 51	2664.54	-27.34	72.01	41.37	97.66	17 3 16	2064.5	-26.00	63.60
90.00	7 40 36	4487.32	9.17	188.15	35.21	63.09	8 55 23	3887.3	5.49	181.41
100.00	17 46 50	2380.77	-28.64	50.92	41.15	98.95	18 26 31	1780.8	-27.10	42.46
100.00	8 55 18	4246.31	10.33	169.82	34.59	61.79	10 6 4	3646.3	6.48	163.15
110.00	19 10 3	2120.38	-32.07	30.40	40.40	102.52	19 45 24	1520.4	-30.01	21.79
110.00	9 48 34	4079.48	13.36	155.38	32.81	58.24	10 56 34	3479.5	9.06	148.91

DIFFERENTIAL CORRECTIONS
TDE .4626 TRA-1.4180 TC3 1.3975 BAU .4402
RDE -.4466 RRA -.1993 RC3 -.0187 FAU .06949
FDE -.0689 FRA .7961 FC3-2.5535 BSP 7529
BDE .6430 BRA 1.4319 BC3 1.3976 FSP 642

MID-COURSE EXECUTION ACCURACY
SGT 2255.2 SGR 580.0 SG3 229.9
RRT .0778 RRF -.0938 RTF -.8436
SGB 2328.6 R23 -.0236 R13 -.8437
SG1 2255.7 SG2 578.1 THA 1.23

ORBIT DETERMINATION ACCURACY
ST 751.7 SR 532.1 SS 259.0
CRT -.6265 CRS -.1336 CST .8442
LSA 863.5 MSA 409.9 SSA 39.6
EL1 843.6 EL2 369.6 ALF 149.68

LAUNCH DATE DEC 4 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 398.568 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 34.900 GAL -1.13 AZL 88.79 HCA 124.79 SMA 227.92 ECC .35359 INC 1.2142 V1 30.219
RP 243.00 LAP 1.00 LOP 196.68 VP 22.584 GAP 20.37 AZP 90.69 TAL 355.69 TAP 120.47 RCA 147.33 APO 308.50 V2 22.585
RC 143.499 GL 8.96 GP 1.94 ZAL 95.24 ZAP 171.46 ETS 165.58 ZAE 152.79 ETE 2.43 ZAC 91.41 ETC 255.93 CLP 171.68

PLANETOCENTRIC CONIC

C3 22.523 VHL 4.746 DLA 13.30 RAL 171.79 RAD 6567.9 VEL 11.996 PTH 2.14 VHP 9.458 DPA -.44 RAP 188.97 ECC 1.3707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 11 14	2669.12	-27.39	72.34	39.80	97.50	16 55 43	2069.1	-26.06	63.92
90.00	7 40 49	4460.82	8.35	186.64	33.63	62.85	8 55 10	3860.8	4.65	179.92
100.00	17 39 31	2384.40	-28.68	51.19	39.59	98.82	18 19 16	1784.4	-27.16	42.71
100.00	8 55 13	4220.77	9.51	168.37	33.02	61.53	10 5 34	3620.8	5.63	161.73
110.00	19 3 22	2122.02	-32.09	30.52	38.85	102.46	19 38 44	1522.0	-30.05	21.90
110.00	9 47 51	4055.92	12.51	154.08	31.23	57.93	10 55 27	3455.9	8.18	147.66

DIFFERENTIAL CORRECTIONS
TDE .4422 TRA-1.3850 TC3 1.5009 BAU .4520
RDE -.4331 RRA -.1929 RC3 -.0144 FAU .07187
FDE -.0537 FRA .7902 FC3-2.7626 BSP 7673
BDE .6190 BRA 1.3984 BC3 1.5009 FSP 679

MID-COURSE EXECUTION ACCURACY
SGT 2294.9 SGR 575.2 SG3 241.9
RRT .0852 RRF -.1023 RTF -.8488
SGB 2365.9 R23 -.0253 R13 -.8489
SG1 2295.5 SG2 573.0 THA 1.30

ORBIT DETERMINATION ACCURACY
ST 743.4 SR 527.8 SS 254.4
CRT -.6173 CRS -.0780 CST .8193
LSA 850.6 MSA 413.1 SSA 40.7
EL1 833.0 EL2 370.6 ALF 149.75

LAUNCH DATE DEC 4 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 401.182 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 34.804 GAL -.98 AZL 88.80 HCA 125.71 SMA 225.33 ECC .34605 INC 1.1971 V1 30.219
RP 242.74 LAP .97 LOP 197.60 VP 22.461 GAP 19.77 AZP 90.70 TAL 356.20 TAP 121.90 RCA 147.35 APO 303.30 V2 22.611
RC 145.763 GL 9.01 GP 2.00 ZAL 94.22 ZAP 170.89 ETS 165.99 ZAE 152.90 ETE 2.71 ZAC 91.55 ETC 255.91 CLP 171.11

PLANETOCENTRIC CONIC

C3 21.563 VHL 4.644 DLA 13.75 RAL 170.84 RAD 6567.9 VEL 11.956 PTH 2.13 VHP 9.235 DPA -.53 RAP 189.31 ECC 1.3549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 31	2674.13	-27.43	72.70	38.25	97.32	16 48 5	2074.1	-26.13	64.27
90.00	7 40 57	4434.74	7.54	185.15	32.08	62.63	8 54 52	3834.7	3.81	178.45
100.00	17 32 6	2388.44	-28.72	51.48	38.04	98.67	18 11 54	1788.4	-27.22	43.00
100.00	8 55 3	4195.66	8.69	166.96	31.46	61.29	10 4 59	3595.7	4.79	160.34
110.00	18 56 36	2124.04	-32.12	30.67	37.31	102.37	19 32 0	1524.0	-30.09	22.05
110.00	9 47 3	4032.83	11.67	152.82	29.67	57.64	10 54 15	3432.8	7.32	146.43

DIFFERENTIAL CORRECTIONS
TDE .4192 TRA-1.3522 TC3 1.6058 BAU .4629
RDE -.4203 RRA -.1867 RC3 -.0094 FAU .07435
FDE -.0356 FRA .7828 FC3-2.9849 BSP 7846
BDE .5936 BRA 1.3650 BC3 1.6058 FSP 722

MID-COURSE EXECUTION ACCURACY
SGT 2332.8 SGR 570.3 SG3 254.5
RRT .0948 RRF -.1125 RTF -.8536
SGB 2401.5 R23 -.0266 R13 -.8537
SG1 2333.5 SG2 567.6 THA 1.41

ORBIT DETERMINATION ACCURACY
ST 731.5 SR 523.5 SS 249.6
CRT -.6049 CRS -.0095 CST .7873
LSA 833.9 MSA 417.5 SSA 41.8
EL1 818.8 EL2 372.4 ALF 149.70

LAUNCH DATE DEC 4 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 403.879 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 34.712 GAL -.83 AZL 88.82 HCA 126.63 SMA 222.91 ECC .33886 INC 1.1795 V1 30.219
RP 242.47 LAP .95 LOP 198.52 VP 22.345 GAP 19.18 AZP 90.70 TAL 356.71 TAP 123.34 RCA 147.37 APO 298.44 V2 22.638
RC 148.041 GL 9.04 GP 2.07 ZAL 93.18 ZAP 170.31 ETS 166.35 ZAE 153.05 ETE 3.01 ZAC 91.70 ETC 255.90 CLP 170.53

PLANETOCENTRIC CONIC

C3 20.675 VHL 4.547 DLA 14.19 RAL 169.87 RAD 6567.8 VEL 11.919 PTH 2.12 VHP 9.016 DPA -.60 RAP 189.65 ECC 1.3403

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 55 42	2679.54	-27.48	73.09	36.70	97.13	16 40 22	2079.5	-26.20	64.65
90.00	7 41 1	4409.12	6.74	183.70	30.53	62.43	8 54 30	3809.1	2.99	177.02
100.00	17 24 35	2392.86	-28.76	51.80	36.50	98.51	18 4 28	1792.9	-27.29	43.31
100.00	8 54 49	4171.03	7.88	165.57	29.91	61.07	10 4 20	3571.0	3.96	158.98
110.00	18 49 45	2126.42	-32.16	30.84	35.78	102.27	19 25 11	1526.4	-30.13	22.22
110.00	9 46 9	4010.24	10.85	151.59	28.12	57.38	10 52 59	3410.2	6.47	145.23

DIFFERENTIAL CORRECTIONS
TDE .3985 TRA-1.3189 TC3 1.7172 BAU .4747
RDE -.4080 RRA -.1807 RC3 -.0034 FAU .07702
FDE -.0178 FRA .7740 FC3-3.2249 BSP 7996
BDE .5703 BRA 1.3312 BC3 1.7172 FSP 765

MID-COURSE EXECUTION ACCURACY
SGT 2372.7 SGR 565.2 SG3 267.9
RRT .1041 RRF -.1231 RTF -.8585
SGB 2439.1 R23 -.0286 R13 -.8587
SG1 2373.4 SG2 562.0 THA 1.50

ORBIT DETERMINATION ACCURACY
ST 720.3 SR 518.9 SS 245.5
CRT -.5938 CRS .0596 CST .7514
LSA 818.0 MSA 421.1 SSA 43.1
EL1 805.4 EL2 373.4 ALF 149.67

LAUNCH DATE DEC 4 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 406.652 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 34.624 GAL -.69 AZL 88.84 HCA 127.55 SMA 220.65 ECC .33201 INC 1.1615 V1 30.219
RP 242.20 LAP .92 LOP 199.44 VP 22.236 GAP 18.59 AZP 90.71 TAL 357.23 TAP 124.78 RCA 147.39 APO 293.91 V2 22.664
RC 150.330 GL 9.06 GP 2.15 ZAL 92.12 ZAP 169.71 ETS 166.66 ZAE 153.24 ETE 3.32 ZAC 91.84 ETC 255.89 CLP 169.94

PLANETOCENTRIC CONIC

C3 19.853 VHL 4.456 DLA 14.63 RAL 168.88 RAD 6567.8 VEL 11.884 PTH 2.11 VHP 8.803 DPA -.67 RAP 189.98 ECC 1.3267

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 47 48	2685.30	-27.52	73.50	35.16	96.93	16 32 34	2085.3	-26.28	65.06
90.00	7 41 0	4383.99	5.94	182.28	29.00	62.26	8 54 4	3784.0	2.18	175.62
100.00	17 17 0	2397.63	-28.81	52.15	34.97	98.33	17 56 58	1797.6	-27.36	43.64
100.00	8 54 29	4146.90	7.08	164.23	28.38	60.88	10 3 36	3546.9	3.15	157.65
110.00	18 42 49	2129.12	-32.20	31.05	34.26	102.16	19 18 18	1529.1	-30.19	22.41
110.00	9 45 9	3988.17	10.03	150.40	26.59	57.15	10 51 37	3388.2	5.64	144.07

DIFFERENTIAL CORRECTIONS
TDE .3840 TRA-1.2787 TC3 1.8450 BAU .4897
RDE -.3964 RRA -.1750 RC3 .0031 FAU .07967
FDE .0043 FRA .7658 FC3-3.4742 BSP 7966
BDE .5519 BRA 1.2906 BC3 1.8450 FSP 816

MID-COURSE EXECUTION ACCURACY
SGT 2415.6 SGR 560.3 SG3 281.6
RRT .1094 RRF -.1359 RTF -.8659
SGB 2479.7 R23 -.0361 R13 -.8662
SG1 2416.4 SG2 556.7 THA 1.54

ORBIT DETERMINATION ACCURACY
ST 711.4 SR 514.5 SS 242.8
CRT -.5904 CRS .1470 CST .6936
LSA 805.2 MSA 423.8 SSA 43.8
EL1 795.6 EL2 371.3 ALF 149.59

LAUNCH DATE DEC 4 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 409.494 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 34.540 GAL -.55 AZL 88.86 HCA 128.48 SMA 218.54 ECC .32549 INC 1.1430 V1 30.219
RP 241.93 LAP .89 LOP 200.37 VP 22.133 GAP 18.01 AZP 90.71 TAL 357.75 TAP 126.23 RCA 147.41 APO 289.67 V2 22.692
RC 152.629 GL 9.07 GP 2.22 ZAL 91.06 ZAP 169.11 ETS 166.93 ZAE 153.47 ETE 3.64 ZAC 91.99 ETC 255.89 CLP 169.34

PLANETOCENTRIC CONIC

C3 19.093 VHL 4.370 DLA 15.06 RAL 167.87 RAD 6567.8 VEL 11.852 PTH 2.10 VHP 8.596 DPA -.74 RAP 190.31 ECC 1.3142

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 39 53	2691.31	-27.57	73.93	33.63	96.72	16 24 44	2091.3	-26.36	65.48
90.00	7 40 53	4359.49	5.16	180.90	27.49	62.12	8 53 32	3759.5	1.39	174.25
100.00	17 9 24	2402.63	-28.86	52.51	33.44	98.15	17 49 27	1802.6	-27.43	44.00
100.00	8 54 3	4123.41	6.30	162.92	26.87	60.72	10 2 46	3523.4	2.36	156.36
110.00	18 35 53	2132.05	-32.24	31.26	32.75	102.04	19 11 25	1532.1	-30.25	22.62
110.00	9 44 4	3966.75	9.24	149.24	25.07	56.94	10 50 11	3366.8	4.82	142.94

DIFFERENTIAL CORRECTIONS
TDE .3595 TRA-1.2486 TC3 1.9496 BAU .4977
RDE -.3851 RRA -.1692 RC3 .0112 FAU .08263
FDE .0225 FRA .7515 FC3-3.7465 BSP 8211
BDE .5268 BRA 1.2600 BC3 1.9497 FSP 860

MID-COURSE EXECUTION ACCURACY
SGT 2449.4 SGR 554.9 SG3 296.3
RRT .1237 RRF -.1478 RTF -.8684
SGB 2511.5 R23 -.0349 R13 -.8686
SG1 2450.4 SG2 550.4 THA 1.69

ORBIT DETERMINATION ACCURACY
ST 695.3 SR 509.7 SS 239.8
CRT -.5727 CRS .2190 CST .6540
LSA 784.3 MSA 428.4 SSA 45.5
EL1 776.7 EL2 374.0 ALF 149.43

LAUNCH DATE DEC 4 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 412.400 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	34.460	GAL	-.42	AZL	88.88	HCA	129.41	SMA	216.56	ECC	.31928	INC	1.1240
RP	241.65	LAP	.87	LOP	201.29	VP	22.036	GAP	17.43	AZP	90.71	TAL	358.27	TAP	127.68	RCA	147.42	APO	285.71
RC	154.936	GL	9.07	GP	2.30	ZAL	89.98	ZAP	168.49	ETS	167.16	ZAE	153.73	ETE	3.99	ZAC	92.13	ETC	255.88

V1	30.219	V2	22.720	CLP	168.72														

PLANETOCENTRIC CONIC

C3	18.390	VHL	4.288	DLA	15.48	RAL	166.85	RAD	6567.7	VEL	11.823	PTH	2.09	VHP	8.394	DPA	-.80	RAP	190.63
ECC	1.3027																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 56	2697.54	-27.62	74.38	32.12	96.50	16 16 54	2097.5	-26.43	65.92
90.00	7 40 40	4335.63	4.40	179.56	26.00	62.00	8 52 55	3735.6	.62	172.92
100.00	17 1 46	2407.84	-28.91	52.89	31.93	97.95	17 41 54	1807.8	-27.51	44.37
100.00	8 53 31	4100.56	5.54	161.65	25.37	60.58	10 1 52	3500.6	1.58	155.10
110.00	18 28 54	2135.20	-32.28	31.50	31.25	101.90	19 4 29	1535.2	-30.31	22.84
110.00	9 42 52	3945.97	8.47	148.13	23.58	56.76	10 48 38	3346.0	4.03	141.85

DIFFERENTIAL CORRECTIONS

TDE	.3329	TRA	-1.2189	TC3	2.0577	BAU	.5059
RDE	-.3744	RRA	-.1636	RC3	.0201	FAU	.08564
FDE	.0459	FRA	.7375	FC3	-4.0316	BSP	8384
BDE	.5010	BRA	1.2299	BC3	2.0578	FSP	907

MID-COURSE EXECUTION ACCURACY

SGT	2483.6	SGR	549.5	SG3	311.6		
RRT	.1402	RRF	-.1626	RTF	-.8712		
SGB	2543.6	R23	-.0347	R13	-.8715		
SG1	2484.8	SG2	543.8	THA	1.87		

ORBIT DETERMINATION ACCURACY

ST	676.5	SR	504.8	SS	239.0		
CRT	-.5503	CRS	.3102	CST	.5998		
LSA	760.2	MSA	435.3	SSA	47.0		
EL1	754.8	EL2	377.7	ALF	149.17		

LAUNCH DATE DEC 4 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 415.367 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	34.383	GAL	-.29	AZL	88.90	HCA	130.33	SMA	214.71	ECC	.31337	INC	1.1045
RP	241.36	LAP	.84	LOP	202.22	VP	21.945	GAP	16.86	AZP	90.71	TAL	358.80	TAP	129.13	RCA	147.43	APO	282.00
RC	157.250	GL	9.05	GP	2.39	ZAL	88.90	ZAP	167.87	ETS	167.37	ZAE	154.03	ETE	4.35	ZAC	92.28	ETC	255.87

V1	30.219	V2	22.748	CLP	168.10														

PLANETOCENTRIC CONIC

C3	17.741	VHL	4.212	DLA	15.89	RAL	165.81	RAD	6567.7	VEL	11.795	PTH	2.09	VHP	8.196	DPA	-.85	RAP	190.94
ECC	1.2920																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 59	2703.93	-27.67	74.85	30.61	96.27	16 9 3	2103.9	-26.51	66.37
90.00	7 40 20	4312.45	3.66	178.26	24.52	61.90	8 52 13	3712.5	-.12	171.63
100.00	16 54 8	2413.21	-28.96	53.28	30.43	97.75	17 34 21	1813.2	-27.58	44.75
100.00	8 52 52	4078.40	4.80	160.43	23.89	60.46	10 0 51	3478.4	.83	153.89
110.00	18 21 56	2138.50	-32.33	31.75	29.76	101.76	18 57 34	1538.5	-30.37	23.08
110.00	9 41 34	3925.88	7.72	147.06	22.09	56.60	10 47 0	3325.9	3.27	140.80

DIFFERENTIAL CORRECTIONS

TDE	.3113	TRA	-1.1854	TC3	2.1765	BAU	.5162
RDE	-.3641	RRA	-.1582	RC3	.0304	FAU	.08893
FDE	.0678	FRA	.7202	FC3	-4.3399	BSP	8529
BDE	.4790	BRA	1.1959	BC3	2.1767	FSP	957

MID-COURSE EXECUTION ACCURACY

SGT	2520.2	SGR	544.1	SG3	328.0		
RRT	.1548	RRF	-.1777	RTF	-.8750		
SGB	2578.3	R23	-.0363	R13	-.8753		
SG1	2521.7	SG2	537.3	THA	2.01		

ORBIT DETERMINATION ACCURACY

ST	659.7	SR	499.9	SS	239.0		
CRT	-.5335	CRS	.3928	CST	.5420		
LSA	739.3	MSA	439.8	SSA	48.6		
EL1	735.8	EL2	379.1	ALF	148.89		

LAUNCH DATE DEC 4 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 418.388 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	34.310	GAL	-.16	AZL	88.92	HCA	131.27	SMA	212.97	ECC	.30774	INC	1.0843
RP	241.08	LAP	.82	LOP	203.16	VP	21.860	GAP	16.29	AZP	90.72	TAL	359.33	TAP	130.59	RCA	147.43	APO	278.51
RC	159.568	GL	9.02	GP	2.48	ZAL	87.82	ZAP	167.23	ETS	167.54	ZAE	154.37	ETE	4.74	ZAC	92.44	ETC	255.86

V1	30.219	V2	22.777	CLP	167.47														

PLANETOCENTRIC CONIC

C3	17.140	VHL	4.140	DLA	16.28	RAL	164.76	RAD	6567.7	VEL	11.770	PTH	2.08	VHP	8.003	DPA	-.89	RAP	191.25
ECC	1.2821																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 3	2710.40	-27.72	75.31	29.12	96.04	16 1 13	2110.4	-26.59	66.83
90.00	7 39 53	4290.03	2.94	177.00	23.06	61.82	8 51 23	3690.0	-.85	170.38
100.00	16 46 31	2418.66	-29.01	53.68	28.94	97.55	17 26 49	1818.7	-27.66	45.13
100.00	8 52 6	4057.00	4.08	159.24	22.43	60.36	9 59 43	3457.0	.10	152.71
110.00	18 14 58	2141.90	-32.38	32.00	28.28	101.62	18 50 40	1541.9	-30.44	23.32
110.00	9 40 8	3906.52	6.99	146.03	20.63	56.45	10 45 15	3306.5	2.53	139.78

DIFFERENTIAL CORRECTIONS

TDE	.2867	TRA	-1.1514	TC3	2.2813	BAU	.5228
RDE	-.3544	RRA	-.1529	RC3	.0414	FAU	.09199
FDE	.0928	FRA	.7011	FC3	-4.6462	BSP	8811
BDE	.4558	BRA	1.1615	BC3	2.2816	FSP	1026

MID-COURSE EXECUTION ACCURACY

SGT	2545.8	SGR	538.8	SG3	343.9		
RRT	.1721	RRF	-.1947	RTF	-.8778		
SGB	2602.2	R23	-.0374	R13	-.8781		
SG1	2547.6	SG2	530.4	THA	2.18		

ORBIT DETERMINATION ACCURACY

ST	639.3	SR	494.9	SS	241.3		
CRT	-.5108	CRS	.4815	CST	.4779		
LSA	714.4	MSA	445.9	SSA	50.1		
EL1	712.7	EL2	381.6	ALF	148.43		

LAUNCH DATE DEC 4 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 421.460 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	34.240	GAL	-.03	AZL	88.94	HCA	132.20	SMA	211.34	ECC	.30238	INC	1.0635
RP	240.79	LAP	.79	LOP	204.09	VP	21.780	GAP	15.72	AZP	90.71	TAL	359.85	TAP	132.05	RCA	147.44	APO	275.25
RC	161.890	GL	8.98	GP	2.57	ZAL	86.73	ZAP	166.57	ETS	167.69	ZAE	154.74	ETE	5.15	ZAC	92.59	ETC	255.85

V1	30.219	V2	22.806	CLP	166.82		

PLANETOCENTRIC CONIC

C3	16.585	VHL	4.073	DLA	16.66	RAL	163.70	RAD	6567.7	VEL	11.746	PTH	2.07	VHP	7.815	DPA	-.92	RAP	191.55
ECC	1.2730																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 10	2716.87	-27.76	75.78	27.64	95.81	15 53 27	2116.9	-26.67	67.29
90.00	7 39 18	4268.43	2.25	175.80	21.61	61.76	8 50 26	3668.4	-1.55	169.17
100.00	16 38 57	2424.12	-29.06	54.08	27.47	97.34	17 19 21	1824.1	-27.74	45.52
100.00	8 51 12	4036.41	3.39	158.11	20.98	60.28	9 58 29	3436.4	-.59	151.59
110.00	18 8 3	2145.34	-32.42	32.26	26.82	101.47	18 43 48	1545.3	-30.50	23.57
110.00	9 38 36	3887.95	6.29	145.05	19.18	56.33	10 43 24	3288.0	1.82	138.82

DIFFERENTIAL CORRECTIONS

TDE	.2084	TRA	-1.1329	TC3	2.3518	BAU	.5216
RDE	-.3464	RRA	-.1481	RC3	.0531	FAU	.09471
FDE	.1757	FRA	.6969	FC3	-4.9440	BSP	9446
BDE	.4043	BRA	1.1425	BC3	2.3524	FSP	1123

MID-COURSE EXECUTION ACCURACY

SGT	2554.0	SGR	535.5	SG3	359.6		
RRT	.2207	RRF	-.2321	RTF	-.8790		
SGB	2609.6	R23	-.0304	R13	-.8793		
SG1	2556.9	SG2	521.7	THA	2.76		

ORBIT DETERMINATION ACCURACY

ST	581.7	SR	491.8	SS	278.4		
CRT	-.3854	CRS	.6940	CST	.3656		
LSA	640.7	MSA	494.6	SSA	50.6		
EL1	640.7	EL2	412.0	ALF	146.82		

LAUNCH DATE DEC 4 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 424.584 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 34.172 GAL .09 AZL 88.96 HCA 133.14 SMA 209.81 ECC .29728 INC 1.0420 V1 30.219
RP 240.49 LAP .76 LOP 205.02 VP 21.706 GAP 15.17 AZP 90.71 TAL .38 TAP 133.51 RCA 147.44 APO 272.18 V2 22.836
RC 164.213 GL 8.92 GP 2.67 ZAL 85.65 ZAP 165.91 ETS 167.82 ZAE 155.14 ETE 5.60 ZAC 92.75 ETC 255.85 CLP 166.16

PLANETOCENTRIC CONIC

C3 16.073 VHL 4.009 DLA 17.02 RAL 162.63 RAD 6567.6 VEL 11.724 PTH 2.07 VHP 7.632 DPA -.94 RAP 191.84 ECC 1.2645

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 22	2723.27	-27.81	76.24	26.17	95.58	15 45 45	2123.3	-26.74	67.74
90.00	7 38 34	4247.71	1.58	174.64	20.19	61.72	8 49 22	3647.7	-2.21	168.01
100.00	16 31 27	2429.51	-29.10	54.47	26.01	97.14	17 11 57	1829.5	-27.81	45.91
100.00	8 50 10	4016.70	2.72	157.03	19.55	60.22	9 57 7	3416.7	-1.26	150.50
110.00	18 1 11	2148.76	-32.47	32.51	25.37	101.33	18 37 0	1548.8	-30.57	23.81
110.00	9 36 55	3870.21	5.62	144.12	17.75	56.23	10 41 26	3270.2	1.14	137.89

DIFFERENTIAL CORRECTIONS
TDE .2604 TRA-1.0727 TC3 2.5678 BAU .5520
RDE -.3360 RRA -.1424 RC3 .0691 FAU .09996
FDE .1321 FRA .6476 FC3-5.3841 BSP 8671
BDE .4251 BRA 1.0821 BC3 2.5688 FSP 1119

MID-COURSE EXECUTION ACCURACY
SGT 2636.0 SGR 528.1 SG3 382.6
RRT .1988 RRF -.2292 RTF -.8884
SGB 2688.3 R23 -.0464 R13 -.8888
SG1 2638.1 SG2 517.2 THA 2.37

ORBIT DETERMINATION ACCURACY
ST 611.3 SR 484.4 SS 243.8
CRT -.4994 CRS .6107 CST .3426
LSA 683.8 MSA 444.1 SSA 53.8
EL1 683.8 EL2 375.2 ALF 147.59

LAUNCH DATE DEC 4 1964 FLIGHT TIME 178.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 427.750 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 34.108 GAL .20 AZL 88.98 HCA 134.07 SMA 208.36 ECC .29242 INC 1.0197 V1 30.219
RP 240.19 LAP .73 LOP 205.96 VP 21.637 GAP 14.61 AZP 90.71 TAL .90 TAP 134.98 RCA 147.43 APO 269.29 V2 22.866
RC 166.536 GL 8.84 GP 2.78 ZAL 84.57 ZAP 165.23 ETS 167.93 ZAE 155.57 ETE 6.08 ZAC 92.91 ETC 255.84 CLP 165.48

PLANETOCENTRIC CONIC

C3 15.600 VHL 3.950 DLA 17.37 RAL 161.55 RAD 6567.6 VEL 11.704 PTH 2.06 VHP 7.453 DPA -.95 RAP 192.12 ECC 1.2567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 39	2729.54	-27.85	76.70	24.72	95.36	15 38 8	2129.5	-26.81	68.18
90.00	7 37 42	4227.90	.94	173.54	18.78	61.70	8 48 9	3627.9	-2.85	166.91
100.00	16 24 3	2434.80	-29.15	54.86	24.56	96.94	17 4 38	1834.8	-27.88	46.28
100.00	8 48 59	3997.87	2.08	155.99	18.14	60.17	9 55 37	3397.9	-1.90	149.47
110.00	17 54 24	2152.11	-32.51	32.76	23.93	101.19	18 30 16	1552.1	-30.63	24.05
110.00	9 35 7	3853.32	4.98	143.23	16.34	56.14	10 39 20	3253.3	.50	137.01

DIFFERENTIAL CORRECTIONS
TDE .2514 TRA-1.0329 TC3 2.6945 BAU .5623
RDE -.3276 RRA -.1376 RC3 .0846 FAU .10371
FDE .1586 FRA .6263 FC3-5.7553 BSP 8744
BDE .4129 BRA 1.0420 BC3 2.6959 FSP 1198

MID-COURSE EXECUTION ACCURACY
SGT 2669.9 SGR 523.5 SG3 401.8
RRT .2127 RRF -.2515 RTF -.8930
SGB 2720.7 R23 -.0556 R13 -.8934
SG1 2672.3 SG2 511.0 THA 2.48

ORBIT DETERMINATION ACCURACY
ST 599.1 SR 479.3 SS 252.0
CRT -.5002 CRS .6800 CST .2529
LSA 672.5 MSA 443.7 SSA 55.0
EL1 672.2 EL2 369.9 ALF 147.10

LAUNCH DATE DEC 4 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 430.958 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 34.047 GAL .32 AZL 89.00 HCA 135.02 SMA 207.00 ECC .28781 INC .9968 V1 30.219
RP 239.88 LAP .70 LOP 206.90 VP 21.572 GAP 14.07 AZP 90.71 TAL 1.42 TAP 136.44 RCA 147.43 APO 266.58 V2 22.897
RC 168.857 GL 8.75 GP 2.89 ZAL 83.49 ZAP 164.53 ETS 168.01 ZAE 156.04 ETE 6.60 ZAC 93.08 ETC 255.83 CLP 164.80

PLANETOCENTRIC CONIC

C3 15.164 VHL 3.894 DLA 17.69 RAL 160.48 RAD 6567.6 VEL 11.685 PTH 2.06 VHP 7.278 DPA -.96 RAP 192.40 ECC 1.2496

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 45 6	2735.50	-27.88	77.13	23.28	95.14	15 30 42	2135.5	-26.88	68.61
90.00	7 36 38	4209.17	.33	172.49	17.39	61.68	8 46 48	3609.2	-3.45	165.86
100.00	16 16 48	2439.81	-29.19	55.23	23.13	96.75	16 57 28	1839.8	-27.95	46.64
100.00	8 47 38	3980.09	1.48	155.01	16.75	60.14	9 53 58	3380.1	-2.50	148.49
110.00	17 47 44	2155.27	-32.55	33.00	22.51	101.05	18 23 40	1555.3	-30.69	24.28
110.00	9 33 11	3837.40	4.37	142.39	14.95	56.06	10 37 8	3237.4	-.11	136.18

DIFFERENTIAL CORRECTIONS
TDE .2194 TRA-1.0082 TC3 2.7795 BAU .5639
RDE -.3195 RRA -.1326 RC3 .1021 FAU .10767
FDE .1896 FRA .5983 FC3-6.1470 BSP 9137
BDE .3876 BRA 1.0169 BC3 2.7814 FSP 1270

MID-COURSE EXECUTION ACCURACY
SGT 2686.1 SGR 518.9 SG3 422.0
RRT .2434 RRF -.2766 RTF -.8928
SGB 2735.7 R23 -.0530 R13 -.8934
SG1 2689.1 SG2 502.7 THA 2.79

ORBIT DETERMINATION ACCURACY
ST 571.5 SR 474.1 SS 263.3
CRT -.4536 CRS .7483 CST .2037
LSA 641.1 MSA 454.4 SSA 57.2
EL1 639.3 EL2 377.7 ALF 146.25

LAUNCH DATE DEC 4 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 434.206 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.988 GAL .43 AZL 89.03 HCA 135.96 SMA 205.72 ECC .28341 INC .9730 V1 30.219
RP 239.58 LAP .68 LOP 207.85 VP 21.513 GAP 13.53 AZP 90.70 TAL 1.94 TAP 137.90 RCA 147.42 APO 264.03 V2 22.928
RC 171.174 GL 8.64 GP 3.01 ZAL 82.42 ZAP 163.82 ETS 168.09 ZAE 156.54 ETE 7.17 ZAC 93.24 ETC 255.83 CLP 164.09

PLANETOCENTRIC CONIC

C3 14.762 VHL 3.842 DLA 17.99 RAL 159.39 RAD 6567.6 VEL 11.668 PTH 2.05 VHP 7.107 DPA -.95 RAP 192.67 ECC 1.2429

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 37 42	2741.19	-27.92	77.54	21.86	94.94	15 23 23	2141.2	-26.94	69.01
90.00	7 35 24	4191.45	-.24	171.50	16.02	61.68	8 45 16	3591.5	-4.02	164.87
100.00	16 9 41	2444.58	-29.23	55.57	21.71	96.57	16 50 25	1844.6	-28.01	46.98
100.00	8 46 7	3963.30	.91	154.09	15.38	60.12	9 52 10	3363.3	-3.07	147.57
110.00	17 41 11	2158.26	-32.59	33.23	21.11	100.93	18 17 10	1558.3	-30.74	24.50
110.00	9 31 5	3822.38	3.80	141.60	13.58	56.00	10 34 48	3222.4	-.69	135.40

DIFFERENTIAL CORRECTIONS
TDE .2066 TRA -.9682 TC3 2.9219 BAU .5771
RDE -.3119 RRA -.1278 RC3 .1215 FAU .11214
FDE .2189 FRA .5671 FC3-6.5764 BSP 9050
BDE .3741 BRA .9765 BC3 2.9245 FSP 1339

MID-COURSE EXECUTION ACCURACY
SGT 2727.7 SGR 514.9 SG3 444.2
RRT .2637 RRF -.3028 RTF -.8981
SGB 2775.9 R23 -.0600 R13 -.8987
SG1 2731.2 SG2 496.1 THA 2.95

ORBIT DETERMINATION ACCURACY
ST 553.9 SR 469.0 SS 275.1
CRT -.4455 CRS .8010 CST .1254
LSA 627.4 MSA 453.2 SSA 58.8
EL1 622.1 EL2 373.9 ALF 145.29

LAUNCH DATE DEC 4 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 437.489 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	33.932	GAL	.54	AZL	89.05	HCA	136.90	SMA	204.51	ECC	.27924	INC	.9483	V1	30.219
RP	239.26	LAP	.65	LOP	208.79	VP	21.458	GAP	12.99	AZP	90.69	TAL	2.45	TAP	139.36	RCA	147.41	APO	261.62	V2	22.959
RC	173.485	GL	8.51	GP	3.13	ZAL	81.36	ZAP	163.09	ETS	168.14	ZAE	157.07	ETE	7.79	ZAC	93.42	ETC	255.82	CLP	163.38

PLANETOCENTRIC CONIC

C3	14.391	VHL	3.794	DLA	18.27	RAL	158.31	RAD	6567.6	VEL	11.652	PTH	2.05	VHP	6.941	DPA	-.93	RAP	192.93	ECC	1.2368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 30 31	2746.40	-27.95	77.92	20.46	94.75	15 16 17	2146.4	-27.00	69.39
90.00	7 33 59	4174.94	-.77	170.58	14.67	61.69	8 43 34	3574.9	-4.55	163.94
100.00	16 2 46	2448.92	-29.26	55.89	20.32	96.41	16 43 35	1848.9	-28.06	47.29
100.00	8 44 25	3947.65	.38	153.23	14.03	60.11	9 50 12	3347.7	-3.60	146.71
110.00	17 34 49	2160.92	-32.63	33.43	19.72	100.81	18 10 50	1560.9	-30.79	24.69
110.00	9 28 51	3808.42	3.27	140.87	12.23	55.95	10 32 19	3208.4	-1.22	134.67

DIFFERENTIAL CORRECTIONS

TDE	.1829	TRA	-.9432	TC3	3.0077	BAU	.5793
RDE	-.3044	RRA	-.1229	RC3	.1427	FAU	.11655
FDE	.2456	FRA	.5347	FC3	-7.0115	BSP	9358
BDE	.3551	BRA	.9512	BC3	3.0111	FSP	1416

MID-COURSE EXECUTION ACCURACY

SGT	2744.9	SGR	511.1	SG3	466.6		
RRT	.2945	RRF	-.3306	RTF	-.8981		
SGB	2792.1	R23	-.0601	R13	-.8988		
SG1	2749.1	SG2	487.7	THA	3.24		

ORBIT DETERMINATION ACCURACY

ST	532.5	SR	463.5	SS	286.4
CRT	-.4067	CRS	.8402	CST	.0916
LSA	605.9	MSA	457.8	SSA	61.2
EL1	596.0	EL2	378.3	ALF	144.45

LAUNCH DATE DEC 4 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 440.809 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	33.878	GAL	.64	AZL	89.08	HCA	137.85	SMA	203.38	ECC	.27526	INC	.9226	V1	30.219
RP	238.95	LAP	.62	LOP	209.74	VP	21.407	GAP	12.47	AZP	90.68	TAL	2.96	TAP	140.82	RCA	147.39	APO	259.36	V2	22.991
RC	175.790	GL	8.37	GP	3.27	ZAL	80.31	ZAP	162.35	ETS	168.18	ZAE	157.64	ETE	8.47	ZAC	93.59	ETC	255.82	CLP	162.64

PLANETOCENTRIC CONIC

C3	14.049	VHL	3.748	DLA	18.53	RAL	157.23	RAD	6567.6	VEL	11.638	PTH	2.04	VHP	6.778	DPA	-.90	RAP	193.18	ECC	1.2312

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 23 32	2751.15	-27.97	78.27	19.08	94.58	15 9 23	2151.2	-27.04	69.72
90.00	7 32 20	4159.56	-1.27	169.73	13.34	61.71	8 41 40	3559.6	-5.04	163.08
100.00	15 56 2	2452.85	-29.29	56.18	18.94	96.26	16 36 55	1852.8	-28.11	47.58
100.00	8 42 31	3933.10	-.11	152.44	12.70	60.11	9 48 4	3333.1	-4.09	145.91
110.00	17 28 36	2163.27	-32.66	33.60	18.35	100.71	18 4 39	1563.3	-30.84	24.86
110.00	9 26 27	3795.44	2.78	140.19	10.89	55.92	10 29 43	3195.4	-1.72	133.99

DIFFERENTIAL CORRECTIONS

TDE	.1744	TRA	-.9029	TC3	3.1350	BAU	.5896
RDE	-.2973	RRA	-.1180	RC3	.1658	FAU	.12129
FDE	.2724	FRA	.4963	FC3	-7.4741	BSP	9244
BDE	.3447	BRA	.9106	BC3	3.1393	FSP	1493

MID-COURSE EXECUTION ACCURACY

SGT	2777.2	SGR	508.1	SG3	490.3		
RRT	.3174	RRF	-.3599	RTF	-.9023		
SGB	2823.3	R23	-.0682	R13	-.9031		
SG1	2782.0	SG2	481.0	THA	3.43		

ORBIT DETERMINATION ACCURACY

ST	516.5	SR	458.1	SS	298.2
CRT	-.4057	CRS	.8728	CST	.0215
LSA	599.3	MSA	449.9	SSA	63.0
EL1	581.7	EL2	371.7	ALF	143.26

LAUNCH DATE DEC 4 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 444.159 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	33.827	GAL	.74	AZL	89.10	HCA	138.80	SMA	202.30	ECC	.27149	INC	.8960	V1	30.219
RP	238.63	LAP	.59	LOP	210.69	VP	21.361	GAP	11.95	AZP	90.67	TAL	3.47	TAP	142.27	RCA	147.38	APO	257.22	V2	23.024
RC	178.086	GL	8.21	GP	3.41	ZAL	79.28	ZAP	161.59	ETS	168.21	ZAE	158.22	ETE	9.22	ZAC	93.77	ETC	255.81	CLP	161.89

PLANETOCENTRIC CONIC

C3	13.734	VHL	3.706	DLA	18.76	RAL	156.16	RAD	6567.5	VEL	11.624	PTH	2.04	VHP	6.620	DPA	-.85	RAP	193.42	ECC	1.2260

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 16 50	2755.25	-28.00	78.56	17.71	94.43	15 2 46	2155.2	-27.09	70.02
90.00	7 30 29	4145.52	-1.72	168.94	12.03	61.73	8 39 34	3545.5	-5.49	162.29
100.00	15 49 35	2456.18	-29.31	56.43	17.57	96.13	16 30 31	1856.2	-28.16	47.81
100.00	8 40 25	3919.81	-.56	151.71	11.39	60.11	9 45 45	3319.8	-4.54	145.17
110.00	17 22 36	2165.18	-32.68	33.75	17.00	100.63	17 58 41	1565.2	-30.87	24.99
110.00	9 23 54	3783.59	2.32	139.57	9.58	55.89	10 26 57	3183.6	-2.17	133.37

DIFFERENTIAL CORRECTIONS

TDE	.1508	TRA	-.8770	TC3	3.2232	BAU	.5929
RDE	-.2905	RRA	-.1131	RC3	.1915	FAU	.12630
FDE	.3030	FRA	.4562	FC3	-7.9617	BSP	9596
BDE	.3273	BRA	.8842	BC3	3.2289	FSP	1586

MID-COURSE EXECUTION ACCURACY

SGT	2795.0	SGR	506.0	SG3	515.5		
RRT	.3527	RRF	-.3927	RTF	-.9028		
SGB	2840.4	R23	-.0694	R13	-.9036		
SG1	2800.8	SG2	472.5	THA	3.76		

ORBIT DETERMINATION ACCURACY

ST	494.0	SR	452.6	SS	313.6
CRT	-.3606	CRS	.9007	CST	-.0019
LSA	583.3	MSA	450.2	SSA	65.4
EL1	554.4	EL2	376.1	ALF	141.82

LAUNCH DATE DEC 4 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 447.542 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	33.778	GAL	.84	AZL	89.13	HCA	139.76	SMA	201.29	ECC	.26790	INC	.8680	V1	30.219
RP	238.31	LAP	.56	LOP	211.64	VP	21.319	GAP	11.43	AZP	90.66	TAL	3.96	TAP	143.72	RCA	147.36	APO	255.21	V2	23.056
RC	180.373	GL	8.02	GP	3.56	ZAL	78.26	ZAP	160.81	ETS	168.22	ZAE	158.84	ETE	10.05	ZAC	93.96	ETC	255.81	CLP	161.13

PLANETOCENTRIC CONIC

C3	13.443	VHL	3.667	DLA	18.96	RAL	155.09	RAD	6567.5	VEL	11.612	PTH	2.03	VHP	6.465	DPA	-.79	RAP	193.65	ECC	1.2212

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 10 25	2758.67	-28.01	78.81	16.37	94.31	14 56 24	2158.7	-27.12	70.26
90.00	7 28 22	4132.77	-2.13	168.23	10.74	61.76	8 37 15	3532.8	-5.89	161.57
100.00	15 43 23	2458.92	-29.33	56.63	16.23	96.03	16 24 21	1858.9	-28.19	48.01
100.00	8 38 6	3907.76	-.97	151.05	10.10	60.12	9 43 14	3307.8	-4.94	144.51
110.00	17 16 48	2166.62	-32.70	33.86	15.66	100.57	17 52 55	1566.6	-30.90	25.10
110.00	9 21 10	3772.82	1.91	139.01	8.29	55.86	10 24 3	3172.8	-2.58	132.81

DIFFERENTIAL CORRECTIONS

TDE	.1366	TRA	-.8445	TC3	3.3265	BAU	.5992
RDE	-.2840	RRA	-.1082	RC3	.2194	FAU	.13158
FDE	.3309	FRA	.4120	FC3	-8.4733	BSP	9644
BDE	.3152	BRA	.8514	BC3	3.3337	FSP	1670

MID-COURSE EXECUTION ACCURACY

SGT	2818.3	SGR	504.8	SG3	541.9		
RRT	.3846	RRF	-.4267	RTF	-.9049		
SGB	2863.2	R23	-.0747	R13	-.9059		
SG1	2825.2	SG2	464.9	THA	4.05		

ORBIT DETERMINATION ACCURACY

ST	475.6	SR	447.1	SS	327.6
CRT	-.3385	CRS	.9206	CST	-.0405
LSA	577.6	MSA	441.7	SSA	67.7
EL1	535.0	EL2	374.0	ALF	140.17

LAUNCH DATE DEC 4 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 450.953 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.732 GAL .93 AZL 89.16 HCA 140.71 SMA 200.33 ECC .26449 INC .8392 V1 30.219
RP 237.98 LAP .53 LOP 212.60 VP 21.281 GAP 10.92 AZP 90.65 TAL 4.45 TAP 145.17 RCA 147.34 APO 253.31 V2 23.089
RC 182.651 GL 7.82 GP 3.72 ZAL 77.26 ZAP 160.01 ETS 168.22 ZAE 159.49 ETE 10.97 ZAC 94.15 ETC 255.80 CLP 160.34

PLANETOCENTRIC CONIC

C3 13.176 VHL 3.630 DLA 19.13 RAL 154.03 RAD 6567.5 VEL 11.600 PTH 2.03 VHP 6.314 DPA -.72 RAP 193.87 ECC 1.2168

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 19	2761.31	-28.03	79.01	15.04	94.22	14 50 21	2161.3	-27.15	70.45
90.00	7 26 1	4121.42	-2.50	167.60	9.47	61.78	8 34 42	3521.4	-6.25	160.93
100.00	15 37 28	2460.95	-29.35	56.78	14.91	95.95	16 18 29	1861.0	-28.21	48.16
100.00	8 35 34	3897.01	-1.34	150.46	8.82	60.13	9 40 31	3297.0	-5.30	143.91
110.00	17 11 15	2167.53	-32.71	33.92	14.34	100.53	17 47 22	1567.5	-30.91	25.16
110.00	9 18 16	3763.20	1.54	138.51	7.02	55.85	10 20 59	3163.2	-2.95	132.31

DIFFERENTIAL CORRECTIONS
TDE .1223 TRA -.8106 TC3 3.4204 BAU .6041
RDE -.2778 RRA -.1031 RC3 .2497 FAU .13700
FDE .3611 FRA .3632 FC3-9.0019 BSP 9757
BDE .3036 BRA .8171 BC3 3.4295 FSP 1767

MID-COURSE EXECUTION ACCURACY
SGT 2835.0 SGR 504.9 SG3 569.2
RRT .4184 RRF -.4628 RTF -.9070
SGB 2879.6 R23 -.0806 R13 -.9080
SG1 2843.1 SG2 457.3 THA 4.37

ORBIT DETERMINATION ACCURACY
ST 455.9 SR 441.6 SS 343.5
CRT -.3142 CRS .9366 CST -.0748
LSA 575.3 MSA 430.1 SSA 69.9
EL1 514.8 EL2 371.3 ALF 137.90

LAUNCH DATE DEC 4 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 454.392 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.687 GAL 1.02 AZL 89.19 HCA 141.67 SMA 199.42 ECC .26125 INC .8088 V1 30.219
RP 237.65 LAP .50 LOP 213.56 VP 21.246 GAP 10.42 AZP 90.63 TAL 4.94 TAP 146.61 RCA 147.32 APO 251.52 V2 23.123
RC 184.919 GL 7.60 GP 3.89 ZAL 76.28 ZAP 159.19 ETS 168.21 ZAE 160.16 ETE 12.01 ZAC 94.35 ETC 255.80 CLP 159.54

PLANETOCENTRIC CONIC

C3 12.930 VHL 3.596 DLA 19.28 RAL 152.98 RAD 6567.5 VEL 11.589 PTH 2.03 VHP 6.167 DPA -.63 RAP 194.08 ECC 1.2128

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 58 34	2763.07	-28.04	79.13	13.73	94.15	14 44 37	2163.1	-27.17	70.58
90.00	7 23 23	4111.52	-2.81	167.04	8.21	61.81	8 31 55	3511.5	-6.56	160.37
100.00	15 31 52	2462.21	-29.36	56.87	13.60	95.90	16 12 54	1862.2	-28.23	48.25
100.00	8 32 47	3887.61	-1.66	149.94	7.57	60.15	9 37 34	3287.6	-5.62	143.39
110.00	17 5 57	2167.84	-32.71	33.95	13.04	100.51	17 42 5	1567.8	-30.92	25.19
110.00	9 15 11	3754.75	1.22	138.07	5.77	55.84	10 17 45	3154.7	-3.27	131.86

DIFFERENTIAL CORRECTIONS
TDE .1133 TRA -.7758 TC3 3.5230 BAU .6109
RDE -.2718 RRA -.0980 RC3 .2831 FAU .14286
FDE .3873 FRA .3099 FC3-9.5655 BSP 9756
BDE .2945 BRA .7820 BC3 3.5343 FSP 1862

MID-COURSE EXECUTION ACCURACY
SGT 2857.7 SGR 506.3 SG3 598.5
RRT .4522 RRF -.5002 RTF -.9095
SGB 2902.2 R23 -.0880 R13 -.9107
SG1 2867.1 SG2 450.1 THA 4.70

ORBIT DETERMINATION ACCURACY
ST 439.0 SR 436.0 SS 356.7
CRT -.3043 CRS .9469 CST -.1160
LSA 576.6 MSA 415.1 SSA 72.3
EL1 499.7 EL2 364.9 ALF 135.66

LAUNCH DATE DEC 4 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 457.858 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.644 GAL 1.11 AZL 89.22 HCA 142.63 SMA 198.57 ECC .25818 INC .7772 V1 30.219
RP 237.31 LAP .47 LOP 214.52 VP 21.216 GAP 9.93 AZP 90.62 TAL 5.41 TAP 148.04 RCA 147.30 APO 249.83 V2 23.157
RC 187.176 GL 7.36 GP 4.07 ZAL 75.31 ZAP 158.34 ETS 168.19 ZAE 160.85 ETE 13.16 ZAC 94.56 ETC 255.79 CLP 158.71

PLANETOCENTRIC CONIC

C3 12.703 VHL 3.564 DLA 19.39 RAL 151.94 RAD 6567.5 VEL 11.580 PTH 2.03 VHP 6.023 DPA -.52 RAP 194.28 ECC 1.2091

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 53 11	2763.88	-28.04	79.19	12.45	94.12	14 39 15	2163.9	-27.17	70.63
90.00	7 20 29	4103.11	-3.09	166.57	6.98	61.84	8 28 52	3503.1	-6.83	159.89
100.00	15 26 36	2462.62	-29.36	56.90	12.32	95.89	16 7 39	1862.6	-28.23	48.28
100.00	8 29 44	3879.61	-1.93	149.50	6.34	60.16	9 34 24	3279.6	-5.88	142.95
110.00	17 0 56	2167.49	-32.71	33.92	11.75	100.53	17 37 4	1567.5	-30.91	25.16
110.00	9 11 54	3747.50	.94	137.69	4.54	55.83	10 14 21	3147.5	-3.55	131.48

DIFFERENTIAL CORRECTIONS
TDE .1122 TRA -.7343 TC3 3.6389 BAU .6204
RDE -.2659 RRA -.0927 RC3 .3195 FAU .14909
FDE .4100 FRA .2490 FC-10.1608 BSP 9626
BDE .2886 BRA .7401 BC3 3.6529 FSP 1960

MID-COURSE EXECUTION ACCURACY
SGT 2885.6 SGR 509.4 SG3 629.4
RRT .4839 RRF -.5385 RTF -.9133
SGB 2930.2 R23 -.0981 R13 -.9147
SG1 2896.4 SG2 444.1 THA 5.00

ORBIT DETERMINATION ACCURACY
ST 423.7 SR 430.1 SS 367.2
CRT -.3225 CRS .9531 CST -.1812
LSA 581.2 MSA 394.9 SSA 75.0
EL1 491.0 EL2 351.3 ALF 133.67

LAUNCH DATE DEC 4 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 461.347 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.604 GAL 1.19 AZL 89.26 HCA 143.60 SMA 197.76 ECC .25526 INC .7440 V1 30.219
RP 236.98 LAP .44 LOP 215.48 VP 21.189 GAP 9.44 AZP 90.60 TAL 5.87 TAP 149.47 RCA 147.28 APO 248.24 V2 23.191
RC 189.421 GL 7.09 GP 4.26 ZAL 74.37 ZAP 157.48 ETS 168.15 ZAE 161.56 ETE 14.47 ZAC 94.77 ETC 255.79 CLP 157.87

PLANETOCENTRIC CONIC

C3 12.494 VHL 3.535 DLA 19.47 RAL 150.92 RAD 6567.5 VEL 11.571 PTH 2.02 VHP 5.884 DPA -.39 RAP 194.47 ECC 1.2056

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 48 14	2763.57	-28.04	79.17	11.18	94.13	14 34 18	2163.6	-27.17	70.61
90.00	7 17 16	4096.34	-3.30	166.19	5.77	61.86	8 25 33	3496.3	-7.04	159.51
100.00	15 21 45	2462.02	-29.36	56.86	11.05	95.91	16 2 47	1862.0	-28.23	48.23
100.00	8 26 26	3873.12	-2.15	149.15	5.13	60.18	9 31 0	3273.1	-6.10	142.59
110.00	16 56 15	2168.36	-32.70	33.84	10.49	100.58	17 32 21	1566.4	-30.89	25.08
110.00	9 8 26	3741.55	.72	137.38	3.34	55.82	10 10 47	3141.5	-3.77	131.17

DIFFERENTIAL CORRECTIONS
TDE .0907 TRA -.7189 TC3 3.6789 BAU .6174
RDE -.2604 RRA -.0875 RC3 .3585 FAU .15516
FDE .4408 FRA .1964 FC-10.7509 BSP 9967
BDE .2757 BRA .7222 BC3 3.6963 FSP 2077

MID-COURSE EXECUTION ACCURACY
SGT 2881.8 SGR 514.7 SG3 660.2
RRT .5275 RRF -.5793 RTF -.9118
SGB 2927.4 R23 -.1025 R13 -.9134
SG1 2894.8 SG2 435.3 THA 5.51

ORBIT DETERMINATION ACCURACY
ST 405.4 SR 424.5 SS 384.7
CRT -.2599 CRS .9582 CST -.1621
LSA 579.7 MSA 388.0 SSA 77.2
EL1 466.6 EL2 356.2 ALF 129.99

LAUNCH DATE DEC 4 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 464.861 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.565 GAL 1.27 AZL 89.29 HCA 144.56 SMA 196.99 ECC .25249 INC .7090 V1 30.219
RP 236.64 LAP .41 LOP 216.45 VP 21.166 GAP 8.96 AZP 90.58 TAL 6.33 TAP 150.89 RCA 147.25 APO 246.73 V2 23.226
RC 191.655 GL 6.80 GP 4.46 ZAL 73.45 ZAP 156.59 ETS 168.11 ZAE 162.30 ETE 15.95 ZAC 94.99 ETC 255.78 CLP 157.00

PLANETOCENTRIC CONIC

C3 12.302 VHL 3.507 DLA 19.51 RAL 149.91 RAD 6567.5 VEL 11.562 PTH 2.02 VHP 5.747 DPA -.25 RAP 194.64 ECC 1.2025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 43 42	2762.16	-28.03	79.07	9.94	94.18	14 29 44	2162.2	-27.16	70.51
90.00	7 13 45	4091.15	-3.47	165.90	4.57	61.88	8 21 56	3491.2	-7.20	159.22
100.00	15 17 16	2460.44	-29.34	56.74	9.80	95.97	15 58 16	1860.4	-28.21	48.12
100.00	8 22 52	3868.11	-2.32	148.87	3.93	60.19	9 27 20	3268.1	-6.27	142.31
110.00	16 51 52	2164.47	-32.67	33.69	9.24	100.66	17 27 56	1564.5	-30.86	24.94
110.00	9 4 45	3736.84	.54	137.14	2.15	55.82	10 7 2	3136.8	-3.95	130.93

DIFFERENTIAL CORRECTIONS

TDE .0825 TRA -.6854 TC3 3.7529 BAU .6207
RDE -.2549 RRA -.0819 RC3 .4013 FAU .16181
FDE .4652 FRA .1298 FC-11.3868 BSP 10029
BDE .2679 BRA .6903 BC3 3.7743 FSP 2193

MID-COURSE EXECUTION ACCURACY

SGT 2891.3 SGR 522.2 SG3 693.5
RRT .5653 RRF -.6196 RTF -.9132
SGB 2938.1 R23 -.1112 R13 -.9150
SG1 2906.7 SG2 428.5 THA 5.96

ORBIT DETERMINATION ACCURACY

ST 389.1 SR 418.6 SS 397.1
CRT -.2472 CRS .9598 CST -.1909
LSA 582.5 MSA 372.3 SSA 79.9
EL1 453.1 EL2 348.3 ALF 126.76

LAUNCH DATE DEC 4 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 468.397 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.528 GAL 1.35 AZL 89.33 HCA 145.53 SMA 196.27 ECC .24986 INC .6724 V1 30.219
RP 236.29 LAP .38 LOP 217.42 VP 21.145 GAP 8.48 AZP 90.55 TAL 6.77 TAP 152.30 RCA 147.23 APO 245.31 V2 23.261
RC 193.877 GL 6.49 GP 4.68 ZAL 72.56 ZAP 155.68 ETS 168.05 ZAE 163.05 ETE 17.64 ZAC 95.23 ETC 255.77 CLP 156.11

PLANETOCENTRIC CONIC

C3 12.125 VHL 3.482 DLA 19.52 RAL 148.91 RAD 6567.5 VEL 11.555 PTH 2.02 VHP 5.615 DPA -.08 RAP 194.80 ECC 1.1995

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 39 37	2759.53	-28.02	78.88	8.71	94.28	14 25 36	2159.5	-27.13	70.32
90.00	7 9 54	4087.65	-3.58	165.71	3.40	61.89	8 18 1	3487.6	-7.31	159.02
100.00	15 13 11	2457.77	-29.35	56.54	8.58	96.07	15 54 9	1857.8	-28.17	47.93
100.00	8 19 0	3864.64	-2.43	148.68	2.76	60.20	9 23 25	3264.6	-6.38	142.12
110.00	16 47 49	2161.73	-32.64	33.49	8.00	100.78	17 23 50	1561.7	-30.81	24.75
110.00	9 0 52	3733.44	.41	136.96	.99	55.82	10 3 6	3133.4	-4.08	130.75

DIFFERENTIAL CORRECTIONS

TDE .0759 TRA -.6542 TC3 3.8222 BAU .6238
RDE -.2495 RRA -.0760 RC3 .4480 FAU .16878
FDE .4883 FRA .0593 FC-12.0509 BSP 10055
BDE .2608 BRA .6586 BC3 3.8484 FSP 2312

MID-COURSE EXECUTION ACCURACY

SGT 2899.2 SGR 532.5 SG3 728.5
RRT .6030 RRF -.6598 RTF -.9146
SGB 2947.7 R23 -.1208 R13 -.9167
SG1 2917.3 SG2 422.2 THA 6.46

ORBIT DETERMINATION ACCURACY

ST 373.3 SR 412.6 SS 408.8
CRT -.2394 CRS .9592 CST -.2212
LSA 585.4 MSA 356.5 SSA 82.7
EL1 441.3 EL2 338.8 ALF 123.64

LAUNCH DATE DEC 4 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 471.955 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.493 GAL 1.43 AZL 89.37 HCA 146.50 SMA 195.59 ECC .24736 INC .6338 V1 30.219
RP 235.94 LAP .35 LOP 218.39 VP 21.129 GAP 8.01 AZP 90.53 TAL 7.21 TAP 153.71 RCA 147.20 APO 243.97 V2 23.297
RC 196.086 GL 6.15 GP 4.92 ZAL 71.69 ZAP 154.75 ETS 167.98 ZAE 163.81 ETE 19.58 ZAC 95.47 ETC 255.77 CLP 155.20

PLANETOCENTRIC CONIC

C3 11.962 VHL 3.459 DLA 19.50 RAL 147.94 RAD 6567.5 VEL 11.548 PTH 2.02 VHP 5.485 DPA .11 RAP 194.96 ECC 1.1969

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 35 59	2755.61	-28.00	78.59	7.50	94.42	14 21 55	2155.6	-27.09	70.04
90.00	7 5 42	4085.86	-3.64	165.61	2.24	61.90	8 13 48	3485.9	-7.37	158.91
100.00	15 9 32	2453.95	-29.30	56.26	7.36	96.22	15 50 26	1853.9	-28.13	47.65
100.00	8 14 50	3862.75	-2.50	148.58	1.61	60.20	9 19 13	3262.8	-6.44	142.01
110.00	16 44 6	2158.08	-32.59	33.21	6.79	100.93	17 20 5	1558.1	-30.74	24.48
110.00	8 56 46	3731.39	.33	136.85	359.84	55.82	9 58 57	3131.4	-4.16	130.64

DIFFERENTIAL CORRECTIONS

TDE .0769 TRA -.6199 TC3 3.8972 BAU .6283
RDE -.2441 RRA -.0698 RC3 .4990 FAU .17612
FDE .5039 FRA -.0186 FC-12.7465 BSP 9934
BDE .2559 BRA .6238 BC3 3.9290 FSP 2428

MID-COURSE EXECUTION ACCURACY

SGT 2910.4 SGR 545.6 SG3 765.2
RRT .6377 RRF -.6989 RTF -.9166
SGB 2961.0 R23 -.1324 R13 -.9191
SG1 2931.5 SG2 417.2 THA 6.96

ORBIT DETERMINATION ACCURACY

ST 359.9 SR 406.1 SS 415.1
CRT -.2642 CRS .9557 CST -.2795
LSA 587.2 MSA 338.5 SSA 86.3
EL1 435.6 EL2 323.7 ALF 122.70

LAUNCH DATE DEC 4 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 475.533 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.459 GAL 1.50 AZL 89.41 HCA 147.48 SMA 194.94 ECC .24500 INC .5931 V1 30.219
RP 235.59 LAP .32 LOP 219.36 VP 21.115 GAP 7.55 AZP 90.50 TAL 7.63 TAP 155.11 RCA 147.18 APO 242.70 V2 23.333
RC 198.280 GL 5.78 GP 5.17 ZAL 70.85 ZAP 153.78 ETS 167.90 ZAE 164.58 ETE 21.82 ZAC 95.72 ETC 255.76 CLP 154.26

PLANETOCENTRIC CONIC

C3 11.812 VHL 3.437 DLA 19.43 RAL 146.98 RAD 6567.5 VEL 11.541 PTH 2.01 VHP 5.359 DPA .32 RAP 195.10 ECC 1.1944

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 32 53	2750.28	-27.97	78.20	6.31	94.61	14 18 44	2150.3	-27.04	69.66
90.00	7 1 10	4085.88	-3.64	165.61	1.10	61.90	8 9 16	3485.9	-7.37	158.92
100.00	15 6 22	2448.85	-29.26	55.89	6.17	96.41	15 47 11	1848.9	-28.06	47.29
100.00	8 10 22	3862.54	-2.50	148.56	.47	60.20	9 14 45	3262.5	-6.45	142.00
110.00	16 40 47	2153.43	-32.53	32.86	5.58	101.13	17 16 41	1553.4	-30.65	24.15
110.00	8 52 26	3730.73	.30	136.82	358.72	55.82	9 54 37	3130.7	-4.18	130.61

DIFFERENTIAL CORRECTIONS

TDE .0673 TRA -.5970 TC3 3.9271 BAU .6263
RDE -.2389 RRA -.0634 RC3 .5537 FAU .18352
FDE .5248 FRA -.0953 FC-13.4507 BSP 10111
BDE .2482 BRA .6003 BC3 3.9659 FSP 2570

MID-COURSE EXECUTION ACCURACY

SGT 2900.5 SGR 562.2 SG3 802.5
RRT .6752 RRF -.7369 RTF -.9161
SGB 2954.5 R23 -.1433 R13 -.9190
SG1 2925.7 SG2 411.2 THA 7.61

ORBIT DETERMINATION ACCURACY

ST 345.5 SR 399.9 SS 425.7
CRT -.2399 CRS .9520 CST -.2889
LSA 588.0 MSA 326.9 SSA 89.0
EL1 422.5 EL2 317.5 ALF 119.28

LAUNCH DATE DEC 4 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 479.133 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.427 GAL 1.57 AZL 89.45 HCA 148.46 SMA 194.33 ECC .24275 INC .5498 V1 30.219
RP 235.24 LAP .29 LOP 220.34 VP 21.104 GAP 7.10 AZP 90.47 TAL 8.04 TAP 156.50 RCA 147.15 APO 241.50 V2 23.369
RC 200.460 GL 5.39 GP 5.44 ZAL 70.03 ZAP 152.79 ETS 167.81 ZAE 165.34 ETE 24.41 ZAC 95.99 ETC 255.75 CLP 153.30

PLANETOCENTRIC CONIC

C3 11.674 VHL 3.417 DLA 19.33 RAL 146.03 RAD 6567.4 VEL 11.535 PTH 2.01 VHP 5.237 DPA .56 RAP 195.22 ECC 1.1921

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 30 16	2743.55	-27.93	77.72	5.14	94.86	14 15 59	2143.6	-26.97	69.18
90.00	6 56 15	4087.69	-3.58	165.71	359.98	61.89	8 4 22	3487.7	-7.31	159.02
100.00	15 3 37	2442.50	-29.21	55.42	4.99	96.65	15 44 20	1842.5	-27.98	46.83
100.00	8 5 34	3863.97	-2.46	148.64	359.35	60.20	9 9 58	3264.0	-6.40	142.08
110.00	16 37 49	2147.78	-32.46	32.44	4.39	101.37	17 13 37	1547.8	-30.55	23.74
110.00	8 47 52	3731.46	.33	136.85	357.61	55.82	9 50 3	3131.5	-4.16	130.64

DIFFERENTIAL CORRECTIONS
TDE .0803 TRA -.5546 TC3 4.0170 BAU .6342
RDE -.2332 RRA -.0561 RC3 .6151 FAU .19186
FDE .5268 FRA -.1924 FC-14.2280 BSP 9765
BDE .2467 BRA .5574 BC3 4.0638 FSP 2683

MID-COURSE EXECUTION ACCURACY
SGT 2919.7 SGR 582.7 SG3 844.0
RRT .7050 RRF -.7726 RTF -.9198
SGB 2977.2 R23 -.1568 R13 -.9231
SG1 2949.0 SG2 409.2 THA 8.17

ORBIT DETERMINATION ACCURACY
ST 335.2 SR 392.4 SS 423.5
CRT -.3253 CRS .9423 CST -.3994
LSA 587.6 MSA 302.4 SSA 94.9
EL1 425.2 EL2 292.5 ALF 122.02

LAUNCH DATE DEC 4 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 482.748 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.396 GAL 1.63 AZL 89.50 HCA 149.44 SMA 193.75 ECC .24063 INC .5037 V1 30.219
RP 234.89 LAP .26 LOP 221.32 VP 21.096 GAP 6.65 AZP 90.43 TAL 8.43 TAP 157.87 RCA 147.13 APO 240.37 V2 23.405
RC 202.623 GL 4.96 GP 5.73 ZAL 69.24 ZAP 151.77 ETS 167.71 ZAE 166.10 ETE 27.43 ZAC 96.27 ETC 255.75 CLP 152.32

PLANETOCENTRIC CONIC

C3 11.546 VHL 3.398 DLA 19.18 RAL 145.11 RAD 6567.4 VEL 11.530 PTH 2.01 VHP 5.118 DPA .83 RAP 195.34 ECC 1.1900

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 28 13	2735.20	-27.88	77.11	3.99	95.16	14 13 48	2135.2	-26.88	68.59
90.00	6 50 57	4091.46	-3.46	165.92	358.88	61.88	7 59 9	3491.5	-7.19	159.23
100.00	15 1 25	2434.68	-29.15	54.85	3.83	96.95	15 42 0	1834.7	-27.88	46.28
100.00	8 0 27	3867.21	-2.35	148.82	358.26	60.19	9 4 54	3267.2	-6.30	142.26
110.00	16 35 18	2140.95	-32.36	31.93	3.22	101.66	17 10 59	1540.9	-30.42	23.25
110.00	8 43 3	3733.71	.42	136.97	356.53	55.82	9 45 16	3133.7	-4.07	130.76

DIFFERENTIAL CORRECTIONS
TDE .0659 TRA -.5421 TC3 4.0052 BAU .6271
RDE -.2283 RRA -.0492 RC3 .6794 FAU .19970
FDE .5457 FRA -.2736 FC-14.9733 BSP 10098
BDE .2376 BRA .5443 BC3 4.0624 FSP 2849

MID-COURSE EXECUTION ACCURACY
SGT 2891.0 SGR 607.5 SG3 883.8
RRT .7396 RRF -.8062 RTF -.9172
SGB 2954.2 R23 -.1698 R13 -.9211
SG1 2926.4 SG2 403.9 THA 9.01

ORBIT DETERMINATION ACCURACY
ST 321.4 SR 386.0 SS 433.6
CRT -.2740 CRS .9366 CST -.3805
LSA 585.4 MSA 297.1 SSA 96.9
EL1 408.8 EL2 291.9 ALF 118.05

LAUNCH DATE DEC 4 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 486.383 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.367 GAL 1.70 AZL 89.54 HCA 150.42 SMA 193.20 ECC .23861 INC .4555 V1 30.219
RP 234.53 LAP .22 LOP 222.31 VP 21.091 GAP 6.21 AZP 90.40 TAL 8.82 TAP 159.24 RCA 147.10 APO 239.30 V2 23.442
RC 204.770 GL 4.50 GP 6.05 ZAL 68.49 ZAP 150.72 ETS 167.60 ZAE 166.83 ETE 30.95 ZAC 96.57 ETC 255.74 CLP 151.30

PLANETOCENTRIC CONIC

C3 11.429 VHL 3.381 DLA 18.99 RAL 144.21 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 5.003 DPA 1.13 RAP 195.44 ECC 1.1881

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 26 42	2725.29	-27.82	76.39	2.85	95.51	14 12 7	2125.3	-26.76	67.88
90.00	6 45 16	4097.13	-3.28	166.24	357.79	61.86	7 53 33	3497.1	-7.02	159.55
100.00	14 59 41	2425.44	-29.07	54.17	2.69	97.29	15 40 7	1825.4	-27.75	45.62
100.00	7 54 58	3872.21	-2.18	149.10	357.18	60.18	8 59 30	3272.2	-6.13	142.54
110.00	16 33 10	2132.96	-32.25	31.33	2.06	102.00	17 8 43	1533.0	-30.26	22.68
110.00	8 37 58	3737.45	.56	137.17	355.47	55.82	9 40 15	3137.5	-3.93	130.96

DIFFERENTIAL CORRECTIONS
TDE .0669 TRA -.5168 TC3 4.0213 BAU .6251
RDE -.2229 RRA -.0414 RC3 .7500 FAU .20807
FDE .5505 FRA -.3703 FC-15.7606 BSP 10109
BDE .2327 BRA .5184 BC3 4.0907 FSP 3004

MID-COURSE EXECUTION ACCURACY
SGT 2874.7 SGR 636.7 SG3 926.0
RRT .7676 RRF -.8364 RTF -.9171
SGB 2944.3 R23 -.1848 R13 -.9217
SG1 2916.7 SG2 402.2 THA 9.84

ORBIT DETERMINATION ACCURACY
ST 311.0 SR 378.6 SS 434.9
CRT -.3004 CRS .9261 CST -.4314
LSA 582.4 MSA 282.4 SSA 101.4
EL1 403.0 EL2 278.7 ALF 118.29

LAUNCH DATE DEC 4 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 490.036 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.340 GAL 1.76 AZL 89.60 HCA 151.41 SMA 192.68 ECC .23670 INC .4032 V1 30.219
RP 234.17 LAP .19 LOP 223.29 VP 21.089 GAP 5.78 AZP 90.35 TAL 9.19 TAP 160.60 RCA 147.07 APO 238.29 V2 23.479
RC 206.900 GL 4.00 GP 6.38 ZAL 67.76 ZAP 149.64 ETS 167.47 ZAE 167.53 ETE 35.06 ZAC 96.89 ETC 255.73 CLP 150.26

PLANETOCENTRIC CONIC

C3 11.322 VHL 3.365 DLA 18.75 RAL 143.32 RAD 6567.4 VEL 11.520 PTH 2.01 VHP 4.890 DPA 1.46 RAP 195.53 ECC 1.1863

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 25 45	2713.68	-27.74	75.55	1.72	95.92	14 10 59	2113.7	-26.63	67.06
90.00	6 39 9	4104.81	-3.03	166.67	356.72	61.83	7 47 34	3504.8	-6.77	159.99
100.00	14 58 29	2414.65	-28.97	53.39	1.55	97.70	15 38 43	1814.7	-27.61	44.85
100.00	7 49 7	3879.07	-1.94	149.47	356.12	60.17	8 53 46	3279.1	-5.90	142.92
110.00	16 31 28	2123.71	-32.12	30.64	.90	102.38	17 6 52	1523.7	-30.08	22.02
110.00	8 32 37	3742.77	.76	137.44	354.43	55.82	9 34 59	3142.8	-3.73	131.24

DIFFERENTIAL CORRECTIONS
TDE .0695 TRA -.4929 TC3 4.0370 BAU .6238
RDE -.2172 RRA -.0529 RC3 .8282 FAU .21704
FDE .5477 FRA -.4739 FC-16.5964 BSP 10056
BDE .2280 BRA .4940 BC3 4.1211 FSP 3155

MID-COURSE EXECUTION ACCURACY
SGT 2860.1 SGR 671.4 SG3 971.1
RRT .7929 RRF -.8638 RTF -.9169
SGB 2937.8 R23 -.2003 R13 -.9225
SG1 2910.2 SG2 402.1 THA 10.75

ORBIT DETERMINATION ACCURACY
ST 302.3 SR 370.6 SS 432.4
CRT -.3367 CRS .9121 CST -.4885
LSA 576.8 MSA 267.6 SSA 106.9
EL1 398.1 EL2 264.9 ALF 119.32

LAUNCH DATE DEC 4 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 493.705 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.313 GAL 1.81 AZL 89.65 HCA 152.40 SMA 192.19 ECC .23489 INC .3481 V1 30.219
RP 233.80 LAP .16 LOP 224.28 VP 21.089 GAP 5.35 AZP 90.31 TAL 9.55 TAP 161.95 RCA 147.05 APO 237.34 V2 23.517
RC 209.011 GL 3.47 GP 6.75 ZAL 67.06 ZAP 148.53 ETS 167.34 ZAE 168.17 ETE 39.86 ZAC 97.23 ETC 255.72 CLP 149.19

PLANETOCENTRIC CONIC

C3 11.223 VHL 3.350 DLA 18.45 RAL 142.46 RAD 6567.4 VEL 11.516 PTH 2.01 VHP 4.782 DPA 1.83 RAP 195.60 ECC 1.1847

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 25 22	2700.30	-27.64	74.58	.60	96.40	14 10 23	2100.3	-26.47	66.11
90.00	6 32 38	4114.56	-2.72	167.21	355.67	61.80	7 41 12	3514.6	-6.47	160.54
100.00	14 57 48	2402.23	-28.86	52.48	.43	98.16	15 37 51	1802.2	-27.43	43.97
100.00	7 42 53	3887.86	-1.65	149.95	355.08	60.15	8 47 41	3287.9	-5.61	143.41
110.00	16 30 13	2113.12	-31.96	29.86	359.76	102.83	17 5 26	1513.1	-29.87	21.27
110.00	8 26 58	3749.74	1.03	137.81	353.40	55.83	9 29 27	3149.7	-3.46	131.60

DIFFERENTIAL CORRECTIONS
TDE .0743 TRA -.4693 TC3 4.0384 BAU .6212
RDE -.2112 RRA -.0236 RC3 .9129 FAU .22618
FDE .5382 FRA -.5846 FC-17.4481 BSP 10019
BDE .2239 BRA .4699 BC3 4.1403 FSP 3319

MID-COURSE EXECUTION ACCURACY
SGT 2837.8 SGR 711.6 SG3 1017.2
RRT .8146 RRF -.8877 RTF -.9165
SGB 2925.7 R23 -.2166 R13 -.9232
SG1 2897.6 SG2 404.2 THA 11.78

ORBIT DETERMINATION ACCURACY
ST 295.3 SR 361.9 SS 427.4
CRT -.3852 CRS .8944 CST -.5525
LSA 569.7 MSA 251.8 SSA 113.5
EL1 394.6 EL2 249.9 ALF 120.99

LAUNCH DATE DEC 4 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 497.391 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.288 GAL 1.87 AZL 89.71 HCA 153.39 SMA 191.73 ECC .23318 INC .2877 V1 30.219
RP 233.44 LAP .13 LOP 225.28 VP 21.092 GAP 4.94 AZP 90.26 TAL 9.89 TAP 163.29 RCA 147.02 APO 236.44 V2 23.555
RC 211.104 GL 2.88 GP 7.15 ZAL 66.39 ZAP 147.37 ETS 167.19 ZAE 168.72 ETE 45.41 ZAC 97.59 ETC 255.71 CLP 148.08

PLANETOCENTRIC CONIC

C3 11.132 VHL 3.336 DLA 18.11 RAL 141.61 RAD 6567.4 VEL 11.512 PTH 2.01 VHP 4.677 DPA 2.24 RAP 195.67 ECC 1.1832

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 25 36	2685.04	-27.52	73.48	359.49	96.94	14 10 21	2085.0	-26.28	65.04
90.00	6 25 39	4126.46	-2.33	167.88	354.64	61.77	7 34 25	3526.5	-6.09	161.21
100.00	14 57 41	2388.08	-28.72	51.45	359.31	98.68	15 37 29	1788.1	-27.22	42.97
100.00	7 36 14	3898.66	-1.28	150.55	354.05	60.13	8 41 13	3298.7	-5.25	144.00
110.00	16 29 25	2101.08	-31.78	28.97	358.62	103.32	17 4 26	1501.1	-29.62	20.42
110.00	8 21 0	3758.43	1.36	138.26	352.40	55.84	9 23 38	3158.4	-3.13	132.06

DIFFERENTIAL CORRECTIONS
TDE .0806 TRA -.4476 TC3 4.0283 BAU .6179
RDE -.2047 RRA -.0135 RC3 1.0058 FAU .23571
FDE .5186 FRA -.7033 FC-18.3314 BSP 9972
BDE .2200 BRA .4479 BC3 4.1519 FSP 3485

MID-COURSE EXECUTION ACCURACY
SGT 2810.5 SGR 758.1 SG3 1065.3
RRT .8332 RRF -.9085 RTF -.9156
SGB 2910.9 R23 -.2334 R13 -.9237
SG1 2882.1 SG2 408.8 THA 12.93

ORBIT DETERMINATION ACCURACY
ST 290.7 SR 352.3 SS 418.6
CRT -.4418 CRS .8707 CST -.6180
LSA 560.0 MSA 235.4 SSA 121.7
EL1 392.0 EL2 234.3 ALF 123.19

LAUNCH DATE DEC 4 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 501.093 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.265 GAL 1.92 AZL 89.77 HCA 154.39 SMA 191.29 ECC .23156 INC .2235 V1 30.219
RP 233.07 LAP .10 LOP 226.27 VP 21.097 GAP 4.52 AZP 90.20 TAL 10.22 TAP 164.61 RCA 147.00 APO 235.59 V2 23.593
RC 213.179 GL 2.25 GP 7.58 ZAL 65.75 ZAP 146.19 ETS 167.03 ZAE 169.15 ETE 51.74 ZAC 97.98 ETC 255.70 CLP 146.95

PLANETOCENTRIC CONIC

C3 11.049 VHL 3.324 DLA 17.70 RAL 140.78 RAD 6567.4 VEL 11.508 PTH 2.00 VHP 4.575 DPA 2.69 RAP 195.72 ECC 1.1818

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 26 26	2667.82	-27.37	72.24	358.39	97.54	14 10 53	2067.8	-26.05	63.83
90.00	6 18 12	4140.62	-1.88	168.67	353.62	61.74	7 27 12	3540.6	-5.64	162.01
100.00	14 58 8	2372.09	-28.55	50.30	358.19	99.27	15 37 40	1772.1	-26.97	41.85
100.00	7 29 10	3911.57	-.84	151.26	353.04	60.12	8 34 22	3311.6	-4.81	144.72
110.00	16 29 6	2087.49	-31.56	27.97	357.48	103.88	17 3 53	1487.5	-29.33	19.47
110.00	8 14 42	3768.94	1.76	138.81	351.41	55.86	9 17 31	3168.9	-2.73	132.61

DIFFERENTIAL CORRECTIONS
TDE .0869 TRA -.4270 TC3 4.0069 BAU .6141
RDE -.1978 RRA -.0024 RC3 1.1071 FAU .24546
FDE .4904 FRA -.8282 FC-19.2325 BSP 9918
BDE .2168 BRA .4270 BC3 4.1570 FSP 3664

MID-COURSE EXECUTION ACCURACY
SGT 2777.8 SGR 811.2 SG3 1114.7
RRT .8484 RRF -.9262 RTF -.9145
SGB 2893.8 R23 -.2501 R13 -.9243
SG1 2863.7 SG2 416.5 THA 14.22

ORBIT DETERMINATION ACCURACY
ST 289.1 SR 341.7 SS 407.7
CRT -.5078 CRS .8402 CST -.6809
LSA 549.2 MSA 217.9 SSA 131.8
EL1 391.1 EL2 217.6 ALF 125.86

LAUNCH DATE DEC 4 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 504.810 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.242 GAL 1.97 AZL 89.84 HCA 155.39 SMA 190.88 ECC .23003 INC .1550 V1 30.219
RP 232.70 LAP .07 LOP 227.27 VP 21.104 GAP 4.12 AZP 90.14 TAL 10.54 TAP 165.93 RCA 146.97 APO 234.78 V2 23.631
RC 215.236 GL 1.57 GP 8.05 ZAL 65.15 ZAP 144.96 ETS 166.86 ZAE 169.43 ETE 58.79 ZAC 98.41 ETC 255.68 CLP 145.78

PLANETOCENTRIC CONIC

C3 10.974 VHL 3.313 DLA 17.23 RAL 139.97 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 4.477 DPA 3.18 RAP 195.76 ECC 1.1806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 27 54	2648.49	-27.19	70.86	357.29	98.22	14 12 2	2048.5	-25.78	62.48
90.00	6 10 14	4157.14	-1.35	169.59	352.61	61.71	7 19 32	3557.1	-5.12	162.94
100.00	14 59 10	2354.15	-28.34	49.00	357.08	99.92	15 38 24	1754.1	-26.68	40.59
100.00	7 21 39	3926.72	-.33	152.09	352.05	60.11	8 27 6	3326.7	-4.30	145.55
110.00	16 29 17	2072.23	-31.30	26.85	356.35	104.49	17 3 49	1472.2	-29.00	18.41
110.00	8 8 2	3781.40	2.24	139.46	350.44	55.88	9 11 3	3181.4	-2.25	133.26

DIFFERENTIAL CORRECTIONS
TDE .0985 TRA -.4085 TC3 3.9746 BAU .6099
RDE -.1901 RRA .0097 RC3 1.2184 FAU .25553
FDE .4505 FRA -.9595 FC-20.1584 BSP 9850
BDE .2141 BRA .4086 BC3 4.1572 FSP 3844

MID-COURSE EXECUTION ACCURACY
SGT 2740.5 SGR 871.8 SG3 1165.6
RRT .8608 RRF -.9411 RTF -.9129
SGB 2875.9 R23 -.2662 R13 -.9250
SG1 2843.9 SG2 427.6 THA 15.68

ORBIT DETERMINATION ACCURACY
ST 290.7 SR 329.7 SS 394.4
CRT -.5768 CRS .7992 CST -.7315
LSA 536.6 MSA 200.0 SSA 144.3
EL1 391.5 EL2 200.0 ALF 128.83

LAUNCH DATE DEC 4 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 508.541 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	33.220	GAL	2.01	AZL	89.92	HCA	156.39	SMA	190.49	ECC	.22858	INC	.0779
RP	232.32	LAP	.03	LOP	228.27	VP	21.114	GAP	3.72	AZP	90.07	TAL	10.84	TAP	167.23	RCA	146.95	APO	234.03
RC	217.275	GL	.82	GP	8.56	ZAL	64.57	ZAP	143.69	ETS	166.67	ZAE	169.52	ETE	66.41	ZAC	98.86	ETC	255.66

V1	30.219	V2	23.670	CLP	144.58														

PLANETOCENTRIC CONIC

C3	10.907	VHL	3.303	DLA	16.69	RAL	139.17	RAD	6567.4	VEL	11.502	PTH	2.00	VHP	4.383	DPA	3.73	RAP	195.80
ECC	1.1795																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 30 1	2626.94	-26.97	69.32	356.19	98.96	14 13 48	2026.9	-25.46	60.98
90.00	6 1 45	4176.17	-.73	170.65	351.63	61.69	7 11 21	3576.2	-4.51	164.01
100.00	15 0 49	2334.10	-28.10	47.56	355.97	100.64	15 39 43	1734.1	-26.34	39.20
100.00	7 13 38	3944.24	.27	153.05	351.07	60.11	8 19 22	3344.2	-3.71	146.52
110.00	16 29 58	2055.16	-31.01	25.61	355.21	105.17	17 4 13	1455.2	-28.61	17.23
110.00	8 0 58	3795.95	2.80	140.22	349.49	55.92	9 4 14	3195.9	-1.70	134.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1103	TRA	-.3901	TC3	3.9296	BAU	.6054	SGT	2696.8	SGR	940.7	SG3	1218.1	ST	296.0	SR	316.0	SS	379.7
RDE	-.1814	RRA	.0235	RC3	1.3406	FAU	.26586	RRT	.8704	RRF	-.9534	RTF	-.9110	CRT	-.6506	CRS	.7409	CST	-.7610
FDE	.3957	FRA	-1.1026	FC	-21.1033	BSP	9751	SGB	2856.1	R23	-.2809	R13	-.9259	LSA	522.5	MSA	183.2	SSA	158.4
BDE	.2123	BRA	.3908	BC3	4.1520	FSP	4026	SG1	2821.6	SG2	442.7	THA	17.33	EL1	393.6	EL2	180.5	ALF	132.13

LAUNCH DATE DEC 4 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 512.287 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	33.200	GAL	2.05	AZL	90.00	HCA	157.40	SMA	190.12	ECC	.22720	INC	.0000
RP	231.95	LAP	.00	LOP	229.28	VP	21.125	GAP	3.33	AZP	90.00	TAL	11.12	TAP	168.52	RCA	146.92	APO	233.31
RC	219.295	GL	.01	GP	9.12	ZAL	64.04	ZAP	142.38	ETS	166.47	ZAE	169.39	ETE	74.32	ZAC	99.36	ETC	255.65

V1	30.219	V2	23.709	CLP	143.35														

PLANETOCENTRIC CONIC

C3	10.847	VHL	3.293	DLA	16.07	RAL	138.39	RAD	6567.4	VEL	11.499	PTH	2.00	VHP	4.293	DPA	4.33	RAP	195.82
ECC	1.1785																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 32 49	2602.98	-26.71	67.62	355.09	99.77	14 16 12	2003.0	-25.09	59.32
90.00	5 52 42	4197.88	-.03	171.86	350.66	61.68	7 2 39	3597.9	-3.81	165.23
100.00	15 3 7	2311.78	-27.81	45.97	354.86	101.44	15 41 38	1711.8	-25.95	37.66
100.00	7 5 5	3964.31	.95	154.15	350.11	60.12	8 11 9	3364.3	-3.04	147.63
110.00	16 31 13	2036.12	-30.66	24.24	354.07	105.92	17 5 9	1436.1	-28.17	15.92
110.00	7 53 28	3812.74	3.44	141.10	348.56	55.97	8 57 0	3212.7	-1.05	134.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1237	TRA	-.3744	TC3	3.8707	BAU	.6007	SGT	2647.0	SGR	1018.7	SG3	1271.8	ST	305.8	SR	300.1	SS	365.3
RDE	-.1713	RRA	.0387	RC3	1.4750	FAU	.27644	RRT	.8773	RRF	-.9635	RTF	-.9084	CRT	-.7210	CRS	.6588	CST	-.7510
FDE	.3236	FRA	-1.2530	FC	-22.0634	BSP	9682	SGB	2836.2	R23	-.2942	R13	-.9269	LSA	507.0	MSA	191.9	SSA	152.4
BDE	.2113	BRA	.3764	BC3	4.1422	FSP	4216	SG1	2798.3	SG2	462.5	THA	19.20	EL1	397.5	EL2	160.0	ALF	135.75

LAUNCH DATE DEC 4 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 516.047 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	33.181	GAL	2.09	AZL	90.09	HCA	158.40	SMA	189.77	ECC	.22591	INC	.0862
RP	231.57	LAP	-.03	LOP	230.29	VP	21.139	GAP	2.95	AZP	89.92	TAL	11.39	TAP	169.80	RCA	146.90	APO	232.64
RC	221.297	GL	-.89	GP	9.74	ZAL	63.54	ZAP	141.03	ETS	166.25	ZAE	169.02	ETE	82.16	ZAC	99.90	ETC	255.63

V1	30.219	V2	23.748	CLP	142.08														

PLANETOCENTRIC CONIC

C3	10.796	VHL	3.286	DLA	15.37	RAL	137.61	RAD	6567.4	VEL	11.497	PTH	2.00	VHP	4.207	DPA	5.00	RAP	195.84
ECC	1.1777																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 36 19	2576.43	-26.39	65.74	353.98	100.66	14 19 16	1976.4	-24.65	57.50
90.00	5 43 0	4222.49	.76	173.23	349.70	61.69	6 53 23	3622.5	-3.03	166.60
100.00	15 6 4	2287.00	-27.46	44.21	353.74	102.30	15 44 11	1687.0	-25.49	35.96
100.00	6 55 56	3987.15	1.72	155.40	349.17	60.15	8 2 24	3387.2	-2.26	148.88
110.00	16 33 2	2014.91	-30.25	22.72	352.91	106.73	17 6 37	1414.9	-27.66	14.48
110.00	7 45 28	3832.01	4.17	142.11	347.65	56.04	8 49 20	3232.0	-.32	135.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1384	TRA	-.3614	TC3	3.7979	BAU	.5960	SGT	2591.1	SGR	1106.3	SG3	1325.7	ST	319.8	SR	282.0	SS	355.9
RDE	-.1598	RRA	.0554	RC3	1.6221	FAU	.28703	RRT	.8817	RRF	-.9716	RTF	-.9052	CRT	-.7842	CRS	.5524	CST	-.6876
FDE	.2369	FRA	-1.4065	FC	-23.0176	BSP	9616	SGB	2817.4	R23	-.3051	R13	-.9282	LSA	491.9	MSA	221.1	SSA	133.0
BDE	.2114	BRA	.3656	BC3	4.1298	FSP	4419	SG1	2775.0	SG2	487.4	THA	21.32	EL1	403.2	EL2	138.8	ALF	139.56

LAUNCH DATE DEC 4 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 519.821 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	33.163	GAL	2.13	AZL	90.18	HCA	159.42	SMA	189.44	ECC	.22468	INC	.1820
RP	231.20	LAP	-.06	LOP	231.30	VP	21.155	GAP	2.57	AZP	89.83	TAL	11.65	TAP	171.07	RCA	146.88	APO	232.01
RC	223.281	GL	-1.87	GP	10.41	ZAL	63.08	ZAP	139.63	ETS	166.01	ZAE	168.40	ETE	89.59	ZAC	100.50	ETC	255.60

V1	30.219	V2	23.788	CLP	140.77														

PLANETOCENTRIC CONIC

C3	10.753	VHL	3.279	DLA	14.57	RAL	136.84	RAD	6567.4	VEL	11.495	PTH	2.00	VHP	4.125	DPA	5.74	RAP	195.86
ECC	1.1770																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 40 35	2547.05	-26.00	63.67	352.87	101.63	14 23 2	1947.1	-24.14	55.50
90.00	5 32 38	4250.27	1.66	174.78	348.77	61.73	6 43 28	3650.3	-2.13	168.16
100.00	15 9 45	2259.53	-27.05	42.27	352.61	103.24	15 47 24	1659.5	-24.95	34.09
100.00	6 46 9	4013.03	2.60	156.82	348.25	60.21	7 53 2	3413.0	-1.39	150.30
110.00	16 35 28	1991.32	-29.78	21.04	351.75	107.62	17 8 39	1391.3	-27.08	12.89
110.00	7 36 56	3854.00	5.00	143.26	346.75	56.14	8 41 10	3254.0	.52	137.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1546	TRA	-.3487	TC3	3.7102	BAU	.5919	SGT	2527.9	SGR	1205.7	SG3	1381.1	ST	337.6	SR	260.5	SS	356.4
RDE	-.1459	RRA	.0749	RC3	1.7850	FAU	.29786	RRT	.8841	RRF	-.9782	RTF	-.9013	CRT	-.8410	CRS	.4105	CST	-.5507
FDE	.1251	FRA	-1.5774	FC	-23.9802	BSP	9516	SGB	2800.8	R23	-.3125	R13	-.9302	LSA	476.0	MSA	264.2	SSA	111.8
BDE	.2126	BRA	.3567	BC3	4.1173	FSP	4606	SG1	2752.5	SG2	517.5	THA	23.76	EL1	410.4	EL2	116.0	ALF	143.65

LAUNCH DATE DEC 4 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 523.607 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.145 GAL 2.16 AZL 90.29 HCA 160.43 SMA 189.13 ECC .22353 INC .2921 V1 30.219
RP 230.82 LAP -.10 LOP 232.32 VP 21.172 GAP 2.20 AZP 89.73 TAL 11.89 TAP 172.32 RCA 146.86 APO 231.41 V2 23.827
RC 225.247 GL -2.95 GP 11.16 ZAL 62.66 ZAP 138.17 ETS 165.76 ZAE 167.54 ETE 96.35 ZAC 101.15 ETC 255.57 CLP 139.42

PLANETOCENTRIC CONIC

C3 10.721 VHL 3.274 DLA 13.66 RAL 136.08 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 4.047 DPA 6.55 RAP 195.87 ECC 1.1764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 45 39	2514.56	-25.54	61.41	351.73	102.67	14 27 34	1914.6	-23.54	53.31
90.00	5 21 29	4281.56	2.67	176.53	347.85	61.80	6 32 50	3681.6	-1.12	169.90
100.00	15 14 11	2229.07	-26.55	40.14	351.46	104.26	15 51 20	1629.1	-24.33	32.04
100.00	6 35 39	4042.28	3.58	158.43	347.34	60.30	7 43 1	3442.3	-.40	151.91
110.00	16 38 33	1965.08	-29.22	19.20	350.57	108.58	17 11 18	1365.1	-26.41	11.15
110.00	7 27 46	3879.03	5.95	144.58	345.88	56.28	8 32 25	3279.0	1.48	138.35

DIFFERENTIAL CORRECTIONS

TDE .1727 TRA -.3390 TC3 3.6058 BAU .5885
RDE -.1296 RRA .0965 RC3 1.9629 FAU .30844
FDE -.0077 FRA-1.7504 FC-24.9058 BSP 9475
BDE .2159 BRA .3524 BC3 4.1054 FSP 4816

MID-COURSE EXECUTION ACCURACY

SGT 2457.6 SGR 1316.8 SG3 1435.3
RRT .8840 RRF -.9833 RTF -.8963
SGB 2788.1 R23 -.3163 R13 -.9329
SG1 2732.6 SG2 553.7 THA 26.52

ORBIT DETERMINATION ACCURACY

ST 360.4 SR 235.9 SS 372.3
CRT -.8864 CRS .2593 CST -.3503
LSA 461.6 MSA 320.3 SSA 92.2
EL1 420.4 EL2 93.6 ALF 148.11

LAUNCH DATE DEC 4 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 527.407 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.129 GAL 2.20 AZL 90.41 HCA 161.45 SMA 188.84 ECC .22243 INC .4101 V1 30.219
RP 230.43 LAP -.13 LOP 233.33 VP 21.192 GAP 1.83 AZP 89.61 TAL 12.11 TAP 173.56 RCA 146.84 APO 230.85 V2 23.867
RC 227.193 GL -4.16 GP 11.99 ZAL 62.28 ZAP 136.66 ETS 165.49 ZAE 166.44 ETE 102.29 ZAC 101.88 ETC 255.54 CLP 138.04

PLANETOCENTRIC CONIC

C3 10.702 VHL 3.271 DLA 12.62 RAL 135.32 RAD 6567.4 VEL 11.493 PTH 2.00 VHP 3.974 DPA 7.46 RAP 195.89 ECC 1.1761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 51 36	2478.59	-24.98	58.92	350.59	103.80	14 32 54	1878.6	-22.83	50.91
90.00	5 9 28	4316.78	3.80	178.50	346.96	61.92	6 21 25	3716.8	.01	171.87
100.00	15 19 26	2195.28	-25.97	37.80	350.30	105.35	15 56 2	1595.3	-23.61	29.80
100.00	6 24 19	4075.32	4.70	160.26	346.46	60.45	7 32 14	3475.3	.73	153.72
110.00	16 42 21	1935.87	-28.57	17.18	349.38	109.62	17 14 36	1335.9	-25.63	9.23
110.00	7 17 54	3907.50	7.03	146.09	345.03	56.46	8 23 1	3307.5	2.57	139.84

DIFFERENTIAL CORRECTIONS

TDE .1927 TRA -.3311 TC3 3.4891 BAU .5872
RDE -.1092 RRA .1215 RC3 2.1611 FAU .31921
FDE -.1753 FRA-1.9373 FC-25.8229 BSP 9410
BDE .2215 BRA .3527 BC3 4.1041 FSP 5004

MID-COURSE EXECUTION ACCURACY

SGT 2382.9 SGR 1443.4 SG3 1490.6
RRT .8820 RRF -.9874 RTF -.8904
SGB 2786.0 R23 -.3153 R13 -.9367
SG1 2721.6 SG2 595.6 THA 29.68

ORBIT DETERMINATION ACCURACY

ST 387.8 SR 206.6 SS 412.0
CRT -.9153 CRS .1251 CST -.1024
LSA 447.2 MSA 396.6 SSA 74.3
EL1 433.0 EL2 74.5 ALF 153.14

LAUNCH DATE DEC 4 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 531.221 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.114 GAL 2.22 AZL 90.54 HCA 162.47 SMA 188.57 ECC .22140 INC .5421 V1 30.219
RP 230.05 LAP -.16 LOP 234.36 VP 21.213 GAP 1.48 AZP 89.48 TAL 12.32 TAP 174.80 RCA 146.82 APO 230.32 V2 23.907
RC 229.120 GL -5.50 GP 12.92 ZAL 61.95 ZAP 135.10 ETS 165.20 ZAE 165.12 ETE 107.39 ZAC 102.69 ETC 255.50 CLP 136.61

PLANETOCENTRIC CONIC

C3 10.698 VHL 3.271 DLA 11.44 RAL 134.55 RAD 6567.4 VEL 11.493 PTH 2.00 VHP 3.907 DPA 8.46 RAP 195.92 ECC 1.1761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 58 27	2438.78	-24.30	56.20	349.42	105.00	14 39 6	1838.8	-22.01	48.28
90.00	4 56 28	4356.44	5.07	180.73	346.09	62.10	6 9 4	3756.4	1.30	174.08
100.00	15 25 34	2157.81	-25.27	35.24	349.12	106.53	16 1 32	1557.8	-22.76	27.33
100.00	6 12 2	4112.65	5.95	162.32	345.61	60.65	7 20 35	3512.6	1.99	155.77
110.00	16 46 54	1903.35	-27.81	14.96	348.16	110.73	17 18 37	1303.3	-24.73	7.13
110.00	7 7 12	3939.87	8.24	147.81	344.20	56.71	8 12 52	3339.9	3.80	141.53

DIFFERENTIAL CORRECTIONS

TDE .2301 TRA -.3091 TC3 3.4084 BAU .5954
RDE -.0804 RRA .1543 RC3 2.3909 FAU .33133
FDE -.4190 FRA-2.1785 FC-26.8126 BSP 9038
BDE .2438 BRA .3455 BC3 4.1633 FSP 5108

MID-COURSE EXECUTION ACCURACY

SGT 2332.1 SGR 1594.4 SG3 1553.6
RRT .8816 RRF -.9907 RTF -.8883
SGB 2825.1 R23 -.3023 R13 -.9440
SG1 2752.1 SG2 637.8 THA 33.08

ORBIT DETERMINATION ACCURACY

ST 441.0 SR 170.0 SS 498.4
CRT -.8987 CRS .0714 CST .2112
LSA 528.0 MSA 435.8 SSA 55.2
EL1 467.4 EL2 70.3 ALF 160.43

LAUNCH DATE DEC 4 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 535.045 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.099 GAL 2.25 AZL 90.69 HCA 163.50 SMA 188.31 ECC .22043 INC .6917 V1 30.219
RP 229.67 LAP -.20 LOP 235.38 VP 21.236 GAP 1.13 AZP 89.34 TAL 12.52 TAP 176.01 RCA 146.80 APO 229.82 V2 23.948
RC 231.027 GL -7.01 GP 13.95 ZAL 61.68 ZAP 133.47 ETS 164.88 ZAE 163.60 ETE 111.66 ZAC 103.61 ETC 255.45 CLP 135.14

PLANETOCENTRIC CONIC

C3 10.712 VHL 3.273 DLA 10.10 RAL 133.77 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 3.845 DPA 9.58 RAP 195.97 ECC 1.1763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 6 24	2394.48	-23.49	53.21	348.23	106.29	14 46 18	1794.5	-21.03	45.40
90.00	4 42 19	4401.29	6.49	183.26	345.26	62.38	5 55 41	3801.3	2.74	176.58
100.00	15 32 44	2116.02	-24.43	32.41	347.92	107.79	16 8 0	1516.0	-21.76	24.63
100.00	5 58 40	4154.99	7.35	164.68	344.79	60.94	7 7 55	3555.0	3.42	158.10
110.00	16 52 20	1866.94	-26.91	12.51	346.93	111.92	17 23 27	1266.9	-23.69	4.82
110.00	6 55 34	3976.83	9.61	149.79	343.42	57.04	8 1 51	3376.8	5.21	143.47

DIFFERENTIAL CORRECTIONS

TDE .2459 TRA -.3129 TC3 3.2289 BAU .5960
RDE -.0507 RRA .1863 RC3 2.6249 FAU .34046
FDE -.6406 FRA-2.3667 FC-27.5144 BSP 9219
BDE .2510 BRA .3642 BC3 4.1612 FSP 5326

MID-COURSE EXECUTION ACCURACY

SGT 2227.6 SGR 1752.1 SG3 1601.0
RRT .8735 RRF -.9931 RTF -.8772
SGB 2834.1 R23 -.2928 R13 -.9491
SG1 2748.5 SG2 691.4 THA 37.25

ORBIT DETERMINATION ACCURACY

ST 466.0 SR 142.8 SS 589.0
CRT -.7737 CRS .2126 CST .3706
LSA 634.7 MSA 423.7 SSA 45.4
EL1 479.4 EL2 88.0 ALF 166.18

LAUNCH DATE DEC 4 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 538.881 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.086 GAL 2.27 AZL 90.86 HCA 164.53 SMA 188.07 ECC .21951 INC .8595 V1 30.219
RP 229.28 LAP -.23 LOP 236.41 VP 21.260 GAP .78 AZP 89.17 TAL 12.69 TAP 177.22 RCA 146.79 APO 229.36 V2 23.988
RC 232.913 GL -8.71 GP 15.11 ZAL 61.48 ZAP 131.77 ETS 164.55 ZAE 161.87 ETE 115.19 ZAC 104.63 ETC 255.39 CLP 133.63

PLANETOCENTRIC CONIC

C3 10.752 VHL 3.279 DLA 8.56 RAL 132.98 RAD 6567.4 VEL 11.495 PTH 2.00 VHP 3.790 DPA 10.83 RAP 196.04 ECC 1.1770

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 15 32	2345.10	-22.51	49.92	347.03	107.65	14 54 37	1745.1	-19.88	42.23
90.00	4 26 50	4452.18	8.09	186.14	344.48	62.77	5 41 2	3852.2	4.37	179.43
100.00	15 41 1	2069.35	-23.42	29.31	346.70	109.13	16 15 31	1469.4	-20.59	21.66
100.00	5 44 1	4203.16	8.94	167.38	344.02	61.36	6 54 4	3603.2	5.04	160.75
110.00	16 58 44	1826.16	-25.84	9.82	345.67	113.20	17 29 10	1226.2	-22.48	2.28
110.00	6 42 48	4019.12	11.17	152.07	342.68	57.48	7 49 47	3419.1	6.80	145.70

DIFFERENTIAL CORRECTIONS
TDE .2655 TRA -.3159 TC3 3.0394 BAU .6025
RDE -.0117 RRA .2254 RC3 2.8859 FAU .34945
FDE -.9197 FRA-2.5805 FC-28.1368 BSP 9396
BDE .2658 BRA .3880 BC3 4.1912 FSP 5505

MID-COURSE EXECUTION ACCURACY
SGT 2121.3 SGR 1934.1 SG3 1648.1
RRT .8630 RRF -.9949 RTF -.8645
SGB 2870.6 R23 -.2750 R13 -.9562
SG1 2771.5 SG2 747.9 THA 41.94

ORBIT DETERMINATION ACCURACY
ST 496.9 SR 133.8 SS 714.5
CRT -.3919 CRS .5552 CST .5071
LSA 777.2 MSA 412.3 SSA 36.5
EL1 499.8 EL2 122.4 ALF 173.59

LAUNCH DATE DEC 4 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 542.728 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.073 GAL 2.30 AZL 91.05 HCA 165.56 SMA 187.85 ECC .21865 INC 1.0518 V1 30.219
RP 228.89 LAP -.26 LOP 237.44 VP 21.286 GAP .44 AZP 88.98 TAL 12.85 TAP 178.41 RCA 146.77 APO 228.92 V2 24.029
RC 234.778 GL -10.63 GP 16.43 ZAL 61.35 ZAP 130.00 ETS 164.18 ZAE 159.94 ETE 118.06 ZAC 105.80 ETC 255.32 CLP 132.08

PLANETOCENTRIC CONIC

C3 10.825 VHL 3.290 DLA 6.78 RAL 132.15 RAD 6567.4 VEL 11.498 PTH 2.00 VHP 3.743 DPA 12.23 RAP 196.14 ECC 1.1782

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 26 1	2289.81	-21.32	46.30	345.81	109.09	15 4 11	1689.8	-18.52	38.75
90.00	4 9 44	4510.23	9.88	189.47	343.76	63.33	5 24 54	3910.2	6.22	182.70
100.00	15 50 36	2017.01	-22.21	25.90	345.46	110.54	16 24 13	1417.0	-19.22	18.38
100.00	5 27 50	4258.27	10.72	170.50	343.31	61.93	6 38 48	3658.3	6.88	163.81
110.00	17 6 14	1780.28	-24.58	6.85	344.39	114.54	17 35 55	1180.3	-21.06	359.47
110.00	6 28 41	4067.76	12.94	154.73	342.01	58.08	7 36 29	3467.8	8.63	148.29

DIFFERENTIAL CORRECTIONS
TDE .2872 TRA -.3219 TC3 2.8304 BAU .6150
RDE .0387 RRA .2714 RC3 3.1700 FAU .35736
FDE-1.2541 FRA-2.8021 FC-28.5795 BSP 9667
BDE .2898 BRA .4210 BC3 4.2497 FSP 5670

MID-COURSE EXECUTION ACCURACY
SGT 2009.4 SGR 2140.6 SG3 1690.0
RRT .8486 RRF -.9963 RTF -.8484
SGB 2936.0 R23 -.2498 R13 -.9645
SG1 2823.2 SG2 806.0 THA 47.13

ORBIT DETERMINATION ACCURACY
ST 531.0 SR 169.8 SS 871.5
CRT .1441 CRS .8585 CST .6110
LSA 952.6 MSA 402.5 SSA 29.1
EL1 531.7 EL2 167.8 ALF 2.93

LAUNCH DATE DEC 4 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 546.587 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.061 GAL 2.31 AZL 91.28 HCA 166.59 SMA 187.63 ECC .21784 INC 1.2748 V1 30.219
RP 228.51 LAP -.30 LOP 238.48 VP 21.314 GAP .11 AZP 88.76 TAL 13.00 TAP 179.59 RCA 146.76 APO 228.51 V2 24.070
RC 236.623 GL -12.84 GP 17.92 ZAL 61.32 ZAP 128.15 ETS 163.79 ZAE 157.80 ETE 120.35 ZAC 107.13 ETC 255.23 CLP 130.48

PLANETOCENTRIC CONIC

C3 10.944 VHL 3.308 DLA 4.74 RAL 131.28 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 3.705 DPA 13.81 RAP 196.29 ECC 1.1801

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 38 7	2227.55	-19.88	42.30	344.58	110.59	15 15 14	1627.6	-16.90	34.90
90.00	3 50 40	4576.97	11.89	193.34	343.13	64.11	5 6 57	3977.0	8.31	186.48
100.00	16 1 41	1958.00	-20.75	22.12	344.22	112.01	16 34 19	1358.0	-17.58	14.76
100.00	5 9 47	4321.75	12.73	174.14	342.70	62.72	6 21 49	3721.8	8.97	167.37
110.00	17 15 2	1728.43	-23.07	3.58	343.11	115.95	17 43 50	1128.4	-19.39	356.37
110.00	6 12 55	4124.09	14.94	157.86	341.42	58.89	7 21 39	3524.1	10.71	151.32

DIFFERENTIAL CORRECTIONS
TDE .3092 TRA -.3296 TC3 2.6001 BAU .6348
RDE .1024 RRA .3261 RC3 3.4729 FAU .36340
FDE-1.6360 FRA-3.0293 FC-28.7464 BSP 10045
BDE .3257 BRA .4636 BC3 4.3384 FSP 5819

MID-COURSE EXECUTION ACCURACY
SGT 1890.6 SGR 2373.3 SG3 1722.6
RRT .8298 RRF -.9973 RTF -.8283
SGB 3034.3 R23 -.2177 R13 -.9733
SG1 2909.7 SG2 860.5 THA 52.72

ORBIT DETERMINATION ACCURACY
ST 564.8 SR 255.2 SS 1054.4
CRT .4812 CRS .9643 CST .6856
LSA 1157.5 MSA 394.1 SSA 23.1
EL1 580.2 EL2 217.8 ALF 14.33

LAUNCH DATE DEC 4 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 550.457 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.049 GAL 2.33 AZL 91.53 HCA 167.63 SMA 187.44 ECC .21707 INC 1.5343 V1 30.219
RP 228.12 LAP -.33 LOP 239.52 VP 21.343 GAP -.21 AZP 88.50 TAL 13.13 TAP 180.76 RCA 146.75 APO 228.12 V2 24.111
RC 238.446 GL -15.38 GP 19.63 ZAL 61.41 ZAP 126.20 ETS 163.37 ZAE 155.43 ETE 122.13 ZAC 108.66 ETC 255.12 CLP 128.83

PLANETOCENTRIC CONIC

C3 11.129 VHL 3.336 DLA 2.36 RAL 130.34 RAD 6567.4 VEL 11.512 PTH 2.01 VHP 3.678 DPA 15.61 RAP 196.52 ECC 1.1831

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 9	2156.97	-18.13	37.87	343.37	112.13	15 28 6	1557.0	-14.97	30.62
90.00	3 29 10	4654.41	14.15	197.90	342.63	65.21	4 46 45	4054.4	10.69	190.93
100.00	16 14 35	1891.05	-18.99	17.93	342.99	113.53	16 46 6	1291.0	-15.64	10.73
100.00	4 49 25	4395.57	14.99	178.46	342.21	63.83	6 2 40	3795.6	11.35	171.55
110.00	17 25 21	1669.54	-21.27	359.96	341.83	117.41	17 53 11	1069.5	-17.43	352.93
110.00	5 55 8	4189.85	17.22	161.60	340.97	60.00	7 4 58	3589.8	13.10	154.91

DIFFERENTIAL CORRECTIONS
TDE .3336 TRA -.3395 TC3 2.3543 BAU .6652
RDE .1880 RRA .3940 RC3 3.8008 FAU .36807
FDE-2.0976 FRA-3.2757 FC-28.6337 BSP 10521
BDE .3829 BRA .5201 BC3 4.4709 FSP 5906

MID-COURSE EXECUTION ACCURACY
SGT 1770.9 SGR 2644.5 SG3 1748.7
RRT .8056 RRF -.9981 RTF -.8031
SGB 3182.7 R23 -.1808 R13 -.9816
SG1 3049.9 SG2 909.6 THA 58.54

ORBIT DETERMINATION ACCURACY
ST 600.9 SR 389.1 SS 1277.6
CRT .6546 CRS .9912 CST .7432
LSA 1412.3 MSA 387.0 SSA 18.2
EL1 664.7 EL2 265.9 ALF 27.79

LAUNCH DATE DEC 4 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 554.338 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.039 GAL 2.34 AZL 91.84 HCA 168.67 SMA 187.25 ECC .21635 INC 1.8420 V1 30.219
RP 227.73 LAP -.36 LOP 240.56 VP 21.373 GAP -.53 AZP 88.19 TAL 13.24 TAP 181.92 RCA 146.74 APO 227.76 V2 24.152
RC 240.248 GL -18.32 GP 21.60 ZAL 61.65 ZAP 124.14 ETS 162.92 ZAE 152.82 ETE 123.48 ZAC 110.44 ETC 254.97 CLP 127.13

PLANETOCENTRIC CONIC

C3 11.407 VHL 3.377 DLA -.41 RAL 129.32 RAD 6567.4 VEL 11.524 PTH 2.01 VHP 3.666 DPA 17.65 RAP 196.83 ECC 1.1877

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 36	2076.25	-15.99	32.91	342.20	113.69	15 43 12	1476.2	-12.65	25.82
90.00	3 4 34	4745.35	16.67	203.39	342.33	66.77	4 23 39	4145.4	13.38	196.25
100.00	16 29 45	1814.47	-16.84	13.26	341.79	115.07	17 0 0	1214.5	-13.32	6.23
100.00	4 26 6	4482.37	17.52	183.65	341.93	65.39	5 40 48	3882.4	14.06	176.58
110.00	17 37 34	1602.20	-19.11	355.93	340.58	118.90	18 4 16	1002.2	-15.10	349.10
110.00	5 34 46	4267.40	19.80	166.14	340.73	61.55	6 45 54	3667.4	15.84	159.25

DIFFERENTIAL CORRECTIONS

TDE .3578 TRA -.3535 TC3 2.0855 BAU .7069
RDE .3014 RRA .4774 RC3 4.1400 FAU .36997
FDE-2.6279 FRA-3.5250 FC-28.0793 BSP 11189
BDE .4678 BRA .5940 BC3 4.6356 FSP 5949

MID-COURSE EXECUTION ACCURACY

SGT 1647.0 SGR 2956.0 SG3 1760.9
RRT .7732 RRF -.9986 RTF -.7698
SGB 3383.8 R23 -.1428 R13 -.9884
SG1 3247.5 SG2 950.7 THA 64.34

ORBIT DETERMINATION ACCURACY

ST 634.5 SR 572.3 SS 1532.7
CRT .7441 CRS .9977 CST .7840
LSA 1712.8 MSA 381.1 SSA 14.3
EL1 798.6 EL2 303.7 ALF 41.05

LAUNCH DATE DEC 4 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 558.230 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.029 GAL 2.36 AZL 92.21 HCA 169.72 SMA 187.08 ECC .21568 INC 2.2128 V1 30.219
RP 227.34 LAP -.39 LOP 241.61 VP 21.404 GAP -.84 AZP 87.82 TAL 13.34 TAP 183.06 RCA 146.73 APO 227.43 V2 24.193
RC 242.030 GL -21.75 GP 23.89 ZAL 62.08 ZAP 121.96 ETS 162.44 ZAE 149.93 ETE 124.45 ZAC 112.51 ETC 254.77 CLP 125.38

PLANETOCENTRIC CONIC

C3 11.826 VHL 3.439 DLA -3.65 RAL 128.18 RAD 6567.5 VEL 11.542 PTH 2.01 VHP 3.672 DPA 19.99 RAP 197.28 ECC 1.1946

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 28 12	1982.91	-13.36	27.32	341.13	115.20	16 1 15	1382.9	-9.85	20.39
90.00	2 35 52	4853.75	19.45	210.13	342.32	69.01	3 56 46	4253.8	16.42	202.76
100.00	16 47 50	1726.03	-14.22	8.00	340.70	116.58	17 16 36	1126.0	-10.53	1.15
100.00	3 58 55	4585.87	20.34	190.05	341.95	67.61	5 15 21	3985.9	17.12	182.73
110.00	17 52 9	1524.66	-16.49	351.44	339.42	120.37	18 17 34	924.7	-12.34	344.79
110.00	5 11 5	4360.01	22.70	171.76	340.80	63.73	6 23 45	3760.0	18.98	164.59

DIFFERENTIAL CORRECTIONS

TDE .3823 TRA -.3716 TC3 1.7945 BAU .7622
RDE .4543 RRA .5820 RC3 4.4746 FAU .36810
FDE-3.2321 FRA-3.7741 FC-26.9467 BSP 12055
BDE .5937 BRA .6905 BC3 4.8210 FSP 5922

MID-COURSE EXECUTION ACCURACY

SGT 1521.1 SGR 3314.9 SG3 1754.1
RRT .7294 RRF -.9990 RTF -.7252
SGB 3647.2 R23 -.1070 R13 -.9933
SG1 3512.5 SG2 982.1 THA 69.85

ORBIT DETERMINATION ACCURACY

ST 664.6 SR 816.3 SS 1819.3
CRT .7949 CRS .9994 CST .8131
LSA 2067.9 MSA 376.4 SSA 11.1
EL1 999.8 EL2 329.2 ALF 52.30

LAUNCH DATE DEC 4 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 562.133 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.020 GAL 2.36 AZL 92.67 HCA 170.77 SMA 186.92 ECC .21504 INC 2.6674 V1 30.219
RP 226.95 LAP -.43 LOP 242.66 VP 21.437 GAP -1.15 AZP 87.37 TAL 13.43 TAP 184.19 RCA 146.72 APO 227.11 V2 24.235
RC 243.792 GL -25.79 GP 26.57 ZAL 62.78 ZAP 119.63 ETS 161.94 ZAE 146.71 ETE 125.09 ZAC 114.94 ETC 254.50 CLP 123.56

PLANETOCENTRIC CONIC

C3 12.464 VHL 3.530 DLA -7.48 RAL 126.87 RAD 6567.5 VEL 11.569 PTH 2.02 VHP 3.704 DPA 22.70 RAP 197.90 ECC 1.2051

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 52 7	1873.37	-10.10	20.93	340.27	116.60	16 23 20	1273.4	-6.45	14.15
90.00	2 1 31	4985.49	22.43	218.64	342.77	72.25	3 24 37	4385.5	19.80	210.96
100.00	17 9 52	1622.55	-10.98	2.02	339.81	117.98	17 36 54	1022.5	-7.16	355.32
100.00	3 26 27	4711.55	23.38	198.15	342.43	70.82	4 44 59	4111.6	20.55	190.49
110.00	18 9 54	1434.56	-13.33	346.38	338.43	121.77	18 33 49	834.6	-9.03	339.91
110.00	4 42 55	4472.30	25.90	178.91	341.36	66.87	5 57 27	3872.3	22.54	171.36

DIFFERENTIAL CORRECTIONS

TDE .4112 TRA -.3904 TC3 1.5014 BAU .8381
RDE .6705 RRA .7222 RC3 4.8005 FAU .36298
FDE-3.9405 FRA-4.0472 FC-25.2128 BSP 12968
BDE .7865 BRA .8210 BC3 5.0298 FSP 5726

MID-COURSE EXECUTION ACCURACY

SGT 1406.2 SGR 3751.1 SG3 1731.7
RRT .6756 RRF -.9993 RTF -.6708
SGB 4006.0 R23 -.0762 R13 -.9964
SG1 3878.5 SG2 1002.6 THA 74.74

ORBIT DETERMINATION ACCURACY

ST 695.0 SR 1149.0 SS 2150.0
CRT .8282 CRS .9999 CST .8360
LSA 2507.3 MSA 372.8 SSA 8.6
EL1 1297.8 EL2 344.9 ALF 61.17

LAUNCH DATE DEC 4 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 566.044 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.011 GAL 2.37 AZL 93.24 HCA 171.82 SMA 186.77 ECC .21445 INC 3.2401 V1 30.219
RP 226.56 LAP -.46 LOP 243.71 VP 21.471 GAP -1.45 AZP 86.79 TAL 13.50 TAP 185.31 RCA 146.72 APO 226.82 V2 24.277
RC 245.534 GL -30.56 GP 29.72 ZAL 63.82 ZAP 117.12 ETS 161.44 ZAE 143.10 ETE 125.44 ZAC 117.82 ETC 254.13 CLP 121.67

PLANETOCENTRIC CONIC

C3 13.453 VHL 3.668 DLA -12.01 RAL 125.33 RAD 6567.5 VEL 11.612 PTH 2.03 VHP 3.773 DPA 25.84 RAP 198.76 ECC 1.2214

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 22 29	1741.63	-6.00	13.42	339.83	117.73	16 51 30	1141.6	-2.24	6.76
90.00	1 18 53	5150.13	25.41	229.78	343.91	77.06	2 44 43	4550.1	23.38	221.70
100.00	17 37 42	1498.94	-6.95	355.05	339.31	119.15	18 2 41	898.9	-3.02	348.48
100.00	2 46 21	4868.05	26.47	208.74	343.62	75.58	4 7 29	4268.0	24.23	200.66
110.00	18 32 7	1328.52	-9.46	340.60	337.78	123.00	18 54 15	728.5	-5.04	334.29
110.00	4 8 26	4611.23	29.27	188.30	342.69	71.50	5 25 17	4011.2	26.46	180.24

DIFFERENTIAL CORRECTIONS

TDE .4309 TRA -.4233 TC3 1.1649 BAU .9285
RDE .9636 RRA .8987 RC3 5.0291 FAU .34950
FDE-4.6602 FRA-4.2602 FC-22.4910 BSP 14321
BDE 1.0556 BRA .9935 BC3 5.1623 FSP 5481

MID-COURSE EXECUTION ACCURACY

SGT 1280.8 SGR 4235.1 SG3 1665.3
RRT .5891 RRF -.9995 RTF -.5833
SGB 4424.6 R23 -.0515 R13 -.9982
SG1 4305.9 SG2 1018.0 THA 79.29

ORBIT DETERMINATION ACCURACY

ST 703.5 SR 1569.6 SS 2469.7
CRT .8411 CRS 1.0000 CST .8440
LSA 2986.7 MSA 370.6 SSA 6.6
EL1 1683.0 EL2 354.8 ALF 68.33

LAUNCH DATE DEC 4 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 569.963 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.003 GAL 2.38 AZL 93.98 HCA 172.87 SMA 186.63 ECC .21389 INC 3.9840 V1 30.219
RP 226.17 LAP -.49 LOP 244.77 VP 21.506 GAP -1.74 AZP 86.05 TAL 13.55 TAP 186.42 RCA 146.71 APO 226.55 V2 24.318
RC 247.256 GL -36.21 GP 33.46 ZAL 65.31 ZAP 114.40 ETS 160.96 ZAE 139.02 ETE 125.59 ZAC 121.24 ETC 253.61 CLP 119.68

PLANETOCENTRIC CONIC

C3 15.043 VHL 3.879 DLA -17.37 RAL 123.46 RAD 6567.6 VEL 11.680 PTH 2.05 VHP 3.897 DPA 29.50 RAP 199.97 ECC 1.2476

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 48	1575.56	-.67	4.12	340.19	118.31	17 30 4	975.6	3.12	357.49
90.00	0 22 37	5365.51	27.79	245.07	346.00	84.35	1 52 2	4765.5	26.72	236.57
100.00	18 15 5	1345.55	-1.80	346.58	339.57	119.84	18 37 31	745.5	2.18	340.06
100.00	1 54 1	5070.76	29.08	223.22	345.83	82.76	3 18 32	4470.8	27.77	214.66
110.00	19 1 13	1201.01	-4.66	333.84	337.78	123.90	19 21 14	601.0	-.18	327.62
110.00	3 24 22	4788.06	32.40	201.11	345.19	78.47	4 44 10	4188.1	30.48	192.43

DIFFERENTIAL CORRECTIONS
TDE .4396 TRA -.4746 TC3 .8018 BAU 1.0328
RDE 1.3638 RRA 1.1199 RC3 5.0726 FAU .32470
FDE-5.3158 FRA-4.3557 FC-18.6864 BSP 16369
BDE 1.4329 BRA 1.2163 BC3 5.1356 FSP 5207

MID-COURSE EXECUTION ACCURACY
SGT 1161.1 SGR 4748.3 SG3 1538.9
RRT .4502 RRF -.9997 RTF -.4430
SGB 4888.2 R23 -.0328 R13 -.9992
SG1 4778.4 SG2 1030.2 THA 83.41

ORBIT DETERMINATION ACCURACY
ST 686.0 SR 2084.0 SS 2734.0
CRT .8365 CRS 1.0000 CST .8368
LSA 3485.9 MSA 370.5 SSA 5.1
EL1 2163.9 EL2 362.0 ALF 74.15

LAUNCH DATE DEC 4 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 573.889 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.996 GAL 2.38 AZL 94.99 HCA 173.93 SMA 186.51 ECC .21338 INC 4.9866 V1 30.219
RP 225.78 LAP -.53 LOP 245.83 VP 21.542 GAP -2.03 AZP 85.04 TAL 13.59 TAP 187.52 RCA 146.71 APO 226.30 V2 24.360
RC 248.959 GL -42.89 GP 37.89 ZAL 67.35 ZAP 111.42 ETS 160.56 ZAE 134.36 ETE 125.61 ZAC 125.29 ETC 252.86 CLP 117.57

PLANETOCENTRIC CONIC

C3 17.733 VHL 4.211 DLA -23.68 RAL 121.08 RAD 6567.7 VEL 11.795 PTH 2.09 VHP 4.109 DPA 33.79 RAP 201.65 ECC 1.2918

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 10 6	1336.06	7.00	350.70	342.40	117.51	18 32 22	736.1	10.63	343.90
90.00	22 53 23	5680.10	27.77	268.00	348.86	95.79	24 28 3	5080.1	28.28	259.37
100.00	19 12 28	1134.80	5.32	335.00	341.48	119.46	19 31 22	534.8	9.21	328.36
100.00	0 37 39	5356.61	29.67	244.38	349.04	93.83	2 6 56	4756.6	29.88	235.58
110.00	19 42 47	1039.68	1.50	325.41	339.10	124.15	20 0 7	439.7	5.97	319.18
110.00	2 23 49	5024.48	34.17	219.29	349.18	89.06	3 47 33	4424.5	33.66	210.09

DIFFERENTIAL CORRECTIONS
TDE .4431 TRA -.5425 TC3 .4534 BAU 1.1677
RDE 1.9566 RRA 1.4387 RC3 4.9046 FAU .29070
FDE-5.9045 FRA-4.3865 FC-14.1924 BSP 18544
BDE 2.0062 BRA 1.5376 BC3 4.9255 FSP 4651

MID-COURSE EXECUTION ACCURACY
SGT 1076.5 SGR 5359.0 SG3 1365.8
RRT .2530 RRF -.9997 RTF -.2441
SGB 5466.1 R23 -.0193 R13 -.9996
SG1 5366.2 SG2 1040.1 THA 86.98

ORBIT DETERMINATION ACCURACY
ST 649.7 SR 2741.2 SS 2938.3
CRT .8150 CRS 1.0000 CST .8137
LSA 4053.4 MSA 373.9 SSA 3.9
EL1 2792.8 EL2 369.5 ALF 78.87

LAUNCH DATE DEC 4 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 577.825 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.989 GAL 2.38 AZL 96.42 HCA 174.98 SMA 186.39 ECC .21289 INC 6.4146 V1 30.219
RP 225.38 LAP -.56 LOP 246.90 VP 21.579 GAP -2.31 AZP 83.61 TAL 13.62 TAP 188.60 RCA 146.71 APO 226.07 V2 24.402
RC 250.643 GL -50.74 GP 43.13 ZAL 70.07 ZAP 108.13 ETS 160.37 ZAE 129.05 ETE 125.69 ZAC 130.06 ETC 251.75 CLP 115.24

PLANETOCENTRIC CONIC

C3 22.629 VHL 4.757 DLA -31.03 RAL 117.89 RAD 6567.9 VEL 12.000 PTH 2.14 VHP 4.474 DPA 38.76 RAP 204.00 ECC 1.3724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.76	18 33 40	1260.68	20.60	351.90	349.18	113.73	18 54 41	660.7	23.63	344.32
103.24	22 4 22	5871.54	20.62	279.82	349.19	113.71	23 42 13	5271.5	23.65	272.24
76.76	18 33 40	1260.68	20.60	351.90	349.18	113.73	18 54 41	660.7	23.63	344.32
103.24	22 4 22	5871.54	20.62	279.82	349.19	113.71	23 42 13	5271.5	23.65	272.24
110.00	20 58 14	790.52	10.88	312.22	343.78	122.61	21 11 24	190.5	15.10	305.66
110.00	0 42 54	5389.70	31.02	247.14	353.26	105.14	2 12 44	4789.7	32.78	238.37

DIFFERENTIAL CORRECTIONS
TDE .4552 TRA -.6213 TC3 .1790 BAU 1.3529
RDE 2.8601 RRA 1.9320 RC3 4.4685 FAU .24687
FDE-6.2597 FRA-4.3033 FC3-9.4448 BSP 20287
BDE 2.9020 BRA 2.0295 BC3 4.4721 FSP 3724

MID-COURSE EXECUTION ACCURACY
SGT 1045.0 SGR 6112.7 SG3 1140.3
RRT .0384 RRF -.9998 RTF -.0277
SGB 6201.4 R23 -.0119 R13 -.9998
SG1 6112.9 SG2 1044.3 THA 89.61

ORBIT DETERMINATION ACCURACY
ST 607.6 SR 3549.2 SS 2999.2
CRT .7789 CRS 1.0000 CST .7761
LSA 4670.9 MSA 380.1 SSA 3.1
EL1 3581.0 EL2 377.7 ALF 82.32

LAUNCH DATE DEC 4 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 581.762 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.983 GAL 2.38 AZL 98.61 HCA 176.04 SMA 186.28 ECC .21245 INC 8.6099 V1 30.219
RP 224.99 LAP -.59 LOP 247.97 VP 21.617 GAP -2.59 AZP 81.41 TAL 13.64 TAP 189.68 RCA 146.71 APO 225.86 V2 24.444
RC 252.307 GL -59.84 GP 49.16 ZAL 73.49 ZAP 104.52 ETS 160.65 ZAE 123.06 ETE 126.10 ZAC 135.49 ETC 250.12 CLP 112.54

PLANETOCENTRIC CONIC

C3 32.572 VHL 5.707 DLA -39.38 RAL 113.29 RAD 6568.3 VEL 12.407 PTH 2.24 VHP 5.125 DPA 44.39 RAP 207.27 ECC 1.5360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.40	16 45 14	1623.99	22.40	21.52	353.14	123.28	17 12 18	1024.0	26.61	14.46
118.60	23 16 6	5689.02	22.41	266.56	353.15	123.27	24 50 55	5089.0	26.62	259.50
61.40	16 45 14	1623.99	22.40	21.52	353.14	123.28	17 12 18	1024.0	26.61	14.46
118.60	23 16 6	5689.02	22.41	266.56	353.15	123.27	24 50 55	5089.0	26.62	259.50
61.40	16 45 14	1623.99	22.40	21.52	353.14	123.28	17 12 18	1024.0	26.61	14.46
118.60	23 16 6	5689.02	22.41	266.56	353.15	123.27	24 50 55	5089.0	26.62	259.50

DIFFERENTIAL CORRECTIONS
TDE .4455 TRA -.7603 TC3 -.0495 BAU 1.5925
RDE 4.2353 RRA 2.6861 RC3 3.6567 FAU .18842
FDE-5.9625 FRA-3.8975 FC3-5.0081 BSP 22121
BDE 4.2586 BRA 2.7916 BC3 3.6570 FSP 2624

MID-COURSE EXECUTION ACCURACY
SGT 1085.5 SGR 6904.5 SG3 838.3
RRT -.2374 RRF -.9997 RTF .2511
SGB 6989.3 R23 -.0084 R13 -.9998
SG1 6909.4 SG2 1053.7 THA 92.19

ORBIT DETERMINATION ACCURACY
ST 536.4 SR 4380.6 SS 2735.5
CRT .6771 CRS 1.0000 CST .6719
LSA 5177.3 MSA 394.8 SSA 2.4
EL1 4395.8 EL2 393.4 ALF 85.22

LAUNCH DATE DEC 4 1964 FLIGHT TIME 280.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 618.006 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.949 GAL 2.20 AZL 81.44 HCA 185.94 SMA 185.71 ECC .20948 INC 8.5584 V1 30.219
RP 221.51 LAP -.88 LOP 257.76 VP 21.992 GAP -4.79 AZP 98.51 TAL 12.76 TAP 198.69 RCA 146.81 APO 224.61 V2 24.820
RC 266.379 GL 60.35 GP -41.33 ZAL 74.39 ZAP 95.41 ETS 183.37 ZAE 120.63 ETE 208.31 ZAC 46.49 ETC 251.64 CLP 97.21

PLANETOCENTRIC CONIC

C3 31.790 VHL 5.638 DLA 71.88 RAL 178.65 RAD 6568.3 VEL 12.376 PTH 2.23 VHP 3.980 DPA -33.77 RAP 156.79 ECC 1.5232

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
14.34	9 59 9	4352.34	-48.82	239.56	120.78	19.34	11 11 41	3752.3	-56.29	235.21
14.34	3 44 45	4738.11	-23.59	247.15	36.12	13.77	5 3 43	4138.1	-31.34	245.34
20.69	7 4 55	4532.54	-35.20	237.02	75.32	22.37	8 20 28	3932.5	-42.53	233.31
159.31	17 41 50	2768.23	-35.19	84.70	75.29	22.37	18 27 58	2168.2	-42.53	81.00
20.69	7 4 55	4532.54	-35.20	237.02	75.32	22.37	8 20 28	3932.5	-42.53	233.31
159.31	17 41 50	2768.23	-35.19	84.70	75.29	22.37	18 27 58	2168.2	-42.53	81.00

DIFFERENTIAL CORRECTIONS
TDE 2.8465 TRA .1579 TC3-1.3541 BAU 1.5161
RDE 4.0948 RRA .8900 RC3-3.3003 FAU .32973
FDE10.6568 FRA 2.2934 FC3-8.9796 BSP 23810
BDE 4.9870 BRA .9039 BC3 3.5673 FSP 4993

MID-COURSE EXECUTION ACCURACY
SGT 3311.3 SGR 6294.6 SG3 1435.3
RRT .9221 RRF .9997 RTF .9208
SGB 7112.5 R23 .0845 R13 .9962
SG1 7019.0 SG2 1149.2 THA 63.35

ORBIT DETERMINATION ACCURACY
ST 2897.1 SR 4253.1 SS 3804.4
CRT .9882 CRS-1.0000 CST -.9885
LSA 6387.5 MSA 393.7 SSA 3.9
EL1 5133.0 EL2 367.1 ALF 55.85

LAUNCH DATE DEC 4 1964 FLIGHT TIME 282.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 622.050 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.948 GAL 2.17 AZL 82.52 HCA 187.04 SMA 185.68 ECC .20928 INC 7.4749 V1 30.219
RP 221.13 LAP -.91 LOP 258.86 VP 22.036 GAP -5.01 AZP 97.42 TAL 12.62 TAP 199.65 RCA 146.82 APO 224.54 V2 24.862
RC 267.844 GL 56.32 GP -37.10 ZAL 73.03 ZAP 94.30 ETS 181.96 ZAE 121.18 ETE 204.46 ZAC 50.39 ETC 252.82 CLP 95.40

PLANETOCENTRIC CONIC

C3 26.491 VHL 5.147 DLA 68.78 RAL 170.80 RAD 6568.1 VEL 12.160 PTH 2.18 VHP 3.684 DPA -29.81 RAP 158.65 ECC 1.4360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
24.28	6 41 16	4477.44	-37.21	231.52	63.66	27.03	7 55 53	3877.4	-44.23	226.88
155.72	17 2 50	2732.17	-37.20	82.98	63.64	27.03	17 48 22	2132.2	-44.22	78.33
24.28	6 41 16	4477.44	-37.21	231.52	63.66	27.03	7 55 53	3877.4	-44.23	226.88
155.72	17 2 50	2732.17	-37.20	82.98	63.64	27.03	17 48 22	2132.2	-44.22	78.33
24.28	6 41 16	4477.44	-37.21	231.52	63.66	27.03	7 55 53	3877.4	-44.23	226.88
155.72	17 2 50	2732.17	-37.20	82.98	63.64	27.03	17 48 22	2132.2	-44.22	78.33

DIFFERENTIAL CORRECTIONS
TDE 2.7435 TRA .0604 TC3-1.7338 BAU 1.3948
RDE 3.5726 RRA .6584 RC3-3.5360 FAU .38168
FDE12.0207 FRA 2.1791 FC-12.4735 BSP 22471
BDE 4.5045 BRA .6611 BC3 3.9382 FSP 5910

MID-COURSE EXECUTION ACCURACY
SGT 3542.2 SGR 5758.9 SG3 1703.7
RRT .9323 RRF .9997 RTF .9310
SGB 6761.0 R23 .1010 R13 .9946
SG1 6670.0 SG2 1105.9 THA 59.23

ORBIT DETERMINATION ACCURACY
ST 3055.0 SR 4024.6 SS 4308.8
CRT .9911 CRS-1.0000 CST -.9914
LSA 6630.8 MSA 358.6 SSA 4.5
EL1 5042.3 EL2 324.8 ALF 52.87

LAUNCH DATE DEC 4 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 626.106 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.947 GAL 2.14 AZL 83.32 HCA 188.14 SMA 185.66 ECC .20911 INC 6.6810 V1 30.219
RP 220.75 LAP -.94 LOP 259.97 VP 22.081 GAP -5.23 AZP 96.61 TAL 12.45 TAP 200.60 RCA 146.84 APO 224.48 V2 24.903
RC 269.292 GL 52.94 GP -33.51 ZAL 71.97 ZAP 92.94 ETS 180.72 ZAE 121.05 ETE 200.93 ZAC 53.68 ETC 253.67 CLP 93.53

PLANETOCENTRIC CONIC

C3 23.041 VHL 4.800 DLA 65.94 RAL 165.82 RAD 6567.9 VEL 12.017 PTH 2.14 VHP 3.487 DPA -26.35 RAP 159.93 ECC 1.3792

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
27.59	6 28 44	4432.71	-38.33	226.35	55.16	31.31	7 42 37	3832.7	-45.02	220.89
152.41	16 35 38	2708.28	-38.32	81.40	55.14	31.31	17 20 46	2108.3	-45.02	75.95
27.59	6 28 44	4432.71	-38.33	226.35	55.16	31.31	7 42 37	3832.7	-45.02	220.89
152.41	16 35 38	2708.28	-38.32	81.40	55.14	31.31	17 20 46	2108.3	-45.02	75.95
27.59	6 28 44	4432.71	-38.33	226.35	55.16	31.31	7 42 37	3832.7	-45.02	220.89
152.41	16 35 38	2708.28	-38.32	81.40	55.14	31.31	17 20 46	2108.3	-45.02	75.95

DIFFERENTIAL CORRECTIONS
TDE 2.6562 TRA -.0099 TC3-2.1450 BAU 1.3050
RDE 3.0639 RRA .5049 RC3-3.6535 FAU .42269
FDE12.6467 FRA 2.0330 FC-15.8824 BSP 21531
BDE 4.0550 BRA .5050 BC3 4.2366 FSP 6680

MID-COURSE EXECUTION ACCURACY
SGT 3780.7 SGR 5278.5 SG3 1923.8
RRT .9408 RRF .9996 RTF .9395
SGB 6492.8 R23 .1177 R13 .9927
SG1 6406.4 SG2 1055.8 THA 54.93

ORBIT DETERMINATION ACCURACY
ST 3171.2 SR 3685.5 SS 4582.1
CRT .9924 CRS-1.0000 CST -.9927
LSA 6672.3 MSA 340.2 SSA 5.1
EL1 4853.0 EL2 297.2 ALF 49.32

LAUNCH DATE DEC 4 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 630.173 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.946 GAL 2.11 AZL 83.93 HCA 189.25 SMA 185.64 ECC .20895 INC 6.0738 V1 30.219
RP 220.37 LAP -.97 LOP 261.09 VP 22.126 GAP -5.44 AZP 96.00 TAL 12.28 TAP 201.53 RCA 146.85 APO 224.43 V2 24.945
RC 270.721 GL 50.06 GP -30.46 ZAL 71.16 ZAP 91.40 ETS 179.66 ZAE 120.41 ETE 197.80 ZAC 56.47 ETC 254.31 CLP 91.63

PLANETOCENTRIC CONIC

C3 20.645 VHL 4.544 DLA 63.41 RAL 162.48 RAD 6567.8 VEL 11.917 PTH 2.12 VHP 3.352 DPA -23.32 RAP 160.80 ECC 1.3398

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.56	6 22 18	4395.33	-38.88	221.64	48.68	35.10	7 35 33	3795.3	-45.25	215.53
149.44	16 15 25	2692.62	-38.87	80.06	48.67	35.10	17 0 17	2092.6	-45.25	73.95
30.56	6 22 18	4395.33	-38.88	221.64	48.68	35.10	7 35 33	3795.3	-45.25	215.53
149.44	16 15 25	2692.62	-38.87	80.06	48.67	35.10	17 0 17	2092.6	-45.25	73.95
30.56	6 22 18	4395.33	-38.88	221.64	48.68	35.10	7 35 33	3795.3	-45.25	215.53
149.44	16 15 25	2692.62	-38.87	80.06	48.67	35.10	17 0 17	2092.6	-45.25	73.95

DIFFERENTIAL CORRECTIONS
TDE 2.5898 TRA -.0678 TC3-2.5881 BAU 1.2459
RDE 2.6241 RRA .3923 RC3-3.6984 FAU .45613
FDE12.8033 FRA 1.8467 FC-19.1275 BSP 20692
BDE 3.6869 BRA .3981 BC3 4.5140 FSP 7231

MID-COURSE EXECUTION ACCURACY
SGT 4029.0 SGR 4844.2 SG3 2098.4
RRT .9479 RRF .9995 RTF .9465
SGB 6300.7 R23 .1340 R13 .9905
SG1 6220.9 SG2 999.7 THA 50.53

ORBIT DETERMINATION ACCURACY
ST 3267.0 SR 3327.1 SS 4699.6
CRT .9931 CRS-1.0000 CST -.9935
LSA 6612.3 MSA 327.8 SSA 5.8
EL1 4654.9 EL2 274.1 ALF 45.53

LAUNCH DATE DEC 4 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 634.250 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	32.945	GAL	2.08	AZL	84.40	HCA	190.37	SMA	185.64	ECC	.20882	INC	5.5951
RP	220.00	LAP	-1.01	LOP	262.20	VP	22.172	GAP	-5.64	AZP	95.50	TAL	12.08	TAP	202.45	RCA	146.87	APO	224.40
RC	272.134	GL	47.60	GP	-27.83	ZAL	70.55	ZAP	89.75	ETS	178.76	ZAE	119.40	ETE	195.07	ZAC	58.84	ETC	254.82

V1 30.219 V2 24.986 CLP 89.72

PLANETOCENTRIC CONIC

C3 18.897 VHL 4.347 DLA 61.16 RAL 160.15 RAD 6567.8 VEL 11.844 PTH 2.10 VHP 3.256 DPA -20.67 RAP 161.39 ECC 1.3110

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
33.23	6 19 28	4363.24	-39.07	217.40	43.60	38.42	7 32 11	3763.2	-45.14	210.78
146.77	15 59 39	2682.69	-39.06	78.96	43.58	38.41	16 44 21	2082.7	-45.13	72.34
33.23	6 19 28	4363.24	-39.07	217.40	43.60	38.42	7 32 11	3763.2	-45.14	210.78
146.77	15 59 39	2682.69	-39.06	78.96	43.58	38.41	16 44 21	2082.7	-45.13	72.34
33.23	6 19 28	4363.24	-39.07	217.40	43.60	38.42	7 32 11	3763.2	-45.14	210.78
146.77	15 59 39	2682.69	-39.06	78.96	43.58	38.41	16 44 21	2082.7	-45.13	72.34

DIFFERENTIAL CORRECTIONS

TDE	2.5598	TRA	-.1020	TC3	-3.0283	BAU 1.1994
RDE	2.2744	RRA	.3238	RC3	-3.6563	FAU .47877
FDE	12.7646	FRA	1.7348	FC	-21.9344	BSP 20565
BDE	3.4243	BRA	.3395	BC3	4.7476	FSP 7795

MID-COURSE EXECUTION ACCURACY

SGT	4288.7	SGR	4458.0	SG3	2235.0	
RRT	.9539	RRF	.9993	RTF	.9523	
SGB	6186.1	R23	.1488	R13	.9882	
SG1	6114.4	SG2	938.8	THA	46.16	

ORBIT DETERMINATION ACCURACY

ST	3375.9	SR	3011.0	SS	4753.1	
CRT	.9936	CRS	-1.0000	CST	-.9940	
LSA	6553.9	MSA	320.1	SSA	6.5	
EL1	4516.5	EL2	254.5	ALF	41.71	

LAUNCH DATE DEC 4 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 638.338 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	32.945	GAL	2.04	AZL	84.79	HCA	191.49	SMA	185.63	ECC	.20870	INC	5.2067
RP	219.62	LAP	-1.04	LOP	263.33	VP	22.218	GAP	-5.85	AZP	95.10	TAL	11.87	TAP	203.36	RCA	146.89	APO	224.37
RC	273.529	GL	45.47	GP	-25.57	ZAL	70.10	ZAP	88.03	ETS	177.99	ZAE	118.12	ETE	192.70	ZAC	60.87	ETC	255.22

V1 30.219 V2 25.027 CLP 87.82

PLANETOCENTRIC CONIC

C3 17.570 VHL 4.192 DLA 59.15 RAL 158.48 RAD 6567.7 VEL 11.788 PTH 2.08 VHP 3.189 DPA -18.33 RAP 161.76 ECC 1.2892

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.62	6 18 51	4335.17	-39.03	213.62	39.54	41.31	7 31 7	3735.2	-44.81	206.59
144.38	15 46 59	2676.73	-39.01	78.11	39.52	41.30	16 31 36	2076.7	-44.80	71.09
35.62	6 18 51	4335.17	-39.03	213.62	39.54	41.31	7 31 7	3735.2	-44.81	206.59
144.38	15 46 59	2676.73	-39.01	78.11	39.52	41.30	16 31 36	2076.7	-44.80	71.09
35.62	6 18 51	4335.17	-39.03	213.62	39.54	41.31	7 31 7	3735.2	-44.81	206.59
144.38	15 46 59	2676.73	-39.01	78.11	39.52	41.30	16 31 36	2076.7	-44.80	71.09

DIFFERENTIAL CORRECTIONS

TDE	2.5361	TRA	-.1364	TC3	-3.4985	BAU 1.1786
RDE	1.9803	RRA	.2671	RC3	-3.5964	FAU .49819
FDE	12.5179	FRA	1.5888	FC	-24.5471	BSP 20330
BDE	3.2176	BRA	.2999	BC3	5.0173	FSP 8117

MID-COURSE EXECUTION ACCURACY

SGT	4555.3	SGR	4113.9	SG3	2341.1	
RRT	.9588	RRF	.9992	RTF	.9571	
SGB	6138.0	R23	.1614	R13	.9860	
SG1	6075.0	SG2	876.8	THA	41.96	

ORBIT DETERMINATION ACCURACY

ST	3469.3	SR	2716.7	SS	4730.2	
CRT	.9939	CRS	-1.0000	CST	-.9944	
LSA	6457.0	MSA	313.6	SSA	7.3	
EL1	4400.1	EL2	236.1	ALF	38.02	

LAUNCH DATE DEC 4 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 642.435 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	32.945	GAL	2.00	AZL	85.11	HCA	192.61	SMA	185.63	ECC	.20860	INC	4.8857
RP	219.25	LAP	-1.07	LOP	264.45	VP	22.264	GAP	-6.04	AZP	94.77	TAL	11.65	TAP	204.26	RCA	146.91	APO	224.36
RC	274.906	GL	43.61	GP	-23.60	ZAL	69.80	ZAP	86.27	ETS	177.34	ZAE	116.65	ETE	190.66	ZAC	62.63	ETC	255.55

V1 30.219 V2 25.067 CLP 85.93

PLANETOCENTRIC CONIC

C3 16.531 VHL 4.066 DLA 57.36 RAL 157.29 RAD 6567.7 VEL 11.744 PTH 2.07 VHP 3.141 DPA -16.25 RAP 161.99 ECC 1.2721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.78	6 19 44	4310.17	-38.84	210.22	36.26	43.82	7 31 34	3710.2	-44.36	202.89
142.22	15 36 34	2673.63	-38.82	77.45	36.25	43.81	16 21 8	2073.6	-44.35	70.12
37.78	6 19 44	4310.17	-38.84	210.22	36.26	43.82	7 31 34	3710.2	-44.36	202.89
142.22	15 36 34	2673.63	-38.82	77.45	36.25	43.81	16 21 8	2073.6	-44.35	70.12
37.78	6 19 44	4310.17	-38.84	210.22	36.26	43.82	7 31 34	3710.2	-44.36	202.89
142.22	15 36 34	2673.63	-38.82	77.45	36.25	43.81	16 21 8	2073.6	-44.35	70.12

DIFFERENTIAL CORRECTIONS

TDE	2.5262	TRA	-.1621	TC3	-3.9762	BAU 1.1716
RDE	1.7385	RRA	.2262	RC3	-3.5057	FAU .51221
FDE	12.1738	FRA	1.4670	FC	-26.8239	BSP 20373
BDE	3.0666	BRA	.2783	BC3	5.3010	FSP 8364

MID-COURSE EXECUTION ACCURACY

SGT	4827.7	SGR	3805.0	SG3	2420.4	
RRT	.9629	RRF	.9989	RTF	.9610	
SGB	6146.9	R23	.1713	R13	.9841	
SG1	6092.9	SG2	813.3	THA	37.99	

ORBIT DETERMINATION ACCURACY

ST	3563.4	SR	2457.7	SS	4670.0	
CRT	.9942	CRS	-1.0000	CST	-.9947	
LSA	6360.2	MSA	307.7	SSA	8.1	
EL1	4323.3	EL2	218.7	ALF	34.54	

LAUNCH DATE DEC 4 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 646.540 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	32.946	GAL	1.96	AZL	85.38	HCA	193.74	SMA	185.64	ECC	.20852	INC	4.6155
RP	218.89	LAP	-1.10	LOP	265.58	VP	22.310	GAP	-6.23	AZP	94.48	TAL	11.41	TAP	205.15	RCA	146.93	APO	224.35
RC	276.266	GL	41.98	GP	-21.87	ZAL	69.61	ZAP	84.49	ETS	176.79	ZAE	115.05	ETE	188.90	ZAC	64.15	ETC	255.83

V1 30.219 V2 25.108 CLP 84.06

PLANETOCENTRIC CONIC

C3 15.695 VHL 3.962 DLA 55.75 RAL 156.44 RAD 6567.6 VEL 11.708 PTH 2.06 VHP 3.109 DPA -14.39 RAP 162.11 ECC 1.2583

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.74	6 21 40	4287.55	-38.55	207.15	33.59	46.03	7 33 7	3687.5	-43.85	199.59
140.26	15 27 51	2672.62	-38.54	76.97	33.57	46.02	16 12 24	2072.6	-43.84	69.40
39.74	6 21 40	4287.55	-38.55	207.15	33.59	46.03	7 33 7	3687.5	-43.85	199.59
140.26	15 27 51	2672.62	-38.54	76.97	33.57	46.02	16 12 24	2072.6	-43.84	69.40
39.74	6 21 40	4287.55	-38.55	207.15	33.59	46.03	7 33 7	3687.5	-43.85	199.59
140.26	15 27 51	2672.62	-38.54	76.97	33.57	46.02	16 12 24	2072.6	-43.84	69.40

DIFFERENTIAL CORRECTIONS

TDE	2.5278	TRA	-.1799	TC3	-4.4573	BAU 1.1739
RDE	1.5437	RRA	.2019	RC3	-3.3812	FAU .51973
FDE	11.8157	FRA	1.4117	FC	-28.6687	BSP 20720
BDE	2.9619	BRA	.2704	BC3	5.5946	FSP 8622

MID-COURSE EXECUTION ACCURACY

SGT	5104.1	SGR	3525.8	SG3	2475.9	
RRT	.9660	RRF	.9986	RTF	.9641	
SGB	6203.5	R23	.1786	R13	.9825	
SG1	6157.3	SG2	755.7	THA	34.30	

ORBIT DETERMINATION ACCURACY

ST	3660.1	SR	2239.5	SS	4603.3	
CRT	.9942	CRS	-1.0000	CST	-.9948	
LSA	6285.5	MSA	307.0	SSA	8.9	
EL1	4285.9	EL2	205.5	ALF	31.39	

LAUNCH DATE DEC 4 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 650.656 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.946 GAL 1.92 AZL 85.61 HCA 194.87 SMA 185.66 ECC .20845 INC 4.3849 V1 30.219
RP 218.52 LAP -1.12 LOP 266.72 VP 22.357 GAP -6.42 AZP 94.24 TAL 11.15 TAP 206.03 RCA 146.96 APO 224.36 V2 25.148
RC 277.609 GL 40.54 GP -20.34 ZAL 69.53 ZAP 82.71 ETS 176.31 ZAE 113.35 ETE 187.39 ZAC 65.49 ETC 256.07 CLP 82.22

PLANETOCENTRIC CONIC

C3 15.007 VHL 3.874 DLA 54.29 RAL 155.84 RAD 6567.6 VEL 11.679 PTH 2.05 VHP 3.088 DPA -12.73 RAP 162.14 ECC 1.2470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.53	6 24 21	4266.80	-38.21	204.37	31.39	47.98	7 35 27	3666.8	-43.30	196.62
138.47	15 20 26	2673.19	-38.20	76.63	31.38	47.97	16 4 59	2073.2	-43.28	68.88
41.53	6 24 21	4266.80	-38.21	204.37	31.39	47.98	7 35 27	3666.8	-43.30	196.62
138.47	15 20 26	2673.19	-38.20	76.63	31.38	47.97	16 4 59	2073.2	-43.28	68.88
41.53	6 24 21	4266.80	-38.21	204.37	31.39	47.98	7 35 27	3666.8	-43.30	196.62
138.47	15 20 26	2673.19	-38.20	76.63	31.38	47.97	16 4 59	2073.2	-43.28	68.88

DIFFERENTIAL CORRECTIONS
TDE 2.5299 TRA -.1967 TC3-4.9537 BAU 1.1906
RDE 1.3733 RRA .1773 RC3-3.2677 FAU .52698
FDE11.3559 FRA 1.3136 FC-30.4016 BSP 20999
BDE 2.8786 BRA .2648 BC3 5.9344 FSP 8669

MID-COURSE EXECUTION ACCURACY
SGT 5383.3 SGR 3276.7 SG3 2516.0
RRT .9690 RRF .9982 RTF .9670
SGB 6302.1 R23 .1826 R13 .9813
SG1 6263.6 SG2 695.6 THA 30.96

ORBIT DETERMINATION ACCURACY
ST 3746.6 SR 2037.0 SS 4493.7
CRT .9944 CRS-1.0000 CST -.9950
LSA 6187.7 MSA 301.4 SSA 9.9
EL1 4260.3 EL2 190.1 ALF 28.46

LAUNCH DATE DEC 4 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 654.780 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.948 GAL 1.87 AZL 85.81 HCA 196.01 SMA 185.67 ECC .20841 INC 4.1857 V1 30.219
RP 218.16 LAP -1.15 LOP 267.85 VP 22.403 GAP -6.60 AZP 94.02 TAL 10.88 TAP 206.89 RCA 146.98 APO 224.37 V2 25.188
RC 278.933 GL 39.26 GP -18.98 ZAL 69.53 ZAP 80.93 ETS 175.91 ZAE 111.59 ETE 186.08 ZAC 66.68 ETC 256.28 CLP 80.40

PLANETOCENTRIC CONIC

C3 14.429 VHL 3.799 DLA 52.96 RAL 155.45 RAD 6567.6 VEL 11.654 PTH 2.05 VHP 3.077 DPA -11.22 RAP 162.12 ECC 1.2375

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.18	6 27 35	4247.59	-37.84	201.83	29.58	49.71	7 38 23	3647.6	-42.73	193.94
136.82	15 14 6	2674.91	-37.83	76.40	29.57	49.70	15 58 41	2074.9	-42.72	68.51
43.18	6 27 35	4247.59	-37.84	201.83	29.58	49.71	7 38 23	3647.6	-42.73	193.94
136.82	15 14 6	2674.91	-37.83	76.40	29.57	49.70	15 58 41	2074.9	-42.72	68.51
43.18	6 27 35	4247.59	-37.84	201.83	29.58	49.71	7 38 23	3647.6	-42.73	193.94
136.82	15 14 6	2674.91	-37.83	76.40	29.57	49.70	15 58 41	2074.9	-42.72	68.51

DIFFERENTIAL CORRECTIONS
TDE 2.5392 TRA -.2057 TC3-5.4487 BAU 1.2125
RDE 1.2333 RRA .1654 RC3-3.1335 FAU .52910
FDE10.9132 FRA 1.2776 FC-31.7461 BSP 21516
BDE 2.8228 BRA .2627 BC3 6.2854 FSP 8739

MID-COURSE EXECUTION ACCURACY
SGT 5662.9 SGR 3048.7 SG3 2538.0
RRT .9712 RRF .9976 RTF .9692
SGB 6431.4 R23 .1845 R13 .9804
SG1 6399.3 SG2 642.7 THA 27.91

ORBIT DETERMINATION ACCURACY
ST 3835.1 SR 1865.7 SS 4388.2
CRT .9944 CRS-1.0000 CST -.9951
LSA 6111.9 MSA 299.6 SSA 10.9
EL1 4261.1 EL2 178.2 ALF 25.86

LAUNCH DATE DEC 4 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 658.912 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.949 GAL 1.82 AZL 85.99 HCA 197.15 SMA 185.70 ECC .20838 INC 4.0116 V1 30.219
RP 217.80 LAP -1.18 LOP 268.99 VP 22.450 GAP -6.78 AZP 93.83 TAL 10.60 TAP 207.75 RCA 147.00 APO 224.39 V2 25.228
RC 280.240 GL 38.11 GP -17.76 ZAL 69.62 ZAP 79.16 ETS 175.57 ZAE 109.79 ETE 184.95 ZAC 67.73 ETC 256.46 CLP 78.61

PLANETOCENTRIC CONIC

C3 13.936 VHL 3.733 DLA 51.74 RAL 155.23 RAD 6567.5 VEL 11.633 PTH 2.04 VHP 3.074 DPA -9.86 RAP 162.06 ECC 1.2293

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.70	6 31 19	4229.54	-37.45	199.49	28.10	51.26	7 41 48	3629.5	-42.16	191.49
135.30	15 8 36	2677.62	-37.43	76.28	28.08	51.24	15 53 14	2077.6	-42.15	68.28
44.70	6 31 19	4229.54	-37.45	199.49	28.10	51.26	7 41 48	3629.5	-42.16	191.49
135.30	15 8 36	2677.62	-37.43	76.28	28.08	51.24	15 53 14	2077.6	-42.15	68.28
44.70	6 31 19	4229.54	-37.45	199.49	28.10	51.26	7 41 48	3629.5	-42.16	191.49
135.30	15 8 36	2677.62	-37.43	76.28	28.08	51.24	15 53 14	2077.6	-42.15	68.28

DIFFERENTIAL CORRECTIONS
TDE 2.5504 TRA -.2111 TC3-5.9479 BAU 1.2410
RDE 1.1140 RRA .1530 RC3-2.9994 FAU .32916
FDE10.4590 FRA 1.2522 FC-32.8735 BSP 22110
BDE 2.7831 BRA .2607 BC3 6.6613 FSP 8758

MID-COURSE EXECUTION ACCURACY
SGT 5942.7 SGR 2842.9 SG3 2548.0
RRT .9730 RRF .9970 RTF .9712
SGB 6587.7 R23 .1839 R13 .9799
SG1 6560.9 SG2 594.0 THA 25.18

ORBIT DETERMINATION ACCURACY
ST 3919.8 SR 1714.9 SS 4274.8
CRT .9943 CRS -.9999 CST -.9951
LSA 6040.7 MSA 297.8 SSA 11.8
EL1 4275.2 EL2 167.2 ALF 23.55

LAUNCH DATE DEC 4 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 663.053 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.950 GAL 1.77 AZL 86.14 HCA 198.29 SMA 185.72 ECC .20836 INC 3.8583 V1 30.219
RP 217.44 LAP -1.21 LOP 270.14 VP 22.497 GAP -6.96 AZP 93.66 TAL 10.30 TAP 208.59 RCA 147.03 APO 224.42 V2 25.268
RC 281.529 GL 37.08 GP -16.67 ZAL 69.77 ZAP 77.42 ETS 175.28 ZAE 107.98 ETE 183.98 ZAC 68.67 ETC 256.63 CLP 76.86

PLANETOCENTRIC CONIC

C3 13.508 VHL 3.675 DLA 50.61 RAL 155.15 RAD 6567.5 VEL 11.614 PTH 2.04 VHP 3.077 DPA -8.62 RAP 161.97 ECC 1.2223

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.12	6 35 24	4212.50	-37.04	197.31	26.88	52.65	7 45 37	3612.5	-41.60	189.22
133.88	15 3 50	2681.04	-37.03	76.24	26.86	52.64	15 48 31	2081.0	-41.59	68.16
46.12	6 35 24	4212.50	-37.04	197.31	26.88	52.65	7 45 37	3612.5	-41.60	189.22
133.88	15 3 50	2681.04	-37.03	76.24	26.86	52.64	15 48 31	2081.0	-41.59	68.16
46.12	6 35 24	4212.50	-37.04	197.31	26.88	52.65	7 45 37	3612.5	-41.60	189.22
133.88	15 3 50	2681.04	-37.03	76.24	26.86	52.64	15 48 31	2081.0	-41.59	68.16

DIFFERENTIAL CORRECTIONS
TDE 2.5629 TRA -.2116 TC3-6.4486 BAU 1.2743
RDE 1.0115 RRA .1460 RC3-2.8640 FAU .52692
FDE 9.9993 FRA 1.2465 FC-33.7701 BSP 22776
BDE 2.7552 BRA .2571 BC3 7.0559 FSP 8732

MID-COURSE EXECUTION ACCURACY
SGT 6221.1 SGR 2654.6 SG3 2546.3
RRT .9744 RRF .9962 RTF .9728
SGB 6763.8 R23 .1814 R13 .9796
SG1 6741.3 SG2 550.3 THA 22.74

ORBIT DETERMINATION ACCURACY
ST 4000.8 SR 1581.7 SS 4155.6
CRT .9943 CRS -.9999 CST -.9951
LSA 5974.1 MSA 296.3 SSA 12.8
EL1 4299.3 EL2 157.5 ALF 21.49

LAUNCH DATE DEC 4 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 667.203 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.952 GAL 1.72 AZL 86.28 HCA 199.44 SMA 185.76 ECC .20837 INC 3.7219 V1 30.219
RP 217.09 LAP -1.24 LOP 271.29 VP 22.544 GAP -7.13 AZP 93.51 TAL 9.99 TAP 209.43 RCA 147.05 APO 224.46 V2 25.307
RC 282.801 GL 36.16 GP -15.68 ZAL 69.99 ZAP 75.71 ETS 175.03 ZAE 106.15 ETE 183.13 ZAC 69.52 ETC 256.78 CLP 75.14

PLANETOCENTRIC CONIC

C3 13.134 VHL 3.624 DLA 49.57 RAL 155.18 RAD 6567.5 VEL 11.598 PTH 2.03 VHP 3.085 DPA -7.49 RAP 161.87 ECC 1.2161

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.45	6 39 50	4196.24	-36.63	195.28	25.88	53.92	7 49 46	3596.2	-41.05	187.12
132.55	14 59 40	2685.09	-36.62	76.28	25.87	53.91	15 44 25	2085.1	-41.03	68.12
47.45	6 39 50	4196.24	-36.63	195.28	25.88	53.92	7 49 46	3596.2	-41.05	187.12
132.55	14 59 40	2685.09	-36.62	76.28	25.87	53.91	15 44 25	2085.1	-41.03	68.12
47.45	6 39 50	4196.24	-36.63	195.28	25.88	53.92	7 49 46	3596.2	-41.05	187.12
132.55	14 59 40	2685.09	-36.62	76.28	25.87	53.91	15 44 25	2085.1	-41.03	68.12

DIFFERENTIAL CORRECTIONS
TDE 2.5759 TRA -.2083 TC3-6.9508 BAU 1.3111
RDE .9236 RRA .1419 RC3-2.7279 FAU .52254
FDE 9.5488 FRA 1.2593 FC-34.4447 BSP 23490
BDE 2.7364 BRA .2520 BC3 7.4669 FSP 8679

MID-COURSE EXECUTION ACCURACY
SGT 6498.0 SGR 2482.1 SG3 2534.7
RRT .9754 RRF .9952 RTF .9741
SGB 6955.9 R23 .1772 R13 .9794
SG1 6937.0 SG2 512.6 THA 20.55

ORBIT DETERMINATION ACCURACY
ST 4078.1 SR 1465.1 SS 4036.5
CRT .9941 CRS -.9999 CST -.9951
LSA 5914.6 MSA 295.9 SSA 13.8
EL1 4330.7 EL2 149.1 ALF 19.68

LAUNCH DATE DEC 4 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 671.358 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.954 GAL 1.66 AZL 86.40 HCA 200.59 SMA 185.79 ECC .20839 INC 3.5998 V1 30.219
RP 216.74 LAP -1.27 LOP 272.44 VP 22.591 GAP -7.30 AZP 93.37 TAL 9.66 TAP 210.25 RCA 147.08 APO 224.51 V2 25.346
RC 284.057 GL 35.32 GP -14.77 ZAL 70.27 ZAP 74.02 ETS 174.82 ZAE 104.33 ETE 182.39 ZAC 70.29 ETC 256.91 CLP 73.46

PLANETOCENTRIC CONIC

C3 12.801 VHL 3.578 DLA 48.58 RAL 155.31 RAD 6567.5 VEL 11.584 PTH 2.03 VHP 3.098 DPA -6.46 RAP 161.77 ECC 1.2107

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.72	6 44 33	4180.62	-36.22	193.35	25.08	55.09	7 54 13	3580.6	-40.50	185.14
131.28	14 56 1	2689.65	-36.21	76.37	25.06	55.07	15 40 51	2089.7	-40.49	68.16
48.72	6 44 33	4180.62	-36.22	193.35	25.08	55.09	7 54 13	3580.6	-40.50	185.14
131.28	14 56 1	2689.65	-36.21	76.37	25.06	55.07	15 40 51	2089.7	-40.49	68.16
48.72	6 44 33	4180.62	-36.22	193.35	25.08	55.09	7 54 13	3580.6	-40.50	185.14
131.28	14 56 1	2689.65	-36.21	76.37	25.06	55.07	15 40 51	2089.7	-40.49	68.16

DIFFERENTIAL CORRECTIONS
TDE 2.5975 TRA -.1919 TC3-7.4303 BAU 1.3460
RDE .8518 RRA .1444 RC3-2.5795 FAU .51383
FDE 9.1597 FRA 1.3454 FC-34.7515 BSP 24487
BDE 2.7336 BRA .2402 BC3 7.8653 FSP 8731

MID-COURSE EXECUTION ACCURACY
SGT 6766.7 SGR 2321.6 SG3 2510.3
RRT .9756 RRF .9940 RTF .9752
SGB 7153.8 R23 .1719 R13 .9793
SG1 7137.5 SG2 483.6 THA 18.59

ORBIT DETERMINATION ACCURACY
ST 4165.1 SR 1369.2 SS 3940.6
CRT .9939 CRS -.9999 CST -.9949
LSA 5887.3 MSA 299.7 SSA 14.6
EL1 4382.0 EL2 143.1 ALF 18.11

LAUNCH DATE DEC 4 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 675.525 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.957 GAL 1.60 AZL 86.51 HCA 201.75 SMA 185.83 ECC .20842 INC 3.4898 V1 30.219
RP 216.39 LAP -1.29 LOP 273.59 VP 22.637 GAP -7.46 AZP 93.24 TAL 9.32 TAP 211.06 RCA 147.10 APO 224.56 V2 25.385
RC 285.296 GL 34.55 GP -13.95 ZAL 70.60 ZAP 72.37 ETS 174.64 ZAE 102.52 ETE 181.74 ZAC 71.00 ETC 257.03 CLP 71.81

PLANETOCENTRIC CONIC

C3 12.503 VHL 3.536 DLA 47.66 RAL 155.53 RAD 6567.5 VEL 11.571 PTH 2.02 VHP 3.116 DPA -5.52 RAP 161.66 ECC 1.2058

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.92	6 49 31	4165.52	-35.81	191.53	24.43	56.16	7 58 56	3565.5	-39.96	183.27
130.08	14 52 48	2694.70	-35.80	76.51	24.42	56.15	15 37 42	2094.7	-39.95	68.26
49.92	6 49 31	4165.52	-35.81	191.53	24.43	56.16	7 58 56	3565.5	-39.96	183.27
130.08	14 52 48	2694.70	-35.80	76.51	24.42	56.15	15 37 42	2094.7	-39.95	68.26
49.92	6 49 31	4165.52	-35.81	191.53	24.43	56.16	7 58 56	3565.5	-39.96	183.27
130.08	14 52 48	2694.70	-35.80	76.51	24.42	56.15	15 37 42	2094.7	-39.95	68.26

DIFFERENTIAL CORRECTIONS
TDE 2.6052 TRA -.1832 TC3-7.9406 BAU 1.3894
RDE .7822 RRA .1409 RC3-2.4574 FAU .50809
FDE 8.6864 FRA 1.3528 FC-35.1810 BSP 25162
BDE 2.7201 BRA .2311 BC3 8.3121 FSP 8556

MID-COURSE EXECUTION ACCURACY
SGT 7039.1 SGR 2177.5 SG3 2485.7
RRT .9760 RRF .9926 RTF .9762
SGB 7368.2 R23 .1644 R13 .9795
SG1 7354.2 SG2 453.8 THA 16.87

ORBIT DETERMINATION ACCURACY
ST 4226.8 SR 1272.6 SS 3803.7
CRT .9938 CRS -.9999 CST -.9949
LSA 5819.4 MSA 297.5 SSA 15.7
EL1 4412.1 EL2 135.4 ALF 16.67

LAUNCH DATE DEC 4 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 679.699 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.959 GAL 1.54 AZL 86.61 HCA 202.91 SMA 185.88 ECC .20848 INC 3.3901 V1 30.219
RP 216.05 LAP -1.32 LOP 274.75 VP 22.684 GAP -7.62 AZP 93.12 TAL 8.96 TAP 211.87 RCA 147.13 APO 224.63 V2 25.423
RC 286.520 GL 33.85 GP -13.20 ZAL 70.99 ZAP 70.75 ETS 174.48 ZAE 100.72 ETE 181.18 ZAC 71.64 ETC 257.14 CLP 70.20

PLANETOCENTRIC CONIC

C3 12.234 VHL 3.498 DLA 46.78 RAL 155.83 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 3.137 DPA -4.66 RAP 161.56 ECC 1.2013

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.07	6 54 43	4150.84	-35.40	189.79	23.94	57.16	8 3 54	3550.8	-39.44	181.50
128.93	14 49 57	2700.13	-35.40	76.71	23.93	57.15	15 34 58	2100.1	-39.43	68.42
51.07	6 54 43	4150.84	-35.40	189.79	23.94	57.16	8 3 54	3550.8	-39.44	181.50
128.93	14 49 57	2700.13	-35.40	76.71	23.93	57.15	15 34 58	2100.1	-39.43	68.42
51.07	6 54 43	4150.84	-35.40	189.79	23.94	57.16	8 3 54	3550.8	-39.44	181.50
128.93	14 49 57	2700.13	-35.40	76.71	23.93	57.15	15 34 58	2100.1	-39.43	68.42

DIFFERENTIAL CORRECTIONS
TDE 2.6136 TRA -.1689 TC3-8.4449 BAU 1.4331
RDE .7224 RRA .1397 RC3-2.3344 FAU .50042
FDE 8.2404 FRA 1.3813 FC-35.4114 BSP 25899
BDE 2.7116 BRA .2192 BC3 8.7616 FSP 8394

MID-COURSE EXECUTION ACCURACY
SGT 7307.1 SGR 2044.2 SG3 2454.1
RRT .9760 RRF .9908 RTF .9771
SGB 7587.6 R23 .1555 R13 .9797
SG1 7575.5 SG2 429.4 THA 15.32

ORBIT DETERMINATION ACCURACY
ST 4286.7 SR 1188.5 SS 3674.3
CRT .9937 CRS -.9998 CST -.9948
LSA 5762.0 MSA 296.4 SSA 16.8
EL1 4446.6 EL2 128.9 ALF 15.42

LAUNCH DATE DEC 4 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 683.882 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.962 GAL 1.48 AZL 86.70 HCA 204.07 SMA 185.92 ECC .20855 INC 3.2991 V1 30.219
RP 215.71 LAP -1.34 LOP 275.92 VP 22.730 GAP -7.77 AZP 93.01 TAL 8.59 TAP 212.66 RCA 147.15 APO 224.70 V2 25.461
RC 287.729 GL 33.21 GP -12.51 ZAL 71.42 ZAP 69.17 ETS 174.35 ZAE 98.95 ETE 180.69 ZAC 72.23 ETC 257.23 CLP 68.63

PLANETOCENTRIC CONIC

C3 11.990 VHL 3.463 DLA 45.94 RAL 156.20 RAD 6567.5 VEL 11.549 PTH 2.02 VHP 3.162 DPA -3.87 RAP 161.47 ECC 1.1973

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.17	7 0 11	4136.40	-35.00	188.11	23.57	58.09	8 9 7	3536.4	-38.92	179.79
127.83	14 47 25	2706.04	-34.99	76.95	23.56	58.08	15 32 31	2106.0	-38.91	68.64
52.17	7 0 11	4136.40	-35.00	188.11	23.57	58.09	8 9 7	3536.4	-38.92	179.79
127.83	14 47 25	2706.04	-34.99	76.95	23.56	58.08	15 32 31	2106.0	-38.91	68.64
52.17	7 0 11	4136.40	-35.00	188.11	23.57	58.09	8 9 7	3536.4	-38.92	179.79
127.83	14 47 25	2706.04	-34.99	76.95	23.56	58.08	15 32 31	2106.0	-38.91	68.64

DIFFERENTIAL CORRECTIONS
TDE 2.6198 TRA -.1505 TC3-8.9492 BAU 1.4778
RDE .6696 RRA .1395 RC3-2.2154 FAU .49185
FDE 7.8051 FRA 1.4199 FC-35.5150 BSP 26658
BDE 2.7040 BRA .2052 BC3 9.2194 FSP 8227

MID-COURSE EXECUTION ACCURACY
SGT 7571.6 SGR 1921.4 SG3 2417.9
RRT .9756 RRF .9888 RTF .9779
SGB 7811.6 R23 .1455 R13 .9799
SG1 7800.9 SG2 409.7 THA 13.94

ORBIT DETERMINATION ACCURACY
ST 4340.3 SR 1113.4 SS 3545.0
CRT .9935 CRS -.9998 CST -.9946
LSA 5705.9 MSA 295.7 SSA 17.8
EL1 4479.1 EL2 123.1 ALF 14.31

LAUNCH DATE DEC 4 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 688.071 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.965 GAL 1.41 AZL 86.78 HCA 205.24 SMA 185.98 ECC .20864 INC 3.2159 V1 30.219
RP 215.38 LAP -1.37 LOP 277.09 VP 22.777 GAP -7.93 AZP 92.91 TAL 8.20 TAP 213.44 RCA 147.18 APO 224.78 V2 25.498
RC 288.924 GL 32.62 GP -11.87 ZAL 71.90 ZAP 67.62 ETS 174.24 ZAE 97.20 ETE 180.26 ZAC 72.78 ETC 257.32 CLP 67.10

PLANETOCENTRIC CONIC

C3 11.766 VHL 3.430 DLA 45.14 RAL 156.63 RAD 6567.4 VEL 11.539 PTH 2.01 VHP 3.190 DPA -3.14 RAP 161.40 ECC 1.1936

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.25	7 5 55	4122.10	-34.59	186.48	23.31	58.96	8 14 37	3522.1	-38.41	178.14
126.75	14 45 8	2712.43	-34.58	77.24	23.30	58.95	15 30 20	2112.4	-38.40	68.91
53.25	7 5 55	4122.10	-34.59	186.48	23.31	58.96	8 14 37	3522.1	-38.41	178.14
126.75	14 45 8	2712.43	-34.58	77.24	23.30	58.95	15 30 20	2112.4	-38.40	68.91
53.25	7 5 55	4122.10	-34.59	186.48	23.31	58.96	8 14 37	3522.1	-38.41	178.14
126.75	14 45 8	2712.43	-34.58	77.24	23.30	58.95	15 30 20	2112.4	-38.40	68.91

DIFFERENTIAL CORRECTIONS
TDE 2.6269 TRA -.1257 TC3-9.4438 BAU 1.5217
RDE .6240 RRA .1409 RC3-2.0969 FAU .48180
FDE 7.3975 FRA 1.4775 FC-35.4509 BSP 27461
BDE 2.7000 BRA .1888 BC3 9.6738 FSP 8062

MID-COURSE EXECUTION ACCURACY
SGT 7830.5 SGR 1807.6 SG3 2376.2
RRT .9746 RRF .9863 RTF .9786
SGB 8036.4 R23 .1348 R13 .9801
SG1 8026.7 SG2 395.0 THA 12.71

ORBIT DETERMINATION ACCURACY
ST 4393.2 SR 1048.1 SS 3423.7
CRT .9933 CRS -.9998 CST -.9944
LSA 5659.7 MSA 296.1 SSA 18.8
EL1 4514.9 EL2 118.1 ALF 13.34

LAUNCH DATE DEC 4 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 692.269 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.968 GAL 1.35 AZL 86.86 HCA 206.41 SMA 186.03 ECC .20874 INC 3.1393 V1 30.219
RP 215.05 LAP -1.40 LOP 278.26 VP 22.823 GAP -8.07 AZP 92.81 TAL 7.81 TAP 214.21 RCA 147.20 APO 224.86 V2 25.535
RC 290.105 GL 32.07 GP -11.28 ZAL 72.42 ZAP 66.11 ETS 174.15 ZAE 95.48 ETE 179.88 ZAC 73.30 ETC 257.40 CLP 65.61

PLANETOCENTRIC CONIC

C3 11.560 VHL 3.400 DLA 44.36 RAL 157.12 RAD 6567.4 VEL 11.530 PTH 2.01 VHP 3.221 DPA -2.47 RAP 161.34 ECC 1.1902

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.30	7 11 53	4107.90	-34.18	184.88	23.15	59.79	8 20 21	3507.9	-37.90	176.53
125.70	14 43 5	2719.24	-34.17	77.57	23.15	59.78	15 28 24	2119.2	-37.89	69.22
54.30	7 11 53	4107.90	-34.18	184.88	23.15	59.79	8 20 21	3507.9	-37.90	176.53
125.70	14 43 5	2719.24	-34.17	77.57	23.15	59.78	15 28 24	2119.2	-37.89	69.22
54.30	7 11 53	4107.90	-34.18	184.88	23.15	59.79	8 20 21	3507.9	-37.90	176.53
125.70	14 43 5	2719.24	-34.17	77.57	23.15	59.78	15 28 24	2119.2	-37.89	69.22

DIFFERENTIAL CORRECTIONS
TDE 2.6311 TRA -.0962 TC3-9.9345 BAU 1.5656
RDE .5831 RRA .1430 RC3-1.9820 FAU .47096
FDE 6.9947 FRA 1.5429 FC-35.2709 BSP 28275
BDE 2.6950 BRA .1723 BC310.1302 FSP 7893

MID-COURSE EXECUTION ACCURACY
SGT 8083.7 SGR 1701.6 SG3 2330.2
RRT .9731 RRF .9834 RTF .9791
SGB 8260.9 R23 .1238 R13 .9803
SG1 8251.9 SG2 384.2 THA 11.60

ORBIT DETERMINATION ACCURACY
ST 4439.1 SR 988.7 SS 3300.0
CRT .9931 CRS -.9998 CST -.9941
LSA 5611.1 MSA 297.0 SSA 19.8
EL1 4546.5 EL2 113.5 ALF 12.48

LAUNCH DATE DEC 4 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 696.474 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 32.972 GAL 1.28 AZL 86.93 HCA 207.58 SMA 186.09 ECC .20886 INC 3.0688 V1 30.219
RP 214.72 LAP -1.42 LOP 279.43 VP 22.869 GAP -8.22 AZP 92.72 TAL 7.39 TAP 214.97 RCA 147.22 APO 224.96 V2 25.572
RC 291.272 GL 31.56 GP -10.74 ZAL 72.99 ZAP 64.64 ETS 174.07 ZAE 93.79 ETE 179.54 ZAC 73.77 ETC 257.47 CLP 64.16

PLANETOCENTRIC CONIC

C3 11.370 VHL 3.372 DLA 43.61 RAL 157.66 RAD 6567.4 VEL 11.522 PTH 2.01 VHP 3.254 DPA -1.87 RAP 161.31 ECC 1.1871

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.33	7 18 7	4093.74	-33.77	183.32	23.09	60.58	8 26 20	3493.7	-37.40	174.96
124.67	14 41 12	2726.50	-33.76	77.94	23.08	60.57	15 26 39	2126.5	-37.39	69.59
55.33	7 18 7	4093.74	-33.77	183.32	23.09	60.58	8 26 20	3493.7	-37.40	174.96
124.67	14 41 12	2726.50	-33.76	77.94	23.08	60.57	15 26 39	2126.5	-37.39	69.59
55.33	7 18 7	4093.74	-33.77	183.32	23.09	60.58	8 26 20	3493.7	-37.40	174.96
124.67	14 41 12	2726.50	-33.76	77.94	23.08	60.57	15 26 39	2126.5	-37.39	69.59

DIFFERENTIAL CORRECTIONS
TDE 2.6354 TRA -.0604 TC-10.4151 BAU 1.6084
RDE .5472 RRA .1456 RC3-1.8709 FAU .45954
FDE 6.6119 FRA 1.6163 FC-34.9919 BSP 29132
BDE 2.6916 BRA .1576 BC310.5818 FSP 7721

MID-COURSE EXECUTION ACCURACY
SGT 8331.0 SGR 1604.1 SG3 2281.8
RRT .9711 RRF .9800 RTF .9795
SGB 8484.0 R23 .1124 R13 .9805
SG1 8475.7 SG2 376.5 THA 10.61

ORBIT DETERMINATION ACCURACY
ST 4483.2 SR 936.2 SS 3180.9
CRT .9929 CRS -.9997 CST -.9938
LSA 5568.2 MSA 298.0 SSA 20.7
EL1 4578.6 EL2 109.2 ALF 11.72

LAUNCH DATE DEC 4 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 700.686 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	32.975	GAL	1.20	AZL	87.00	HCA	208.76	SMA	186.15	ECC	.20900	INC	3.0031	V1	30.219
RP	214.40	LAP	-1.44	LOP	280.61	VP	22.915	GAP	-8.36	AZP	92.63	TAL	6.97	TAP	215.72	RCA	147.25	APO	225.06	V2	25.608
RC	292.426	GL	31.08	GP	-10.23	ZAL	73.60	ZAP	63.21	ETS	174.01	ZAE	92.13	ETE	179.25	ZAC	74.22	ETC	257.53	CLP	62.75

PLANETOCENTRIC CONIC

C3	11.193	VHL	3.346	DLA	42.88	RAL	158.26	RAD	6567.4	VEL	11.514	PTH	2.01	VHP	3.290	DPA	-1.31	RAP	161.29	ECC	1.1842

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.35	7 24 36	4079.48	-33.36	181.77	23.11	61.33	8 32 35	3479.5	-36.90	173.41
123.65	14 39 29	2734.29	-33.35	78.37	23.10	61.32	15 25 3	2134.3	-36.89	70.00
56.35	7 24 36	4079.48	-33.36	181.77	23.11	61.33	8 32 35	3479.5	-36.90	173.41
123.65	14 39 29	2734.29	-33.35	78.37	23.10	61.32	15 25 3	2134.3	-36.89	70.00
56.35	7 24 36	4079.48	-33.36	181.77	23.11	61.33	8 32 35	3479.5	-36.90	173.41
123.65	14 39 29	2734.29	-33.35	78.37	23.10	61.32	15 25 3	2134.3	-36.89	70.00

DIFFERENTIAL CORRECTIONS

TDE	2.6345	TRA	-.0225	TC-10.8967	BAU	1.6518	
RDE	.5148	RRA	.1479	RC3-1.7639	FAU	.44768	
FDE	6.2359	FRA	1.6834	FC-34.6258	BSP	29926	
BDE	2.6843	BRA	.1496	BC311.0385	FSP	7534	

MID-COURSE EXECUTION ACCURACY

SGT	8574.4	SGR	1513.2	SG3	2230.3		
RRT	.9684	RRF	.9759	RTF	.9800		
SGB	8706.9	R23	.1007	R13	.9808		
SG1	8699.0	SG2	371.8	THA	9.72		

ORBIT DETERMINATION ACCURACY

ST	4517.1	SR	888.3	SS	3060.0		
CRT	.9927	CRS	-.9997	CST	-.9934		
LSA	5519.7	MSA	298.7	SSA	21.7		
EL1	4602.4	EL2	105.0	ALF	11.05		

LAUNCH DATE DEC 4 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 704.905 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	32.979	GAL	1.13	AZL	87.06	HCA	209.94	SMA	186.22	ECC	.20915	INC	2.9421	V1	30.219
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.960	GAP	-8.50	AZP	92.55	TAL	6.52	TAP	216.46	RCA	147.27	APO	225.17	V2	25.644
RC	293.566	GL	30.64	GP	-9.76	ZAL	74.26	ZAP	61.82	ETS	173.95	ZAE	90.50	ETE	178.99	ZAC	74.64	ETC	257.58	CLP	61.37

PLANETOCENTRIC CONIC

C3	11.030	VHL	3.321	DLA	42.16	RAL	158.91	RAD	6567.4	VEL	11.507	PTH	2.00	VHP	5.327	DPA	-.80	RAP	161.30	ECC	1.1815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.36	7 31 21	4065.10	-32.95	180.24	23.21	62.05	8 39 6	3465.1	-36.39	171.87
122.64	14 37 52	2742.60	-32.94	78.83	23.20	62.04	15 23 35	2142.6	-36.38	70.47
57.36	7 31 21	4065.10	-32.95	180.24	23.21	62.05	8 39 6	3465.1	-36.39	171.87
122.64	14 37 52	2742.60	-32.94	78.83	23.20	62.04	15 23 35	2142.6	-36.38	70.47
57.36	7 31 21	4065.10	-32.95	180.24	23.21	62.05	8 39 6	3465.1	-36.39	171.87
122.64	14 37 52	2742.60	-32.94	78.83	23.20	62.04	15 23 35	2142.6	-36.38	70.47

DIFFERENTIAL CORRECTIONS

TDE	2.6309	TRA	.0214	TC-11.3760	BAU	1.6953	
RDE	.4857	RRA	.1511	RC3-1.6637	FAU	.43614	
FDE	5.8710	FRA	1.7654	FC-34.2339	BSP	30713	
BDE	2.6754	BRA	.1526	BC311.4970	FSP	7336	

MID-COURSE EXECUTION ACCURACY

SGT	8814.7	SGR	1430.7	SG3	2179.8		
RRT	.9651	RRF	.9713	RTF	.9802		
SGB	8930.0	R23	.0902	R13	.9808		
SG1	8922.4	SG2	370.3	THA	8.92		

ORBIT DETERMINATION ACCURACY

ST	4544.6	SR	845.2	SS	2940.0		
CRT	.9925	CRS	-.9996	CST	-.9930		
LSA	5469.9	MSA	301.3	SSA	22.6		
EL1	4621.4	EL2	101.4	ALF	10.46		

LAUNCH DATE DEC 4 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 709.132 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	32.983	GAL	1.05	AZL	87.11	HCA	211.12	SMA	186.29	ECC	.20932	INC	2.8852	V1	30.219
RP	213.77	LAP	-1.49	LOP	282.97	VP	23.005	GAP	-8.63	AZP	92.47	TAL	6.07	TAP	217.19	RCA	147.29	APO	225.28	V2	25.679
RC	294.693	GL	30.22	GP	-9.33	ZAL	74.95	ZAP	60.47	ETS	173.91	ZAE	88.90	ETE	178.76	ZAC	75.04	ETC	257.62	CLP	60.03

PLANETOCENTRIC CONIC

C3	10.877	VHL	3.298	DLA	41.45	RAL	159.60	RAD	6567.4	VEL	11.501	PTH	2.00	VHP	3.367	DPA	-.34	RAP	161.33	ECC	1.1790

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.37	7 38 25	4050.43	-32.53	178.70	23.38	62.75	8 45 55	3450.4	-35.89	170.33
121.63	14 36 19	2751.57	-32.52	79.35	23.37	62.74	15 22 11	2151.6	-35.88	70.99
58.37	7 38 25	4050.43	-32.53	178.70	23.38	62.75	8 45 55	3450.4	-35.89	170.33
121.63	14 36 19	2751.57	-32.52	79.35	23.37	62.74	15 22 11	2151.6	-35.88	70.99
58.37	7 38 25	4050.43	-32.53	178.70	23.38	62.75	8 45 55	3450.4	-35.89	170.33
121.63	14 36 19	2751.57	-32.52	79.35	23.37	62.74	15 22 11	2151.6	-35.88	70.99

DIFFERENTIAL CORRECTIONS

TDE	2.6256	TRA	.0689	TC-11.8434	BAU	1.7372	
RDE	.4599	RRA	.1537	RC3-1.5640	FAU	.42362	
FDE	5.5254	FRA	1.8359	FC-33.7164	BSP	31502	
BDE	2.6655	BRA	.1684	BC311.9462	FSP	7142	

MID-COURSE EXECUTION ACCURACY

SGT	9047.6	SGR	1352.7	SG3	2124.9		
RRT	.9610	RRF	.9658	RTF	.9806		
SGB	9148.2	R23	.0791	R13	.9811		
SG1	9140.7	SG2	370.3	THA	8.19		

ORBIT DETERMINATION ACCURACY

ST	4567.5	SR	806.8	SS	2824.1		
CRT	.9924	CRS	-.9995	CST	-.9925		
LSA	5421.9	MSA	302.3	SSA	23.5		
EL1	4637.2	EL2	97.5	ALF	9.95		

LAUNCH DATE DEC 4 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 713.365 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	32.987	GAL	.97	AZL	87.17	HCA	212.31	SMA	186.36	ECC	.20951	INC	2.8318	V1	30.219
RP	213.46	LAP	-1.51	LOP	284.16	VP	23.050	GAP	-8.77	AZP	92.39	TAL	5.60	TAP	217.91	RCA	147.31	APO	225.40	V2	25.714
RC	295.805	GL	29.82	GP	-8.92	ZAL	75.68	ZAP	59.15	ETS	173.87	ZAE	87.33	ETE	178.56	ZAC	75.42	ETC	257.66	CLP	58.73

PLANETOCENTRIC CONIC

C3	10.736	VHL	3.277	DLA	40.74	RAL	160.33	RAD	6567.4	VEL	11.495	PTH	2.00	VHP	3.409	DPA	.08	RAP	161.39	ECC	1.1767

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.39	7 45 47	4035.41	-32.10	177.14	23.61	63.43	8 53 2	3435.4	-35.38	168.78
120.61	14 34 48	2761.24	-32.09	79.93	23.61	63.42	15 20 49	2161.2	-35.37	71.57
59.39	7 45 47	4035.41	-32.10	177.14	23.61	63.43	8 53 2	3435.4	-35.38	168.78
120.61	14 34 48	2761.24	-32.09	79.93	23.61	63.42	15 20 49	2161.2	-35.37	71.57
59.39	7 45 47	4035.41	-32.10	177.14	23.61	63.43	8 53 2	3435.4	-35.38	168.78
120.61	14 34 48	2761.24	-32.09	79.93	23.61	63.42	15 20 49	2161.2	-35.37	71.57

DIFFERENTIAL CORRECTIONS

TDE	2.6154	TRA	.1202	TC-12.3129	BAU	1.7798	
RDE	.4364	RRA	.1564	RC3-1.4712	FAU	.41168	
FDE	5.1842	FRA	1.9071	FC-33.1983	BSP	32264	
BDE	2.6515	BRA	.1973	BC312.4005	FSP	6948	

MID-COURSE EXECUTION ACCURACY

SGT	9278.9	SGR	1281.5	SG3	2071.5		
RRT	.9562	RRF	.9595	RTF	.9809		
SGB	9366.9	R23	.0688	R13	.9813		
SG1	9359.5	SG2	372.1	THA	7.53		

ORBIT DETERMINATION ACCURACY

ST	4580.6	SR	771.3	SS	2705.5		
CRT	.9924	CRS	-.9994	CST	-.9919		
LSA	5366.9	MSA	304.0	SSA	24.4		
EL1	4644.1	EL2	93.8	ALF	9.49		

LAUNCH DATE DEC 4 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 717.606 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	32.992	GAL	.89	AZL	87.22	HCA	213.50	SMA	186.43	ECC	.20972	INC	2.7817
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.094	GAP	-8.90	AZP	92.32	TAL	5.12	TAP	218.62	RCA	147.33	APO	225.53
RC	296.904	GL	29.45	GP	-8.54	ZAL	76.45	ZAP	57.87	ETS	173.85	ZAE	85.80	ETE	178.38	ZAC	75.78	ETC	257.69

V1	30.219	V2	25.748	CLP	57.46														

PLANETOCENTRIC CONIC

C3	10.604	VHL	3.256	DLA	40.04	RAL	161.10	RAD	6567.4	VEL	11.489	PTH	2.00	VHP	3.453	DPA	.46	RAP	161.47
ECC	1.1745																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.41	7 53 30	4019.91	-31.67	175.57	23.91	64.09	9 0 30	3419.9	-34.86	167.21
119.59	14 33 15	2771.73	-31.65	80.57	23.90	64.07	15 19 27	2171.7	-34.85	72.21
60.41	7 53 30	4019.91	-31.67	175.57	23.91	64.09	9 0 30	3419.9	-34.86	167.21
119.59	14 33 15	2771.73	-31.65	80.57	23.90	64.07	15 19 27	2171.7	-34.85	72.21
60.41	7 53 30	4019.91	-31.67	175.57	23.91	64.09	9 0 30	3419.9	-34.86	167.21
119.59	14 33 15	2771.73	-31.65	80.57	23.90	64.07	15 19 27	2171.7	-34.85	72.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.6026	TRA	.1781	TC-12.7668	BAU	1.8204	SGT	9501.2	SGR	1214.9	SG3	2015.6	ST	4587.8	SR	739.5	SS	2589.6
RDE	.4154	RRA	.1595	RC3-1.3798	FAU	.39912	RRT	.9502	RRF	.9523	RTF	.9811	CRT	.9924	CRS	-.9993	CST	-.9912
FDE	4.8575	FRA	1.9850	FC-32.5848	BSP	33033	SGB	9578.5	R23	.0595	R13	.9814	LSA	5310.9	MSA	306.4	SSA	25.3
BDE	2.6356	BRA	.2391	BC312.8412	FSP	6749	SG1	9571.2	SG2	375.8	THA	6.94	EL1	4646.1	EL2	90.1	ALF	9.09

LAUNCH DATE DEC 4 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 721.853 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	32.996	GAL	.80	AZL	87.27	HCA	214.70	SMA	186.51	ECC	.20995	INC	2.7346
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.138	GAP	-9.02	AZP	92.25	TAL	4.62	TAP	219.31	RCA	147.35	APO	225.67
RC	297.989	GL	29.09	GP	-8.18	ZAL	77.26	ZAP	56.62	ETS	173.82	ZAE	84.30	ETE	178.23	ZAC	76.12	ETC	257.71

V1	30.219	V2	25.782	CLP	56.24														

PLANETOCENTRIC CONIC

C3	10.482	VHL	3.238	DLA	39.35	RAL	161.92	RAD	6567.4	VEL	11.483	PTH	2.00	VHP	3.499	DPA	.80	RAP	161.58
ECC	1.1725																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.45	8 1 35	4003.88	-31.22	173.97	24.26	64.73	9 8 18	3403.9	-34.34	165.62
118.55	14 31 40	2783.06	-31.21	81.27	24.26	64.71	15 18 3	2183.1	-34.33	72.93
61.45	8 1 35	4003.88	-31.22	173.97	24.26	64.73	9 8 18	3403.9	-34.34	165.62
118.55	14 31 40	2783.06	-31.21	81.27	24.26	64.71	15 18 3	2183.1	-34.33	72.93
61.45	8 1 35	4003.88	-31.22	173.97	24.26	64.73	9 8 18	3403.9	-34.34	165.62
118.55	14 31 40	2783.06	-31.21	81.27	24.26	64.71	15 18 3	2183.1	-34.33	72.93

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.5874	TRA	.2405	TC-13.2148	BAU	1.8607	SGT	9720.5	SGR	1153.9	SG3	1960.5	ST	4589.2	SR	710.9	SS	2476.0
RDE	.3965	RRA	.1624	RC3-1.2931	FAU	.38683	RRT	.9434	RRF	.9440	RTF	.9813	CRT	.9924	CRS	-.9990	CST	-.9904
FDE	4.5451	FRA	2.0581	FC-31.9495	BSP	33811	SGB	9788.7	R23	.0505	R13	.9815	LSA	5253.6	MSA	308.4	SSA	26.1
BDE	2.6176	BRA	.2902	BC313.2779	FSP	6560	SG1	9781.3	SG2	380.3	THA	6.40	EL1	4643.1	EL2	86.3	ALF	8.74

LAUNCH DATE DEC 4 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 726.106 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	33.001	GAL	.71	AZL	87.31	HCA	215.89	SMA	186.59	ECC	.21020	INC	2.6900
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.182	GAP	-9.15	AZP	92.18	TAL	4.11	TAP	220.00	RCA	147.37	APO	225.81
RC	299.061	GL	28.75	GP	-7.85	ZAL	78.11	ZAP	55.41	ETS	173.81	ZAE	82.82	ETE	178.09	ZAC	76.45	ETC	257.73

V1	30.219	V2	25.815	CLP	55.04														

PLANETOCENTRIC CONIC

C3	10.369	VHL	3.220	DLA	38.65	RAL	162.77	RAD	6567.4	VEL	11.479	PTH	2.00	VHP	3.546	DPA	1.10	RAP	161.71
ECC	1.1706																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.52	8 10 2	3987.17	-30.77	172.33	24.68	65.35	9 16 30	3387.2	-33.81	163.99
117.48	14 30 0	2795.39	-30.76	82.06	24.67	65.34	15 16 35	2195.4	-33.80	73.72
62.52	8 10 2	3987.17	-30.77	172.33	24.68	65.35	9 16 30	3387.2	-33.81	163.99
117.48	14 30 0	2795.39	-30.76	82.06	24.67	65.34	15 16 35	2195.4	-33.80	73.72
62.52	8 10 2	3987.17	-30.77	172.33	24.68	65.35	9 16 30	3387.2	-33.81	163.99
117.48	14 30 0	2795.39	-30.76	82.06	24.67	65.34	15 16 35	2195.4	-33.80	73.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.5867	TRA	.3066	TC-13.6582	BAU	1.9007	SGT	9935.6	SGR	1097.1	SG3	1904.8	ST	4579.5	SR	684.3	SS	2359.7
RDE	.3791	RRA	.1653	RC3-1.2096	FAU	.37457	RRT	.9354	RRF	.9345	RTF	.9815	CRT	.9925	CRS	-.9987	CST	-.9894
FDE	4.2366	FRA	2.1295	FC-31.2746	BSP	34525	SGB	9995.9	R23	.0426	R13	.9816	LSA	5187.5	MSA	311.2	SSA	27.0
BDE	2.5945	BRA	.3483	BC313.7116	FSP	6359	SG1	9988.5	SG2	386.0	THA	5.91	EL1	4629.6	EL2	82.5	ALF	8.44

LAUNCH DATE DEC 4 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 730.366 EARTH TO MARS

RL	147.44	LAL	-.00	LOL	71.88	VL	33.006	GAL	.62	AZL	87.35	HCA	217.10	SMA	186.67	ECC	.21046	INC	2.6478
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.225	GAP	-9.27	AZP	92.11	TAL	3.58	TAP	220.68	RCA	147.39	APO	225.96
RC	300.120	GL	28.42	GP	-7.53	ZAL	79.00	ZAP	54.24	ETS	173.79	ZAE	81.38	ETE	177.96	ZAC	76.76	ETC	257.74

V1	30.219	V2	25.847	CLP	53.88														

PLANETOCENTRIC CONIC

C3	10.264	VHL	3.204	DLA	37.95	RAL	163.65	RAD	6567.4	VEL	11.474	PTH	1.99	VHP	3.595	DPA	1.38	RAP	161.87
ECC	1.1689																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.60	8 18 56	3969.63	-30.30	170.64	25.14	65.97	9 25 6	3369.6	-33.27	162.31
116.40	14 28 10	2808.86	-30.29	82.92	25.14	65.95	15 14 59	2208.9	-33.26	74.60
63.60	8 18 56	3969.63	-30.30	170.64	25.14	65.97	9 25 6	3369.6	-33.27	162.31
116.40	14 28 10	2808.86	-30.29	82.92	25.14	65.95	15 14 59	2208.9	-33.26	74.60
63.60	8 18 56	3969.63	-30.30	170.64	25.14	65.97	9 25 6	3369.6	-33.27	162.31
116.40	14 28 10	2808.86	-30.29	82.92	25.14	65.95	15 14 59	2208.9	-33.26	74.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.5432	TRA	.3777	TC-14.0924	BAU	1.9400	SGT	10146.9	SGR	1045.3	SG3	1850.2	ST	4563.5	SR	660.9	SS	2249.1
RDE	.3638	RRA	.1681	RC3-1.1299	FAU	.36252	RRT	.9261	RRF	.9238	RTF	.9816	CRT	.9928	CRS	-.9982	CST	-.9882
FDE	3.9477	FRA	2.2001	FC-30.5765	BSP	35224	SGB	10200.6	R23	.0354	R13	.9818	LSA	5120.7	MSA	314.1	SSA	27.8
BDE	2.5691	BRA	.4134	BC314.1377	FSP	6158	SG1	10193.0	SG2	392.6	THA	5.46	EL1	4610.5	EL2	78.6	ALF	8.18

LAUNCH DATE DEC 4 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 734.629 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.010 GAL .53 AZL 87.39 HCA 218.30 SMA 186.76 ECC .21075 INC 2.6079 V1 30.219
RP 212.01 LAP -1.62 LOP 290.15 VP 23.267 GAP -9.39 AZP 92.05 TAL 3.04 TAP 221.34 RCA 147.40 APO 226.12 V2 25.879
RC 301.167 GL 28.10 GP -7.24 ZAL 79.93 ZAP 53.10 ETS 173.78 ZAE 79.98 ETE 177.86 ZAC 77.07 ETC 257.74 CLP 52.75

PLANETOCENTRIC CONIC

C3 10.169 VHL 3.189 DLA 37.24 RAL 164.58 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 3.645 DPA 1.62 RAP 162.06 ECC 1.1673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.73	8 28 20	3951.08	-29.82	168.88	25.66	66.57	9 34 11	3351.1	-32.71	160.57
115.27	14 26 8	2823.64	-29.81	83.89	25.65	66.56	15 13 11	2223.6	-32.71	75.58
64.73	8 28 20	3951.08	-29.82	168.88	25.66	66.57	9 34 11	3351.1	-32.71	160.57
115.27	14 26 8	2823.64	-29.81	83.89	25.65	66.56	15 13 11	2223.6	-32.71	75.58
64.73	8 28 20	3951.08	-29.82	168.88	25.66	66.57	9 34 11	3351.1	-32.71	160.57
115.27	14 26 8	2823.64	-29.81	83.89	25.65	66.56	15 13 11	2223.6	-32.71	75.58

DIFFERENTIAL CORRECTIONS
TDE 2.5313 TRA .4701 TC-14.4507 BAU 1.9696
RDE .3517 RRA .1728 RC3-1.0425 FAU .34778
FDE 3.7082 FRA 2.3119 FC-29.6090 BSP 36295
BDE 2.5556 BRA .5008 BC314.4883 FSP 6044

MID-COURSE EXECUTION ACCURACY
SGT10331.9 SGR 996.7 SG3 1787.9
RRT .9143 RRF .9115 RTF .9816
SGB10379.9 R23 .0313 R13 .9817
SG110372.1 SG2 402.2 THA 5.05

ORBIT DETERMINATION ACCURACY
ST 4567.7 SR 642.9 SS 2163.1
CRT .9932 CRS -.9975 CST -.9869
LSA 5084.6 MSA 319.9 SSA 28.2
EL1 4612.1 EL2 74.3 ALF 7.96

LAUNCH DATE DEC 4 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 738.902 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.016 GAL .43 AZL 87.43 HCA 219.51 SMA 186.85 ECC .21106 INC 2.5699 V1 30.219
RP 211.73 LAP -1.63 LOP 291.36 VP 23.309 GAP -9.51 AZP 91.98 TAL 2.49 TAP 222.00 RCA 147.41 APO 226.28 V2 25.911
RC 302.203 GL 27.79 GP -6.96 ZAL 80.89 ZAP 51.99 ETS 173.78 ZAE 78.60 ETE 177.76 ZAC 77.36 ETC 257.74 CLP 51.66

PLANETOCENTRIC CONIC

C3 10.082 VHL 3.175 DLA 36.53 RAL 165.53 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 3.697 DPA 1.83 RAP 162.27 ECC 1.1659

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.89	8 38 14	3931.37	-29.33	167.04	26.22	67.17	9 43 45	3331.4	-32.15	158.74
114.11	14 23 49	2839.92	-29.32	84.96	26.22	67.16	15 11 9	2239.9	-32.14	76.67
65.89	8 38 14	3931.37	-29.33	167.04	26.22	67.17	9 43 45	3331.4	-32.15	158.74
114.11	14 23 49	2839.92	-29.32	84.96	26.22	67.16	15 11 9	2239.9	-32.14	76.67
65.89	8 38 14	3931.37	-29.33	167.04	26.22	67.17	9 43 45	3331.4	-32.15	158.74
114.11	14 23 49	2839.92	-29.32	84.96	26.22	67.16	15 11 9	2239.9	-32.14	76.67

DIFFERENTIAL CORRECTIONS
TDE 2.4938 TRA .5442 TC-14.8863 BAU 2.0107
RDE .3380 RRA .1744 RC3 -.9728 FAU .33705
FDE 3.4164 FRA 2.3532 FC-28.9433 BSP 36885
BDE 2.5166 BRA .5714 BC314.9180 FSP 5843

MID-COURSE EXECUTION ACCURACY
SGT10540.8 SGR 952.4 SG3 1736.1
RRT .9028 RRF .8980 RTF .9818
SGB10583.8 R23 .0238 R13 .9819
SG110575.9 SG2 408.2 THA 4.67

ORBIT DETERMINATION ACCURACY
ST 4523.8 SR 621.4 SS 2041.0
CRT .9935 CRS -.9965 CST -.9853
LSA 4991.3 MSA 321.6 SSA 29.2
EL1 4565.8 EL2 69.9 ALF 7.77

LAUNCH DATE DEC 4 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 743.180 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.021 GAL .34 AZL 87.47 HCA 220.72 SMA 186.94 ECC .21139 INC 2.5338 V1 30.219
RP 211.47 LAP -1.65 LOP 292.57 VP 23.350 GAP -9.62 AZP 91.92 TAL 1.92 TAP 222.64 RCA 147.42 APO 226.45 V2 25.941
RC 303.228 GL 27.49 GP -6.70 ZAL 81.90 ZAP 50.91 ETS 173.77 ZAE 77.24 ETE 177.68 ZAC 77.64 ETC 257.73 CLP 50.59

PLANETOCENTRIC CONIC

C3 10.004 VHL 3.163 DLA 35.81 RAL 166.51 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 3.751 DPA 2.01 RAP 162.51 ECC 1.1646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.10	8 48 45	3910.20	-28.82	165.10	26.83	67.76	9 53 56	3310.2	-31.57	156.82
112.90	14 21 8	2857.98	-28.81	86.17	26.83	67.75	15 8 46	2258.0	-31.56	77.89
67.10	8 48 45	3910.20	-28.82	165.10	26.83	67.76	9 53 56	3310.2	-31.57	156.82
112.90	14 21 8	2857.98	-28.81	86.17	26.83	67.75	15 8 46	2258.0	-31.56	77.89
67.10	8 48 45	3910.20	-28.82	165.10	26.83	67.76	9 53 56	3310.2	-31.57	156.82
112.90	14 21 8	2857.98	-28.81	86.17	26.83	67.75	15 8 46	2258.0	-31.56	77.89

DIFFERENTIAL CORRECTIONS
TDE 2.4566 TRA .6273 TC-15.2948 BAU 2.0491
RDE .3264 RRA .1763 RC3 -.9031 FAU .32579
FDE 3.1528 FRA 2.4019 FC-28.1952 BSP 37411
BDE 2.4782 BRA .6517 BC315.3214 FSP 5598

MID-COURSE EXECUTION ACCURACY
SGT10741.2 SGR 911.7 SG3 1683.2
RRT .8895 RRF .8828 RTF .9820
SGB10779.8 R23 .0175 R13 .9821
SG110771.8 SG2 415.4 THA 4.32

ORBIT DETERMINATION ACCURACY
ST 4479.5 SR 603.3 SS 1930.7
CRT .9940 CRS -.9951 CST -.9835
LSA 4904.2 MSA 323.7 SSA 30.0
EL1 4519.4 EL2 65.2 ALF 7.63

LAUNCH DATE DEC 4 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 747.463 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.026 GAL .23 AZL 87.50 HCA 221.93 SMA 187.03 ECC .21174 INC 2.4992 V1 30.219
RP 211.20 LAP -1.67 LOP 293.79 VP 23.391 GAP -9.74 AZP 91.86 TAL 1.34 TAP 223.27 RCA 147.43 APO 226.63 V2 25.971
RC 304.242 GL 27.19 GP -6.46 ZAL 82.93 ZAP 49.86 ETS 173.77 ZAE 75.92 ETE 177.60 ZAC 77.92 ETC 257.72 CLP 49.56

PLANETOCENTRIC CONIC

C3 9.934 VHL 3.152 DLA 35.08 RAL 167.52 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 3.805 DPA 2.17 RAP 162.77 ECC 1.1635

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.37	8 59 57	3887.37	-28.30	163.05	27.49	68.35	10 4 44	3287.4	-30.97	154.79
111.63	14 18 2	2878.04	-28.29	87.52	27.48	68.33	15 6 0	2278.0	-30.96	79.26
68.37	8 59 57	3887.37	-28.30	163.05	27.49	68.35	10 4 44	3287.4	-30.97	154.79
111.63	14 18 2	2878.04	-28.29	87.52	27.48	68.33	15 6 0	2278.0	-30.96	79.26
68.37	8 59 57	3887.37	-28.30	163.05	27.49	68.35	10 4 44	3287.4	-30.97	154.79
111.63	14 18 2	2878.04	-28.29	87.52	27.48	68.33	15 6 0	2278.0	-30.96	79.26

DIFFERENTIAL CORRECTIONS
TDE 2.4122 TRA .7162 TC-15.6965 BAU 2.0876
RDE .3152 RRA .1786 RC3 -.8379 FAU .31527
FDE 2.8810 FRA 2.4564 FC-27.4750 BSP 38011
BDE 2.4327 BRA .7381 BC315.7189 FSP 5398

MID-COURSE EXECUTION ACCURACY
SGT10939.0 SGR 874.4 SG3 1632.8
RRT .8750 RRF .8661 RTF .9820
SGB10973.9 R23 .0115 R13 .9820
SG110965.8 SG2 422.3 THA 4.01

ORBIT DETERMINATION ACCURACY
ST 4420.9 SR 585.4 SS 1812.0
CRT .9946 CRS -.9929 CST -.9809
LSA 4802.2 MSA 328.9 SSA 30.9
EL1 4459.1 EL2 60.4 ALF 7.50

LAUNCH DATE DEC 4 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 751.752 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.031 GAL .13 AZL 87.53 HCA 223.15 SMA 187.12 ECC .21211 INC 2.4662 V1 30.219
RP 210.95 LAP -1.69 LOP 295.01 VP 23.432 GAP -9.85 AZP 91.80 TAL .75 TAP 223.90 RCA 147.43 APO 226.82 V2 26.001
RC 305.247 GL 26.89 GP -6.22 ZAL 84.01 ZAP 48.85 ETS 173.77 ZAE 74.63 ETE 177.54 ZAC 78.19 ETC 257.71 CLP 48.55

PLANETOCENTRIC CONIC

C3 9.873 VHL 3.142 DLA 34.34 RAL 168.56 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 3.861 DPA 2.30 RAP 163.05 ECC 1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.72	9 11 56	3862.40	-27.76	160.85	28.19	68.93	10 16 19	3262.4	-30.36	152.61
110.28	14 14 21	2900.57	-27.75	89.05	28.18	68.91	15 2 41	2300.6	-30.35	80.82
69.72	9 11 56	3862.40	-27.76	160.85	28.19	68.93	10 16 19	3262.4	-30.36	152.61
110.28	14 14 21	2900.57	-27.75	89.05	28.18	68.91	15 2 41	2300.6	-30.35	80.82
69.72	9 11 56	3862.40	-27.76	160.85	28.19	68.93	10 16 19	3262.4	-30.36	152.61
110.28	14 14 21	2900.57	-27.75	89.05	28.18	68.91	15 2 41	2300.6	-30.35	80.82

DIFFERENTIAL CORRECTIONS
TDE 2.3671 TRA .8081 TC-16.0580 BAU 2.1221
RDE .3057 RRA .1803 RC3 -.7686 FAU .30312
FDE 2.6366 FRA 2.4972 FC-26.5785 BSP 38567
BDE 2.3868 BRA .8289 BC316.0764 FSP 5177

MID-COURSE EXECUTION ACCURACY
SGT11120.3 SGR 838.2 SG3 1575.5
RRT .8574 RRF .8468 RTF .9822
SGB11151.8 R23 .0067 R13 .9822
SG111143.5 SG2 430.5 THA 3.70

ORBIT DETERMINATION ACCURACY
ST 4359.9 SR 570.3 SS 1704.3
CRT .9952 CRS -.9902 CST -.9782
LSA 4704.0 MSA 331.7 SSA 31.6
EL1 4396.7 EL2 55.3 ALF 7.42

LAUNCH DATE DEC 4 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 756.047 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.037 GAL .02 AZL 87.57 HCA 224.37 SMA 187.22 ECC .21251 INC 2.4345 V1 30.219
RP 210.70 LAP -1.70 LOP 296.23 VP 23.471 GAP -9.96 AZP 91.74 TAL .14 TAP 224.51 RCA 147.44 APO 227.01 V2 26.029
RC 306.243 GL 26.60 GP -6.01 ZAL 85.12 ZAP 47.86 ETS 173.77 ZAE 73.36 ETE 177.48 ZAC 78.46 ETC 257.69 CLP 47.57

PLANETOCENTRIC CONIC

C3 9.822 VHL 3.134 DLA 33.58 RAL 169.63 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 3.918 DPA 2.40 RAP 163.36 ECC 1.1616

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.15	9 24 53	3834.83	-27.20	158.46	28.93	69.50	10 28 48	3234.8	-29.73	150.24
108.85	14 9 55	2926.07	-27.19	90.80	28.93	69.49	14 58 41	2326.1	-29.72	82.59
71.15	9 24 53	3834.83	-27.20	158.46	28.93	69.50	10 28 48	3234.8	-29.73	150.24
108.85	14 9 55	2926.07	-27.19	90.80	28.93	69.49	14 58 41	2326.1	-29.72	82.59
110.00	15 5 34	2755.77	-30.84	78.92	30.29	74.46	15 51 30	2155.8	-32.66	70.17
110.00	13 28 24	3053.13	-25.66	99.02	27.27	64.58	14 19 18	2453.1	-26.88	91.34

DIFFERENTIAL CORRECTIONS
TDE 2.2992 TRA .8394 TC-16.5228 BAU 2.1717
RDE .2930 RRA .1658 RC3 -.7306 FAU .29944
FDE 2.2964 FRA 2.1337 FC-26.3940 BSP 38751
BDE 2.3178 BRA .8556 BC316.5390 FSP 4823

MID-COURSE EXECUTION ACCURACY
SGT11327.7 SGR 793.2 SG3 1529.2
RRT .8531 RRF .8213 RTF .9856
SGB11355.5 R23 -.0396 R13 .9856
SG111348.0 SG2 413.1 THA 3.42

ORBIT DETERMINATION ACCURACY
ST 4250.9 SR 546.9 SS 1508.1
CRT .9964 CRS -.9889 CST -.9810
LSA 4535.0 MSA 276.9 SSA 33.2
EL1 4285.7 EL2 46.1 ALF 7.31

LAUNCH DATE DEC 4 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 760.343 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.043 GAL -.08 AZL 87.60 HCA 225.59 SMA 187.32 ECC .21293 INC 2.4042 V1 30.219
RP 210.46 LAP -1.72 LOP 297.45 VP 23.510 GAP -10.07 AZP 91.68 TAL 359.52 TAP 225.11 RCA 147.43 APO 227.21 V2 26.057
RC 307.229 GL 26.31 GP -5.80 ZAL 86.27 ZAP 46.90 ETS 173.77 ZAE 72.12 ETE 177.43 ZAC 78.71 ETC 257.66 CLP 46.62

PLANETOCENTRIC CONIC

C3 9.780 VHL 3.127 DLA 32.81 RAL 170.73 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 3.976 DPA 2.49 RAP 163.69 ECC 1.1609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.69	9 39 0	3803.93	-26.62	155.84	29.72	70.08	10 42 24	3203.9	-29.09	147.65
107.31	14 4 31	2955.27	-26.61	92.82	29.71	70.06	14 53 47	2355.3	-29.08	84.62
72.69	9 39 0	3803.93	-26.62	155.84	29.72	70.08	10 42 24	3203.9	-29.09	147.65
107.31	14 4 31	2955.27	-26.61	92.82	29.71	70.06	14 53 47	2355.3	-29.08	84.62
110.00	15 34 28	2678.46	-32.11	73.25	31.54	77.59	16 19 7	2078.5	-33.48	64.29
110.00	13 8 13	3128.73	-21.37	103.70	27.21	62.67	14 0 22	2528.7	-24.86	96.28

DIFFERENTIAL CORRECTIONS
TDE 2.2772 TRA 1.0292 TC-16.7273 BAU 2.1886
RDE .2921 RRA .1868 RC3 -.6404 FAU .28034
FDE 2.2373 FRA 2.6537 FC-24.8163 BSP 39993
BDE 2.2959 BRA 1.0460 BC316.7395 FSP 4918

MID-COURSE EXECUTION ACCURACY
SGT11484.6 SGR 782.8 SG3 1474.3
RRT .8162 RRF .8061 RTF .9821
SGB11511.3 R23 .0056 R13 .9821
SG111502.4 SG2 451.6 THA 3.19

ORBIT DETERMINATION ACCURACY
ST 4237.8 SR 549.1 SS 1537.6
CRT .9966 CRS -.9812 CST -.9710
LSA 4528.0 MSA 347.0 SSA 32.8
EL1 4273.0 EL2 45.1 ALF 7.36

LAUNCH DATE DEC 4 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 764.646 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.049 GAL -.20 AZL 87.62 HCA 226.82 SMA 187.42 ECC .21337 INC 2.3750 V1 30.219
RP 210.22 LAP -1.73 LOP 298.67 VP 23.548 GAP -10.17 AZP 91.63 TAL 358.88 TAP 225.70 RCA 147.43 APO 227.41 V2 26.085
RC 308.206 GL 26.02 GP -5.61 ZAL 87.45 ZAP 45.96 ETS 173.77 ZAE 70.90 ETE 177.38 ZAC 78.96 ETC 257.63 CLP 45.70

PLANETOCENTRIC CONIC

C3 9.747 VHL 3.122 DLA 32.03 RAL 171.84 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 4.036 DPA 2.55 RAP 164.04 ECC 1.1604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.38	9 54 33	3768.77	-26.03	152.91	30.54	70.64	10 57 21	3168.8	-28.42	144.74
105.62	13 57 53	2989.11	-26.01	95.17	30.54	70.63	14 47 42	2389.1	-28.41	87.00
74.38	9 54 33	3768.77	-26.03	152.91	30.54	70.64	10 57 21	3168.8	-28.42	144.74
105.62	13 57 53	2989.11	-26.01	95.17	30.54	70.63	14 47 42	2389.1	-28.41	87.00
110.00	15 57 16	2619.62	-32.89	68.84	32.60	80.10	16 40 56	2019.6	-33.90	59.75
110.00	12 54 20	3186.26	-19.54	107.15	27.41	61.38	13 47 26	2586.3	-23.20	99.93

DIFFERENTIAL CORRECTIONS
TDE 2.2230 TRA 1.1355 TC-17.0492 BAU 2.2230
RDE .2859 RRA .1874 RC3 -.5816 FAU .26985
FDE 2.0363 FRA 2.6651 FC-23.9674 BSP 40587
BDE 2.2413 BRA 1.1509 BC317.0592 FSP 4736

MID-COURSE EXECUTION ACCURACY
SGT11662.7 SGR 756.2 SG3 1422.9
RRT .7942 RRF .7818 RTF .9827
SGB11687.2 R23 .0003 R13 .9827
SG111678.1 SG2 458.9 THA 2.95

ORBIT DETERMINATION ACCURACY
ST 4158.0 SR 538.8 SS 1444.5
CRT .9972 CRS -.9751 CST -.9675
LSA 4421.0 MSA 346.4 SSA 33.5
EL1 4192.6 EL2 40.0 ALF 7.36

LAUNCH DATE DEC 4 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 768.953 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.054 GAL -.31 AZL 87.65 HCA 228.04 SMA 187.52 ECC .21385 INC 2.3469 V1 30.219
RP 209.99 LAP -1.75 LOP 299.90 VP 23.586 GAP -10.28 AZP 91.57 TAL 358.23 TAP 226.27 RCA 147.42 APO 227.63 V2 26.111
RC 309.174 GL 25.72 GP -5.42 ZAL 88.67 ZAP 45.06 ETS 173.77 ZAE 69.71 ETE 177.34 ZAC 79.20 ETC 257.60 CLP 44.80

PLANETOCENTRIC CONIC

C3 9.725 VHL 3.118 DLA 31.23 RAL 172.98 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 4.097 DPA 2.59 RAP 164.42 ECC 1.1600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.25	10 12 1	3727.75	-25.41	149.57	31.41	71.21	11 14 9	3127.8	-27.74	141.43
103.75	13 49 29	3029.22	-25.40	97.97	31.41	71.19	14 39 58	2429.2	-27.73	89.83
76.25	10 12 1	3727.75	-25.41	149.57	31.41	71.21	11 14 9	3127.8	-27.74	141.43
103.75	13 49 29	3029.22	-25.40	97.97	31.41	71.19	14 39 58	2429.2	-27.73	89.83
110.00	16 17 13	2569.45	-33.41	65.02	33.57	82.30	17 0 3	1969.5	-34.11	55.85
110.00	12 43 28	3235.52	-17.90	110.04	27.78	60.38	13 37 23	2635.5	-21.71	102.97

DIFFERENTIAL CORRECTIONS
TDE 2.1601 TRA 1.2558 TC-17.3360 BAU 2.2549
RDE .2794 RRA .1896 RC3 -.5229 FAU .25897
FDE 1.8148 FRA 2.7153 FC-23.0539 BSP 41115
BDE 2.1781 BRA 1.2700 BC317.3439 FSP 4542

MID-COURSE EXECUTION ACCURACY
SGT11829.5 SGR 732.0 SG3 1371.3
RRT .7695 RRF .7555 RTF .9824
SGB11852.2 R23 -.0024 R13 .9824
SG111843.0 SG2 467.0 THA 2.73

ORBIT DETERMINATION ACCURACY
ST 4063.4 SR 527.8 SS 1341.5
CRT .9976 CRS -.9646 CST -.9603
LSA 4296.6 MSA 356.8 SSA 34.1
EL1 4097.4 EL2 36.3 ALF 7.38

LAUNCH DATE DEC 4 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 773.263 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.060 GAL -.43 AZL 87.68 HCA 229.27 SMA 187.63 ECC .21434 INC 2.3198 V1 30.219
RP 209.77 LAP -1.76 LOP 301.14 VP 23.623 GAP -10.38 AZP 91.51 TAL 357.56 TAP 226.84 RCA 147.41 APO 227.85 V2 26.137
RC 310.132 GL 25.43 GP -5.25 ZAL 89.92 ZAP 44.17 ETS 173.77 ZAE 68.54 ETE 177.31 ZAC 79.45 ETC 257.56 CLP 43.93

PLANETOCENTRIC CONIC

C3 9.713 VHL 3.117 DLA 30.41 RAL 174.14 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 4.158 DPA 2.60 RAP 164.81 ECC 1.1599

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.42	10 32 15	3678.13	-24.78	145.61	32.31	71.78	11 33 34	3078.1	-27.03	137.49
101.58	13 38 30	3078.36	-24.76	101.42	32.31	71.76	14 29 48	2478.4	-27.02	93.31
78.42	10 32 15	3678.13	-24.78	145.61	32.31	71.78	11 33 34	3078.1	-27.03	137.49
101.58	13 38 30	3078.36	-24.76	101.42	32.31	71.76	14 29 48	2478.4	-27.02	93.31
110.00	16 35 28	2524.52	-33.76	61.56	34.49	84.32	17 17 32	1924.5	-34.18	52.34
110.00	12 34 28	3279.97	-16.39	112.59	28.27	59.57	13 29 8	2680.0	-20.31	105.66

DIFFERENTIAL CORRECTIONS
TDE 2.1034 TRA 1.3868 TC-17.5840 BAU 2.2841
RDE .2748 RRA .1917 RC3 -.4675 FAU .24866
FDE 1.6332 FRA 2.7651 FC-22.1632 BSP 41881
BDE 2.1213 BRA 1.4000 BC317.5902 FSP 4402

MID-COURSE EXECUTION ACCURACY
SGT11992.5 SGR 712.1 SG3 1323.4
RRT .7442 RRF .7290 RTF .9824
SGB12013.7 R23 -.0049 R13 .9824
SG112004.3 SG2 475.2 THA 2.53

ORBIT DETERMINATION ACCURACY
ST 3980.9 SR 520.0 SS 1260.7
CRT .9978 CRS -.9522 CST -.9532
LSA 4192.0 MSA 365.2 SSA 34.5
EL1 4014.6 EL2 34.5 ALF 7.43

LAUNCH DATE DEC 4 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 777.579 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.066 GAL -.55 AZL 87.71 HCA 230.51 SMA 187.74 ECC .21487 INC 2.2937 V1 30.219
RP 209.55 LAP -1.77 LOP 302.37 VP 23.659 GAP -10.49 AZP 91.46 TAL 356.89 TAP 227.39 RCA 147.40 APO 228.08 V2 26.162
RC 311.080 GL 25.13 GP -5.08 ZAL 91.20 ZAP 43.32 ETS 173.77 ZAE 67.39 ETE 177.28 ZAC 79.69 ETC 257.52 CLP 43.08

PLANETOCENTRIC CONIC

C3 9.712 VHL 3.116 DLA 29.58 RAL 175.32 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 4.221 DPA 2.60 RAP 165.23 ECC 1.1598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.07	10 57 3	3614.01	-24.12	140.60	33.26	72.34	11 57 17	3014.0	-26.31	132.51
98.93	13 23 6	3142.44	-24.11	105.96	33.25	72.33	14 15 28	2542.4	-26.30	97.87
100.00	14 7 45	2999.61	-26.56	96.14	34.03	75.75	14 57 45	2399.6	-28.25	87.75
100.00	12 55 5	3232.07	-21.72	111.70	32.34	68.94	13 48 57	2632.1	-24.39	103.91
110.00	16 52 32	2483.19	-34.00	58.35	35.40	86.20	17 33 55	1883.2	-34.15	49.11
110.00	12 26 48	3321.26	-14.95	114.93	28.85	58.90	13 22 9	2721.3	-18.96	108.11

DIFFERENTIAL CORRECTIONS
TDE 2.0288 TRA 1.5086 TC-17.8674 BAU 2.3205
RDE .2703 RRA .1926 RC3 -.4180 FAU .23982
FDE 1.4431 FRA 2.7832 FC-21.3775 BSP 42275
BDE 2.0468 BRA 1.5208 BC317.8723 FSP 4219

MID-COURSE EXECUTION ACCURACY
SGT12169.8 SGR 693.3 SG3 1279.2
RRT .7175 RRF .7000 RTF .9826
SGB12189.5 R23 -.0087 R13 .9826
SG112180.0 SG2 482.5 THA 2.34

ORBIT DETERMINATION ACCURACY
ST 3865.2 SR 511.8 SS 1171.3
CRT .9974 CRS -.9352 CST -.9440
LSA 4053.9 MSA 372.2 SSA 35.1
EL1 3898.8 EL2 36.5 ALF 7.52

LAUNCH DATE DEC 4 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 781.898 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.073 GAL -.67 AZL 87.73 HCA 231.74 SMA 187.85 ECC .21543 INC 2.2683 V1 30.219
RP 209.34 LAP -1.78 LOP 303.61 VP 23.694 GAP -10.59 AZP 91.41 TAL 356.19 TAP 227.94 RCA 147.38 APO 228.31 V2 26.186
RC 312.019 GL 24.82 GP -4.92 ZAL 92.51 ZAP 42.48 ETS 173.77 ZAE 66.27 ETE 177.25 ZAC 79.92 ETC 257.48 CLP 42.25

PLANETOCENTRIC CONIC

C3 9.722 VHL 3.118 DLA 28.73 RAL 176.51 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 4.285 DPA 2.58 RAP 165.67 ECC 1.1600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.93	11 32 38	3515.08	-23.45	133.08	34.24	72.90	12 31 13	2915.1	-25.57	125.02
95.07	12 57 3	3241.79	-23.44	113.05	34.23	72.89	13 51 5	2641.8	-25.56	104.99
100.00	14 46 4	2891.24	-28.14	88.48	35.52	79.48	15 34 15	2291.2	-29.31	79.87
100.00	12 26 18	3340.86	-18.90	118.55	32.43	66.40	13 21 59	2740.9	-21.93	111.06
110.00	17 8 46	2444.49	-34.13	55.34	36.29	87.98	17 49 30	1844.5	-34.03	46.09
110.00	12 20 6	3360.38	-13.56	117.11	29.52	58.32	13 16 6	2760.4	-17.66	110.39

DIFFERENTIAL CORRECTIONS
TDE 1.9560 TRA 1.6442 TC-18.0842 BAU 2.3511
RDE .2666 RRA .1940 RC3 -.3663 FAU .22991
FDE 1.2649 FRA 2.8161 FC-20.4722 BSP 42848
BDE 1.9741 BRA 1.6557 BC318.0880 FSP 4066

MID-COURSE EXECUTION ACCURACY
SGT12327.9 SGR 676.5 SG3 1231.7
RRT .6881 RRF .6694 RTF .9825
SGB12346.4 R23 -.0107 R13 .9825
SG112336.6 SG2 490.5 THA 2.17

ORBIT DETERMINATION ACCURACY
ST 3755.2 SR 505.0 SS 1091.0
CRT .9964 CRS -.9122 CST -.9320
LSA 3924.2 MSA 383.2 SSA 35.5
EL1 3788.8 EL2 42.3 ALF 7.63

LAUNCH DATE DEC 4 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 786.220 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.079 GAL -.80 AZL 87.76 HCA 232.98 SMA 187.96 ECC .21601 INC 2.2438 V1 30.219
RP 209.14 LAP -1.79 LOP 304.84 VP 23.729 GAP -10.69 AZP 91.35 TAL 355.49 TAP 228.47 RCA 147.35 APO 228.56 V2 26.209
RC 312.950 GL 24.51 GP -4.77 ZAL 93.86 ZAP 41.67 ETS 173.77 ZAE 65.17 ETE 177.23 ZAC 80.15 ETC 257.44 CLP 41.45

PLANETOCENTRIC CONIC

C3 9.745 VHL 3.122 DLA 27.87 RAL 177.72 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 4.350 DPA 2.55 RAP 166.12 ECC 1.1604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 4 1	3234.74	-25.60	113.17	36.07	77.47	13 57 56	2634.7	-27.07	104.81
90.00	11 35 20	3523.05	-19.95	132.38	34.25	69.48	12 34 3	2923.0	-22.57	124.68
100.00	15 13 12	2818.27	-28.94	83.20	36.74	82.15	16 0 11	2218.3	-29.72	74.48
100.00	12 8 49	3414.75	-16.83	123.05	32.87	64.92	13 5 44	2814.7	-20.07	115.76
110.00	17 24 21	2407.83	-34.18	52.48	37.18	89.67	18 4 29	1807.8	-33.85	43.25
110.00	12 14 10	3397.96	-12.21	119.18	30.26	57.82	13 10 48	2798.0	-16.37	112.55

DIFFERENTIAL CORRECTIONS

TDE 1.8807 TRA 1.7847 TC-18.2790 BAU 2.3817
RDE .2639 RRA .1952 RC3 -.3176 FAU .22051
FDE 1.1030 FRA 2.8404 FC-19.5902 BSP 43393
BDE 1.8991 BRA 1.7953 BC318.2818 FSP 3914

MID-COURSE EXECUTION ACCURACY

SGT12485.3 SGR 661.9 SG3 1186.1
RRT .6578 RRF .6377 RTF .9826
SGB12502.9 R23 -.0128 R13 .9826
SG112492.9 SG2 498.3 THA 2.00

ORBIT DETERMINATION ACCURACY

ST 3642.6 SR 499.5 SS 1019.9
CRT .9945 CRS -.8839 CST -.9187
LSA 3795.0 MSA 393.3 SSA 35.9
EL1 3676.3 EL2 52.0 ALF 7.77

LAUNCH DATE DEC 4 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 790.545 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.085 GAL -.93 AZL 87.78 HCA 234.22 SMA 188.07 ECC .21663 INC 2.2201 V1 30.219
RP 208.94 LAP -1.80 LOP 306.09 VP 23.763 GAP -10.79 AZP 91.30 TAL 354.77 TAP 228.99 RCA 147.33 APO 228.81 V2 26.232
RC 313.871 GL 24.19 GP -4.63 ZAL 95.23 ZAP 40.88 ETS 173.77 ZAE 64.08 ETE 177.21 ZAC 80.39 ETC 257.39 CLP 40.66

PLANETOCENTRIC CONIC

C3 9.780 VHL 3.127 DLA 26.98 RAL 178.95 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 4.417 DPA 2.49 RAP 166.60 ECC 1.1610

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 40 43	3130.70	-26.93	105.84	37.51	80.90	14 32 53	2530.7	-27.91	97.32
90.00	11 8 24	3628.51	-17.30	138.98	34.54	67.23	12 8 53	3028.5	-20.24	131.54
100.00	15 36 12	2758.38	-29.41	78.81	37.87	84.41	16 22 11	2158.4	-29.88	70.04
100.00	11 55 36	3476.06	-15.02	126.71	33.46	63.85	12 53 32	2876.1	-18.42	119.56
110.00	17 39 26	2372.81	-34.16	49.74	38.08	91.29	18 18 58	1772.8	-33.61	40.54
110.00	12 8 52	3434.40	-10.88	121.17	31.07	57.39	13 6 6	2834.4	-15.11	114.61

DIFFERENTIAL CORRECTIONS

TDE 1.8007 TRA 1.9330 TC-18.4447 BAU 2.4119
RDE .2618 RRA .1963 RC3 -.2709 FAU .21137
FDE .9471 FRA 2.8658 FC-18.7111 BSP 43934
BDE 1.8196 BRA 1.9430 BC318.4466 FSP 3767

MID-COURSE EXECUTION ACCURACY

SGT12639.8 SGR 649.3 SG3 1141.9
RRT .6264 RRF .6051 RTF .9826
SGB12656.5 R23 -.0146 R13 .9826
SG112646.4 SG2 505.9 THA 1.85

ORBIT DETERMINATION ACCURACY

ST 3524.9 SR 494.7 SS 954.6
CRT .9912 CRS -.8468 CST -.9019
LSA 3662.7 MSA 405.9 SSA 36.2
EL1 3558.9 EL2 64.9 ALF 7.92

LAUNCH DATE DEC 4 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 794.872 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.092 GAL -1.06 AZL 87.80 HCA 235.47 SMA 188.18 ECC .21728 INC 2.1970 V1 30.219
RP 208.76 LAP -1.81 LOP 307.33 VP 23.796 GAP -10.89 AZP 91.25 TAL 354.03 TAP 229.50 RCA 147.29 APO 229.07 V2 26.254
RC 314.784 GL 23.87 GP -4.50 ZAL 96.63 ZAP 40.11 ETS 173.77 ZAE 63.02 ETE 177.19 ZAC 80.62 ETC 257.34 CLP 39.90

PLANETOCENTRIC CONIC

C3 9.828 VHL 3.135 DLA 26.09 RAL 180.19 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 4.484 DPA 2.43 RAP 167.09 ECC 1.1617

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 7 56	3057.10	-27.61	100.57	38.74	83.46	14 58 53	2457.1	-28.23	91.96
90.00	10 51 4	3704.05	-15.25	143.58	35.11	65.85	11 52 48	3104.0	-18.39	136.31
100.00	15 56 53	2705.84	-29.70	74.93	38.95	86.43	16 41 59	2105.8	-29.88	66.13
100.00	11 44 47	3530.54	-13.36	129.90	34.18	63.01	12 43 38	2930.5	-16.88	122.88
110.00	17 54 5	2339.15	-34.08	47.12	38.99	92.85	18 33 4	1739.1	-33.31	37.96
110.00	12 4 5	3470.00	-9.57	123.09	31.94	57.03	13 1 55	2870.0	-13.85	116.60

DIFFERENTIAL CORRECTIONS

TDE 1.7170 TRA 2.0864 TC-18.5822 BAU 2.4418
RDE .2603 RRA .1972 RC3 -.2263 FAU .20253
FDE .8002 FRA 2.8863 FC-17.8399 BSP 44477
BDE 1.7367 BRA 2.0957 BC318.5836 FSP 3628

MID-COURSE EXECUTION ACCURACY

SGT12791.3 SGR 638.3 SG3 1098.9
RRT .5940 RRF .5715 RTF .9826
SGB12807.2 R23 -.0162 R13 .9826
SG112797.0 SG2 513.3 THA 1.70

ORBIT DETERMINATION ACCURACY

ST 3404.7 SR 490.8 SS 896.6
CRT .9861 CRS -.8006 CST -.8821
LSA 3529.7 MSA 419.9 SSA 36.4
EL1 3439.0 EL2 80.6 ALF 8.09

LAUNCH DATE DEC 4 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 799.202 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.098 GAL -1.20 AZL 87.83 HCA 236.71 SMA 188.30 ECC .21796 INC 2.1746 V1 30.219
RP 208.58 LAP -1.82 LOP 308.58 VP 23.828 GAP -10.99 AZP 91.19 TAL 353.28 TAP 229.99 RCA 147.25 APO 229.34 V2 26.274
RC 315.690 GL 23.53 GP -4.37 ZAL 98.06 ZAP 39.36 ETS 173.77 ZAE 61.98 ETE 177.18 ZAC 80.84 ETC 257.29 CLP 39.16

PLANETOCENTRIC CONIC

C3 9.890 VHL 3.145 DLA 25.17 RAL 181.43 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 4.552 DPA 2.34 RAP 167.60 ECC 1.1628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 31 15	2996.02	-28.01	96.14	39.91	85.65	15 21 11	2396.0	-28.32	87.49
90.00	10 37 42	3767.64	-13.45	147.38	35.82	64.84	11 40 30	3167.6	-16.73	140.24
100.00	16 16 2	2658.17	-29.85	71.39	40.02	88.29	17 0 20	2058.2	-29.77	62.59
100.00	11 35 36	3580.72	-11.80	132.80	34.98	62.33	12 35 17	2980.7	-15.41	125.88
110.00	18 8 23	2306.66	-33.94	44.59	39.91	94.33	18 46 50	1706.7	-32.97	35.49
110.00	11 59 44	3504.99	-8.27	124.96	32.87	56.71	12 58 9	2905.0	-12.59	118.53

DIFFERENTIAL CORRECTIONS

TDE 1.6290 TRA 2.2460 TC-18.6869 BAU 2.4710
RDE .2594 RRA .1979 RC3 -.1833 FAU .19375
FDE .6593 FRA 2.9029 FC-16.9597 BSP 45002
BDE 1.6495 BRA 2.2547 BC318.6878 FSP 3486

MID-COURSE EXECUTION ACCURACY

SGT12938.3 SGR 628.8 SG3 1056.0
RRT .5604 RRF .5369 RTF .9825
SGB12953.5 R23 -.0177 R13 .9825
SG112943.1 SG2 520.6 THA 1.56

ORBIT DETERMINATION ACCURACY

ST 3282.0 SR 487.5 SS 845.3
CRT .9787 CRS -.7429 CST -.8585
LSA 3396.0 MSA 435.9 SSA 36.5
EL1 3316.6 EL2 99.0 ALF 8.28

LAUNCH DATE DEC 4 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 803.533 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.105 GAL -1.34 AZL 87.85 HCA 237.96 SMA 188.41 ECC .21868 INC 2.1528 V1 30.219
RP 208.40 LAP -1.82 LOP 309.82 VP 23.859 GAP -11.09 AZP 91.14 TAL 352.52 TAP 230.48 RCA 147.21 APO 229.62 V2 26.294
RC 316.588 GL 23.19 GP -4.25 ZAL 99.51 ZAP 38.63 ETS 173.77 ZAE 60.96 ETE 177.16 ZAC 81.07 ETC 257.24 CLP 38.44

PLANETOCENTRIC CONIC

C3 9.967 VHL 3.157 DLA 24.25 RAL 182.69 RAD 6567.4 VEL 11.461 PTH 1.99 VHP 4.622 DPA 2.24 RAP 168.13 ECC 1.1640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 18	2942.21	-28.22	92.22	41.04	87.60	15 41 20	2342.2	-28.26	83.55
90.00	10 26 41	3824.52	-11.77	150.72	36.64	64.06	11 30 26	3224.5	-15.17	143.69
100.00	16 34 5	2614.03	-29.89	68.11	41.08	90.02	17 17 39	2014.0	-29.57	59.32
100.00	11 27 35	3627.93	-10.29	135.50	35.86	61.78	12 28 3	3027.9	-13.98	128.86
110.00	18 22 23	2275.20	-33.75	42.15	40.85	95.77	19 0 18	1675.2	-32.59	33.11
110.00	11 55 46	3539.52	-6.97	126.80	33.86	56.45	12 54 46	2939.5	-11.34	120.42

DIFFERENTIAL CORRECTIONS
TDE 1.5372 TRA 2.4114 TC-18.7644 BAU 2.5004
RDE .2592 RRA .1984 RC3 -.1428 FAU .18537
FDE .5276 FRA 2.9147 FC-16.1008 BSP 45504
BDE 1.5588 BRA 2.4196 BC318.7649 FSP 3352

MID-COURSE EXECUTION ACCURACY
SGT13084.2 SGR 620.7 SG3 1014.7
RRT .5265 RRF .5018 RTF .9825
SGB13098.9 R23 -.0192 R13 .9824
SG113088.3 SG2 527.6 THA 1.43

ORBIT DETERMINATION ACCURACY
ST 3159.4 SR 485.0 SS 802.5
CRT .9682 CRS -.6744 CST -.8324
LSA 3264.1 MSA 453.3 SSA 36.6
EL1 3194.2 EL2 120.1 ALF 8.47

LAUNCH DATE DEC 4 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 807.866 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.111 GAL -1.48 AZL 87.87 HCA 239.21 SMA 188.53 ECC .21943 INC 2.1315 V1 30.219
RP 208.24 LAP -1.83 LOP 311.07 VP 23.889 GAP -11.19 AZP 91.09 TAL 351.74 TAP 230.95 RCA 147.16 APO 229.90 V2 26.314
RC 317.480 GL 22.84 GP -4.13 ZAL 100.99 ZAP 37.93 ETS 173.77 ZAE 59.95 ETE 177.15 ZAC 81.29 ETC 257.18 CLP 37.73

PLANETOCENTRIC CONIC

C3 10.059 VHL 3.172 DLA 23.30 RAL 183.96 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 4.692 DPA 2.13 RAP 168.68 ECC 1.1656

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 50	2893.31	-28.31	88.65	42.16	89.39	16 0 3	2293.3	-28.10	79.99
90.00	10 17 15	3877.09	-10.19	153.77	37.54	63.44	11 21 52	3277.1	-13.68	146.83
100.00	16 51 18	2572.61	-29.85	65.04	42.14	91.63	17 34 11	1972.6	-29.31	56.27
100.00	11 20 28	3673.03	-8.83	138.05	36.82	61.32	12 21 41	3073.0	-12.59	131.28
110.00	18 36 7	2244.67	-33.52	39.80	41.81	97.14	19 13 32	1644.7	-32.17	30.85
110.00	11 52 8	3573.73	-5.68	128.60	34.90	56.24	12 51 42	2973.7	-10.08	122.27

DIFFERENTIAL CORRECTIONS
TDE 1.4425 TRA 2.5845 TC-18.8032 BAU 2.5288
RDE .2595 RRA .1988 RC3 -.1040 FAU .17710
FDE .4035 FRA 2.9258 FC-15.2420 BSP 46045
BDE 1.4656 BRA 2.5921 BC318.8035 FSP 3227

MID-COURSE EXECUTION ACCURACY
SGT13224.9 SGR 614.1 SG3 974.2
RRT .4922 RRF .4665 RTF .9823
SGB13239.1 R23 -.0203 R13 .9823
SG113228.3 SG2 534.4 THA 1.31

ORBIT DETERMINATION ACCURACY
ST 3040.4 SR 483.3 SS 768.8
CRT .9536 CRS -.5945 CST -.8041
LSA 3137.5 MSA 473.0 SSA 36.5
EL1 3075.3 EL2 143.8 ALF 8.64

LAUNCH DATE DEC 4 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 812.200 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.118 GAL -1.63 AZL 87.89 HCA 240.46 SMA 188.65 ECC .22023 INC 2.1107 V1 30.219
RP 208.08 LAP -1.84 LOP 312.32 VP 23.919 GAP -11.29 AZP 91.04 TAL 350.95 TAP 231.41 RCA 147.10 APO 230.20 V2 26.332
RC 318.367 GL 22.48 GP -4.02 ZAL 102.48 ZAP 37.23 ETS 173.76 ZAE 58.96 ETE 177.14 ZAC 81.52 ETC 257.13 CLP 37.05

PLANETOCENTRIC CONIC

C3 10.168 VHL 3.189 DLA 22.35 RAL 185.23 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 4.764 DPA 2.00 RAP 169.24 ECC 1.1673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 30 15	2848.03	-28.30	85.33	43.27	91.05	16 17 43	2248.0	-27.85	76.70
90.00	10 8 58	3926.66	-8.67	156.61	38.52	62.94	11 14 25	3326.7	-12.23	149.75
100.00	17 7 50	2533.39	-29.74	62.13	43.21	93.16	17 50 3	1933.4	-28.98	53.40
100.00	11 14 4	3716.54	-7.40	140.49	37.84	60.95	12 16 1	3116.5	-11.21	133.78
110.00	18 49 37	2214.98	-33.24	37.52	42.80	98.46	19 26 32	1615.0	-31.72	28.63
110.00	11 48 47	3607.71	-4.39	130.39	35.99	56.07	12 48 55	3007.7	-8.82	124.10

DIFFERENTIAL CORRECTIONS
TDE 1.3440 TRA 2.7639 TC-18.8093 BAU 2.5568
RDE .2606 RRA .1989 RC3 -.0673 FAU .16905
FDE .2875 FRA 2.9318 FC-14.3938 BSP 46552
BDE 1.3690 BRA 2.7710 BC318.8094 FSP 3098

MID-COURSE EXECUTION ACCURACY
SGT13362.4 SGR 608.6 SG3 934.4
RRT .4575 RRF .4310 RTF .9822
SGB13376.3 R23 -.0214 R13 .9822
SG113365.3 SG2 541.0 THA 1.20

ORBIT DETERMINATION ACCURACY
ST 2925.1 SR 482.3 SS 743.4
CRT .9341 CRS -.5054 CST -.7759
LSA 3016.0 MSA 494.0 SSA 36.3
EL1 2959.7 EL2 170.2 ALF 8.78

LAUNCH DATE DEC 4 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 816.535 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.125 GAL -1.78 AZL 87.91 HCA 241.71 SMA 188.77 ECC .22106 INC 2.0904 V1 30.219
RP 207.93 LAP -1.84 LOP 313.58 VP 23.947 GAP -11.38 AZP 90.99 TAL 350.15 TAP 231.86 RCA 147.04 APO 230.50 V2 26.349
RC 319.247 GL 22.11 GP -3.92 ZAL 103.99 ZAP 36.56 ETS 173.76 ZAE 57.99 ETE 177.13 ZAC 81.74 ETC 257.07 CLP 36.38

PLANETOCENTRIC CONIC

C3 10.293 VHL 3.208 DLA 21.38 RAL 186.50 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 4.836 DPA 1.86 RAP 169.81 ECC 1.1694

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 47 49	2805.58	-28.21	82.23	44.40	92.61	16 34 34	2205.6	-27.55	73.63
90.00	10 1 35	3974.04	-7.19	159.31	39.56	62.54	11 7 49	3374.0	-10.81	152.51
100.00	17 23 49	2496.02	-29.57	59.36	44.30	94.61	18 5 25	1896.0	-28.62	50.69
100.00	11 8 16	3758.83	-5.99	142.84	38.91	60.66	12 10 55	3158.8	-9.86	136.19
110.00	19 2 53	2186.09	-32.93	35.33	43.80	99.73	19 39 19	1586.1	-31.24	26.51
110.00	11 45 42	3641.53	-3.11	132.16	37.12	55.94	12 46 23	3041.5	-7.55	125.90

DIFFERENTIAL CORRECTIONS
TDE 1.2421 TRA 2.9488 TC-18.7855 BAU 2.5851
RDE .2621 RRA .1988 RC3 -.0329 FAU .16133
FDE .1781 FRA 2.9326 FC-13.5687 BSP 47051
BDE 1.2694 BRA 2.9555 BC318.7855 FSP 2977

MID-COURSE EXECUTION ACCURACY
SGT13498.3 SGR 604.1 SG3 896.0
RRT .4230 RRF .3954 RTF .9820
SGB13511.8 R23 -.0228 R13 .9820
SG113500.7 SG2 547.3 THA 1.09

ORBIT DETERMINATION ACCURACY
ST 2815.9 SR 481.9 SS 725.7
CRT .9084 CRS -.4086 CST -.7489
LSA 2901.8 MSA 516.5 SSA 36.0
EL1 2849.9 EL2 199.1 ALF 8.88

LAUNCH DATE DEC 4 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 820.870 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.132 GAL -1.93 AZL 87.93 HCA 242.97 SMA 188.89 ECC .22193 INC 2.0706 V1 30.219
RP 207.79 LAP -1.84 LOP 314.83 VP 23.975 GAP -11.48 AZP 90.94 TAL 349.33 TAP 232.30 RCA 146.97 APO 230.82 V2 26.366
RC 320.122 GL 21.74 GP -3.82 ZAL 105.52 ZAP 35.91 ETS 173.75 ZAE 57.04 ETE 177.12 ZAC 81.97 ETC 257.01 CLP 35.73

PLANETOCENTRIC CONIC

C3 10.437 VHL 3.231 DLA 20.40 RAL 187.78 RAD 6567.4 VEL 11.482 PTH 2.00 VHP 4.910 DPA 1.70 RAP 170.41 ECC 1.1718

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 40	2765.44	-28.05	79.31	45.53	94.07	16 50 46	2165.4	-27.19	70.74
90.00	9 54 56	4019.77	-5.75	161.90	40.67	62.23	11 1 55	3419.8	-9.42	155.14
100.00	17 39 19	2460.24	-29.34	56.72	45.40	95.98	18 20 19	1860.2	-28.21	48.11
100.00	11 2 58	3800.20	-4.61	145.13	40.04	60.43	12 6 18	3200.2	-8.51	138.52
110.00	19 15 56	2157.96	-32.59	33.20	44.84	100.94	19 51 54	1558.0	-30.74	24.47
110.00	11 42 50	3675.24	-1.82	133.92	38.31	55.86	12 44 5	3075.2	-6.29	127.69

DIFFERENTIAL CORRECTIONS

TDE 1.1371 TRA 3.1420 TC-18.7254 BAU 2.6128
RDE .2644 RRA .1985 RC3 -.0005 FAU .15378
FDE .0763 FRA 2.9322 FC-12.7556 BSP 47556
BDE 1.1674 BRA 3.1482 BC318.7254 FSP 2860

MID-COURSE EXECUTION ACCURACY

SGT13630.8 SGR 600.8 SG3 858.5
RRT .3887 RRF .3602 RTF .9818
SGB13644.0 R23 -.0239 R13 .9818
SG113632.8 SG2 553.4 THA .98

ORBIT DETERMINATION ACCURACY

ST 2716.6 SR 482.2 SS 716.2
CRT .8752 CRS -.3084 CST -.7264
LSA 2798.5 MSA 540.4 SSA 35.7
EL1 2749.4 EL2 230.4 ALF 8.89

LAUNCH DATE DEC 4 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 825.205 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.139 GAL -2.09 AZL 87.95 HCA 244.22 SMA 189.02 ECC .22284 INC 2.0511 V1 30.219
RP 207.66 LAP -1.85 LOP 316.09 VP 24.001 GAP -11.58 AZP 90.89 TAL 348.50 TAP 232.72 RCA 146.90 APO 231.14 V2 26.381
RC 320.992 GL 21.35 GP -3.72 ZAL 107.06 ZAP 35.27 ETS 173.74 ZAE 56.10 ETE 177.11 ZAC 82.19 ETC 256.95 CLP 35.10

PLANETOCENTRIC CONIC

C3 10.600 VHL 3.256 DLA 19.42 RAL 189.06 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 4.985 DPA 1.53 RAP 171.01 ECC 1.1744

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 20 57	2727.26	-27.83	76.53	46.68	95.44	17 6 24	2127.3	-26.79	68.02
90.00	9 48 51	4064.22	-4.33	164.40	41.83	61.99	10 56 36	3464.2	-8.05	157.68
100.00	17 54 24	2425.89	-29.07	54.21	46.52	97.28	18 34 50	1825.9	-27.76	45.65
100.00	10 58 5	3840.82	-3.24	147.37	41.23	60.27	12 2 6	3240.8	-7.17	140.79
110.00	19 28 48	2130.58	-32.22	31.15	45.90	102.10	20 4 18	1530.6	-30.22	22.51
110.00	11 40 11	3708.90	-.53	135.68	39.54	55.82	12 42 0	3108.9	-5.01	129.46

DIFFERENTIAL CORRECTIONS

TDE 1.0289 TRA 3.3413 TC-18.6311 BAU 2.6402
RDE .2672 RRA .1979 RC3 .0299 FAU .14641
FDE -.0188 FRA 2.9262 FC-11.9580 BSP 48057
BDE 1.0630 BRA 3.3471 BC318.6311 FSP 2744

MID-COURSE EXECUTION ACCURACY

SGT13759.6 SGR 598.2 SG3 821.7
RRT .3545 RRF .3251 RTF .9816
SGB13772.5 R23 -.0251 R13 .9816
SG113761.2 SG2 559.3 THA .88

ORBIT DETERMINATION ACCURACY

ST 2628.5 SR 483.0 SS 712.8
CRT .8335 CRS -.2074 CST -.7100
LSA 2707.5 MSA 564.6 SSA 35.2
EL1 2659.5 EL2 263.8 ALF 8.80

LAUNCH DATE DEC 4 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 829.540 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.146 GAL -2.25 AZL 87.97 HCA 245.48 SMA 189.14 ECC .22380 INC 2.0321 V1 30.219
RP 207.54 LAP -1.85 LOP 317.35 VP 24.027 GAP -11.68 AZP 90.84 TAL 347.65 TAP 233.13 RCA 146.81 APO 231.47 V2 26.396
RC 321.856 GL 20.96 GP -3.63 ZAL 108.62 ZAP 34.65 ETS 173.73 ZAE 55.18 ETE 177.10 ZAC 82.41 ETC 256.90 CLP 34.48

PLANETOCENTRIC CONIC

C3 10.783 VHL 3.284 DLA 18.42 RAL 190.34 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 5.061 DPA 1.36 RAP 171.63 ECC 1.1775

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 44	2690.78	-27.57	73.90	47.84	96.74	17 21 35	2090.8	-26.35	65.44
90.00	9 43 17	4107.66	-2.94	166.83	43.05	61.82	10 51 45	3507.7	-6.68	160.15
100.00	18 9 8	2392.82	-28.76	51.80	47.66	98.51	18 49 1	1792.8	-27.29	43.31
100.00	10 53 34	3880.85	-1.88	149.57	42.47	60.16	11 58 15	3280.9	-5.84	143.02
110.00	19 41 28	2103.91	-31.82	29.18	46.98	103.20	20 16 32	1503.9	-29.68	20.62
110.00	11 37 43	3742.52	.75	137.43	40.82	55.82	12 40 6	3142.5	-3.73	131.22

DIFFERENTIAL CORRECTIONS

TDE .9188 TRA 3.5476 TC-18.5026 BAU 2.6673
RDE .2706 RRA .1972 RC3 .0583 FAU .13921
FDE -.1053 FRA 2.9181 FC-11.1770 BSP 48549
BDE .9578 BRA 3.5531 BC318.5027 FSP 2634

MID-COURSE EXECUTION ACCURACY

SGT13885.0 SGR 596.6 SG3 785.8
RRT .3209 RRF .2909 RTF .9813
SGB13897.8 R23 -.0258 R13 .9812
SG113886.4 SG2 565.0 THA .79

ORBIT DETERMINATION ACCURACY

ST 2556.1 SR 484.5 SS 715.1
CRT .7827 CRS -.1112 CST -.7026
LSA 2633.1 MSA 587.9 SSA 34.7
EL1 2584.5 EL2 298.2 ALF 8.55

LAUNCH DATE DEC 4 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 833.873 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.153 GAL -2.41 AZL 87.99 HCA 246.74 SMA 189.27 ECC .22481 INC 2.0134 V1 30.219
RP 207.42 LAP -1.85 LOP 318.61 VP 24.052 GAP -11.79 AZP 90.80 TAL 346.79 TAP 233.53 RCA 146.72 APO 231.82 V2 26.409
RC 322.714 GL 20.55 GP -3.55 ZAL 110.18 ZAP 34.04 ETS 173.72 ZAE 54.27 ETE 177.10 ZAC 82.64 ETC 256.84 CLP 33.88

PLANETOCENTRIC CONIC

C3 10.987 VHL 3.315 DLA 17.42 RAL 191.62 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 5.138 DPA 1.17 RAP 172.27 ECC 1.1808

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 52 4	2655.84	-27.26	71.38	49.03	97.96	17 36 20	2055.8	-25.88	62.99
90.00	9 38 9	4150.28	-1.57	169.21	44.32	61.72	10 47 19	3550.3	-5.33	162.55
100.00	18 23 31	2360.95	-28.42	49.49	48.83	99.68	19 2 52	1761.0	-26.79	41.07
100.00	10 49 23	3920.40	-.54	151.74	43.75	60.11	11 54 43	3320.4	-4.52	145.21
110.00	19 53 57	2077.97	-31.40	27.27	48.10	104.26	20 28 35	1478.0	-29.12	18.81
110.00	11 35 26	3776.14	2.04	139.19	42.14	55.87	12 38 22	3176.1	-2.45	132.98

DIFFERENTIAL CORRECTIONS

TDE .8047 TRA 3.7609 TC-18.3440 BAU 2.6945
RDE .2746 RRA .1961 RC3 .0844 FAU .13227
FDE -.1878 FRA 2.9051 FC-10.4222 BSP 49041
BDE .8503 BRA 3.7660 BC318.3442 FSP 2525

MID-COURSE EXECUTION ACCURACY

SGT14008.7 SGR 595.5 SG3 750.9
RRT .2877 RRF .2568 RTF .9809
SGB14021.4 R23 -.0270 R13 .9809
SG114009.8 SG2 570.3 THA .70

ORBIT DETERMINATION ACCURACY

ST 2499.2 SR 486.5 SS 721.5
CRT .7217 CRS -.0175 CST -.7020
LSA 2574.7 MSA 610.7 SSA 34.0
EL1 2524.2 EL2 333.4 ALF 8.14

LAUNCH DATE DEC 4 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 838.205 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.160 GAL -2.58 AZL 88.00 HCA 248.00 SMA 189.40 ECC .22586 INC 1.9951 V1 30.219
RP 207.31 LAP -1.85 LOP 319.87 VP 24.075 GAP -11.89 AZP 90.75 TAL 345.92 TAP 233.92 RCA 146.62 APO 232.17 V2 26.422
RC 323.566 GL 20.14 GP -3.46 ZAL 111.75 ZAP 33.45 ETS 173.71 ZAE 53.38 ETE 177.09 ZAC 82.86 ETC 256.78 CLP 33.29

PLANETOCENTRIC CONIC

C3 11.214 VHL 3.349 DLA 16.41 RAL 192.89 RAD 6567.4 VEL 11.515 PTH 2.01 VHP 5.217 DPA .97 RAP 172.91 ECC 1.1845

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 1	2622.29	-26.93	68.99	50.24	99.12	17 50 43	2022.3	-25.39	60.66
90.00	9 33 22	4192.23	-.21	171.55	45.64	61.68	10 43 14	3592.2	-4.00	164.91
100.00	18 37 35	2330.21	-28.05	47.28	50.02	100.78	19 16 26	1730.2	-26.27	38.93
100.00	10 45 29	3959.55	.78	153.89	45.08	60.12	11 51 28	3359.6	-3.20	147.36
110.00	20 6 16	2052.76	-30.96	25.44	49.25	105.27	20 40 29	1452.8	-28.56	17.06
110.00	11 33 18	3809.76	3.32	140.94	43.50	55.96	12 36 47	3209.8	-1.17	134.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6888 TRA 3.9815 TC-18.1535 BAU 2.7215 SGT14129.5 SGR 595.2 SG3 717.0 ST 2462.0 SR 489.0 SS 730.9
RDE .2792 RRA .1948 RC3 .1085 FAU .12551 RRT .2553 RRF .2237 RTF .9805 CRT .6516 CRS .0675 CST -.7104
FDE -.2622 FRA 2.8893 FC3-9.6896 BSP 49526 SGB14142.0 R23 -.0280 R13 .9805 LSA 2537.0 MSA 630.3 SSA 33.3
BDE .7433 BRA 3.9863 BC318.1538 FSP 2420 SG114130.3 SG2 575.4 THA .62 EL1 2483.0 EL2 367.8 ALF 7.54

LAUNCH DATE DEC 4 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 842.536 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.167 GAL -2.75 AZL 88.02 HCA 249.26 SMA 189.52 ECC .22696 INC 1.9770 V1 30.219
RP 207.21 LAP -1.85 LOP 321.13 VP 24.098 GAP -11.99 AZP 90.70 TAL 345.03 TAP 234.29 RCA 146.51 APO 232.54 V2 26.434
RC 324.413 GL 19.73 GP -3.38 ZAL 113.32 ZAP 32.87 ETS 173.70 ZAE 52.50 ETE 177.08 ZAC 83.08 ETC 256.72 CLP 32.72

PLANETOCENTRIC CONIC

C3 11.464 VHL 3.386 DLA 15.40 RAL 194.17 RAD 6567.4 VEL 11.526 PTH 2.01 VHP 5.297 DPA .75 RAP 173.57 ECC 1.1887

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 36	2590.05	-26.56	66.70	51.48	100.21	18 4 46	1990.0	-24.88	58.43
90.00	9 28 55	4233.62	1.12	173.86	47.01	61.70	10 39 29	3633.6	-2.67	167.23
100.00	18 51 23	2300.53	-27.65	45.16	51.24	101.83	19 29 43	1700.5	-25.74	36.88
100.00	10 41 50	3990.37	2.10	156.02	46.46	60.17	11 48 28	3398.4	-1.88	149.50
110.00	20 18 24	2028.27	-30.51	23.67	50.42	106.22	20 52 12	1428.3	-27.99	15.39
110.00	11 31 18	3843.40	4.60	142.71	44.91	56.09	12 35 22	3243.4	.12	136.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5707 TRA 4.2104 TC-17.9301 BAU 2.7481 SGT14246.8 SGR 595.4 SG3 683.9 ST 2445.6 SR 491.9 SS 742.3
RDE .2844 RRA .1933 RC3 .1306 FAU .11890 RRT .2237 RRF .1911 RTF .9799 CRT .5731 CRS .1461 CST -.7248
FDE -.3314 FRA 2.8696 FC3-8.9790 BSP 50016 SGB14259.2 R23 -.0292 R13 .9799 LSA 2520.8 MSA 646.9 SSA 32.6
BDE .6376 BRA 4.2148 BC317.9306 FSP 2319 SG114247.4 SG2 580.3 THA .54 EL1 2462.2 EL2 400.4 ALF 6.75

LAUNCH DATE DEC 4 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 846.863 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.174 GAL -2.93 AZL 88.04 HCA 250.52 SMA 189.65 ECC .22811 INC 1.9592 V1 30.219
RP 207.12 LAP -1.85 LOP 322.40 VP 24.120 GAP -12.10 AZP 90.65 TAL 344.13 TAP 234.65 RCA 146.39 APO 232.92 V2 26.444
RC 325.253 GL 19.31 GP -3.31 ZAL 114.90 ZAP 32.31 ETS 173.69 ZAE 51.63 ETE 177.08 ZAC 83.31 ETC 256.66 CLP 32.16

PLANETOCENTRIC CONIC

C3 11.739 VHL 3.426 DLA 14.39 RAL 195.43 RAD 6567.4 VEL 11.538 PTH 2.01 VHP 5.377 DPA .53 RAP 174.25 ECC 1.1932

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 52	2559.03	-26.16	64.51	52.73	101.24	18 18 31	1959.0	-24.35	56.31
90.00	9 24 46	4274.55	2.44	176.14	48.42	61.78	10 36 0	3674.5	-1.35	169.51
100.00	19 4 54	2271.90	-27.24	43.14	52.48	102.82	19 42 46	1671.9	-25.20	34.93
100.00	10 38 25	4036.91	3.40	158.14	47.89	60.28	11 45 42	3436.9	-.58	151.61
110.00	20 30 21	2004.52	-30.05	21.98	51.62	107.12	21 3 45	1404.5	-27.41	13.78
110.00	11 29 27	3877.05	5.88	144.48	46.35	56.27	12 34 4	3277.1	1.40	138.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4502 TRA 4.4460 TC-17.6794 BAU 2.7747 SGT14361.5 SGR 596.1 SG3 651.7 ST 2449.8 SR 495.3 SS 754.4
RDE .2902 RRA .1914 RC3 .1507 FAU .11248 RRT .1928 RRF .1595 RTF .9793 CRT .4883 CRS .2164 CST -.7444
FDE -.3940 FRA 2.8464 FC3-8.2948 BSP 50502 SGB14373.9 R23 -.0302 R13 .9793 LSA 2526.0 MSA 658.9 SSA 31.8
BDE .5356 BRA 4.4501 BC317.6800 FSP 2220 SG114362.0 SG2 584.9 THA .46 EL1 2462.1 EL2 430.1 ALF 5.82

LAUNCH DATE DEC 4 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 851.188 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.182 GAL -3.11 AZL 88.06 HCA 251.79 SMA 189.78 ECC .22932 INC 1.9418 V1 30.219
RP 207.04 LAP -1.84 LOP 323.66 VP 24.140 GAP -12.20 AZP 90.61 TAL 343.21 TAP 235.00 RCA 146.26 APO 233.31 V2 26.454
RC 326.088 GL 18.88 GP -3.23 ZAL 116.48 ZAP 31.76 ETS 173.68 ZAE 50.78 ETE 177.07 ZAC 83.53 ETC 256.61 CLP 31.61

PLANETOCENTRIC CONIC

C3 12.041 VHL 3.470 DLA 13.38 RAL 196.69 RAD 6567.5 VEL 11.551 PTH 2.02 VHP 5.459 DPA .30 RAP 174.93 ECC 1.1982

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 49 49	2529.18	-25.75	62.43	54.02	102.20	18 31 58	1929.2	-23.81	54.29
90.00	9 20 51	4315.06	3.74	178.41	49.87	61.91	10 32 47	3715.1	-.04	171.77
100.00	19 18 9	2244.28	-26.80	41.20	53.75	103.75	19 55 33	1644.3	-24.65	33.06
100.00	10 35 12	4075.20	4.69	160.25	49.35	60.44	11 43 7	3475.2	.72	153.71
110.00	20 42 8	1981.52	-29.57	20.35	52.85	107.98	21 15 9	1381.5	-26.83	12.24
110.00	11 27 43	3910.72	7.15	146.26	47.84	56.48	12 32 54	3310.7	2.69	140.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3272 TRA 4.6894 TC-17.4031 BAU 2.8016 SGT14474.6 SGR 597.2 SG3 620.4 ST 2474.8 SR 499.0 SS 766.3
RDE .2965 RRA .1892 RC3 .1688 FAU .10626 RRT .1627 RRF .1285 RTF .9787 CRT .3994 CRS .2797 CST -.7667
FDE -.4509 FRA 2.8186 FC3-7.6399 BSP 50966 SGB14486.9 R23 -.0314 R13 .9787 LSA 2552.6 MSA 666.3 SSA 31.0
BDE .4416 BRA 4.6932 BC317.4039 FSP 2123 SG114474.9 SG2 589.2 THA .39 EL1 2483.1 EL2 456.0 ALF 4.77

LAUNCH DATE DEC 4 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 895.509 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.189 GAL -3.29 AZL 88.08 HCA 253.05 SMA 189.92 ECC .23058 INC 1.9245 V1 30.219
RP 206.96 LAP -1.84 LOP 324.93 VP 24.160 GAP -12.31 AZP 90.56 TAL 342.28 TAP 235.34 RCA 146.13 APO 233.71 V2 26.463
RC 326.917 GL 18.44 GP -3.16 ZAL 118.05 ZAP 31.23 ETS 173.66 ZAE 49.94 ETE 177.06 ZAC 83.75 ETC 256.55 CLP 31.08

PLANETOCENTRIC CONIC

C3 12.371 VHL 3.517 DLA 12.38 RAL 197.94 RAD 6567.5 VEL 11.565 PTH 2.02 VHP 5.543 DPA .06 RAP 175.63 ECC 1.2036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 28	2500.46	-25.32	60.43	55.33	103.12	18 45 8	1900.5	-23.27	52.36
90.00	9 17 11	4355.22	5.03	180.66	51.37	62.10	10 29 46	3755.2	1.26	174.01
100.00	19 31 9	2217.65	-26.36	39.35	55.04	104.63	20 8 7	1617.7	-24.09	31.28
100.00	10 32 11	4113.26	5.97	162.36	50.86	60.65	11 40 44	3513.3	2.01	155.80
110.00	20 53 44	1959.28	-29.10	18.80	54.11	108.79	21 26 23	1359.3	-26.26	10.77
110.00	11 26 6	3944.39	8.41	148.05	49.36	56.74	12 31 50	3344.4	3.97	141.77

DIFFERENTIAL CORRECTIONS
TDE .2018 TRA 4.9392 TC-17.1015 BAU 2.8285
RDE .3035 RRA .1867 RC3 .1848 FAU .10024
FDE -.5028 FRA 2.7873 FC3-7.0149 BSP 51427
BDE .3644 BRA 4.9427 BC317.1025 FSP 2028

MID-COURSE EXECUTION ACCURACY
SGT14583.6 SGR 598.6 SG3 590.0
RRT .1334 RRF .0982 RTF .9779
SGB14595.9 R23 -.0327 R13 .9779
SG114583.8 SG2 593.2 THA .31

ORBIT DETERMINATION ACCURACY
ST 2519.0 SR 503.1 SS 777.8
CRT .3093 CRS .3368 CST -.7896
LSA 2598.9 MSA 669.4 SSA 30.2
EL1 2524.0 EL2 477.5 ALF 3.67

LAUNCH DATE DEC 4 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 859.825 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.196 GAL -3.48 AZL 88.09 HCA 254.32 SMA 190.05 ECC .23190 INC 1.9074 V1 30.219
RP 206.89 LAP -1.84 LOP 326.20 VP 24.179 GAP -12.42 AZP 90.52 TAL 341.34 TAP 235.66 RCA 145.98 APO 234.12 V2 26.471
RC 327.742 GL 18.01 GP -3.10 ZAL 119.62 ZAP 30.71 ETS 173.65 ZAE 49.12 ETE 177.05 ZAC 83.98 ETC 256.49 CLP 30.57

PLANETOCENTRIC CONIC

C3 12.730 VHL 3.568 DLA 11.38 RAL 199.18 RAD 6567.5 VEL 11.581 PTH 2.03 VHP 5.627 DPA -.19 RAP 176.34 ECC 1.2095

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 16 51	2472.85	-24.88	58.53	56.66	103.97	18 58 3	1872.8	-22.72	50.53
90.00	9 13 43	4395.05	6.29	182.90	52.92	62.33	10 26 59	3795.0	2.54	176.23
100.00	19 43 55	2192.00	-25.91	37.57	56.36	105.46	20 20 27	1592.0	-23.53	29.58
100.00	10 29 20	4151.12	7.22	164.46	52.41	60.92	11 38 31	3551.1	3.29	157.88
110.00	21 5 9	1937.82	-28.62	17.31	55.40	109.55	21 37 27	1337.8	-25.68	9.36
110.00	11 24 35	3978.07	9.66	149.85	50.93	57.05	12 30 53	3378.1	5.25	143.53

DIFFERENTIAL CORRECTIONS
TDE .0756 TRA 5.1978 TC-16.7804 BAU 2.8560
RDE .3110 RRA .1839 RC3 .1990 FAU .09437
FDE -.5485 FRA 2.7520 FC3-6.4179 BSP 51893
BDE .3201 BRA 5.2010 BC316.7815 FSP 1937

MID-COURSE EXECUTION ACCURACY
SGT14693.0 SGR 600.3 SG3 560.4
RRT .1049 RRF .0688 RTF .9770
SGB14705.3 R23 -.0341 R13 .9770
SG114693.2 SG2 597.0 THA .25

ORBIT DETERMINATION ACCURACY
ST 2582.3 SR 507.6 SS 787.6
CRT .2213 CRS .3871 CST -.8121
LSA 2664.3 MSA 668.4 SSA 29.4
EL1 2584.8 EL2 494.5 ALF 2.59

LAUNCH DATE DEC 4 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 864.137 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.204 GAL -3.67 AZL 88.11 HCA 255.59 SMA 190.18 ECC .23328 INC 1.8906 V1 30.219
RP 206.84 LAP -1.83 LOP 327.46 VP 24.196 GAP -12.54 AZP 90.47 TAL 340.38 TAP 235.97 RCA 145.82 APO 234.55 V2 26.477
RC 328.562 GL 17.57 GP -3.03 ZAL 121.18 ZAP 30.20 ETS 173.63 ZAE 48.31 ETE 177.05 ZAC 84.21 ETC 256.44 CLP 30.06

PLANETOCENTRIC CONIC

C3 13.120 VHL 3.622 DLA 10.38 RAL 200.42 RAD 6567.5 VEL 11.598 PTH 2.03 VHP 5.714 DPA -.45 RAP 177.06 ECC 1.2159

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 57	2446.30	-24.43	56.71	58.02	104.78	19 10 43	1846.3	-22.17	48.78
90.00	9 10 27	4434.59	7.54	185.14	54.50	62.62	10 24 22	3834.6	3.81	178.45
100.00	19 56 27	2167.33	-25.45	35.88	57.71	106.24	20 32 34	1567.3	-22.98	27.96
100.00	10 26 38	4188.79	8.47	166.57	54.00	61.22	11 36 27	3588.8	4.56	159.96
110.00	21 16 24	1917.15	-28.14	15.89	56.72	110.26	21 48 21	1317.2	-25.12	8.02
110.00	11 23 11	4011.74	10.90	151.67	52.54	57.40	12 30 3	3411.7	6.53	145.31

DIFFERENTIAL CORRECTIONS
TDE -.0528 TRA 5.4638 TC-16.4358 BAU 2.8832
RDE .3191 RRA .1808 RC3 .2114 FAU .08866
FDE -.5892 FRA 2.7131 FC3-5.8503 BSP 52329
BDE .3235 BRA 5.4668 BC316.4372 FSP 1847

MID-COURSE EXECUTION ACCURACY
SGT14797.9 SGR 602.3 SG3 531.7
RRT .0774 RRF .0402 RTF .9760
SGB14810.2 R23 -.0355 R13 .9760
SG114798.0 SG2 600.5 THA .18

ORBIT DETERMINATION ACCURACY
ST 2661.4 SR 512.3 SS 795.7
CRT .1365 CRS .4322 CST -.8331
LSA 2745.2 MSA 664.2 SSA 28.6
EL1 2662.3 EL2 507.3 ALF 1.56

LAUNCH DATE DEC 4 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 868.444 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.211 GAL -3.87 AZL 88.13 HCA 256.85 SMA 190.32 ECC .23473 INC 1.8739 V1 30.219
RP 206.79 LAP -1.82 LOP 328.73 VP 24.213 GAP -12.65 AZP 90.43 TAL 339.41 TAP 236.27 RCA 145.65 APO 234.99 V2 26.483
RC 329.378 GL 17.12 GP -2.97 ZAL 122.73 ZAP 29.71 ETS 173.61 ZAE 47.50 ETE 177.04 ZAC 84.43 ETC 256.39 CLP 29.57

PLANETOCENTRIC CONIC

C3 13.543 VHL 3.680 DLA 9.39 RAL 201.64 RAD 6567.5 VEL 11.616 PTH 2.04 VHP 5.801 DPA -.71 RAP 177.79 ECC 1.2229

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 48	2420.82	-23.98	54.98	59.41	105.53	19 23 9	1820.8	-21.62	47.11
90.00	9 7 21	4473.85	8.76	187.38	56.13	62.96	10 21 55	3873.8	5.06	180.65
100.00	20 8 45	2143.62	-24.99	34.27	59.09	106.96	20 44 29	1543.6	-22.43	26.41
100.00	10 24 6	4226.28	9.69	168.68	55.63	61.58	11 34 32	3626.3	5.82	162.03
110.00	21 27 28	1897.28	-27.66	14.54	58.06	110.93	21 59 6	1297.3	-24.56	6.75
110.00	11 21 52	4045.38	12.13	153.50	54.18	57.79	12 29 17	3445.4	7.79	147.09

DIFFERENTIAL CORRECTIONS
TDE -.1831 TRA 5.7372 TC-16.0765 BAU 2.9111
RDE .3278 RRA .1773 RC3 .2220 FAU .08312
FDE -.6257 FRA 2.6699 FC3-5.3135 BSP 52751
BDE .3755 BRA 5.7400 BC316.0780 FSP 1758

MID-COURSE EXECUTION ACCURACY
SGT14901.7 SGR 604.5 SG3 503.8
RRT .0505 RRF .0122 RTF .9748
SGB14914.0 R23 -.0372 R13 .9748
SG114901.7 SG2 603.8 THA .12

ORBIT DETERMINATION ACCURACY
ST 2753.9 SR 517.2 SS 802.0
CRT .0567 CRS .4732 CST -.8515
LSA 2839.2 MSA 658.0 SSA 27.8
EL1 2754.1 EL2 516.4 ALF .63

LAUNCH DATE DEC 4 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 872.744 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.219 GAL -4.07 AZL 88.14 HCA 258.12 SMA 190.45 ECC .23623 INC 1.8574 V1 30.219
RP 206.75 LAP -1.82 LOP 330.00 VP 24.228 GAP -12.77 AZP 90.38 TAL 338.43 TAP 236.55 RCA 145.46 APO 235.45 V2 26.488
RC 330.190 GL 16.68 GP -2.91 ZAL 124.27 ZAP 29.22 ETS 173.60 ZAE 46.72 ETE 177.03 ZAC 84.66 ETC 256.34 CLP 29.09

PLANETOCENTRIC CONIC

C3 14.001 VHL 3.742 DLA 8.41 RAL 202.85 RAD 6567.6 VEL 11.636 PTH 2.04 VHP 5.890 DPA -.99 RAP 178.53 ECC 1.2304

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 25	2396.38	-23.52	53.34	60.82	106.23	19 35 21	1796.4	-21.08	45.52
90.00	9 4 25	4512.85	9.96	189.62	57.79	63.35	10 19 38	3912.9	6.30	182.85
100.00	20 20 50	2120.88	-24.53	32.74	60.49	107.65	20 56 11	1520.9	-21.88	24.94
100.00	10 21 41	4263.59	10.89	170.80	57.30	61.99	11 32 45	3663.6	7.06	164.11
110.00	21 38 22	1878.23	-27.19	13.26	59.43	111.56	22 9 40	1278.2	-24.02	5.53
110.00	11 20 38	4079.00	13.34	155.35	55.86	58.23	12 28 37	3479.0	9.05	148.89

DIFFERENTIAL CORRECTIONS
TDE -.3148 TRA 6.0187 TC-15.6997 BAU 2.9391
RDE .3370 RRA .1735 RC3 .2309 FAU .07774
FDE -.6567 FRA 2.6233 FC3-4.8065 BSP 53173
BDE .4612 BRA 6.0212 BC315.7014 FSP 1673

MID-COURSE EXECUTION ACCURACY
SGT15002.2 SGR 606.9 SG3 476.7
RRT .0245 RRF -.0149 RTF .9735
SGB15014.5 R23 -.0388 R13 .9735
SG115002.2 SG2 606.7 THA .06

ORBIT DETERMINATION ACCURACY
ST 2857.9 SR 522.4 SS 805.7
CRT -.0170 CRS .5095 CST -.8680
LSA 2943.9 MSA 649.9 SSA 27.1
EL1 2857.9 EL2 522.3 ALF 179.82

LAUNCH DATE DEC 4 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 877.037 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.226 GAL -4.28 AZL 88.16 HCA 259.39 SMA 190.59 ECC .23781 INC 1.8410 V1 30.219
RP 206.71 LAP -1.81 LOP 331.27 VP 24.243 GAP -12.89 AZP 90.34 TAL 337.43 TAP 236.82 RCA 145.27 APO 235.91 V2 26.492
RC 331.000 GL 16.24 GP -2.86 ZAL 125.80 ZAP 28.75 ETS 173.58 ZAE 45.94 ETE 177.02 ZAC 84.89 ETC 256.29 CLP 28.62

PLANETOCENTRIC CONIC

C3 14.496 VHL 3.807 DLA 7.44 RAL 204.05 RAD 6567.6 VEL 11.657 PTH 2.05 VHP 5.980 DPA -1.27 RAP 179.28 ECC 1.2386

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 46	2372.97	-23.07	51.77	62.26	106.89	19 47 19	1773.0	-20.54	44.01
90.00	9 1 38	4551.60	11.13	191.86	59.50	63.79	10 17 30	3951.6	7.52	185.04
100.00	20 32 41	2099.10	-24.07	31.28	61.91	108.28	21 7 40	1499.1	-21.35	23.55
100.00	10 19 24	4300.71	12.07	172.93	59.01	62.44	11 31 5	3700.7	8.28	166.18
110.00	21 49 5	1860.00	-26.73	12.05	60.83	112.15	22 20 5	1260.0	-23.49	4.38
110.00	11 19 30	4112.57	14.54	157.22	57.58	58.72	12 28 2	3512.6	10.29	150.69

DIFFERENTIAL CORRECTIONS
TDE -.4485 TRA 6.3080 TC-15.3130 BAU 2.9681
RDE .3469 RRA .1693 RC3 .2383 FAU .07251
FDE -.6836 FRA 2.5724 FC3-4.3301 BSP 53575
BDE .5669 BRA 6.3103 BC315.3149 FSP 1588

MID-COURSE EXECUTION ACCURACY
SGT15102.0 SGR 609.4 SG3 450.4
RRT -.0009 RRF -.0416 RTF .9720
SGB15114.3 R23 .0407 R13 -.9720
SG115102.0 SG2 609.4 THA 180.00

ORBIT DETERMINATION ACCURACY
ST 2970.9 SR 527.7 SS 807.1
CRT -.0847 CRS .5426 CST -.8819
LSA 3056.8 MSA 640.9 SSA 26.4
EL1 2971.2 EL2 525.7 ALF 179.11

LAUNCH DATE DEC 4 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 881.323 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.234 GAL -4.49 AZL 88.18 HCA 260.66 SMA 190.73 ECC .23946 INC 1.8248 V1 30.219
RP 206.69 LAP -1.80 LOP 332.54 VP 24.256 GAP -13.01 AZP 90.30 TAL 336.42 TAP 237.08 RCA 145.06 APO 236.40 V2 26.494
RC 331.806 GL 15.79 GP -2.80 ZAL 127.32 ZAP 28.29 ETS 173.56 ZAE 45.17 ETE 177.01 ZAC 85.12 ETC 256.24 CLP 28.17

PLANETOCENTRIC CONIC

C3 15.030 VHL 3.877 DLA 6.48 RAL 205.24 RAD 6567.6 VEL 11.680 PTH 2.05 VHP 6.072 DPA -1.56 RAP 180.04 ECC 1.2474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 54	2350.58	-22.62	50.29	63.72	107.50	19 59 5	1750.6	-20.01	42.58
90.00	8 58 59	4590.11	12.28	194.11	61.24	64.28	10 15 29	3990.1	8.72	187.23
100.00	20 44 20	2078.27	-23.62	29.90	63.36	108.88	21 18 58	1478.3	-20.82	22.22
100.00	10 17 15	4337.65	13.22	175.06	60.76	62.94	11 29 32	3737.7	9.49	168.26
110.00	21 59 38	1842.60	-26.28	10.90	62.25	112.69	22 30 20	1242.6	-22.97	3.30
110.00	11 18 26	4146.08	15.71	159.10	59.34	59.24	12 27 32	3546.1	11.52	152.51

DIFFERENTIAL CORRECTIONS
TDE -.5829 TRA 6.6046 TC-14.9166 BAU 2.9977
RDE .3572 RRA .1648 RC3 .2442 FAU .06743
FDE -.7059 FRA 2.5171 FC3-3.8843 BSP 53945
BDE .6836 BRA 6.6067 BC314.9186 FSP 1505

MID-COURSE EXECUTION ACCURACY
SGT15199.3 SGR 612.1 SG3 424.8
RRT -.0255 RRF -.0676 RTF .9703
SGB15211.6 R23 .0429 R13 -.9703
SG115199.3 SG2 611.9 THA 179.94

ORBIT DETERMINATION ACCURACY
ST 3090.0 SR 533.0 SS 805.6
CRT -.1457 CRS .5726 CST -.8936
LSA 3175.2 MSA 631.5 SSA 25.6
EL1 3091.0 EL2 527.2 ALF 178.52

LAUNCH DATE DEC 4 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 885.600 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.241 GAL -4.71 AZL 88.19 HCA 261.93 SMA 190.87 ECC .24118 INC 1.8087 V1 30.219
RP 206.68 LAP -1.79 LOP 333.81 VP 24.268 GAP -13.14 AZP 90.25 TAL 335.39 TAP 237.32 RCA 144.83 APO 236.90 V2 26.496
RC 332.609 GL 15.35 GP -2.75 ZAL 128.81 ZAP 27.85 ETS 173.54 ZAE 44.42 ETE 177.00 ZAC 85.35 ETC 256.19 CLP 27.72

PLANETOCENTRIC CONIC

C3 15.605 VHL 3.950 DLA 5.54 RAL 206.42 RAD 6567.6 VEL 11.704 PTH 2.06 VHP 6.165 DPA -1.86 RAP 180.81 ECC 1.2568

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 48	2329.20	-22.17	48.88	65.20	108.08	20 10 37	1729.2	-19.50	41.22
90.00	8 56 28	4628.37	13.40	196.36	63.02	64.82	10 13 36	4028.4	9.90	189.43
100.00	20 55 45	2058.39	-23.17	28.59	64.83	109.43	21 30 4	1458.4	-20.31	20.96
100.00	10 15 11	4374.41	14.35	177.21	62.55	63.49	11 28 6	3774.4	10.67	170.35
110.00	22 10 0	1826.05	-25.84	9.81	63.69	113.20	22 40 26	1226.0	-22.47	2.27
110.00	11 17 26	4179.52	16.87	161.01	61.14	59.82	12 27 6	3579.5	12.73	154.34

DIFFERENTIAL CORRECTIONS
TDE -.7182 TRA 6.9116 TC-14.5057 BAU 3.0267
RDE .3681 RRA .1599 RC3 .2487 FAU .06246
FDE -.7235 FRA 2.4594 FC3-3.4654 BSP 54326
BDE .8070 BRA 6.9135 BC314.5079 FSP 1424

MID-COURSE EXECUTION ACCURACY
SGT15292.7 SGR 614.8 SG3 400.1
RRT -.0491 RRF -.0925 RTF .9683
SGB15305.0 R23 .0449 R13 -.9683
SG115292.7 SG2 614.1 THA 179.89

ORBIT DETERMINATION ACCURACY
ST 3214.5 SR 538.5 SS 801.5
CRT -.2005 CRS .5993 CST -.9035
LSA 3298.1 MSA 621.9 SSA 25.0
EL1 3216.3 EL2 527.3 ALF 178.02

LAUNCH DATE DEC 4 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 889.869 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.249 GAL -4.93 AZL 88.21 HCA 263.20 SMA 191.01 ECC .24297 INC 1.7927 V1 30.219
RP 206.67 LAP -1.78 LOP 335.08 VP 24.280 GAP -13.27 AZP 90.21 TAL 334.36 TAP 237.56 RCA 144.60 APO 237.42 V2 26.497
RC 333.409 GL 14.91 GP -2.70 ZAL 130.30 ZAP 27.41 ETS 173.52 ZAE 43.68 ETE 176.99 ZAC 85.58 ETC 256.15 CLP 27.29

PLANETOCENTRIC CONIC

C3 16.223 VHL 4.028 DLA 4.61 RAL 207.58 RAD 6567.7 VEL 11.731 PTH 2.07 VHP 6.261 DPA -2.16 RAP 181.59 ECC 1.2670

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 28	2308.81	-21.74	47.54	66.71	108.61	20 21 57	1708.8	-19.00	39.94
90.00	8 54 4	4666.40	14.49	198.62	64.84	65.40	10 11 50	4066.4	11.05	191.63
100.00	21 6 59	2039.46	-22.74	27.35	66.33	109.94	21 40 58	1439.5	-19.82	19.78
100.00	10 13 14	4410.98	15.45	179.37	64.37	64.09	11 26 45	3811.0	11.84	172.44
110.00	22 20 11	1810.34	-25.41	8.79	65.16	113.67	22 50 21	1210.3	-21.99	1.30
110.00	11 16 31	4212.86	18.00	162.93	62.97	60.44	12 26 44	3612.9	13.93	156.19

DIFFERENTIAL CORRECTIONS
TDE -.8555 TRA 7.2257 TC-14.0979 BAU 3.0582
RDE .3796 RRA .1545 RC3 .2519 FAU .05768
FDE -.7380 FRA 2.3963 FC3-3.0781 BSP 54663
BDE .9359 BRA 7.2274 BC314.1001 FSP 1344

MID-COURSE EXECUTION ACCURACY
SGT15388.0 SGR 617.5 SG3 376.1
RRT -.0723 RRF -.1174 RTF .9660
SGB15400.4 R23 .0476 R13 -.9660
SG115388.1 SG2 615.9 THA 179.83

ORBIT DETERMINATION ACCURACY
ST 3341.7 SR 544.0 SS 795.0
CRT -.2500 CRS .6246 CST -.9115
LSA 3423.3 MSA 612.7 SSA 24.3
EL1 3344.6 EL2 526.3 ALF 177.61

LAUNCH DATE DEC 4 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 894.127 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.257 GAL -5.16 AZL 88.22 HCA 264.47 SMA 191.15 ECC .24485 INC 1.7767 V1 30.219
RP 206.67 LAP -1.77 LOP 336.35 VP 24.290 GAP -13.40 AZP 90.17 TAL 333.31 TAP 237.77 RCA 144.34 APO 237.95 V2 26.497
RC 334.204 GL 14.47 GP -2.65 ZAL 131.76 ZAP 26.99 ETS 173.49 ZAE 42.94 ETE 176.97 ZAC 85.81 ETC 256.11 CLP 26.87

PLANETOCENTRIC CONIC

C3 16.887 VHL 4.109 DLA 3.69 RAL 208.73 RAD 6567.7 VEL 11.759 PTH 2.08 VHP 6.357 DPA -2.47 RAP 182.38 ECC 1.2779

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 54 55	2289.41	-21.31	46.28	68.23	109.10	20 33 5	1689.4	-18.51	38.72
90.00	8 51 46	4704.18	15.55	200.89	66.69	66.03	10 10 11	4104.2	12.18	193.83
100.00	21 18 0	2021.46	-22.32	26.18	67.84	110.42	21 51 41	1421.5	-19.34	18.66
100.00	10 11 23	4447.35	16.52	181.54	66.23	64.73	11 25 31	3847.4	12.98	174.54
110.00	22 30 12	1795.47	-25.00	7.83	66.64	114.11	23 0 7	1195.5	-21.53	.39
110.00	11 15 40	4246.11	19.10	164.88	64.84	61.10	12 26 26	3646.1	15.10	158.05

DIFFERENTIAL CORRECTIONS
TDE -.9931 TRA 7.5484 TC-13.6816 BAU 3.0894
RDE .3916 RRA .1488 RC3 .2539 FAU .05301
FDE -.7481 FRA 2.3294 FC3-2.7176 BSP 54991
BDE 1.0675 BRA 7.5498 BC313.6839 FSP 1266

MID-COURSE EXECUTION ACCURACY
SGT15478.5 SGR 620.3 SG3 352.7
RRT -.0947 RRF -.1416 RTF .9634
SGB15490.9 R23 .0505 R13 -.9634
SG115478.6 SG2 617.5 THA 179.78

ORBIT DETERMINATION ACCURACY
ST 3470.0 SR 549.5 SS 785.6
CRT -.2940 CRS .6475 CST -.9180
LSA 3548.9 MSA 603.8 SSA 23.7
EL1 3473.8 EL2 524.6 ALF 177.27

LAUNCH DATE DEC 4 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 898.374 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.264 GAL -5.39 AZL 88.24 HCA 265.74 SMA 191.29 ECC .24681 INC 1.7609 V1 30.219
RP 206.68 LAP -1.76 LOP 337.62 VP 24.299 GAP -13.54 AZP 90.13 TAL 332.24 TAP 237.98 RCA 144.08 APO 238.50 V2 26.495
RC 334.996 GL 14.04 GP -2.61 ZAL 133.20 ZAP 26.57 ETS 173.47 ZAE 42.22 ETE 176.96 ZAC 86.04 ETC 256.07 CLP 26.46

PLANETOCENTRIC CONIC

C3 17.600 VHL 4.195 DLA 2.79 RAL 209.86 RAD 6567.7 VEL 11.789 PTH 2.08 VHP 6.456 DPA -2.79 RAP 183.18 ECC 1.2897

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 10	2270.98	-20.90	45.09	69.78	109.56	20 44 1	1671.0	-18.04	37.58
90.00	8 49 35	4741.72	16.57	203.17	68.58	66.71	10 8 37	4141.7	13.28	196.04
100.00	21 28 48	2004.40	-21.91	25.08	69.38	110.86	22 2 13	1404.4	-18.87	17.60
100.00	10 9 38	4483.53	17.56	183.72	68.12	65.41	11 24 21	3883.5	14.09	176.64
110.00	22 40 2	1781.45	-24.61	6.93	68.15	114.51	23 9 44	1181.4	-21.09	359.54
110.00	11 14 53	4279.25	20.18	166.84	66.75	61.81	12 26 12	3679.2	16.26	159.92

DIFFERENTIAL CORRECTIONS
TDE-1.1315 TRA 7.8796 TC-13.2642 BAU 3.1217
RDE .4041 RRA .1427 RC3 .2548 FAU .04845
FDE -.7545 FRA 2.2591 FC3-2.3832 BSP 55318
BDE 1.2015 BRA 7.8809 BC313.2666 FSP 1190

MID-COURSE EXECUTION ACCURACY
SGT15567.1 SGR 623.1 SG3 330.2
RRT -.1165 RRF -.1652 RTF .9604
SGB15579.5 R23 .0535 R13 -.9604
SG115567.2 SG2 618.9 THA 179.73

ORBIT DETERMINATION ACCURACY
ST 3598.2 SR 555.0 SS 773.7
CRT -.3334 CRS .6687 CST -.9232
LSA 3674.0 MSA 595.3 SSA 23.1
EL1 3603.0 EL2 522.5 ALF 176.99

LAUNCH DATE DEC 4 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 902.609 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.272 GAL -5.63 AZL 88.25 HCA 267.01 SMA 191.43 ECC .24885 INC 1.7451 V1 30.219
RP 206.70 LAP -1.74 LOP 338.89 VP 24.307 GAP -13.68 AZP 90.09 TAL 331.17 TAP 238.17 RCA 143.79 APO 239.07 V2 26.493
RC 335.784 GL 13.61 GP -2.56 ZAL 134.62 ZAP 26.17 ETS 173.45 ZAE 41.51 ETE 176.94 ZAC 86.27 ETC 256.03 CLP 26.06

PLANETOCENTRIC CONIC

C3 18.365 VHL 4.285 DLA 1.91 RAL 210.98 RAD 6567.7 VEL 11.821 PTH 2.09 VHP 6.556 DPA -3.11 RAP 183.98 ECC 1.3022

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 17 12	2253.51	-20.49	43.96	71.35	109.98	20 54 45	1653.5	-17.59	36.49
90.00	8 47 30	4779.02	17.56	205.46	70.50	67.42	10 7 9	4179.0	14.35	198.25
100.00	21 39 25	1988.26	-21.51	24.05	70.94	111.27	22 12 34	1388.3	-18.43	16.61
100.00	10 7 57	4519.49	18.56	185.92	70.05	66.14	11 23 17	3919.5	15.18	178.76
110.00	22 49 43	1768.27	-24.24	6.09	69.68	114.88	23 19 11	1168.3	-20.68	358.75
110.00	11 14 9	4312.25	21.23	168.83	68.69	62.56	12 26 2	3712.3	17.39	161.81

DIFFERENTIAL CORRECTIONS
TDE-1.2720 TRA 8.2188 TC-12.8483 BAU 3.1552
RDE .4171 RRA .1362 RC3 .2547 FAU .04403
FDE -.7576 FRA 2.1844 FC3-2.0754 BSP 55590
BDE 1.3386 BRA 8.2199 BC312.8509 FSP 1115

MID-COURSE EXECUTION ACCURACY
SGT15653.7 SGR 626.0 SG3 308.3
RRT -.1377 RRF -.1884 RTF .9568
SGB15666.2 R23 .0570 R13 -.9568
SG115654.0 SG2 620.0 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 3725.7 SR 560.4 SS 759.4
CRT -.3689 CRS .6886 CST -.9273
LSA 3798.1 MSA 587.2 SSA 22.6
EL1 3731.5 EL2 520.0 ALF 176.76

LAUNCH DATE DEC 4 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 906.831 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.280 GAL -5.87 AZL 88.27 HCA 268.27 SMA 191.57 ECC .25098 INC 1.7293 V1 30.219
RP 206.73 LAP -1.73 LOP 340.16 VP 24.314 GAP -13.82 AZP 90.05 TAL 330.08 TAP 238.35 RCA 143.49 APO 239.65 V2 26.490
RC 336.567 GL 13.19 GP -2.52 ZAL 136.02 ZAP 25.78 ETS 173.43 ZAE 40.81 ETE 176.93 ZAC 86.51 ETC 256.00 CLP 25.67

PLANETOCENTRIC CONIC

C3 19.184 VHL 4.380 DLA 1.05 RAL 212.09 RAD 6567.8 VEL 11.856 PTH 2.10 VHP 6.658 DPA -3.44 RAP 184.80 ECC 1.3157

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 28 1	2236.98	-20.11	42.90	72.94	110.37	21 5 18	1637.0	-17.15	35.47
90.00	8 45 30	4816.06	18.51	207.76	72.46	68.18	10 5 47	4216.1	15.39	200.48
100.00	21 49 51	1973.03	-21.13	23.07	72.52	111.65	22 22 44	1373.0	-18.01	15.67
100.00	10 6 22	4555.25	19.53	188.14	72.01	66.91	11 22 17	3955.2	16.24	180.89
110.00	22 59 12	1755.92	-23.88	5.30	71.23	115.22	23 28 28	1155.9	-20.28	358.01
110.00	11 13 29	4345.12	22.25	170.84	70.67	63.35	12 25 55	3745.1	18.49	163.72

DIFFERENTIAL CORRECTIONS
TDE-1.4123 TRA 8.5678 TC-12.4344 BAU 3.1897
RDE .4306 RRA .1292 RC3 .2538 FAU .03971
FDE -.7574 FRA 2.1054 FC3-1.7919 BSP 55840
BDE 1.4765 BRA 8.5688 BC312.4370 FSP 1041

MID-COURSE EXECUTION ACCURACY
SGT15739.0 SGR 628.7 SG3 287.0
RRT -.1583 RRF -.2113 RTF .9527
SGB15751.5 R23 .0610 R13 -.9527
SG115739.3 SG2 620.8 THA 179.64

ORBIT DETERMINATION ACCURACY
ST 3850.9 SR 565.6 SS 742.7
CRT -.4005 CRS .7073 CST -.9303
LSA 3919.7 MSA 579.8 SSA 22.0
EL1 3857.6 EL2 517.4 ALF 176.57

LAUNCH DATE DEC 4 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 911.040 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.288 GAL -6.12 AZL 88.29 HCA 269.54 SMA 191.72 ECC .25320 INC 1.7136 V1 30.219
RP 206.77 LAP -1.71 LOP 341.43 VP 24.320 GAP -13.97 AZP 90.01 TAL 328.97 TAP 238.52 RCA 143.17 APO 240.26 V2 26.485
RC 337.346 GL 12.77 GP -2.48 ZAL 137.40 ZAP 25.40 ETS 173.40 ZAE 40.11 ETE 176.91 ZAC 86.74 ETC 255.97 CLP 25.29

PLANETOCENTRIC CONIC

C3 20.061 VHL 4.479 DLA .20 RAL 213.18 RAD 6567.8 VEL 11.893 PTH 2.11 VHP 6.762 DPA -3.77 RAP 185.63 ECC 1.3301

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 38 38	2221.38	-19.73	41.91	74.54	110.73	21 15 40	1621.4	-16.74	34.52
90.00	8 43 36	4852.86	19.43	210.07	74.45	68.99	10 4 29	4252.9	16.40	202.71
100.00	22 0 5	1958.69	-20.77	22.16	74.11	111.99	22 32 43	1358.7	-17.60	14.80
100.00	10 4 51	4590.78	20.46	190.36	74.01	67.72	11 21 22	3990.8	17.26	183.03
110.00	23 8 32	1744.40	-23.54	4.58	72.79	115.53	23 37 37	1144.4	-19.91	357.32
110.00	11 12 53	4377.84	23.23	172.87	72.68	64.19	12 25 51	3777.8	19.57	165.64

DIFFERENTIAL CORRECTIONS
TDE-1.5534 TRA 8.9257 TC-12.0250 BAU 3.2257
RDE .4446 RRA .1218 RC3 .2520 FAU .03552
FDE -.7537 FRA 2.0228 FC3-1.5328 BSP 56075
BDE 1.6158 BRA 8.9266 BC312.0276 FSP 970

MID-COURSE EXECUTION ACCURACY
SGT15822.6 SGR 631.5 SG3 266.4
RRT -.1784 RRF -.2336 RTF .9479
SGB15835.2 R23 .0654 R13 -.9479
SG115823.0 SG2 621.3 THA 179.59

ORBIT DETERMINATION ACCURACY
ST 3973.3 SR 570.8 SS 723.6
CRT -.4288 CRS .7248 CST -.9324
LSA 4038.3 MSA 572.8 SSA 21.5
EL1 3981.0 EL2 514.6 ALF 176.42

LAUNCH DATE DEC 4 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 915.233 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.296 GAL -6.38 AZL 88.30 HCA 270.81 SMA 191.86 ECC .25552 INC 1.6978 V1 30.219
RP 206.81 LAP -1.70 LOP 342.69 VP 24.325 GAP -14.13 AZP 89.98 TAL 327.86 TAP 238.67 RCA 142.84 APO 240.89 V2 26.480
RC 338.120 GL 12.35 GP -2.44 ZAL 138.76 ZAP 25.03 ETS 173.38 ZAE 39.43 ETE 176.89 ZAC 86.98 ETC 255.94 CLP 24.92

PLANETOCENTRIC CONIC

C3 20.998 VHL 4.582 DLA -.62 RAL 214.26 RAD 6567.9 VEL 11.932 PTH 2.12 VHP 6.868 DPA -4.11 RAP 186.46 ECC 1.3456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 49 4	2206.69	-19.38	40.98	76.16	111.06	21 25 51	1606.7	-16.34	33.62
90.00	8 41 47	4889.40	20.30	212.39	76.47	69.83	10 3 16	4289.4	17.37	204.95
100.00	22 10 7	1945.24	-20.42	21.31	75.72	112.31	22 42 32	1345.2	-17.22	13.98
100.00	10 3 25	4626.09	21.36	192.60	76.04	68.57	11 20 31	4026.1	18.26	185.18
110.00	23 17 42	1733.70	-23.23	3.91	74.37	115.81	23 46 36	1133.7	-19.56	356.68
110.00	11 12 19	4410.39	24.18	174.92	74.73	65.07	12 25 50	3810.4	20.62	167.59

DIFFERENTIAL CORRECTIONS
TDE-1.6959 TRA 9.2919 TC-11.6196 BAU 3.2627
RDE .4592 RRA .1140 RC3 .2495 FAU .03140
FDE -.7471 FRA 1.9358 FC3-1.2946 BSP 56267
BDE 1.7570 BRA 9.2926 BC311.6223 FSP 899

MID-COURSE EXECUTION ACCURACY
SGT15902.7 SGR 634.2 SG3 246.5
RRT -.1979 RRF -.2556 RTF .9420
SGB15915.3 R23 .0703 R13 -.9420
SG115903.2 SG2 621.6 THA 179.55

ORBIT DETERMINATION ACCURACY
ST 4092.4 SR 575.7 SS 702.4
CRT -.4543 CRS .7417 CST -.9337
LSA 4153.5 MSA 566.2 SSA 21.0
EL1 4100.9 EL2 511.8 ALF 176.28

LAUNCH DATE DEC 4 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 919.410 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.303 GAL -6.64 AZL 88.32 HCA 272.08 SMA 192.01 ECC .25794 INC 1.6821 V1 30.219
RP 206.87 LAP -1.68 LOP 343.96 VP 24.329 GAP -14.29 AZP 89.94 TAL 326.73 TAP 238.81 RCA 142.48 APO 241.53 V2 26.474
RC 338.890 GL 11.95 GP -2.40 ZAL 140.09 ZAP 24.67 ETS 173.36 ZAE 38.76 ETE 176.87 ZAC 87.21 ETC 255.91 CLP 24.56

PLANETOCENTRIC CONIC

C3 22.001 VHL 4.691 DLA -1.43 RAL 215.33 RAD 6567.9 VEL 11.974 PTH 2.13 VHP 6.976 DPA -4.46 RAP 187.30 ECC 1.3621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 59 18	2192.88	-19.04	40.11	77.80	111.37	21 35 51	1592.9	-15.97	32.78
90.00	8 40 2	4925.69	21.14	214.73	78.52	70.71	10 2 8	4325.7	18.31	207.19
100.00	22 19 59	1932.64	-20.10	20.52	77.35	112.61	22 52 11	1332.6	-16.86	13.22
100.00	10 2 3	4661.16	22.21	194.86	78.10	69.47	11 19 44	4061.2	19.22	187.34
110.00	23 26 42	1723.80	-22.93	3.29	75.97	116.07	23 55 26	1123.8	-19.24	356.10
110.00	11 11 49	4442.77	25.09	176.99	76.81	65.99	12 25 52	3842.8	21.64	169.55

DIFFERENTIAL CORRECTIONS
TDE-1.8377 TRA 9.6691 TC-11.2193 BAU 3.3007
RDE .4741 RRA .1058 RC3 .2464 FAU .02738
FDE -.7373 FRA 1.8451 FC3-1.0774 BSP 56464
BDE 1.8979 BRA 9.6697 BC311.2220 FSP 830

MID-COURSE EXECUTION ACCURACY
SGT15981.2 SGR 636.8 SG3 227.2
RRT -.2168 RRF -.2770 RTF .9350
SGB15993.9 R23 .0758 R13 -.9351
SG115981.8 SG2 621.7 THA 179.50

ORBIT DETERMINATION ACCURACY
ST 4207.4 SR 580.5 SS 679.1
CRT -.4770 CRS .7577 CST -.9342
LSA 4264.5 MSA 560.1 SSA 20.6
EL1 4216.6 EL2 509.1 ALF 176.18

LAUNCH DATE DEC 4 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 923.569 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.311 GAL -6.91 AZL 88.33 HCA 273.34 SMA 192.15 ECC .26047 INC 1.6664 V1 30.219
RP 206.93 LAP -1.66 LOP 345.23 VP 24.332 GAP -14.45 AZP 89.90 TAL 325.59 TAP 238.93 RCA 142.10 APO 242.20 V2 26.466
RC 339.657 GL 11.55 GP -2.37 ZAL 141.41 ZAP 24.32 ETS 173.33 ZAE 38.10 ETE 176.85 ZAC 87.45 ETC 255.89 CLP 24.21

PLANETOCENTRIC CONIC

C3 23.072 VHL 4.803 DLA -2.22 RAL 216.38 RAD 6567.9 VEL 12.019 PTH 2.15 VHP 7.086 DPA -4.81 RAP 188.16 ECC 1.3797

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 9 21	2179.95	-18.71	39.30	79.46	111.65	21 45 41	1580.0	-15.61	32.00
90.00	8 38 22	4961.70	21.93	217.07	80.59	71.62	10 1 4	4361.7	19.22	209.45
100.00	22 29 40	1920.89	-19.79	19.78	78.99	112.87	23 1 41	1320.9	-16.52	12.52
100.00	10 0 45	4695.99	23.03	197.12	80.18	70.39	11 19 1	4096.0	20.14	189.51
110.00	23 35 32	1714.69	-22.66	2.72	77.58	116.31	24 4 7	1114.7	-18.94	355.56
110.00	11 11 22	4474.96	25.97	179.08	78.92	66.95	12 25 57	3875.0	22.62	171.53

DIFFERENTIAL CORRECTIONS
TDE-1.9811 TRA10.0547 TC-10.8269 BAU 3.3404
RDE .4896 RRA .0970 RC3 .2428 FAU .02346
FDE -.7248 FRA 1.7500 FC3 -.8803 BSP 56613
BDE 2.0407 BRA10.0552 BC310.8296 FSP 762

MID-COURSE EXECUTION ACCURACY
SGT16057.0 SGR 639.4 SG3 208.6
RRT -.2353 RRF -.2981 RTF .9266
SGB16069.8 R23 .0821 R13 -.9266
SG116057.7 SG2 621.5 THA 179.46

ORBIT DETERMINATION ACCURACY
ST 4318.3 SR 585.1 SS 653.9
CRT -.4976 CRS .7734 CST -.9339
LSA 4371.4 MSA 554.4 SSA 20.1
EL1 4328.2 EL2 506.3 ALF 176.09

LAUNCH DATE DEC 4 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 927.710 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.319 GAL -7.18 AZL 88.35 HCA 274.61 SMA 192.30 ECC .26310 INC 1.6506 V1 30.219
RP 207.00 LAP -1.65 LOP 346.50 VP 24.333 GAP -14.62 AZP 89.87 TAL 324.44 TAP 239.05 RCA 141.71 APO 242.90 V2 26.458
RC 340.420 GL 11.16 GP -2.33 ZAL 142.70 ZAP 23.98 ETS 173.31 ZAE 37.45 ETE 176.83 ZAC 87.69 ETC 255.87 CLP 23.87

PLANETOCENTRIC CONIC

C3 24.216 VHL 4.921 DLA -2.99 RAL 217.41 RAD 6568.0 VEL 12.066 PTH 2.16 VHP 7.199 DPA -5.16 RAP 189.02 ECC 1.3985

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 19 13	2167.86	-18.41	38.54	81.12	111.90	21 55 21	1567.9	-15.27	31.27
90.00	8 36 47	4997.45	22.68	219.43	82.70	72.57	10 0 4	4397.5	20.08	211.72
100.00	22 39 10	1909.97	-19.50	19.10	80.65	113.12	23 11 0	1310.0	-16.20	11.86
100.00	9 59 31	4730.58	23.80	199.40	82.30	71.36	11 18 22	4130.6	21.03	191.70
110.00	23 44 13	1706.35	-22.41	2.21	79.21	116.52	24 12 39	1106.4	-18.67	355.07
110.00	11 10 58	4506.96	26.81	181.19	81.07	67.95	12 26 5	3907.0	23.57	173.52

DIFFERENTIAL CORRECTIONS
TDE-2.1240 TRA10.4517 TC-10.4423 BAU 3.3815
RDE .5055 RRA .0870 RC3 .2386 FAU .01961
FDE -.7094 FRA 1.6510 FC3 -.7012 BSP 56746
BDE 2.1833 BRA10.4521 BC310.4450 FSP 696

MID-COURSE EXECUTION ACCURACY
SGT16131.6 SGR 641.9 SG3 190.6
RRT -.2531 RRF -.3186 RTF .9161
SGB16144.4 R23 .0893 R13 -.9161
SG116132.5 SG2 621.0 THA 179.42

ORBIT DETERMINATION ACCURACY
ST 4424.4 SR 589.4 SS 627.0
CRT -.5159 CRS .7886 CST -.9328
LSA 4473.7 MSA 549.1 SSA 19.7
EL1 4435.0 EL2 503.7 ALF 176.02

LAUNCH DATE DEC 4 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 931.830 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.327 GAL -7.47 AZL 88.37 HCA 275.87 SMA 192.45 ECC .26584 INC 1.6348 V1 30.219
RP 207.08 LAP -1.63 LOP 347.76 VP 24.334 GAP -14.80 AZP 89.83 TAL 323.27 TAP 239.15 RCA 141.29 APO 243.61 V2 26.449
RC 341.179 GL 10.77 GP -2.30 ZAL 143.96 ZAP 23.65 ETS 173.29 ZAE 36.81 ETE 176.80 ZAC 87.93 ETC 255.85 CLP 23.55

PLANETOCENTRIC CONIC

C3 25.437 VHL 5.043 DLA -3.74 RAL 218.44 RAD 6568.0 VEL 12.117 PTH 2.17 VHP 7.314 DPA -5.52 RAP 189.89 ECC 1.4186

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 28 55	2156.59	-18.12	37.84	82.80	112.14	22 4 51	1556.6	-14.96	30.59
90.00	8 35 15	5032.93	23.38	221.79	84.83	73.56	9 59 8	4432.9	20.91	213.99
100.00	22 48 30	1899.84	-19.22	18.47	82.32	113.34	23 20 10	1299.8	-15.90	11.26
100.00	9 58 21	4764.92	24.53	201.70	84.44	72.35	11 17 46	4164.9	21.88	193.90
110.00	23 52 44	1698.77	-22.18	1.74	80.84	116.71	24 21 3	1098.8	-18.41	354.63
110.00	11 10 37	4538.75	27.60	183.33	83.24	68.98	12 26 15	3938.8	24.49	175.54

DIFFERENTIAL CORRECTIONS
TDE-2.2676 TRA10.8572 TC-10.0688 BAU 3.4250
RDE .5218 RRA .0782 RC3 .2341 FAU .01586
FDE -.6915 FRA 1.5477 FC3 -.5398 BSP 56840
BDE 2.3269 BRA10.8574 BC310.0716 FSP 631

MID-COURSE EXECUTION ACCURACY
SGT16204.0 SGR 644.3 SG3 173.2
RRT -.2706 RRF -.3387 RTF .9031
SGB16216.8 R23 .0976 R13 -.9031
SG116205.0 SG2 620.2 THA 179.38

ORBIT DETERMINATION ACCURACY
ST 4525.4 SR 593.5 SS 598.4
CRT -.5326 CRS .8037 CST -.9308
LSA 4570.9 MSA 544.0 SSA 19.3
EL1 4536.6 EL2 501.1 ALF 175.96

LAUNCH DATE DEC 4 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 7 1966

HELIOCENTRIC CONIC DISTANCE 935.929 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.335 GAL -7.76 AZL 88.38 HCA 277.14 SMA 192.60 ECC .26870 INC 1.6189 V1 30.219
RP 207.17 LAP -1.61 LOP 349.02 VP 24.334 GAP -14.98 AZP 89.80 TAL 322.09 TAP 239.23 RCA 140.85 APO 244.35 V2 26.438
RC 341.936 GL 10.40 GP -2.27 ZAL 145.21 ZAP 23.33 ETS 173.26 ZAE 36.18 ETE 176.78 ZAC 88.17 ETC 255.84 CLP 23.23

PLANETOCENTRIC CONIC

C3 26.739 VHL 5.171 DLA -4.47 RAL 219.45 RAD 6568.1 VEL 12.170 PTH 2.18 VHP 7.431 DPA -5.88 RAP 190.76 ECC 1.4401

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 26	2146.12	-17.85	37.19	84.50	112.35	22 14 12	1546.1	-14.67	29.96
90.00	8 33 48	5068.13	24.04	224.16	86.98	74.57	9 58 16	4468.1	21.69	216.28
100.00	22 57 40	1890.49	-18.97	17.90	84.00	113.54	23 29 11	1290.5	-15.63	10.70
100.00	9 57 14	4798.99	25.21	204.00	86.61	73.38	11 17 13	4199.0	22.69	196.10
110.00	0 5 2	1691.92	-21.97	1.32	82.49	116.87	0 33 14	1091.9	-18.18	354.23
110.00	11 10 18	4570.33	28.35	185.47	85.44	70.05	12 26 28	3970.3	25.37	177.57

DIFFERENTIAL CORRECTIONS
TDE-2.4114 TRA11.2730 TC3-9.7021 BAU 3.4693
RDE .5386 RRA .0681 RC3 .2293 FAU .01216
FDE -.6709 FRA 1.4402 FC3 -.3938 BSP 56899
BDE 2.4708 BRA11.2732 BC3 9.7048 FSP 568

MID-COURSE EXECUTION ACCURACY
SGT16272.4 SGR 646.6 SG3 156.5
RRT -.2876 RRF -.3578 RTF .8865
SGB16285.3 R23 .1071 R13 -.8865
SG116273.5 SG2 619.3 THA 179.34

ORBIT DETERMINATION ACCURACY
ST 4621.3 SR 597.2 SS 568.3
CRT -.5475 CRS .8188 CST -.9278
LSA 4663.2 MSA 539.3 SSA 18.9
EL1 4633.0 EL2 498.5 ALF 175.90

LAUNCH DATE DEC 4 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 9 1966

HELIOCENTRIC CONIC DISTANCE 940.005 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.343 GAL -8.05 AZL 88.40 HCA 278.40 SMA 192.75 ECC .27168 INC 1.6029 V1 30.219
RP 207.27 LAP -1.59 LOP 350.29 VP 24.333 GAP -15.17 AZP 89.77 TAL 320.90 TAP 239.30 RCA 140.38 APO 245.11 V2 26.427
RC 342.690 GL 10.03 GP -2.23 ZAL 146.43 ZAP 23.02 ETS 173.24 ZAE 35.56 ETE 176.75 ZAC 88.41 ETC 255.83 CLP 22.92

PLANETOCENTRIC CONIC

C3 28.129 VHL 5.304 DLA -5.18 RAL 220.44 RAD 6568.1 VEL 12.227 PTH 2.20 VHP 7.550 DPA -6.25 RAP 191.65 ECC 1.4629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 47	2136.41	-17.60	36.59	86.20	112.55	22 23 23	1536.4	-14.39	29.38
90.00	8 32 24	5103.05	24.65	226.53	89.15	75.61	9 57 27	4503.1	22.43	218.57
100.00	23 6 41	1881.89	-18.74	17.36	85.69	113.73	23 38 3	1281.9	-15.37	10.19
100.00	9 56 12	4832.80	25.85	206.31	88.79	74.44	11 16 44	4232.8	23.46	198.32
110.00	0 13 15	1685.77	-21.78	.94	84.15	117.02	0 41 21	1085.8	-17.98	353.87
110.00	11 10 2	4601.69	29.06	187.64	87.67	71.16	12 26 44	4001.7	26.21	179.61

DIFFERENTIAL CORRECTIONS
TDE-2.5549 TRA11.7003 TC3-9.3461 BAU 3.5157
RDE .5558 RRA .0575 RC3 .2242 FAU .00853
FDE -.6480 FRA 1.3285 FC3 -.2626 BSP 56947
BDE 2.6146 BRA11.7005 BC3 9.3487 FSP 507

MID-COURSE EXECUTION ACCURACY
SGT16339.6 SGR 648.8 SG3 140.5
RRT -.3040 RRF -.3760 RTF .8650
SGB16352.4 R23 .1182 R13 -.8650
SG116340.8 SG2 618.0 THA 179.31

ORBIT DETERMINATION ACCURACY
ST 4712.1 SR 600.7 SS 536.8
CRT -.5610 CRS .8341 CST -.9235
LSA 4750.4 MSA 534.9 SSA 18.5
EL1 4724.2 EL2 496.0 ALF 175.86

LAUNCH DATE DEC 4 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 11 1966

HELIOCENTRIC CONIC DISTANCE 944.056 EARTH TO MARS

RL 147.44 LAL -.00 LOL 71.88 VL 33.351 GAL -8.36 AZL 88.41 HCA 279.66 SMA 192.90 ECC .27478 INC 1.5869 V1 30.219
RP 207.37 LAP -1.56 LOP 351.55 VP 24.330 GAP -15.37 AZP 89.73 TAL 319.70 TAP 239.36 RCA 139.89 APO 245.90 V2 26.415
RC 343.441 GL 9.67 GP -2.20 ZAL 147.63 ZAP 22.72 ETS 173.21 ZAE 34.94 ETE 176.72 ZAC 88.65 ETC 255.83 CLP 22.62

PLANETOCENTRIC CONIC

C3 29.611 VHL 5.442 DLA -5.88 RAL 221.43 RAD 6568.2 VEL 12.288 PTH 2.21 VHP 7.673 DPA -6.62 RAP 192.55 ECC 1.4873

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 56 58	2127.44	-17.36	36.04	87.91	112.73	22 32 26	1527.4	-14.13	28.85
90.00	8 31 4	5137.68	25.22	228.91	91.34	76.67	9 56 42	4537.7	23.13	220.86
100.00	23 15 32	1874.02	-18.52	16.88	87.39	113.89	23 46 46	1274.0	-15.14	9.72
100.00	9 55 12	4866.34	26.44	208.62	91.00	75.52	11 16 18	4266.3	24.19	200.54
110.00	0 21 20	1680.31	-21.61	.61	85.82	117.16	0 49 20	1080.3	-17.79	353.56
110.00	11 9 49	4632.81	29.73	189.82	89.93	72.29	12 27 2	4032.8	27.02	181.68

DIFFERENTIAL CORRECTIONS
TDE-2.7003 TRA12.1370 TC3-9.0019 BAU 3.5646
RDE .5734 RRA .0464 RC3 .2188 FAU .00497
FDE -.6230 FRA 1.2125 FC3 -.1452 BSP 56927
BDE 2.7605 BRA12.1371 BC3 9.0046 FSP 447

MID-COURSE EXECUTION ACCURACY
SGT16404.4 SGR 650.8 SG3 125.3
RRT -.3202 RRF -.3927 RTF .8367
SGB16417.3 R23 .1314 R13 -.8367
SG116405.8 SG2 616.5 THA 179.27

ORBIT DETERMINATION ACCURACY
ST 4798.3 SR 603.9 SS 504.2
CRT -.5734 CRS .8498 CST -.9180
LSA 4833.3 MSA 530.5 SSA 18.1
EL1 4810.9 EL2 493.5 ALF 175.83

LAUNCH DATE DEC 5 1964 FLIGHT TIME 140.00 ARRIVAL DATE APR 24 1965

HELIOCENTRIC CONIC DISTANCE 378.345 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 35.941 GAL -2.30 AZL 88.67 HCA 116.04 SMA 260.83 ECC .43634 INC 1.3332 V1 30.223
RP 245.01 LAP 1.20 LOP 188.94 VP 23.969 GAP 25.65 AZP 90.59 TAL 352.42 TAP 108.45 RCA 147.02 APO 374.64 V2 22.385
RC 125.213 GL 8.19 GP 1.53 ZAL 101.79 ZAP 176.02 ETS 156.09 ZAE 153.54 ETE .39 ZAC 90.34 ETC 256.04 CLP 176.33

PLANETOCENTRIC CONIC

C3 34.401 VHL 5.865 DLA 9.57 RAL 178.52 RAD 6568.4 VEL 12.481 PTH 2.26 VHP 11.653 DPA .47 RAP 185.99 ECC 1.5661

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 5 12	2649.73	-27.21	70.95	52.85	98.17	17 49 22	2049.7	-25.79	62.56
90.00	7 32 41	4690.84	15.18	200.08	46.99	65.80	8 50 52	4090.8	11.78	193.05
100.00	18 31 15	2372.21	-28.55	50.30	52.61	99.27	19 10 47	1772.2	-26.97	41.86
100.00	8 49 19	4443.59	16.41	181.31	46.40	64.66	10 3 23	3843.6	12.86	174.32
110.00	19 50 11	2125.16	-32.14	30.75	51.82	102.32	20 25 37	1525.2	-30.11	22.13
110.00	9 46 52	4263.40	19.67	165.90	44.66	61.46	10 57 55	3663.4	15.71	159.02

DIFFERENTIAL CORRECTIONS

TDE .6085 TRA-1.5909 TC3 .7696 BAU .3542
RDE -.5712 RRA -.2564 RC3 -.0315 FAU .05444
FDE -.1385 FRA .7636 FC3-1.3699 BSP 5984
BDE .8346 BRA 1.6193 BC3 .7703 FSP 410

MID-COURSE EXECUTION ACCURACY

SGT 1917.6 SGR 614.2 SG3 153.9
RRT .0316 RRF -.0524 RTF -.7991
SGB 2013.6 R23 -.0242 R13 -.7991
SG1 1917.7 SG2 613.9 THA .65

ORBIT DETERMINATION ACCURACY

ST 761.5 SR 563.2 SS 270.4
CRT -.6891 CRS -.3852 CST .9269
LSA 906.4 MSA 384.2 SSA 32.8
EL1 878.6 EL2 353.8 ALF 146.98

LAUNCH DATE DEC 5 1964 FLIGHT TIME 142.00 ARRIVAL DATE APR 26 1965

HELIOCENTRIC CONIC DISTANCE 379.816 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 35.799 GAL -2.13 AZL 88.68 HCA 116.94 SMA 255.70 ECC .42483 INC 1.3186 V1 30.223
RP 244.80 LAP 1.18 LOP 189.85 VP 23.776 GAP 25.03 AZP 90.60 TAL 352.87 TAP 109.81 RCA 147.07 APO 364.34 V2 22.407
RC 127.239 GL 8.29 GP 1.57 ZAL 100.94 ZAP 175.53 ETS 158.08 ZAE 153.26 ETE .63 ZAC 90.47 ETC 256.03 CLP 175.82

PLANETOCENTRIC CONIC

C3 32.571 VHL 5.707 DLA 10.01 RAL 177.77 RAD 6568.3 VEL 12.407 PTH 2.24 VHP 11.372 DPA .35 RAP 186.36 ECC 1.5360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 58 41	2650.26	-27.21	70.98	51.25	98.15	17 42 51	2050.3	-25.80	62.60
90.00	7 33 12	4662.75	14.39	198.40	45.32	65.34	8 50 55	4062.7	10.94	191.42
100.00	18 24 58	2371.95	-28.54	50.28	51.02	99.28	19 4 30	1772.0	-26.97	41.84
100.00	8 49 36	4416.28	15.61	179.68	44.73	64.18	10 3 12	3816.3	12.01	172.74
110.00	19 44 27	2123.22	-32.11	30.61	50.23	102.41	20 19 51	1523.2	-30.07	21.99
110.00	9 46 36	4237.78	18.83	164.39	42.97	60.93	10 57 14	3637.8	14.81	157.58

DIFFERENTIAL CORRECTIONS

TDE .5846 TRA-1.5751 TC3 .8366 BAU .3645
RDE -.5532 RRA -.2482 RC3 -.0308 FAU .05619
FDE -.1316 FRA .7639 FC3-1.4934 BSP 6265
BDE .8048 BRA 1.5945 BC3 .8372 FSP 432

MID-COURSE EXECUTION ACCURACY

SGT 1958.2 SGR 611.3 SG3 162.3
RRT .0391 RRF -.0556 RTF -.8034
SGB 2051.4 R23 -.0208 R13 -.8035
SG1 1958.4 SG2 610.7 THA .77

ORBIT DETERMINATION ACCURACY

ST 759.8 SR 560.5 SS 268.4
CRT -.6795 CRS -.3635 CST .9226
LSA 900.9 MSA 388.3 SSA 33.8
EL1 873.9 EL2 357.5 ALF 147.23

LAUNCH DATE DEC 5 1964 FLIGHT TIME 144.00 ARRIVAL DATE APR 28 1965

HELIOCENTRIC CONIC DISTANCE 381.478 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 35.663 GAL -1.95 AZL 88.70 HCA 117.85 SMA 251.01 ECC .41387 INC 1.3038 V1 30.223
RP 244.57 LAP 1.15 LOP 190.75 VP 23.591 GAP 24.41 AZP 90.61 TAL 353.33 TAP 111.17 RCA 147.12 APO 354.89 V2 22.429
RC 129.306 GL 8.39 GP 1.62 ZAL 100.05 ZAP 175.02 ETS 159.67 ZAE 153.04 ETE .87 ZAC 90.60 ETC 256.01 CLP 175.30

PLANETOCENTRIC CONIC

C3 30.876 VHL 5.557 DLA 10.45 RAL 176.99 RAD 6568.2 VEL 12.339 PTH 2.22 VHP 11.098 DPA .24 RAP 186.73 ECC 1.5081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 51 58	2651.41	-27.22	71.07	49.66	98.11	17 36 9	2051.4	-25.82	62.68
90.00	7 33 42	4634.70	13.58	196.73	43.66	64.91	8 50 57	4034.7	10.09	189.79
100.00	18 18 30	2372.30	-28.55	50.31	49.43	99.26	18 58 3	1772.3	-26.97	41.86
100.00	8 49 50	4389.05	14.79	178.07	43.06	63.72	10 2 59	3789.0	11.14	171.18
110.00	19 38 33	2121.82	-32.09	30.50	48.64	102.46	20 13 55	1521.8	-30.04	21.89
110.00	9 46 17	4212.29	17.98	162.90	41.30	60.42	10 56 29	3612.3	13.91	156.15

DIFFERENTIAL CORRECTIONS

TDE .5621 TRA-1.5481 TC3 .9102 BAU .3759
RDE -.5358 RRA -.2403 RC3 -.0298 FAU .05797
FDE -.1228 FRA .7642 FC3-1.6255 BSP 6473
BDE .7766 BRA 1.5666 BC3 .9107 FSP 457

MID-COURSE EXECUTION ACCURACY

SGT 1998.5 SGR 608.1 SG3 171.1
RRT .0454 RRF -.0599 RTF -.8089
SGB 2089.0 R23 -.0194 R13 -.8090
SG1 1998.7 SG2 607.4 THA .87

ORBIT DETERMINATION ACCURACY

ST 757.7 SR 557.6 SS 265.6
CRT -.6709 CRS -.3354 CST .9151
LSA 894.8 MSA 392.0 SSA 34.7
EL1 868.9 EL2 360.5 ALF 147.45

LAUNCH DATE DEC 5 1964 FLIGHT TIME 146.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 383.310 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 35.533 GAL -1.78 AZL 88.71 HCA 118.75 SMA 246.69 ECC .40343 INC 1.2886 V1 30.223
RP 244.34 LAP 1.13 LOP 191.66 VP 23.416 GAP 23.79 AZP 90.62 TAL 353.80 TAP 112.55 RCA 147.17 APO 346.21 V2 22.451
RC 131.411 GL 8.48 GP 1.67 ZAL 99.14 ZAP 174.51 ETS 160.97 ZAE 152.87 ETE 1.11 ZAC 90.73 ETC 255.99 CLP 174.77

PLANETOCENTRIC CONIC

C3 29.305 VHL 5.413 DLA 10.90 RAL 176.18 RAD 6568.2 VEL 12.275 PTH 2.21 VHP 10.832 DPA .12 RAP 187.10 ECC 1.4823

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 45 3	2653.18	-27.24	71.19	48.06	98.05	17 29 17	2053.2	-25.84	62.80
90.00	7 34 9	4606.75	12.77	195.08	42.00	64.51	8 50 56	4006.8	9.23	188.19
100.00	18 11 51	2373.24	-28.56	50.38	47.83	99.23	18 51 25	1773.2	-26.99	41.93
100.00	8 50 2	4361.93	13.97	176.48	41.40	63.30	10 2 44	3761.9	10.27	169.64
110.00	19 32 29	2120.96	-32.08	30.44	47.05	102.50	20 7 49	1521.0	-30.03	21.83
110.00	9 45 54	4186.97	17.12	161.44	39.63	59.95	10 55 41	3587.0	13.00	154.75

DIFFERENTIAL CORRECTIONS

TDE .5405 TRA-1.5196 TC3 .9890 BAU .3876
RDE -.5191 RRA -.2326 RC3 -.0285 FAU .05979
FDE -.1125 FRA .7637 FC3-1.7664 BSP 6671
BDE .7494 BRA 1.5373 BC3 .9894 FSP 485

MID-COURSE EXECUTION ACCURACY

SGT 2038.8 SGR 604.7 SG3 180.2
RRT .0514 RRF -.0650 RTF -.8148
SGB 2126.6 R23 -.0192 R13 -.8149
SG1 2039.0 SG2 603.8 THA .96

ORBIT DETERMINATION ACCURACY

ST 754.8 SR 554.5 SS 262.1
CRT -.6627 CRS -.3019 CST .9048
LSA 887.8 MSA 395.6 SSA 35.7
EL1 863.4 EL2 363.1 ALF 147.65

LAUNCH DATE DEC 5 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 385.295 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 35.409 GAL -1.62 AZL 88.73 HCA 119.66 SMA 242.71 ECC .39350 INC 1.2732 V1 30.223
RP 244.11 LAP 1.11 LOP 192.57 VP 23.250 GAP 23.17 AZP 90.63 TAL 354.28 TAP 113.94 RCA 147.21 APO 338.22 V2 22.475
RC 133.550 GL 8.57 GP 1.72 ZAL 98.21 ZAP 173.99 ETS 162.04 ZAE 152.74 ETE 1.35 ZAC 90.86 ETC 255.98 CLP 174.24

PLANETOCENTRIC CONIC

C3 27.851 VHL 5.277 DLA 11.36 RAL 175.35 RAD 6568.1 VEL 12.216 PTH 2.20 VHP 10.572 DPA .01 RAP 187.46 ECC 1.4584

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 37 58	2655.56	-27.26	71.36	46.46	97.97	17 22 14	2055.6	-25.88	62.97
90.00	7 34 33	4578.95	11.95	193.45	40.36	64.14	8 50 52	3978.9	8.37	186.60
100.00	18 5 2	2374.75	-28.57	50.49	46.24	99.17	18 44 37	1774.7	-27.01	42.03
100.00	8 50 10	4334.99	13.14	174.91	39.75	62.91	10 2 25	3735.0	9.40	168.11
110.00	19 26 15	2120.64	-32.07	30.42	45.46	102.51	20 1 35	1520.6	-30.02	21.81
110.00	9 45 27	4161.86	16.26	160.00	37.98	59.51	10 54 49	3561.9	12.09	153.37

DIFFERENTIAL CORRECTIONS
TDE .5194 TRA-1.4898 TC3 1.0720 BAU .3993
RDE -.5030 RRA -.2252 RC3 -.0267 FAU .06169
FDE -.1011 FRA .7622 FC3-1.9176 BSP 6840
BDE .7231 BRA 1.5067 BC3 1.0724 FSP 514

MID-COURSE EXECUTION ACCURACY
SGT 2078.5 SGR 601.1 SG3 189.7
RRT .0573 RRF -.0708 RTF -.8205
SGB 2163.6 R23 -.0196 R13 -.8206
SG1 2078.8 SG2 600.0 THA 1.03

ORBIT DETERMINATION ACCURACY
ST 751.1 SR 551.2 SS 258.1
CRT -.6545 CRS -.2635 CST .8918
LSA 879.8 MSA 399.1 SSA 36.6
EL1 857.1 EL2 365.2 ALF 147.82

LAUNCH DATE DEC 5 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 387.419 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 35.290 GAL -1.45 AZL 88.74 HCA 120.57 SMA 239.04 ECC .38403 INC 1.2575 V1 30.223
RP 243.87 LAP 1.08 LOP 193.48 VP 23.091 GAP 22.56 AZP 90.64 TAL 354.77 TAP 115.34 RCA 147.24 APO 330.84 V2 22.498
RC 135.719 GL 8.65 GP 1.78 ZAL 97.24 ZAP 173.45 ETS 162.93 ZAE 152.66 ETE 1.60 ZAC 91.00 ETC 255.97 CLP 173.70

PLANETOCENTRIC CONIC

C3 26.504 VHL 5.148 DLA 11.81 RAL 174.48 RAD 6568.1 VEL 12.161 PTH 2.18 VHP 10.319 DPA -.09 RAP 187.82 ECC 1.4362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 43	2658.51	-27.29	71.58	44.87	97.87	17 15 1	2058.5	-25.92	63.18
90.00	7 34 55	4551.35	11.12	191.84	38.73	63.79	8 50 46	3951.3	7.51	185.03
100.00	17 58 3	2376.82	-28.60	50.64	44.65	99.10	18 37 40	1776.8	-27.04	42.18
100.00	8 50 15	4308.27	12.30	173.36	38.12	62.54	10 2 4	3708.3	8.53	166.61
110.00	19 19 52	2120.83	-32.08	30.43	43.88	102.50	19 55 13	1520.8	-30.02	21.82
110.00	9 44 56	4137.03	15.40	158.59	36.34	59.10	10 53 53	3537.0	11.19	152.02

DIFFERENTIAL CORRECTIONS
TDE .4984 TRA-1.4592 TC3 1.1604 BAU .4113
RDE -.4877 RRA -.2180 RC3 -.0244 FAU .06371
FDE -.0884 FRA .7598 FC3-2.0811 BSP 7006
BDE .6973 BRA 1.4754 BC3 1.1607 FSP 546

MID-COURSE EXECUTION ACCURACY
SGT 2118.5 SGR 597.2 SG3 199.8
RRT .0634 RRF -.0774 RTF -.8263
SGB 2201.1 R23 -.0205 R13 -.8264
SG1 2118.9 SG2 595.9 THA 1.11

ORBIT DETERMINATION ACCURACY
ST 746.1 SR 547.8 SS 253.7
CRT -.6460 CRS -.2192 CST .8754
LSA 870.4 MSA 402.6 SSA 37.6
EL1 849.7 EL2 367.2 ALF 147.96

LAUNCH DATE DEC 5 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 389.669 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 35.177 GAL -1.29 AZL 88.76 HCA 121.49 SMA 235.65 ECC .37502 INC 1.2414 V1 30.223
RP 243.63 LAP 1.06 LOP 194.39 VP 22.941 GAP 21.94 AZP 90.65 TAL 355.26 TAP 116.75 RCA 147.28 APO 324.02 V2 22.522
RC 137.915 GL 8.72 GP 1.84 ZAL 96.26 ZAP 172.91 ETS 163.69 ZAE 152.62 ETE 1.86 ZAC 91.13 ETC 255.95 CLP 173.15

PLANETOCENTRIC CONIC

C3 25.257 VHL 5.026 DLA 12.27 RAL 173.59 RAD 6568.0 VEL 12.109 PTH 2.17 VHP 10.073 DPA -.19 RAP 188.18 ECC 1.4157

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 18	2662.03	-27.32	71.83	43.28	97.75	17 7 40	2062.0	-25.97	63.42
90.00	7 35 13	4523.99	10.30	190.26	37.11	63.48	8 50 37	3924.0	6.65	183.48
100.00	17 50 56	2379.43	-28.62	50.83	43.06	99.00	18 30 35	1779.4	-27.08	42.36
100.00	8 50 17	4281.83	11.47	171.84	36.49	62.21	10 1 39	3681.8	7.66	165.13
110.00	19 13 21	2121.52	-32.09	30.48	42.30	102.48	19 48 43	1521.5	-30.04	21.87
110.00	9 44 21	4112.50	14.53	157.22	34.71	58.71	10 52 53	3512.5	10.29	150.69

DIFFERENTIAL CORRECTIONS
TDE .4774 TRA-1.4275 TC3 1.2534 BAU .4233
RDE -.4729 RRA -.2111 RC3 -.0216 FAU .06580
FDE -.0743 FRA .7555 FC3-2.2555 BSP 7150
BDE .6720 BRA 1.4430 BC3 1.2536 FSP 579

MID-COURSE EXECUTION ACCURACY
SGT 2158.1 SGR 593.2 SG3 210.3
RRT .0698 RRF -.0846 RTF -.8320
SGB 2238.1 R23 -.0219 R13 -.8322
SG1 2158.5 SG2 591.6 THA 1.19

ORBIT DETERMINATION ACCURACY
ST 739.8 SR 544.2 SS 248.8
CRT -.6373 CRS -.1685 CST .8549
LSA 859.7 MSA 406.1 SSA 38.6
EL1 841.1 EL2 368.9 ALF 148.04

LAUNCH DATE DEC 5 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 392.033 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 35.068 GAL -1.14 AZL 88.77 HCA 122.40 SMA 232.50 ECC .36643 INC 1.2250 V1 30.223
RP 243.38 LAP 1.03 LOP 195.30 VP 22.799 GAP 21.34 AZP 90.66 TAL 355.77 TAP 118.16 RCA 147.31 APO 317.70 V2 22.547
RC 140.134 GL 8.78 GP 1.89 ZAL 95.26 ZAP 172.36 ETS 164.33 ZAE 152.63 ETE 2.12 ZAC 91.27 ETC 255.94 CLP 172.60

PLANETOCENTRIC CONIC

C3 24.103 VHL 4.909 DLA 12.73 RAL 172.68 RAD 6568.0 VEL 12.062 PTH 2.16 VHP 9.833 DPA -.29 RAP 188.53 ECC 1.3967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 45	2666.07	-27.36	72.12	41.69	97.60	17 0 11	2066.1	-26.02	63.71
90.00	7 35 28	4496.94	9.47	188.70	35.50	63.19	8 50 25	3896.9	5.80	181.95
100.00	17 43 40	2382.55	-28.66	51.05	41.48	98.89	18 23 22	1782.5	-27.13	42.58
100.00	8 50 14	4255.72	10.64	170.35	34.88	61.90	10 1 10	3655.7	6.80	163.67
110.00	19 6 43	2122.67	-32.10	30.57	40.73	102.43	19 42 6	1522.7	-30.06	21.95
110.00	9 43 40	4088.35	13.68	155.87	33.10	58.36	10 51 49	3488.3	9.39	149.39

DIFFERENTIAL CORRECTIONS
TDE .4558 TRA-1.3950 TC3 1.3513 BAU .4355
RDE -.4588 RRA -.2043 RC3 -.0181 FAU .06804
FDE -.0597 FRA .7500 FC3-2.4441 BSP 7324
BDE .6467 BRA 1.4099 BC3 1.3514 FSP 615

MID-COURSE EXECUTION ACCURACY
SGT 2197.5 SGR 588.9 SG3 221.4
RRT .0769 RRF -.0923 RTF -.8378
SGB 2275.1 R23 -.0229 R13 -.8380
SG1 2198.0 SG2 587.0 THA 1.27

ORBIT DETERMINATION ACCURACY
ST 731.6 SR 540.4 SS 244.0
CRT -.6275 CRS -.1134 CST .8315
LSA 847.0 MSA 409.6 SSA 39.7
EL1 830.6 EL2 370.6 ALF 148.05

LAUNCH DATE DEC 5 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 394.501 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 34.964 GAL -.98 AZL 88.79 HCA 123.32 SMA 229.58 ECC .35825 INC 1.2082 V1 30.223
RP 243.12 LAP 1.01 LOP 196.22 VP 22.664 GAP 20.73 AZP 90.66 TAL 356.28 TAP 119.59 RCA 147.33 APO 311.83 V2 22.572
RC 142.373 GL 8.84 GP 1.96 ZAL 94.24 ZAP 171.80 ETS 164.89 ZAE 152.68 ETE 2.39 ZAC 91.41 ETC 255.93 CLP 172.03

PLANETOCENTRIC CONIC

C3 23.035 VHL 4.799 DLA 13.19 RAL 171.74 RAD 6567.9 VEL 12.017 PTH 2.14 VHP 9.599 DPA -.38 RAP 188.88 ECC 1.3791

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 8 4	2670.61	-27.40	72.45	40.11	97.45	16 52 35	2070.6	-26.08	64.02
90.00	7 35 39	4470.25	8.65	187.17	33.90	62.93	8 50 9	3870.3	4.95	180.45
100.00	17 36 17	2386.14	-28.70	51.31	39.90	98.76	18 16 3	1786.1	-27.19	42.83
100.00	8 50 7	4229.96	9.81	168.89	33.28	61.62	10 0 37	3630.0	5.94	162.24
110.00	18 59 58	2124.27	-32.13	30.68	39.16	102.36	19 35 22	1524.3	-30.09	22.06
110.00	9 42 55	4064.60	12.82	154.56	31.50	58.04	10 50 40	3464.6	8.51	148.12

DIFFERENTIAL CORRECTIONS

TDE .4351 TRA-1.3630 TC3 1.4518 BAU .4471
RDE -.4453 RRA -.1978 RC3 -.0140 FAU .07036
FDE -.0437 FRA .7431 FC3-2.6443 BSP 7467
BDE .6225 BRA 1.3773 BC3 1.4518 FSP 652

MID-COURSE EXECUTION ACCURACY

SGT 2237.1 SGR 584.4 SG3 233.1
RRT .0844 RRF -.1009 RTF -.8430
SGB 2312.2 R23 -.0246 R13 -.8432
SG1 2237.7 SG2 582.2 THA 1.36

ORBIT DETERMINATION ACCURACY

ST 723.1 SR 536.5 SS 239.3
CRT -.6177 CRS -.0508 CST .8020
LSA 834.0 MSA 413.2 SSA 40.9
EL1 819.9 EL2 372.1 ALF 148.06

LAUNCH DATE DEC 5 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 397.064 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 34.865 GAL -.83 AZL 88.81 HCA 124.23 SMA 226.86 ECC .35047 INC 1.1910 V1 30.223
RP 242.87 LAP .98 LOP 197.14 VP 22.537 GAP 20.13 AZP 90.67 TAL 356.79 TAP 121.02 RCA 147.35 APO 306.37 V2 22.598
RC 144.629 GL 8.88 GP 2.02 ZAL 93.20 ZAP 171.23 ETS 165.36 ZAE 152.78 ETE 2.66 ZAC 91.55 ETC 255.92 CLP 171.46

PLANETOCENTRIC CONIC

C3 22.046 VHL 4.695 DLA 13.64 RAL 170.77 RAD 6567.9 VEL 11.976 PTH 2.13 VHP 9.371 DPA -.46 RAP 189.22 ECC 1.3628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 0 17	2675.61	-27.44	72.80	38.54	97.27	16 44 52	2075.6	-26.15	64.37
90.00	7 35 46	4443.97	7.83	185.68	32.32	62.70	8 49 50	3844.0	4.11	178.97
100.00	17 28 47	2390.16	-28.74	51.60	38.33	98.61	18 8 38	1790.2	-27.25	43.12
100.00	8 49 56	4204.65	8.98	167.46	31.70	61.37	10 0 1	3604.6	5.09	160.84
110.00	18 53 8	2126.26	-32.16	30.83	37.60	102.28	19 28 34	1526.3	-30.13	22.20
110.00	9 42 5	4041.31	11.98	153.28	29.91	57.74	10 49 26	3441.3	7.64	146.88

DIFFERENTIAL CORRECTIONS

TDE .4134 TRA-1.3301 TC3 1.5536 BAU .4579
RDE -.4323 RRA -.1914 RC3 -.0092 FAU .07276
FDE -.0270 FRA .7346 FC3-2.8572 BSP 7633
BDE .5982 BRA 1.3438 BC3 1.5537 FSP 692

MID-COURSE EXECUTION ACCURACY

SGT 2274.3 SGR 579.8 SG3 245.2
RRT .0930 RRF -.1101 RTF -.8479
SGB 2347.1 R23 -.0259 R13 -.8481
SG1 2275.0 SG2 577.1 THA 1.45

ORBIT DETERMINATION ACCURACY

ST 712.3 SR 532.5 SS 234.9
CRT -.6064 CRS .0163 CST .7686
LSA 818.8 MSA 416.9 SSA 42.1
EL1 807.0 EL2 373.7 ALF 147.98

LAUNCH DATE DEC 5 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 399.713 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 34.770 GAL -.69 AZL 88.83 HCA 125.15 SMA 224.33 ECC .34305 INC 1.1734 V1 30.223
RP 242.60 LAP .96 LOP 198.06 VP 22.416 GAP 19.53 AZP 90.68 TAL 357.31 TAP 122.47 RCA 147.37 APO 301.29 V2 22.624
RC 146.900 GL 8.91 GP 2.09 ZAL 92.14 ZAP 170.65 ETS 165.77 ZAE 152.91 ETE 2.95 ZAC 91.69 ETC 255.91 CLP 170.88

PLANETOCENTRIC CONIC

C3 21.133 VHL 4.597 DLA 14.09 RAL 169.79 RAD 6567.9 VEL 11.938 PTH 2.12 VHP 9.149 DPA -.54 RAP 189.56 ECC 1.3478

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 52 24	2681.01	-27.49	73.19	36.97	97.08	16 37 5	2081.0	-26.22	64.75
90.00	7 35 48	4418.15	7.02	184.21	30.76	62.50	8 49 26	3818.1	3.28	177.53
100.00	17 21 13	2394.57	-28.78	51.92	36.77	98.44	18 1 7	1794.6	-27.31	43.43
100.00	8 49 40	4179.81	8.17	166.07	30.14	61.15	9 59 20	3579.8	4.26	159.46
110.00	18 46 12	2128.63	-32.19	31.01	36.05	102.18	19 21 41	1528.6	-30.18	22.37
110.00	9 41 9	4018.52	11.15	152.04	28.34	57.48	10 48 8	3418.5	6.78	145.67

DIFFERENTIAL CORRECTIONS

TDE .3911 TRA-1.2976 TC3 1.6602 BAU .4690
RDE -.4200 RRA -.1852 RC3 -.0035 FAU .07531
FDE -.0083 FRA .7252 FC3-3.0851 BSP 7786
BDE .5739 BRA 1.3108 BC3 1.6602 FSP 734

MID-COURSE EXECUTION ACCURACY

SGT 2312.8 SGR 575.0 SG3 258.0
RRT .1029 RRF -.1207 RTF -.8528
SGB 2383.0 R23 -.0275 R13 -.8530
SG1 2313.4 SG2 571.8 THA 1.56

ORBIT DETERMINATION ACCURACY

ST 700.0 SR 528.3 SS 231.1
CRT -.5935 CRS .0943 CST .7268
LSA 801.9 MSA 421.4 SSA 43.3
EL1 792.5 EL2 375.6 ALF 147.83

LAUNCH DATE DEC 5 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 402.444 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 34.679 GAL -.54 AZL 88.84 HCA 126.08 SMA 221.96 ECC .33598 INC 1.1554 V1 30.223
RP 242.34 LAP .93 LOP 198.98 VP 22.302 GAP 18.94 AZP 90.68 TAL 357.84 TAP 123.91 RCA 147.39 APO 296.54 V2 22.651
RC 149.184 GL 8.93 GP 2.16 ZAL 91:07 ZAP 170.06 ETS 166.13 ZAE 153.08 ETE 3.26 ZAC 91.83 ETC 255.90 CLP 170.29

PLANETOCENTRIC CONIC

C3 20.287 VHL 4.504 DLA 14.53 RAL 168.78 RAD 6567.8 VEL 11.902 PTH 2.11 VHP 8.932 DPA -.61 RAP 189.89 ECC 1.3339

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 25	2686.80	-27.54	73.61	35.41	96.88	16 29 12	2086.8	-26.30	65.16
90.00	7 35 45	4392.79	6.22	182.78	29.20	62.32	8 48 58	3792.8	2.47	176.11
100.00	17 13 33	2399.37	-28.83	52.27	35.22	98.27	17 53 32	1799.4	-27.39	43.77
100.00	8 49 18	4155.46	7.37	164.70	28.58	60.95	9 58 34	3555.5	3.44	158.12
110.00	18 39 12	2131.35	-32.23	31.21	34.51	102.06	19 14 43	1531.3	-30.23	22.57
110.00	9 40 8	3996.24	10.33	150.83	26.79	57.23	10 46 44	3396.2	5.94	144.49

DIFFERENTIAL CORRECTIONS

TDE .3846 TRA-1.2498 TC3 1.8002 BAU .4882
RDE -.4084 RRA -.1794 RC3 .0027 FAU .07788
FDE .0145 FRA .7164 FC3-3.3233 BSP 7553
BDE .5610 BRA 1.2627 BC3 1.8002 FSP 782

MID-COURSE EXECUTION ACCURACY

SGT 2359.4 SGR 570.5 SG3 271.1
RRT .1017 RRF -.1333 RTF -.8633
SGB 2427.4 R23 -.0403 R13 -.8635
SG1 2360.1 SG2 567.4 THA 1.50

ORBIT DETERMINATION ACCURACY

ST 696.1 SR 524.3 SS 229.2
CRT -.6009 CRS .1898 CST .6508
LSA 795.5 MSA 420.9 SSA 43.8
EL1 789.2 EL2 369.6 ALF 147.77

LAUNCH DATE DEC 5 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 405.246 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 34.593 GAL -.40 AZL 88.86 HCA 127.00 SMA 219.76 ECC .32926 INC 1.1368 V1 30.223
RP 242.06 LAP .91 LOP 199.90 VP 22.195 GAP 18.35 AZP 90.68 TAL 358.37 TAP 125.37 RCA 147.40 APO 292.12 V2 22.678
RC 151.478 GL 8.94 GP 2.24 ZAL 89.99 ZAP 169.45 ETS 166.44 ZAE 153.29 ETE 3.58 ZAC 91.98 ETC 255.89 CLP 169.69

PLANETOCENTRIC CONIC

C3 19.507 VHL 4.417 DLA 14.96 RAL 167.76 RAD 6567.8 VEL 11.870 PTH 2.11 VHP 8.721 DPA -.68 RAP 190.21 ECC 1.3210

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 36 25	2692.84	-27.58	74.04	33.87	96.66	16 21 18	2092.8	-26.37	65.59
90.00	7 35 36	4368.10	5.44	181.38	27.67	62.17	8 48 24	3768.1	1.67	174.73
100.00	17 5 52	2404.39	-28.88	52.64	33.68	98.08	17 45 56	1804.4	-27.46	44.12
100.00	8 48 51	4131.78	6.58	163.38	27.05	60.78	9 57 43	3531.8	2.64	156.82
110.00	18 32 11	2134.30	-32.27	31.43	32.98	101.94	19 7 45	1534.3	-30.29	22.78
110.00	9 39 1	3974.64	9.53	149.67	25.25	57.02	10 45 15	3374.6	5.12	143.35

DIFFERENTIAL CORRECTIONS
TDE .3557 TRA-1.2232 TC3 1.8922 BAU .4935
RDE -.3970 RRA -.1734 RC3 .0104 FAU .08069
FDE .0322 FRA .7000 FC3-3.5811 BSP 7959
BDE .5330 BRA 1.2354 BC3 1.8923 FSP 832

MID-COURSE EXECUTION ACCURACY
SGT 2388.4 SGR 565.3 SG3 285.1
RRT .1186 RRF -.1444 RTF -.8642
SGB 2454.4 R23 -.0361 R13 -.8645
SG1 2389.4 SG2 561.0 THA 1.70

ORBIT DETERMINATION ACCURACY
ST 676.9 SR 519.7 SS 226.4
CRT -.5776 CRS .2641 CST .6118
LSA 771.6 MSA 426.7 SSA 45.7
EL1 766.9 EL2 374.5 ALF 147.42

LAUNCH DATE DEC 5 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 408.117 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 34.510 GAL -.27 AZL 88.88 HCA 127.93 SMA 217.69 ECC .32286 INC 1.1178 V1 30.223
RP 241.79 LAP .88 LOP 200.83 VP 22.094 GAP 17.77 AZP 90.69 TAL 358.90 TAP 126.82 RCA 147.41 APO 287.98 V2 22.706
RC 153.781 GL 8.94 GP 2.32 ZAL 88.91 ZAP 168.84 ETS 166.71 ZAE 153.54 ETE 3.92 ZAC 92.13 ETC 255.88 CLP 169.08

PLANETOCENTRIC CONIC

C3 18.785 VHL 4.334 DLA 15.39 RAL 166.73 RAD 6567.8 VEL 11.839 PTH 2.10 VHP 8.515 DPA -.74 RAP 190.54 ECC 1.3092

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 28 23	2699.11	-27.63	74.50	32.33	96.44	16 13 23	2099.1	-26.45	66.03
90.00	7 35 22	4344.03	4.67	180.03	26.16	62.04	8 47 46	3744.0	.89	173.39
100.00	16 58 9	2409.65	-28.93	53.02	32.15	97.88	17 38 19	1809.6	-27.53	44.50
100.00	8 48 17	4108.74	5.82	162.10	25.53	60.63	9 56 46	3508.7	1.86	155.55
110.00	18 25 8	2137.47	-32.31	31.67	31.47	101.81	19 0 46	1537.5	-30.35	23.00
110.00	9 37 47	3953.67	8.75	148.54	23.73	56.82	10 43 41	3353.7	4.33	142.25

DIFFERENTIAL CORRECTIONS
TDE .3286 TRA-1.1973 TC3 2.0016 BAU .5027
RDE -.3862 RRA -.1677 RC3 .0192 FAU .08381
FDE .0553 FRA .6862 FC3-3.8624 BSP 8240
BDE .5071 BRA 1.2089 BC3 2.0017 FSP 879

MID-COURSE EXECUTION ACCURACY
SGT 2427.7 SGR 560.2 SG3 300.5
RRT .1357 RRF -.1588 RTF -.8670
SGB 2491.5 R23 -.0350 R13 -.8673
SG1 2429.0 SG2 554.7 THA 1.89

ORBIT DETERMINATION ACCURACY
ST 658.7 SR 515.2 SS 226.9
CRT -.5533 CRS .3579 CST .5535
LSA 748.3 MSA 434.3 SSA 47.4
EL1 745.3 EL2 379.3 ALF 147.08

LAUNCH DATE DEC 5 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 411.050 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 34.431 GAL -.14 AZL 88.90 HCA 128.85 SMA 215.76 ECC .31677 INC 1.0982 V1 30.223
RP 241.51 LAP .86 LOP 201.76 VP 21.999 GAP 17.19 AZP 90.69 TAL 359.43 TAP 128.28 RCA 147.41 APO 284.11 V2 22.734
RC 156.092 GL 8.92 GP 2.41 ZAL 87.81 ZAP 168.22 ETS 166.95 ZAE 153.83 ETE 4.27 ZAC 92.28 ETC 255.87 CLP 168.46

PLANETOCENTRIC CONIC

C3 18.119 VHL 4.257 DLA 15.80 RAL 165.68 RAD 6567.7 VEL 11.811 PTH 2.09 VHP 8.314 DPA -.79 RAP 190.85 ECC 1.2982

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 20 21	2705.57	-27.68	74.96	30.81	96.21	16 5 27	2105.6	-26.53	66.49
90.00	7 35 1	4320.66	3.92	178.72	24.66	61.93	8 47 1	3720.7	.14	172.08
100.00	16 50 26	2415.08	-28.98	53.42	30.63	97.68	17 30 41	1815.1	-27.61	44.88
100.00	8 47 37	4086.38	5.07	160.87	24.03	60.50	9 55 44	3486.4	1.10	154.33
110.00	18 18 5	2140.83	-32.36	31.92	29.96	101.67	18 53 46	1540.8	-30.42	23.24
110.00	9 36 27	3933.39	8.00	147.46	22.23	56.65	10 42 1	3333.4	3.56	141.19

DIFFERENTIAL CORRECTIONS
TDE .3046 TRA-1.1619 TC3 2.1193 BAU .5134
RDE -.3759 RRA -.1619 RC3 .0290 FAU .08699
FDE .0766 FRA .6634 FC3-4.1563 BSP 8348
BDE .4838 BRA 1.1731 BC3 2.1195 FSP 923

MID-COURSE EXECUTION ACCURACY
SGT 2462.8 SGR 554.9 SG3 316.2
RRT .1502 RRF -.1722 RTF -.8710
SGB 2524.5 R23 -.0349 R13 -.8713
SG1 2464.2 SG2 548.3 THA 2.04

ORBIT DETERMINATION ACCURACY
ST 639.4 SR 510.5 SS 226.4
CRT -.5339 CRS .4420 CST .4924
LSA 725.4 MSA 438.2 SSA 49.2
EL1 723.9 EL2 381.2 ALF 146.52

LAUNCH DATE DEC 5 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 414.040 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 34.355 GAL -.01 AZL 88.92 HCA 129.79 SMA 213.95 ECC .31097 INC 1.0781 V1 30.223
RP 241.22 LAP .83 LOP 202.69 VP 21.910 GAP 16.62 AZP 90.69 TAL 359.96 TAP 129.75 RCA 147.41 APO 280.48 V2 22.762
RC 158.408 GL 8.89 GP 2.49 ZAL 86.72 ZAP 167.58 ETS 167.15 ZAE 154.14 ETE 4.65 ZAC 92.43 ETC 255.86 CLP 167.83

PLANETOCENTRIC CONIC

C3 17.504 VHL 4.184 DLA 16.20 RAL 164.61 RAD 6567.7 VEL 11.785 PTH 2.08 VHP 8.117 DPA -.83 RAP 191.16 ECC 1.2881

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 12 20	2712.13	-27.73	75.44	29.30	95.98	15 57 32	2112.1	-26.61	66.95
90.00	7 34 33	4298.03	3.20	177.45	23.18	61.85	8 46 11	3698.0	-.59	170.82
100.00	16 42 44	2420.61	-29.03	53.82	29.13	97.47	17 23 4	1820.6	-27.69	45.27
100.00	8 46 50	4064.78	4.34	159.67	22.55	60.40	9 54 35	3464.8	.37	153.14
110.00	18 11 2	2144.30	-32.41	32.18	28.47	101.52	18 46 47	1544.3	-30.48	23.49
110.00	9 35 1	3913.85	7.26	146.42	20.75	56.51	10 40 14	3313.8	2.81	140.17

DIFFERENTIAL CORRECTIONS
TDE .5578 TRA-1.1545 TC3 2.0492 BAU .4796
RDE -.3621 RRA -.1569 RC3 .0389 FAU .08862
FDE -.0993 FRA .6643 FC3-4.3829 BSP 10314
BDE .6650 BRA 1.1651 BC3 2.0496 FSP 1034

MID-COURSE EXECUTION ACCURACY
SGT 2496.8 SGR 545.0 SG3 327.5
RRT .0334 RRF -.1278 RTF -.8403
SGB 2555.6 R23 -.0984 R13 -.8404
SG1 2496.9 SG2 544.6 THA .44

ORBIT DETERMINATION ACCURACY
ST 911.1 SR 500.4 SS 234.0
CRT -.7580 CRS -.2887 CST .8218
LSA 1011.1 MSA 332.1 SSA 51.6
EL1 995.6 EL2 298.7 ALF 155.00

LAUNCH DATE DEC 5 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 417.087 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	34.282	GAL	.12	AZL	88.94	HCA	130.72	SMA	212.24	ECC	.30545	INC	1.0575
RP	240.93	LAP	.80	LOP	203.62	VP	21.826	GAP	16.05	AZP	90.69	TAL	.50	TAP	131.22	RCA	147.41	APO	277.07
RC	160.729	GL	8.84	GP	2.59	ZAL	85.62	ZAP	166.93	ETS	167.33	ZAE	154.50	ETE	5.06	ZAC	92.58	ETC	255.86

V1	30.223	V2	22.791	CLP	167.18														

PLANETOCENTRIC CONIC

C3	16.937	VHL	4.115	DLA	16.58	RAL	163.54	RAD	6567.7	VEL	11.761	PTH	2.08	VHP	7.926	DPA	-.86	RAP	191.46
ECC	1.2787																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 4 21	2718.72	-27.78	75.91	27.81	95.75	15 49 40	2118.7	-26.69	67.42
90.00	7 33 57	4276.21	2.50	176.23	21.72	61.78	8 45 13	3676.2	-1.29	169.60
100.00	16 35 4	2426.18	-29.08	54.23	27.64	97.27	17 15 30	1826.2	-27.77	45.67
100.00	8 45 55	4043.98	3.64	158.53	21.09	60.31	9 53 19	3444.0	-.34	152.00
110.00	18 4 2	2147.84	-32.46	32.44	26.99	101.37	18 39 50	1547.8	-30.55	23.75
110.00	9 33 27	3895.09	6.56	145.43	19.28	56.38	10 38 22	3295.1	2.09	139.19

DIFFERENTIAL CORRECTIONS

TDE	.2771	TRA	-1.0849	TC3	2.3759	BAU	.5381
RDE	-.3565	RRA	-.1510	RC3	.0529	FAU	.09425
FDE	.1129	FRA	.6152	FC3	-4.8178	BSP	8280
BDE	.4515	BRA	1.0953	BC3	2.3765	FSP	1011

MID-COURSE EXECUTION ACCURACY

SGT	2540.9	SGR	544.4	SG3	351.5		
RRT	.1730	RRF	-.2017	RTF	-.8806		
SGB	2598.6	R23	-.0429	R13	-.8810		
SG1	2542.8	SG2	535.8	THA	2.22		

ORBIT DETERMINATION ACCURACY

ST	613.0	SR	500.7	SS	227.9
CRT	-.5223	CRS	.5751	CST	.3582
LSA	696.7	MSA	436.2	SSA	53.0
EL1	696.6	EL2	375.7	ALF	145.66

LAUNCH DATE DEC 5 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 420.182 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	34.213	GAL	.24	AZL	88.96	HCA	131.65	SMA	210.65	ECC	.30020	INC	1.0361
RP	240.64	LAP	.77	LOP	204.56	VP	21.748	GAP	15.49	AZP	90.69	TAL	1.03	TAP	132.68	RCA	147.41	APO	273.88
RC	163.052	GL	8.78	GP	2.69	ZAL	84.52	ZAP	166.27	ETS	167.48	ZAE	154.89	ETE	5.49	ZAC	92.74	ETC	255.85

V1	30.223	V2	22.821	CLP	166.53														

PLANETOCENTRIC CONIC

C3	16.413	VHL	4.051	DLA	16.95	RAL	162.45	RAD	6567.7	VEL	11.739	PTH	2.07	VHP	7.739	DPA	-.89	RAP	191.75
ECC	1.2701																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 27	2725.25	-27.82	76.39	26.33	95.51	15 41 53	2125.3	-26.76	67.88
90.00	7 33 12	4255.29	1.82	175.06	20.28	61.74	8 44 8	3655.3	-1.97	168.44
100.00	16 27 29	2431.70	-29.12	54.63	26.17	97.06	17 8 1	1831.7	-27.84	46.06
100.00	8 44 52	4024.06	2.97	157.43	19.65	60.24	9 51 56	3424.1	-1.01	150.91
110.00	17 57 5	2151.36	-32.50	32.71	25.53	101.22	18 32 56	1551.4	-30.62	24.00
110.00	9 31 45	3877.16	5.88	144.48	17.84	56.27	10 36 22	3277.2	1.41	138.25

DIFFERENTIAL CORRECTIONS

TDE	.2507	TRA	-1.0563	TC3	2.4740	BAU	.5431
RDE	-.3478	RRA	-.1458	RC3	.0662	FAU	.09753
FDE	.1446	FRA	.5939	FC3	-5.1445	BSP	8633
BDE	.4287	BRA	1.0663	BC3	2.4749	FSP	1084

MID-COURSE EXECUTION ACCURACY

SGT	2565.8	SGR	539.6	SG3	368.5		
RRT	.1948	RRF	-.2230	RTF	-.8823		
SGB	2621.9	R23	-.0444	R13	-.8828		
SG1	2568.0	SG2	528.8	THA	2.45		

ORBIT DETERMINATION ACCURACY

ST	590.6	SR	496.0	SS	238.2
CRT	-.4914	CRS	.6669	CST	.2778
LSA	671.4	MSA	444.8	SSA	54.6
EL1	671.0	EL2	380.2	ALF	144.82

LAUNCH DATE DEC 5 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 423.324 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	34.147	GAL	.36	AZL	88.99	HCA	132.59	SMA	209.14	ECC	.29521	INC	1.0141
RP	240.34	LAP	.75	LOP	205.49	VP	21.676	GAP	14.93	AZP	90.69	TAL	1.56	TAP	134.15	RCA	147.40	APO	270.88
RC	165.375	GL	8.71	GP	2.79	ZAL	83.42	ZAP	165.59	ETS	167.61	ZAE	155.31	ETE	5.96	ZAC	92.90	ETC	255.84

V1	30.223	V2	22.851	CLP	165.86														

PLANETOCENTRIC CONIC

C3	15.931	VHL	3.991	DLA	17.30	RAL	161.36	RAD	6567.6	VEL	11.718	PTH	2.06	VHP	7.557	DPA	-.91	RAP	192.04
ECC	1.2622																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 48 39	2731.65	-27.86	76.85	24.86	95.28	15 34 11	2131.7	-26.84	68.33
90.00	7 32 19	4235.28	1.18	173.95	18.86	61.71	8 42 54	3635.3	-2.61	167.32
100.00	16 20 0	2437.11	-29.17	55.03	24.71	96.85	17 0 37	1837.1	-27.91	46.45
100.00	8 43 40	4005.05	2.33	156.39	18.22	60.19	9 50 25	3405.0	-1.66	149.86
110.00	17 50 13	2154.82	-32.55	32.97	24.08	101.07	18 26 8	1554.8	-30.68	24.25
110.00	9 29 56	3860.11	5.24	143.58	16.41	56.17	10 34 16	3260.1	.76	137.36

DIFFERENTIAL CORRECTIONS

TDE	.2307	TRA	-1.0277	TC3	2.5897	BAU	.5518
RDE	-.3393	RRA	-.1407	RC3	.0812	FAU	.10129
FDE	.1707	FRA	.5716	FC3	-5.5044	BSP	8776
BDE	.4103	BRA	1.0373	BC3	2.5910	FSP	1152

MID-COURSE EXECUTION ACCURACY

SGT	2602.1	SGR	534.9	SG3	387.4		
RRT	.2152	RRF	-.2443	RTF	-.8854		
SGB	2656.5	R23	-.0469	R13	-.8859		
SG1	2604.8	SG2	521.8	THA	2.64		

ORBIT DETERMINATION ACCURACY

ST	573.1	SR	491.1	SS	247.7
CRT	-.4682	CRS	.7298	CST	.2139
LSA	652.6	MSA	449.4	SSA	56.4
EL1	650.9	EL2	382.1	ALF	144.15

LAUNCH DATE DEC 5 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 426.510 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	34.084	GAL	.47	AZL	89.01	HCA	133.53	SMA	207.73	ECC	.29046	INC	.9913
RP	240.04	LAP	.72	LOP	206.43	VP	21.608	GAP	14.38	AZP	90.68	TAL	2.09	TAP	135.62	RCA	147.39	APO	268.06
RC	167.697	GL	8.62	GP	2.90	ZAL	82.33	ZAP	164.90	ETS	167.72	ZAE	155.76	ETE	6.47	ZAC	93.06	ETC	255.84

V1	30.223	V2	22.881	CLP	165.17														

PLANETOCENTRIC CONIC

C3	15.486	VHL	3.935	DLA	17.63	RAL	160.27	RAD	6567.6	VEL	11.699	PTH	2.06	VHP	7.379	DPA	-.91	RAP	192.32
ECC	1.2549																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 59	2737.85	-27.90	77.30	23.42	95.06	15 26 37	2137.9	-26.90	68.78
90.00	7 31 16	4216.26	.56	172.89	17.46	61.69	8 41 32	3616.3	-3.23	166.26
100.00	16 12 37	2442.35	-29.21	55.41	23.26	96.66	16 53 19	1842.3	-27.98	46.82
100.00	8 42 19	3987.00	1.72	155.39	16.82	60.15	9 48 46	3387.0	-2.27	148.87
110.00	17 43 27	2158.17	-32.59	33.22	22.65	100.93	18 19 25	1558.2	-30.74	24.49
110.00	9 27 59	3843.94	4.62	142.73	15.01	56.09	10 32 3	3243.9	.14	136.52

DIFFERENTIAL CORRECTIONS

TDE	.2183	TRA	-.9844	TC3	2.7210	BAU	.5637
RDE	-.3312	RRA	-.1355	RC3	.0979	FAU	.10533
FDE	.1982	FRA	.5380	FC3	-5.8885	BSP	8795
BDE	.3967	BRA	.9937	BC3	2.7228	FSP	1220

MID-COURSE EXECUTION ACCURACY

SGT	2636.1	SGR	530.5	SG3	407.4		
RRT	.2310	RRF	-.2664	RTF	-.8905		
SGB	2688.9	R23	-.0540	R13	-.8910		
SG1	2639.1	SG2	515.5	THA	2.77		

ORBIT DETERMINATION ACCURACY

ST	555.6	SR	486.3	SS	257.7
CRT	-.4632	CRS	.7876	CST	.1265
LSA	639.8	MSA	446.0	SSA	58.2
EL1	634.7	EL2	377.3	ALF	143.05

LAUNCH DATE DEC 5 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 429.736 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 34.023 GAL .58 AZL 89.03 HCA 134.47 SMA 206.40 ECC .28594 INC .9677 V1 30.223
RP 239.73 LAP .69 LOP 207.37 VP 21.545 GAP 13.83 AZP 90.68 TAL 2.62 TAP 137.09 RCA 147.38 APO 265.41 V2 22.912
RC 170.016 GL 8.51 GP 3.01 ZAL 81.25 ZAP 164.19 ETS 167.81 ZAE 156.25 ETE 7.02 ZAC 93.23 ETC 255.83 CLP 164.48

PLANETOCENTRIC CONIC

C3 15.076 VHL 3.883 DLA 17.94 RAL 159.18 RAD 6567.6 VEL 11.682 PTH 2.05 VHP 7.206 DPA -.91 RAP 192.59 ECC 1.2481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 29	2743.71	-27.93	77.73	21.99	94.85	15 19 13	2143.7	-26.97	69.19
90.00	7 30 3	4198.35	-.01	171.89	16.08	61.68	8 40 1	3598.4	-3.80	165.25
100.00	16 5 25	2447.27	-29.25	55.77	21.84	96.47	16 46 12	1847.3	-28.04	47.18
100.00	8 40 48	3970.02	1.14	154.46	15.43	60.13	9 46 58	3370.0	-2.84	147.94
110.00	17 36 49	2161.29	-32.63	33.45	21.24	100.80	18 12 50	1561.3	-30.80	24.71
110.00	9 25 53	3828.77	4.05	141.94	13.62	56.03	10 29 42	3228.8	-.44	135.73

DIFFERENTIAL CORRECTIONS
TDE .1950 TRA -.9561 TC3 2.8188 BAU .5686
RDE -.3235 RRA -.1303 RC3 .1166 FAU .10956
FDE .2253 FRA .5049 FC3-6.2916 BSP 9042
BDE .3777 BRA .9650 BC3 2.8212 FSP 1290

MID-COURSE EXECUTION ACCURACY
SGT 2659.6 SGR 526.2 SG3 428.5
RRT .2576 RRF -.2910 RTF -.8916
SGB 2711.2 R23 -.0544 R13 -.8922
SG1 2663.2 SG2 507.7 THA 3.03

ORBIT DETERMINATION ACCURACY
ST 533.9 SR 481.2 SS 269.3
CRT -.4290 CRS .8325 CST .0800
LSA 619.5 MSA 449.1 SSA 60.5
EL1 609.7 EL2 380.6 ALF 141.83

LAUNCH DATE DEC 5 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 433.001 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.965 GAL .69 AZL 89.06 HCA 135.42 SMA 205.14 ECC .28164 INC .9434 V1 30.223
RP 239.42 LAP .66 LOP 208.32 VP 21.487 GAP 13.29 AZP 90.67 TAL 3.14 TAP 138.56 RCA 147.37 APO 262.92 V2 22.943
RC 172.331 GL 8.39 GP 3.14 ZAL 80.17 ZAP 163.47 ETS 167.88 ZAE 156.77 ETE 7.62 ZAC 93.40 ETC 255.82 CLP 163.76

PLANETOCENTRIC CONIC

C3 14.699 VHL 3.834 DLA 18.22 RAL 158.08 RAD 6567.6 VEL 11.665 PTH 2.05 VHP 7.036 DPA -.89 RAP 192.85 ECC 1.2419

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 26 10	2749.21	-27.96	78.13	20.57	94.65	15 11 59	2149.2	-27.02	69.59
90.00	7 28 38	4181.53	-.56	170.95	14.71	61.69	8 38 19	3581.5	-4.34	164.31
100.00	15 58 22	2451.88	-29.28	56.11	20.43	96.30	16 39 14	1851.9	-28.10	47.51
100.00	8 39 7	3954.09	.60	153.59	14.07	60.11	9 45 1	3354.1	-3.38	147.06
110.00	17 30 20	2164.17	-32.67	33.67	19.84	100.67	18 6 24	1564.2	-30.85	24.92
110.00	9 23 39	3814.56	3.50	141.19	12.26	55.98	10 27 13	3214.6	-.98	134.99

DIFFERENTIAL CORRECTIONS
TDE .1813 TRA -.9186 TC3 2.9408 BAU .5785
RDE -.3161 RRA -.1253 RC3 .1368 FAU .11398
FDE .2540 FRA .4690 FC3-6.7135 BSP 9056
BDE .3645 BRA .9271 BC3 2.9440 FSP 1365

MID-COURSE EXECUTION ACCURACY
SGT 2692.1 SGR 522.5 SG3 450.5
RRT .2796 RRF -.3174 RTF -.8956
SGB 2742.3 R23 -.0604 R13 -.8963
SG1 2696.2 SG2 500.9 THA 3.22

ORBIT DETERMINATION ACCURACY
ST 515.8 SR 476.2 SS 283.2
CRT -.4161 CRS .8698 CST .0149
LSA 609.4 MSA 444.6 SSA 62.5
EL1 592.0 EL2 377.2 ALF 140.44

LAUNCH DATE DEC 5 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 436.301 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.910 GAL .80 AZL 89.08 HCA 136.36 SMA 203.96 ECC .27756 INC .9181 V1 30.223
RP 239.11 LAP .63 LOP 209.27 VP 21.434 GAP 12.76 AZP 90.66 TAL 3.66 TAP 140.03 RCA 147.35 APO 260.57 V2 22.975
RC 174.639 GL 8.25 GP 3.27 ZAL 79.11 ZAP 162.73 ETS 167.94 ZAE 157.32 ETE 8.27 ZAC 93.57 ETC 255.82 CLP 163.03

PLANETOCENTRIC CONIC

C3 14.351 VHL 3.788 DLA 18.49 RAL 156.99 RAD 6567.6 VEL 11.651 PTH 2.05 VHP 6.871 DPA -.86 RAP 193.10 ECC 1.2362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 19 5	2754.20	-27.99	78.49	19.18	94.47	15 4 59	2154.2	-27.08	69.94
90.00	7 27 1	4165.92	-1.06	170.08	13.37	61.70	8 36 27	3565.9	-4.84	163.43
100.00	15 51 33	2456.03	-29.31	56.42	19.04	96.14	16 32 29	1856.0	-28.15	47.80
100.00	8 37 14	3939.33	.10	152.78	12.73	60.11	9 42 53	3339.3	-3.88	146.25
110.00	17 24 1	2166.72	-32.70	33.86	18.46	100.56	18 0 8	1566.7	-30.90	25.11
110.00	9 21 15	3801.40	3.00	140.51	10.91	55.93	10 24 37	3201.4	-1.49	134.30

DIFFERENTIAL CORRECTIONS
TDE .1612 TRA -.8895 TC3 3.0386 BAU .5838
RDE -.3091 RRA -.1201 RC3 .1592 FAU .11865
FDE .2824 FRA .4305 FC3-7.1572 BSP 9297
BDE .3486 BRA .8976 BC3 3.0428 FSP 1447

MID-COURSE EXECUTION ACCURACY
SGT 2715.2 SGR 519.4 SG3 473.7
RRT .3088 RRF -.3460 RTF -.8971
SGB 2764.4 R23 -.0626 R13 -.8978
SG1 2720.0 SG2 493.1 THA 3.50

ORBIT DETERMINATION ACCURACY
ST 495.3 SR 471.0 SS 297.6
CRT -.3827 CRS .8983 CST -.0213
LSA 596.5 MSA 442.4 SSA 64.9
EL1 568.9 EL2 378.8 ALF 138.75

LAUNCH DATE DEC 5 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 439.637 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.857 GAL .90 AZL 89.11 HCA 137.31 SMA 202.84 ECC .27368 INC .8919 V1 30.223
RP 238.79 LAP .60 LOP 210.22 VP 21.385 GAP 12.23 AZP 90.66 TAL 4.18 TAP 141.49 RCA 147.33 APO 258.36 V2 23.007
RC 176.939 GL 8.09 GP 3.40 ZAL 78.06 ZAP 161.97 ETS 167.98 ZAE 157.90 ETE 8.99 ZAC 93.75 ETC 255.81 CLP 162.29

PLANETOCENTRIC CONIC

C3 14.032 VHL 3.746 DLA 18.72 RAL 155.90 RAD 6567.6 VEL 11.637 PTH 2.04 VHP 6.710 DPA -.82 RAP 193.34 ECC 1.2309

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 12 14	2758.67	-28.01	78.81	17.81	94.31	14 58 13	2158.7	-27.12	70.26
90.00	7 25 11	4151.51	-1.53	169.28	12.05	61.72	8 34 23	3551.5	-5.30	162.62
100.00	15 44 56	2459.72	-29.34	56.69	17.67	96.00	16 25 56	1859.7	-28.20	48.07
100.00	8 35 10	3925.70	-.36	152.03	11.40	60.11	9 40 35	3325.7	-4.34	145.50
110.00	17 17 53	2168.91	-32.73	34.03	17.10	100.47	17 54 2	1568.9	-30.94	25.26
110.00	9 18 42	3789.27	2.54	139.87	9.59	55.90	10 21 51	3189.3	-1.95	133.67

DIFFERENTIAL CORRECTIONS
TDE .1576 TRA -.8443 TC3 3.1762 BAU .5968
RDE -.3023 RRA -.1150 RC3 .1834 FAU .12360
FDE .3093 FRA .3858 FC3-7.6260 BSP 9073
BDE .3409 BRA .8521 BC3 3.1815 FSP 1521

MID-COURSE EXECUTION ACCURACY
SGT 2753.1 SGR 517.0 SG3 498.2
RRT .3294 RRF -.3756 RTF -.9027
SGB 2801.2 R23 -.0727 R13 -.9035
SG1 2758.5 SG2 487.2 THA 3.65

ORBIT DETERMINATION ACCURACY
ST 480.1 SR 465.8 SS 311.2
CRT -.3951 CRS .9195 CST -.0984
LSA 598.2 MSA 426.7 SSA 66.9
EL1 558.9 EL2 367.6 ALF 137.19

LAUNCH DATE DEC 5 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 443.002 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.807 GAL .99 AZL 89.14 HCA 138.26 SMA 201.79 ECC .27000 INC .8645 V1 30.223
RP 238.47 LAP .58 LOP 211.17 VP 21.340 GAP 11.72 AZP 90.65 TAL 4.68 TAP 142.95 RCA 147.31 APO 256.28 V2 23.040
RC 179.231 GL 7.91 GP 3.55 ZAL 77.03 ZAP 161.20 ETS 168.01 ZAE 158.50 ETE 9.79 ZAC 93.94 ETC 255.81 CLP 161.53

PLANETOCENTRIC CONIC

C3 13.738 VHL 3.706 DLA 18.93 RAL 154.83 RAD 6567.5 VEL 11.624 PTH 2.04 VHP 6.553 DPA -.77 RAP 193.58 ECC 1.2261

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 5 42	2762.40	-28.03	79.08	16.46	94.18	14 51 45	2162.4	-27.16	70.53
90.00	7 23 8	4138.49	-1.95	168.55	10.75	61.74	8 32 6	3538.5	-5.71	161.89
100.00	15 38 38	2462.74	-29.36	56.91	16.33	95.88	16 19 41	1862.7	-28.24	48.28
100.00	8 32 53	3913.39	-.78	151.36	10.11	60.12	9 38 6	3313.4	-4.75	144.82
110.00	17 12 0	2170.60	-32.75	34.16	15.76	100.40	17 48 11	1570.6	-30.97	25.39
110.00	9 16 0	3778.29	2.12	139.30	8.29	55.87	10 18 58	3178.3	-2.37	133.09

DIFFERENTIAL CORRECTIONS

TDE .1291 TRA -.8238 TC3 3.2429 BAU .5969
RDE -.2959 RRA -.1098 RC3 .2101 FAU .12866
FDE .3420 FRA .3414 FC3-8.1081 BSP 9462
BDE .3228 BRA .8310 BC3 3.2497 FSP 1610

MID-COURSE EXECUTION ACCURACY

SGT 2762.5 SGR 515.5 SG3 523.5
RRT .3686 RRF -.4092 RTF -.9018
SGB 2810.1 R23 -.0716 R13 -.9027
SG1 2769.2 SG2 478.1 THA 4.06

ORBIT DETERMINATION ACCURACY

ST 456.2 SR 460.6 SS 330.2
CRT -.3292 CRS .9371 CST -.0936
LSA 586.2 MSA 425.3 SSA 69.6
EL1 528.5 EL2 375.4 ALF 134.16

LAUNCH DATE DEC 5 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 446.398 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.759 GAL 1.09 AZL 89.16 HCA 139.22 SMA 200.80 ECC .26650 INC .8361 V1 30.223
RP 238.14 LAP .55 LOP 212.12 VP 21.299 GAP 11.20 AZP 90.63 TAL 5.18 TAP 144.40 RCA 147.29 APO 254.31 V2 23.073
RC 181.513 GL 7.71 GP 3.71 ZAL 76.02 ZAP 160.41 ETS 168.02 ZAE 159.14 ETE 10.67 ZAC 94.13 ETC 255.80 CLP 160.75

PLANETOCENTRIC CONIC

C3 13.467 VHL 3.670 DLA 19.12 RAL 153.76 RAD 6567.5 VEL 11.613 PTH 2.03 VHP 6.399 DPA -.70 RAP 193.80 ECC 1.2216

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 59 28	2765.43	-28.05	79.31	15.13	94.07	14 45 33	2165.4	-27.19	70.74
90.00	7 20 50	4126.79	-2.32	167.90	9.47	61.77	8 29 37	3526.8	-6.08	161.23
100.00	15 32 35	2465.13	-29.38	57.08	15.00	95.79	16 13 41	1865.1	-28.26	48.46
100.00	8 30 23	3902.32	-1.16	150.75	8.83	60.13	9 35 26	3302.3	-5.12	144.21
110.00	17 6 21	2171.81	-32.76	34.25	14.44	100.34	17 42 33	1571.8	-30.99	25.47
110.00	9 13 7	3768.41	1.74	138.78	7.01	55.86	10 15 56	3168.4	-2.75	132.58

DIFFERENTIAL CORRECTIONS

TDE .1168 TRA -.7902 TC3 3.3381 BAU .6026
RDE -.2897 RRA -.1046 RC3 .2391 FAU .13404
FDE .3691 FRA .2900 FC3-8.6165 BSP 9552
BDE .3123 BRA .7971 BC3 3.3467 FSP 1702

MID-COURSE EXECUTION ACCURACY

SGT 2782.3 SGR 515.0 SG3 550.2
RRT .4000 RRF -.4431 RTF -.9039
SGB 2829.5 R23 -.0774 R13 -.9049
SG1 2790.1 SG2 470.6 THA 4.36

ORBIT DETERMINATION ACCURACY

ST 438.3 SR 455.3 SS 344.8
CRT -.3097 CRS .9480 CST -.1275
LSA 585.8 MSA 412.1 SSA 72.1
EL1 511.8 EL2 370.7 ALF 131.51

LAUNCH DATE DEC 5 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 449.823 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.713 GAL 1.18 AZL 89.19 HCA 140.18 SMA 199.86 ECC .26317 INC .8067 V1 30.223
RP 237.81 LAP .52 LOP 213.08 VP 21.263 GAP 10.70 AZP 90.62 TAL 5.67 TAP 145.85 RCA 147.26 APO 252.46 V2 23.106
RC 183.786 GL 7.50 GP 3.87 ZAL 75.02 ZAP 159.59 ETS 168.03 ZAE 159.80 ETE 11.66 ZAC 94.32 ETC 255.80 CLP 159.95

PLANETOCENTRIC CONIC

C3 13.219 VHL 3.636 DLA 19.27 RAL 152.70 RAD 6567.5 VEL 11.602 PTH 2.03 VHP 6.250 DPA -.61 RAP 194.01 ECC 1.2175

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 53 34	2767.62	-28.06	79.46	13.82	93.99	14 39 42	2167.6	-27.21	70.90
90.00	7 18 16	4116.51	-2.65	167.32	8.22	61.80	8 26 53	3516.5	-6.41	160.65
100.00	15 26 52	2466.78	-29.39	57.21	13.69	95.73	16 7 58	1866.8	-28.28	48.58
100.00	8 27 40	3892.58	-1.49	150.21	7.57	60.14	9 32 33	3292.6	-5.45	143.67
110.00	17 0 56	2172.44	-32.77	34.29	13.13	100.32	17 37 9	1572.4	-31.00	25.52
110.00	9 10 5	3759.68	1.41	138.33	5.76	55.84	10 12 44	3159.7	-3.08	132.12

DIFFERENTIAL CORRECTIONS

TDE .1051 TRA -.7575 TC3 3.4295 BAU .6080
RDE -.2837 RRA -.0992 RC3 .2706 FAU .13967
FDE .3976 FRA .2362 FC3-9.1476 BSP 9636
BDE .3025 BRA .7639 BC3 3.4402 FSP 1799

MID-COURSE EXECUTION ACCURACY

SGT 2801.0 SGR 515.8 SG3 578.3
RRT .4334 RRF -.4792 RTF -.9059
SGB 2848.1 R23 -.0838 R13 -.9071
SG1 2810.1 SG2 463.3 THA 4.69

ORBIT DETERMINATION ACCURACY

ST 420.6 SR 449.9 SS 360.8
CRT -.2892 CRS .9555 CST -.1563
LSA 587.6 MSA 398.2 SSA 74.6
EL1 495.8 EL2 365.3 ALF 128.44

LAUNCH DATE DEC 5 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 453.275 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.669 GAL 1.27 AZL 89.22 HCA 141.14 SMA 198.97 ECC .26001 INC .7757 V1 30.223
RP 237.48 LAP .49 LOP 214.04 VP 21.230 GAP 10.20 AZP 90.60 TAL 6.16 TAP 147.29 RCA 147.24 APO 250.71 V2 23.140
RC 186.049 GL 7.26 GP 4.04 ZAL 74.04 ZAP 158.76 ETS 168.02 ZAE 160.48 ETE 12.76 ZAC 94.52 ETC 255.79 CLP 159.13

PLANETOCENTRIC CONIC

C3 12.990 VHL 3.604 DLA 19.39 RAL 151.65 RAD 6567.5 VEL 11.592 PTH 2.03 VHP 6.104 DPA -.51 RAP 194.21 ECC 1.2138

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 48 2	2768.91	-28.06	79.56	12.53	93.94	14 34 11	2168.9	-27.22	70.99
90.00	7 15 27	4107.69	-2.94	166.83	6.98	61.82	8 23 55	3507.7	-6.68	160.15
100.00	15 21 28	2467.62	-29.39	57.27	12.40	95.70	16 2 35	1867.6	-28.29	48.64
100.00	8 24 42	3884.21	-1.77	149.75	6.33	60.16	9 29 26	3284.2	-5.73	143.20
110.00	16 55 48	2172.46	-32.77	34.30	11.85	100.32	17 32 1	1572.5	-31.00	25.52
110.00	9 6 51	3752.13	1.12	137.93	4.52	55.83	10 9 23	3152.1	-3.37	131.73

DIFFERENTIAL CORRECTIONS

TDE .0966 TRA -.7246 TC3 3.5223 BAU .6140
RDE -.2779 RRA -.0938 RC3 .3049 FAU .14560
FDE .4246 FRA .1791 FC3-9.7033 BSP 9621
BDE .2943 BRA .7306 BC3 3.5355 FSP 1895

MID-COURSE EXECUTION ACCURACY

SGT 2821.6 SGR 518.2 SG3 607.7
RRT .4672 RRF -.5167 RTF -.9082
SGB 2868.8 R23 -.0915 R13 -.9096
SG1 2832.3 SG2 456.4 THA 5.04

ORBIT DETERMINATION ACCURACY

ST 404.5 SR 444.4 SS 375.8
CRT -.2782 CRS .9596 CST -.1892
LSA 591.2 MSA 383.3 SSA 77.2
EL1 483.1 EL2 357.4 ALF 125.64

LAUNCH DATE DEC 5 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 456.753 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.627 GAL 1.35 AZL 89.26 HCA 142.10 SMA 198.14 ECC .25701 INC .7434 V1 30.223
RP 237.15 LAP .46 LOP 215.00 VP 21.200 GAP 9.70 AZP 90.59 TAL 6.63 TAP 148.73 RCA 147.21 APO 249.06 V2 23.174
RC 188.300 GL 7.01 GP 4.23 ZAL 73.09 ZAP 157.90 ETS 168.00 ZAE 161.19 ETE 14.00 ZAC 94.73 ETC 255.79 CLP 158.29

PLANETOCENTRIC CONIC

C3 12.780 VHL 3.575 DLA 19.49 RAL 150.62 RAD 6567.5 VEL 11.583 PTH 2.03 VHP 5.962 DPA -.39 RAP 194.40 ECC 1.2103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 42 52	2769.22	-28.07	79.58	11.26	93.93	14 29 2	2169.2	-27.23	71.02
90.00	7 12 21	4100.37	-3.17	166.42	5.76	61.85	8 20 41	3500.4	-6.91	159.74
100.00	15 16 25	2467.60	-29.39	57.27	11.13	95.70	15 57 32	1867.6	-28.29	48.63
100.00	8 21 30	3877.22	-2.01	149.37	5.11	60.17	9 26 7	3277.2	-5.96	142.82
110.00	16 50 57	2171.81	-32.76	34.25	10.58	100.34	17 27 9	1571.8	-30.99	25.47
110.00	9 3 26	3745.78	.88	137.60	3.31	55.83	10 5 52	3145.8	-3.61	131.39

DIFFERENTIAL CORRECTIONS
TDE .1000 TRA -.6810 TC3 3.6392 BAU .6245
RDE -.2722 RRA -.0880 RC3 .3426 FAU .15204
FDE .4452 FRA .1106 FC-10.2994 BSP 9419
BDE .2900 BRA .6867 BC3 3.6553 FSP 1992

MID-COURSE EXECUTION ACCURACY
SGT 2852.4 SGR 522.2 SG3 639.4
RRT .4972 RRF -.5546 RTF -.9125
SGB 2899.8 R23 -.1028 R13 -.9142
SG1 2864.5 SG2 451.2 THA 5.33

ORBIT DETERMINATION ACCURACY
ST 390.4 SR 438.6 SS 385.8
CRT -.3139 CRS .9601 CST -.2650
LSA 597.0 MSA 361.6 SSA 80.5
EL1 479.3 EL2 339.2 ALF 124.80

LAUNCH DATE DEC 5 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 460.253 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.587 GAL 1.44 AZL 89.29 HCA 143.06 SMA 197.35 ECC .25417 INC .7094 V1 30.223
RP 236.81 LAP .43 LOP 215.96 VP 21.175 GAP 9.22 AZP 90.57 TAL 7.10 TAP 150.16 RCA 147.19 APO 247.51 V2 23.209
RC 190.540 GL 6.73 GP 4.43 ZAL 72.16 ZAP 157.02 ETS 167.97 ZAE 161.91 ETE 15.40 ZAC 94.95 ETC 255.78 CLP 157.43

PLANETOCENTRIC CONIC

C3 12.587 VHL 3.548 DLA 19.55 RAL 149.60 RAD 6567.5 VEL 11.575 PTH 2.02 VHP 5.823 DPA -.26 RAP 194.58 ECC 1.2072

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 38 11	2768.37	-28.06	79.52	10.02	93.96	14 24 19	2168.4	-27.22	70.95
90.00	7 8 57	4094.70	-3.36	166.10	4.57	61.87	8 17 12	3494.7	-7.09	159.42
100.00	15 11 47	2466.53	-29.39	57.19	9.89	95.74	15 52 54	1866.5	-28.28	48.56
100.00	8 18 2	3871.78	-2.19	149.07	3.92	60.18	9 22 34	3271.8	-6.14	142.51
110.00	16 46 28	2170.34	-32.75	34.14	9.33	100.41	17 22 38	1570.3	-30.96	25.37
110.00	8 59 51	3740.73	.69	137.34	2.13	55.82	10 2 12	3140.7	-3.80	131.13

DIFFERENTIAL CORRECTIONS
TDE .0759 TRA -.6657 TC3 3.6646 BAU .6200
RDE -.2669 RRA -.0823 RC3 .3827 FAU .15829
FDE .4766 FRA .0492 FC-10.8871 BSP 9819
BDE .2775 BRA .6707 BC3 3.6845 FSP 2112

MID-COURSE EXECUTION ACCURACY
SGT 2842.1 SGR 528.6 SG3 670.8
RRT .5418 RRF -.5949 RTF -.9104
SGB 2890.9 R23 -.1063 R13 -.9122
SG1 2856.9 SG2 442.0 THA 5.90

ORBIT DETERMINATION ACCURACY
ST 371.8 SR 433.2 SS 404.6
CRT -.2342 CRS .9608 CST -.2261
LSA 596.9 MSA 355.5 SSA 82.7
EL1 456.1 EL2 343.3 ALF 118.38

LAUNCH DATE DEC 5 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 463.778 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.549 GAL 1.52 AZL 89.33 HCA 144.03 SMA 196.60 ECC .25148 INC .6740 V1 30.223
RP 236.46 LAP .40 LOP 216.93 VP 21.153 GAP 8.74 AZP 90.55 TAL 7.55 TAP 151.58 RCA 147.16 APO 246.04 V2 23.244
RC 192.768 GL 6.43 GP 4.64 ZAL 71.26 ZAP 156.12 ETS 167.93 ZAE 162.65 ETE 16.99 ZAC 95.17 ETC 255.78 CLP 156.55

PLANETOCENTRIC CONIC

C3 12.410 VHL 3.523 DLA 19.57 RAL 148.60 RAD 6567.5 VEL 11.567 PTH 2.02 VHP 5.688 DPA -.10 RAP 194.75 ECC 1.2042

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 33 54	2766.41	-28.05	79.38	8.80	94.03	14 20 1	2166.4	-27.20	70.81
90.00	7 5 15	4090.61	-3.49	165.87	3.39	61.88	8 13 25	3490.6	-7.22	159.18
100.00	15 7 32	2464.47	-29.37	57.04	8.67	95.82	15 48 37	1864.5	-28.26	48.41
100.00	8 14 18	3867.78	-2.33	148.85	2.75	60.19	9 18 46	3267.8	-6.28	142.29
110.00	16 42 16	2168.11	-32.72	33.97	8.11	100.50	17 18 24	1568.1	-30.92	25.21
110.00	8 56 4	3736.91	.54	137.14	.96	55.82	9 58 20	3136.9	-3.95	130.93

DIFFERENTIAL CORRECTIONS
TDE .0693 TRA -.6362 TC3 3.7266 BAU .6223
RDE -.2616 RRA -.0762 RC3 .4264 FAU .16501
FDE .5003 FRA -.0219 FC-11.5114 BSP 9911
BDE .2706 BRA .6407 BC3 3.7509 FSP 2235

MID-COURSE EXECUTION ACCURACY
SGT 2848.2 SGR 537.2 SG3 704.3
RRT .5785 RRF -.6343 RTF -.9115
SGB 2898.4 R23 -.1157 R13 -.9136
SG1 2865.5 SG2 435.5 THA 6.38

ORBIT DETERMINATION ACCURACY
ST 357.0 SR 427.4 SS 417.5
CRT -.2245 CRS .9585 CST -.2516
LSA 600.5 MSA 341.3 SSA 85.6
EL1 446.2 EL2 333.3 ALF 115.56

LAUNCH DATE DEC 5 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 467.325 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.512 GAL 1.59 AZL 89.36 HCA 145.00 SMA 195.89 ECC .24892 INC .6369 V1 30.223
RP 236.12 LAP .37 LOP 217.90 VP 21.134 GAP 8.26 AZP 90.52 TAL 8.00 TAP 153.00 RCA 147.13 APO 244.65 V2 23.279
RC 194.983 GL 6.11 GP 4.87 ZAL 70.38 ZAP 155.19 ETS 167.87 ZAE 163.41 ETE 18.81 ZAC 95.41 ETC 255.77 CLP 155.65

PLANETOCENTRIC CONIC

C3 12.247 VHL 3.500 DLA 19.56 RAL 147.62 RAD 6567.5 VEL 11.560 PTH 2.02 VHP 5.557 DPA .08 RAP 194.90 ECC 1.2016

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 30 5	2763.23	-28.04	79.14	7.59	94.15	14 16 8	2163.2	-27.17	70.59
90.00	7 1 13	4088.18	-3.56	165.74	2.24	61.89	8 9 22	3488.2	-7.30	159.05
100.00	15 3 43	2461.32	-29.35	56.80	7.46	95.94	15 44 44	1861.3	-28.22	48.18
100.00	8 10 17	3865.31	-2.41	148.72	1.60	60.20	9 14 42	3265.3	-6.36	142.16
110.00	16 38 25	2165.02	-32.68	33.73	6.89	100.64	17 14 30	1565.0	-30.87	24.98
110.00	8 52 4	3734.38	.44	137.01	359.82	55.82	9 54 18	3134.4	-4.04	130.80

DIFFERENTIAL CORRECTIONS
TDE .0649 TRA -.6064 TC3 3.7894 BAU .6253
RDE -.2564 RRA -.0698 RC3 .4741 FAU .17214
FDE .5216 FRA -.0988 FC-12.1688 BSP 9889
BDE .2645 BRA .6104 BC3 3.8190 FSP 2352

MID-COURSE EXECUTION ACCURACY
SGT 2855.8 SGR 548.7 SG3 739.7
RRT .6148 RRF -.6736 RTF -.9128
SGB 2908.0 R23 -.1260 R13 -.9152
SG1 2876.1 SG2 429.7 THA 6.89

ORBIT DETERMINATION ACCURACY
ST 342.8 SR 421.5 SS 428.7
CRT -.2234 CRS .9544 CST -.2830
LSA 603.5 MSA 326.8 SSA 88.7
EL1 437.8 EL2 321.7 ALF 113.52

LAUNCH DATE DEC 5 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 470.894 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.478	GAL	1.66	AZL	89.40	HCA	145.98	SMA	195.22	ECC	.24649	INC	.5975	V1	30.223
RP	235.77	LAP	.33	LOP	218.88	VP	21.118	GAP	7.80	AZP	90.50	TAL	8.43	TAP	154.40	RCA	147.10	APO	243.34	V2	23.315
RC	197.185	GL	5.76	GP	5.11	ZAL	69.52	ZAP	154.24	ETS	167.81	ZAE	164.18	ETE	20.91	ZAC	95.66	ETC	255.76	CLP	154.72

PLANETOCENTRIC CONIC

C3	12.097	VHL	3.478	DLA	19.52	RAL	146.65	RAD	6567.5	VEL	11.554	PTH	2.02	VHP	5.429	DPA	.28	RAP	195.04	ECC	1.1991

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 26 44	2758.77	-28.01	78.82	6.41	94.31	14 12 43	2158.8	-27.12	70.27
90.00	6 56 52	4087.43	-3.59	165.70	1.10	61.89	8 5 0	3487.4	-7.32	159.00
100.00	15 0 18	2457.03	-29.32	56.49	6.27	96.10	15 41 15	1857.0	-28.17	47.88
100.00	8 5 59	3864.40	-2.44	148.67	.47	60.20	9 10 23	3264.4	-6.39	142.10
110.00	16 34 55	2161.04	-32.63	33.44	5.70	100.81	17 10 56	1561.0	-30.80	24.70
110.00	8 47 52	3733.16	.40	136.94	358.70	55.82	9 50 5	3133.2	-4.09	130.73

DIFFERENTIAL CORRECTIONS

TDE	.0700	TRA	-.5680	TC3	3.8664	BAU	.6311
RDE	-.2510	RRA	-.0628	RC3	.5265	FAU	.17979
FDE	.5344	FRA	-.1889	FC-12.8669		BSP	9721
BDE	.2606	BRA	.5715	BC3	3.9021	FSP	2469

MID-COURSE EXECUTION ACCURACY

SGT	2869.2	SGR	563.1	SG3	777.6		
RRT	.6475	RRF	-.7115	RTF	-.9156		
SGB	2924.0	R23	-.1381	R13	-.9184		
SG1	2892.8	SG2	425.6	THA	7.40		

ORBIT DETERMINATION ACCURACY

ST	329.4	SR	414.9	SS	434.2		
CRT	-.2706	CRS	.9469	CST	-.3586		
LSA	605.2	MSA	306.8	SSA	93.4		
EL1	434.9	EL2	302.6	ALF	114.64		

LAUNCH DATE DEC 5 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 474.482 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.445	GAL	1.73	AZL	89.44	HCA	146.95	SMA	194.59	ECC	.24419	INC	.5559	V1	30.223
RP	235.42	LAP	.30	LOP	219.85	VP	21.106	GAP	7.34	AZP	90.47	TAL	8.85	TAP	155.80	RCA	147.07	APO	242.10	V2	23.351
RC	199.372	GL	5.39	GP	5.37	ZAL	68.70	ZAP	153.26	ETS	167.74	ZAE	164.95	ETE	23.32	ZAC	95.91	ETC	255.76	CLP	153.77

PLANETOCENTRIC CONIC

C3	11.959	VHL	3.458	DLA	19.43	RAL	145.71	RAD	6567.5	VEL	11.548	PTH	2.02	VHP	5.304	DPA	.51	RAP	195.17	ECC	1.1968

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 23 54	2752.88	-27.98	78.39	5.25	94.52	14 9 47	2152.9	-27.06	69.85
90.00	6 52 11	4088.49	-3.55	165.75	359.99	61.89	8 0 19	3488.5	-7.29	159.06
100.00	14 57 23	2451.46	-29.28	56.08	5.11	96.31	15 38 14	1851.5	-28.10	47.48
100.00	8 1 23	3865.15	-2.42	148.71	359.36	60.20	9 5 49	3265.1	-6.36	142.15
110.00	16 31 49	2156.03	-32.56	33.06	4.52	101.02	17 7 45	1556.0	-30.70	24.33
110.00	8 43 27	3733.34	.40	136.95	357.60	55.82	9 45 41	3133.3	-4.08	130.74

DIFFERENTIAL CORRECTIONS

TDE	.0571	TRA	-.5505	TC3	3.8755	BAU	.6266
RDE	-.2461	RRA	-.0558	RC3	.5820	FAU	.18726
FDE	.5571	FRA	-.2708	FC-13.5557		BSP	9953
BDE	.2526	BRA	.5533	BC3	3.9189	FSP	2613

MID-COURSE EXECUTION ACCURACY

SGT	2851.2	SGR	581.3	SG3	815.0		
RRT	.6850	RRF	-.7484	RTF	-.9141		
SGB	2909.8	R23	-.1488	R13	-.9173		
SG1	2879.4	SG2	419.3	THA	8.12		

ORBIT DETERMINATION ACCURACY

ST	315.6	SR	409.0	SS	447.0		
CRT	-.2250	CRS	.9414	CST	-.3445		
LSA	606.6	MSA	299.4	SSA	95.5		
EL1	421.9	EL2	298.1	ALF	110.32		

LAUNCH DATE DEC 5 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 478.089 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.413	GAL	1.80	AZL	89.49	HCA	147.93	SMA	193.99	ECC	.24201	INC	.5123	V1	30.223
RP	235.06	LAP	.27	LOP	220.83	VP	21.096	GAP	6.89	AZP	90.43	TAL	9.25	TAP	157.19	RCA	147.04	APO	240.93	V2	23.387
RC	201.544	GL	4.98	GP	5.65	ZAL	67.90	ZAP	152.25	ETS	167.65	ZAE	165.72	ETE	26.13	ZAC	96.19	ETC	255.75	CLP	152.79

PLANETOCENTRIC CONIC

C3	11.833	VHL	3.440	DLA	19.31	RAL	144.79	RAD	6567.5	VEL	11.542	PTH	2.01	VHP	5.183	DPA	.76	RAP	195.28	ECC	1.1947

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 21 35	2745.60	-27.94	77.86	4.10	94.78	14 7 20	2145.6	-26.99	69.33
90.00	6 47 8	4091.30	-3.46	165.91	358.90	61.88	7 55 19	3491.3	-7.20	159.22
100.00	14 54 55	2444.62	-29.23	55.58	3.96	96.57	15 35 39	1844.6	-28.01	46.99
100.00	7 56 29	3867.52	-2.34	148.84	358.27	60.19	9 0 57	3267.5	-6.29	142.28
110.00	16 29 5	2150.02	-32.49	32.61	3.36	101.28	17 4 55	1550.0	-30.59	23.90
110.00	8 38 49	3734.88	.46	137.03	356.52	55.82	9 41 4	3134.9	-4.03	130.82

DIFFERENTIAL CORRECTIONS

TDE	.0565	TRA	-.5239	TC3	3.9103	BAU	.6269
RDE	-.2409	RRA	-.0483	RC3	.6430	FAU	.19532
FDE	.5697	FRA	-.3642	FC-14.2906		BSP	9972
BDE	.2475	BRA	.5262	BC3	3.9629	FSP	2757

MID-COURSE EXECUTION ACCURACY

SGT	2846.3	SGR	603.3	SG3	855.2		
RRT	.7169	RRF	-.7829	RTF	-.9145		
SGB	2909.5	R23	-.1620	R13	-.9184		
SG1	2879.6	SG2	415.8	THA	8.83		

ORBIT DETERMINATION ACCURACY

ST	303.9	SR	402.4	SS	453.3		
CRT	-.2424	CRS	.9326	CST	-.3870		
LSA	606.7	MSA	286.0	SSA	99.4		
EL1	415.7	EL2	285.4	ALF	110.22		

LAUNCH DATE DEC 5 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 481.715 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.383	GAL	1.86	AZL	89.53	HCA	148.91	SMA	193.42	ECC	.23995	INC	.4660	V1	30.223
RP	234.71	LAP	.24	LOP	221.81	VP	21.089	GAP	6.44	AZP	90.40	TAL	9.65	TAP	158.56	RCA	147.01	APO	239.83	V2	23.424
RC	203.699	GL	4.55	GP	5.95	ZAL	67.13	ZAP	151.21	ETS	167.56	ZAE	166.46	ETE	29.40	ZAC	96.47	ETC	255.74	CLP	151.78

PLANETOCENTRIC CONIC

C3	11.716	VHL	3.423	DLA	19.14	RAL	143.88	RAD	6567.4	VEL	11.537	PTH	2.01	VHP	5.066	DPA	1.04	RAP	195.39	ECC	1.1928

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 19 46	2736.81	-27.89	77.23	2.98	95.10	14 5 23	2136.8	-26.89	68.70
90.00	6 41 44	4095.96	-3.31	166.17	357.82	61.86	7 50 0	3496.0	-7.05	159.49
100.00	14 52 56	2436.41	-29.16	54.98	2.83	96.88	15 33 32	1836.4	-27.90	46.40
100.00	7 51 16	3871.58	-2.20	149.06	357.20	60.18	8 55 47	3271.6	-6.15	142.50
110.00	16 26 44	2142.91	-32.39	32.08	2.22	101.58	17 2 27	1542.9	-30.46	23.39
110.00	8 33 56	3737.85	.58	137.19	355.47	55.82	9 36 14	3137.8	-3.91	130.98

DIFFERENTIAL CORRECTIONS

TDE	.0586	TRA	-.4984	TC3	3.9343	BAU	.6262
RDE	-.2356	RRA	-.0401	RC3	.7093	FAU	.20370
FDE	.5748	FRA	-.4642	FC-15.0514		BSP	9949
BDE	.2427	BRA	.5000	BC3	3.9977	FSP	2902

MID-COURSE EXECUTION ACCURACY

SGT	2836.1	SGR	629.5	SG3	897.0		
RRT	.7460	RRF	-.8147	RTF	-.9147		
SGB	2905.2	R23	-.1764	R13	-.9193		
SG1	2875.6	SG2	413.5	THA	9.60		

ORBIT DETERMINATION ACCURACY

ST	293.8	SR	395.1	SS	455.3		
CRT	-.2745	CRS	.9211	CST	-.4410		
LSA	604.0	MSA	272.2	SSA	104.1		
EL1	410.5	EL2	272.0	ALF	111.20		

LAUNCH DATE DEC 5 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 485.360 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.355 GAL 1.92 AZL 89.58 HCA 149.90 SMA 192.89 ECC .23799 INC .4167 V1 30.223
RP 234.35 LAP .21 LOP 222.80 VP 21.085 GAP 6.00 AZP 90.36 TAL 10.03 TAP 159.93 RCA 146.98 APO 238.79 V2 23.461
RC 205.837 GL 4.08 GP 6.27 ZAL 66.40 ZAP 150.14 ETS 167.45 ZAE 167.18 ETE 33.22 ZAC 96.78 ETC 255.73 CLP 150.75

PLANETOCENTRIC CONIC

C3 11.610 VHL 3.407 DLA 18.93 RAL 143.00 RAD 6567.4 VEL 11.532 PTH 2.01 VHP 4.951 DPA 1.36 RAP 195.48 ECC 1.1911

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 18 31	2726.45	-27.83	76.47	1.87	95.47	14 3 57	2126.4	-26.78	67.96
90.00	6 35 57	4102.49	-3.10	166.54	356.76	61.84	7 44 19	3502.5	-6.85	159.86
100.00	14 51 26	2426.78	-29.08	54.27	1.71	97.24	15 31 53	1826.8	-27.77	45.71
100.00	7 45 42	3877.39	-2.00	149.38	356.15	60.17	8 50 19	3277.4	-5.96	142.83
110.00	16 24 49	2134.64	-32.27	31.46	1.08	101.93	17 0 24	1534.6	-30.30	22.80
110.00	8 28 49	3742.30	.75	137.42	354.43	55.82	9 31 11	3142.3	-3.74	131.21

DIFFERENTIAL CORRECTIONS
TDE .0599 TRA -.4738 TC3 3.9455 BAU .6243
RDE -.2302 RRA -.0313 RC3 .7812 FAU .21235
FDE .5791 FRA -.5708 FC-15.8347 BSP 9916
BDE .2379 BRA .4748 BC3 4.0221 FSP 3052

MID-COURSE EXECUTION ACCURACY
SGT 2819.3 SGR 660.6 SG3 940.2
RRT .7728 RRF -.8437 RTF -.9146
SGB 2895.7 R23 -.1913 R13 -.9200
SG1 2866.2 SG2 412.4 THA 10.48

ORBIT DETERMINATION ACCURACY
ST 283.7 SR 387.8 SS 457.9
CRT -.3042 CRS .9083 CST -.4902
LSA 601.4 MSA 259.0 SSA 108.8
EL1 404.8 EL2 258.9 ALF 111.88

LAUNCH DATE DEC 5 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 489.021 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.327 GAL 1.98 AZL 89.64 HCA 150.89 SMA 192.38 ECC .23614 INC .3643 V1 30.223
RP 233.98 LAP .18 LOP 223.79 VP 21.084 GAP 5.57 AZP 90.32 TAL 10.40 TAP 161.29 RCA 146.95 APO 237.81 V2 23.498
RC 207.958 GL 3.58 GP 6.61 ZAL 65.69 ZAP 149.04 ETS 167.34 ZAE 167.85 ETE 37.67 ZAC 97.10 ETC 255.72 CLP 149.69

PLANETOCENTRIC CONIC

C3 11.512 VHL 3.393 DLA 18.68 RAL 142.14 RAD 6567.4 VEL 11.528 PTH 2.01 VHP 4.841 DPA 1.70 RAP 195.55 ECC 1.1895

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 17 48	2714.44	-27.75	75.61	.77	95.90	14 3 2	2114.4	-26.64	67.11
90.00	6 29 46	4110.96	-2.83	167.01	355.72	61.81	7 38 17	3511.0	-6.58	160.34
100.00	14 50 28	2415.64	-28.98	53.46	.60	97.66	15 30 43	1815.6	-27.62	44.92
100.00	7 39 48	3885.00	-1.74	149.80	355.12	60.15	8 44 33	3285.0	-5.70	143.25
110.00	16 23 19	2125.13	-32.14	30.75	359.96	102.33	16 58 44	1525.1	-30.11	22.12
110.00	8 23 26	3748.27	.97	137.73	353.42	55.83	9 25 54	3148.3	-3.52	131.52

DIFFERENTIAL CORRECTIONS
TDE .0642 TRA -.4511 TC3 3.9517 BAU .6224
RDE -.2245 RRA -.0219 RC3 .8600 FAU .22145
FDE .5739 FRA -.6832 FC-16.6539 BSP 9894
BDE .2335 BRA .4517 BC3 4.0442 FSP 3213

MID-COURSE EXECUTION ACCURACY
SGT 2801.6 SGR 697.0 SG3 985.6
RRT .7964 RRF -.8697 RTF -.9143
SGB 2887.0 R23 -.2072 R13 -.9207
SG1 2857.3 SG2 413.3 THA 11.45

ORBIT DETERMINATION ACCURACY
ST 276.5 SR 379.7 SS 455.8
CRT -.3512 CRS .8919 CST -.5508
LSA 595.8 MSA 245.5 SSA 114.7
EL1 400.4 EL2 245.4 ALF 113.71

LAUNCH DATE DEC 5 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 492.699 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.302 GAL 2.04 AZL 89.69 HCA 151.88 SMA 191.90 ECC .23438 INC .3085 V1 30.223
RP 233.62 LAP .15 LOP 224.78 VP 21.085 GAP 5.15 AZP 90.27 TAL 10.75 TAP 162.63 RCA 146.92 APO 236.88 V2 23.536
RC 210.060 GL 3.04 GP 6.99 ZAL 65.01 ZAP 147.91 ETS 167.21 ZAE 168.45 ETE 42.84 ZAC 97.44 ETC 255.71 CLP 148.60

PLANETOCENTRIC CONIC

C3 11.422 VHL 3.380 DLA 18.37 RAL 141.29 RAD 6567.4 VEL 11.524 PTH 2.01 VHP 4.734 DPA 2.09 RAP 195.62 ECC 1.1880

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 17 39	2700.72	-27.65	74.61	359.68	96.39	14 2 40	2100.7	-26.47	66.14
90.00	6 23 12	4121.45	-2.50	167.60	354.70	61.78	7 31 53	3521.4	-6.25	160.93
100.00	14 50 0	2402.92	-28.86	52.53	359.51	98.13	15 30 3	1802.9	-27.44	44.02
100.00	7 33 32	3894.47	-1.42	150.32	354.11	60.14	8 38 26	3294.5	-5.39	143.77
110.00	16 22 15	2114.31	-31.98	29.95	358.84	102.78	16 57 29	1514.3	-29.89	21.36
110.00	8 17 46	3755.84	1.26	138.13	352.43	55.84	9 20 22	3155.8	-3.23	131.92

DIFFERENTIAL CORRECTIONS
TDE .0686 TRA -.4300 TC3 3.9453 BAU .6195
RDE -.2186 RRA -.0116 RC3 .9456 FAU .23081
FDE .5645 FRA -.8018 FC-17.4945 BSP 9845
BDE .2291 BRA .4302 BC3 4.0570 FSP 3377

MID-COURSE EXECUTION ACCURACY
SGT 2777.6 SGR 739.1 SG3 1032.5
RRT .8170 RRF -.8925 RTF -.9136
SGB 2874.2 R23 -.2236 R13 -.9213
SG1 2843.9 SG2 416.2 THA 12.54

ORBIT DETERMINATION ACCURACY
ST 270.2 SR 371.2 SS 452.9
CRT -.3999 CRS .8729 CST -.6078
LSA 589.3 MSA 232.3 SSA 121.0
EL1 396.1 EL2 232.1 ALF 115.55

LAUNCH DATE DEC 5 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 496.393 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.277 GAL 2.09 AZL 89.75 HCA 152.87 SMA 191.45 ECC .23273 INC .2480 V1 30.223
RP 233.25 LAP .11 LOP 225.77 VP 21.089 GAP 4.73 AZP 90.22 TAL 11.09 TAP 163.97 RCA 146.89 APO 236.00 V2 23.574
RC 212.144 GL 2.46 GP 7.40 ZAL 64.36 ZAP 146.73 ETS 167.08 ZAE 168.95 ETE 48.78 ZAC 97.81 ETC 255.70 CLP 147.47

PLANETOCENTRIC CONIC

C3 11.340 VHL 3.367 DLA 18.01 RAL 140.47 RAD 6567.4 VEL 11.521 PTH 2.01 VHP 4.630 DPA 2.51 RAP 195.67 ECC 1.1866

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 18 5	2685.19	-27.52	73.49	358.61	96.93	14 2 51	2085.2	-26.28	65.05
90.00	6 16 12	4133.97	-2.09	168.30	353.70	61.75	7 25 6	3534.0	-5.85	161.64
100.00	14 50 5	2388.52	-28.72	51.48	358.42	98.67	15 29 54	1788.5	-27.22	43.00
100.00	7 26 53	3905.87	-1.04	150.94	353.12	60.12	8 31 59	3305.9	-5.00	144.40
110.00	16 21 38	2102.08	-31.79	29.04	357.73	103.28	16 56 40	1502.1	-29.64	20.49
110.00	8 11 49	3765.07	1.62	138.61	351.46	55.85	9 14 34	3165.1	-2.88	132.40

DIFFERENTIAL CORRECTIONS
TDE .0767 TRA -.4097 TC3 3.9262 BAU .6157
RDE -.2120 RRA -.0003 RC3 1.0389 FAU .24046
FDE .5415 FRA -.9297 FC-18.3579 BSP 9793
BDE .2255 BRA .4097 BC3 4.0613 FSP 3548

MID-COURSE EXECUTION ACCURACY
SGT 2747.1 SGR 787.2 SG3 1080.8
RRT .8340 RRF -.9122 RTF -.9124
SGB 2857.7 R23 -.2406 R13 -.9218
SG1 2826.3 SG2 422.2 THA 13.75

ORBIT DETERMINATION ACCURACY
ST 267.8 SR 361.3 SS 444.6
CRT -.4690 CRS .8467 CST -.6739
LSA 579.5 MSA 217.8 SSA 129.5
EL1 394.0 EL2 216.9 ALF 118.52

LAUNCH DATE DEC 5 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 500.102 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.254	GAL	2.14	AZL	89.82	HCA	153.87	SMA	191.02	ECC	.23116	INC	.1833	V1	30.223
RP	232.88	LAP	.08	LOP	226.77	VP	21.095	GAP	4.32	AZP	90.17	TAL	11.42	TAP	165.29	RCA	146.87	APO	235.18	V2	23.612
RC	214.210	GL	1.83	GP	7.84	ZAL	63.75	ZAP	145.53	ETS	166.93	ZAE	169.32	ETE	55.48	ZAC	98.21	ETC	255.69	CLP	146.32

PLANETOCENTRIC CONIC

C3	11.265	VHL	3.356	DLA	17.60	RAL	139.67	RAD	6567.4	VEL	11.518	PTH	2.01	VHP	4.530	DPA	2.97	RAP	195.71	ECC	1.1854

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 19 7	2667.76	-27.37	72.24	357.54	97.55	14 3 35	2067.8	-26.05	63.82
90.00	6 8 45	4148.67	-1.62	169.12	352.72	61.73	7 17 54	3548.7	-5.39	162.46
100.00	14 50 43	2372.35	-28.55	50.31	357.34	99.26	15 30 16	1772.4	-26.97	41.87
100.00	7 19 50	3919.31	-.58	151.68	352.14	60.11	8 25 9	3319.3	-4.55	145.15
110.00	16 21 30	2088.36	-31.57	28.03	356.63	103.84	16 56 18	1488.4	-29.35	19.53
110.00	8 5 33	3776.07	2.04	139.18	350.51	55.87	9 8 29	3176.1	-2.46	132.98

DIFFERENTIAL CORRECTIONS

TDE	.0853	TRA	-.3900	TC3	3.8983	BAU	.6117
RDE	-.2050	RRA	.0122	RC3	1.1411	FAU	.25046
FDE	.5117	FRA	-1.0864	FC	-19.2477	BSP	9721
BDE	.2220	BRA	.3902	BC3	4.0618	FSP	3724

MID-COURSE EXECUTION ACCURACY

SGT	2712.4	SGR	842.4	SG3	1131.0		
RRT	.8483	RRF	-.9290	RTF	-.9111		
SGB	2840.2	R23	-.2567	R13	-.9226		
SG1	2807.3	SG2	431.0	THA	15.12		

ORBIT DETERMINATION ACCURACY

ST	267.0	SR	350.7	SS	436.1
CRT	-.5394	CRS	.8145	CST	-.7288
LSA	569.0	MSA	203.5	SSA	138.7
EL1	392.3	EL2	201.0	ALF	121.44

LAUNCH DATE DEC 5 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 503.827 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.232	GAL	2.18	AZL	89.88	HCA	154.87	SMA	190.62	ECC	.22967	INC	.1151	V1	30.223
RP	232.51	LAP	.05	LOP	227.77	VP	21.103	GAP	3.92	AZP	90.10	TAL	11.73	TAP	166.60	RCA	146.84	APO	234.40	V2	23.650
RC	216.258	GL	1.15	GP	8.31	ZAL	63.17	ZAP	144.28	ETS	166.77	ZAE	169.51	ETE	62.85	ZAC	98.63	ETC	255.67	CLP	145.13

PLANETOCENTRIC CONIC

C3	11.198	VHL	3.346	DLA	17.12	RAL	138.88	RAD	6567.4	VEL	11.515	PTH	2.01	VHP	4.433	DPA	3.48	RAP	195.74	ECC	1.1843

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 20 45	2648.32	-27.19	70.85	356.48	98.22	14 4 54	2048.3	-25.77	62.47
90.00	6 0 50	4165.63	-1.07	170.06	351.75	61.70	7 10 16	3565.6	-4.85	163.42
100.00	14 51 56	2354.30	-28.34	49.01	356.27	99.92	15 31 10	1754.3	-26.68	40.60
100.00	7 12 21	3934.89	-.05	152.53	351.18	60.11	8 17 56	3334.9	-4.05	146.01
110.00	16 21 50	2073.02	-31.32	26.91	355.53	104.46	16 56 23	1473.0	-29.01	18.46
110.00	7 58 56	3788.93	2.53	139.85	349.57	55.90	9 2 5	3188.9	-1.96	133.65

DIFFERENTIAL CORRECTIONS

TDE	.0959	TRA	-.3731	TC3	3.8591	BAU	.6074
RDE	-.1972	RRA	.0257	RC3	1.2526	FAU	.26069
FDE	.4698	FRA	-1.2077	FC	-20.1545	BSP	9641
BDE	.2192	BRA	.3740	BC3	4.0573	FSP	3907

MID-COURSE EXECUTION ACCURACY

SGT	2672.9	SGR	904.9	SG3	1182.4		
RRT	.8595	RRF	-.9431	RTF	-.9093		
SGB	2821.9	R23	-.2725	R13	-.9233		
SG1	2786.9	SG2	443.6	THA	16.66		

ORBIT DETERMINATION ACCURACY

ST	270.5	SR	338.8	SS	425.2
CRT	-.6138	CRS	.7730	CST	-.7689
LSA	556.9	MSA	192.0	SSA	147.7
EL1	392.4	EL2	184.4	ALF	124.85

LAUNCH DATE DEC 5 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 507.566 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.211	GAL	2.23	AZL	89.96	HCA	155.88	SMA	190.24	ECC	.22827	INC	.0242	V1	30.223
RP	232.14	LAP	.02	LOP	228.78	VP	21.114	GAP	3.53	AZP	90.04	TAL	12.02	TAP	167.90	RCA	146.81	APO	233.66	V2	23.689
RC	218.287	GL	.40	GP	8.83	ZAL	62.62	ZAP	142.99	ETS	166.59	ZAE	169.50	ETE	70.65	ZAC	99.09	ETC	255.66	CLP	143.91

PLANETOCENTRIC CONIC

C3	11.138	VHL	3.337	DLA	16.57	RAL	138.11	RAD	6567.4	VEL	11.512	PTH	2.01	VHP	4.341	DPA	4.05	RAP	195.76	ECC	1.1833

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 23 2	2626.74	-26.97	69.30	355.41	98.96	14 6 48	2026.7	-25.46	60.96
90.00	5 52 25	4185.00	-.45	171.14	350.80	61.69	7 2 10	3585.0	-4.23	164.51
100.00	14 53 44	2334.23	-28.10	47.57	355.19	100.64	15 32 38	1734.2	-26.34	39.21
100.00	7 4 24	3952.74	.55	153.51	350.25	60.11	8 10 17	3352.7	-3.43	146.99
110.00	16 22 41	2055.94	-31.02	25.67	354.43	105.14	16 56 56	1455.9	-28.63	17.28
110.00	7 51 56	3803.79	3.09	140.63	348.66	55.94	8 55 20	3203.8	-1.40	134.43

DIFFERENTIAL CORRECTIONS

TDE	.1084	TRA	-.3585	TC3	3.8065	BAU	.6027
RDE	-.1881	RRA	.0409	RC3	1.3753	FAU	.27128
FDE	.4102	FRA	-1.3585	FC	-21.0856	BSP	9554
BDE	.2171	BRA	.3608	BC3	4.0474	FSP	4089

MID-COURSE EXECUTION ACCURACY

SGT	2627.2	SGR	975.9	SG3	1235.5		
RRT	.8680	RRF	-.9549	RTF	-.9067		
SGB	2802.6	R23	-.2873	R13	-.9240		
SG1	2764.5	SG2	460.6	THA	18.40		

ORBIT DETERMINATION ACCURACY

ST	278.5	SR	324.8	SS	412.0
CRT	-.6878	CRS	.7147	CST	-.7827
LSA	542.0	MSA	192.2	SSA	148.8
EL1	394.0	EL2	166.6	ALF	128.67

LAUNCH DATE DEC 5 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 511.319 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.191	GAL	2.27	AZL	90.04	HCA	156.88	SMA	189.88	ECC	.22694	INC	.0363	V1	30.223
RP	231.76	LAP	-.02	LOP	229.78	VP	21.126	GAP	3.14	AZP	89.96	TAL	12.30	TAP	169.19	RCA	146.79	APO	232.97	V2	23.728
RC	220.299	GL	-.40	GP	9.40	ZAL	62.11	ZAP	141.66	ETS	166.41	ZAE	169.27	ETE	78.58	ZAC	99.59	ETC	255.64	CLP	142.65

PLANETOCENTRIC CONIC

C3	11.085	VHL	3.329	DLA	15.95	RAL	137.35	RAD	6567.4	VEL	11.510	PTH	2.00	VHP	4.252	DPA	4.67	RAP	195.77	ECC	1.1824

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 25 57	2602.86	-26.71	67.61	354.35	99.78	14 9 20	2002.9	-25.08	59.31
90.00	5 43 27	4206.93	.26	172.37	349.87	61.68	6 53 34	3606.9	-3.52	165.73
100.00	14 56 9	2311.98	-27.81	45.98	354.12	101.43	15 34 41	1712.0	-25.95	37.67
100.00	6 55 57	3973.04	1.24	154.63	349.32	60.13	8 2 10	3373.0	-2.74	148.11
110.00	16 24 3	2036.96	-30.67	24.30	353.32	105.88	16 58 0	1437.0	-28.19	15.98
110.00	7 44 32	3820.82	3.74	141.52	347.76	56.00	8 48 13	3220.8	-.75	135.31

DIFFERENTIAL CORRECTIONS

TDE	.1213	TRA	-.3441	TC3	3.7377	BAU	.5973
RDE	-.1780	RRA	.0577	RC3	1.5085	FAU	.28181
FDE	.3406	FRA	-1.5183	FC	-22.0080	BSP	9478
BDE	.2155	BRA	.3489	BC3	4.0306	FSP	4286

MID-COURSE EXECUTION ACCURACY

SGT	2572.5	SGR	1055.3	SG3	1288.8		
RRT	.8740	RRF	-.9645	RTF	-.9038		
SGB	2780.5	R23	-.2996	R13	-.9253		
SG1	2738.4	SG2	481.8	THA	20.38		

ORBIT DETERMINATION ACCURACY

ST	288.6	SR	309.4	SS	402.7
CRT	-.7552	CRS	.6431	CST	-.7592
LSA	527.9	MSA	209.2	SSA	137.1
EL1	396.6	EL2	147.6	ALF	132.37

LAUNCH DATE DEC 5 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 515.086 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.172 GAL 2.30 AZL 90.13 HCA 157.89 SMA 189.54 ECC .22569 INC .1280 V1 30.223
RP 231.38 LAP -.05 LOP 230.79 VP 21.141 GAP 2.75 AZP 89.88 TAL 12.56 TAP 170.46 RCA 146.76 APO 232.32 V2 23.768
RC 222.292 GL -1.29 GP 10.03 ZAL 61.64 ZAP 140.28 ETS 166.21 ZAE 168.79 ETE 86.27 ZAC 100.14 ETC 255.62 CLP 141.36

PLANETOCENTRIC CONIC

C3 11.041 VHL 3.323 DLA 15.24 RAL 136.61 RAD 6567.4 VEL 11.508 PTH 2.00 VHP 4.167 DPA 5.35 RAP 195.77 ECC 1.1817

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 29 34	2576.50	-26.39	65.74	353.28	100.66	14 12 30	1976.5	-24.65	57.51
90.00	5 33 54	4231.63	1.06	173.74	348.96	61.70	6 44 26	3631.6	-2.73	167.12
100.00	14 59 13	2287.37	-27.47	44.23	353.03	102.29	15 37 20	1687.4	-25.50	35.98
100.00	6 46 56	3995.98	2.02	155.89	348.42	60.17	7 53 32	3396.0	-1.96	149.37
110.00	16 25 58	2015.91	-30.27	22.79	352.21	106.69	16 59 34	1415.9	-27.69	14.55
110.00	7 36 40	3840.22	4.48	142.54	346.89	56.08	8 40 40	3240.2	-.00	136.33

DIFFERENTIAL CORRECTIONS
TDE .1369 TRA -.3330 TC3 3.6588 BAU .5928
RDE -.1660 RRA .0765 RC3 1.6557 FAU .29266
FDE .2480 FRA-1.6847 FC-22.9485 BSP 9379
BDE .2152 BRA .3417 BC3 4.0159 FSP 4477

MID-COURSE EXECUTION ACCURACY
SGT 2514.3 SGR 1145.1 SG3 1343.6
RRT .8774 RRF -.9723 RTF -.8999
SGB 2762.8 R23 -.3096 R13 -.9268
SG1 2715.6 SG2 508.6 THA 22.62

ORBIT DETERMINATION ACCURACY
ST 304.9 SR 291.1 SS 395.8
CRT -.8170 CRS .5457 CST -.6831
LSA 512.2 MSA 239.6 SSA 120.5
EL1 401.8 EL2 127.4 ALF 136.62

LAUNCH DATE DEC 5 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 518.867 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.154 GAL 2.34 AZL 90.23 HCA 158.91 SMA 189.22 ECC .22450 INC .2259 V1 30.223
RP 231.01 LAP -.08 LOP 231.81 VP 21.158 GAP 2.38 AZP 89.79 TAL 12.81 TAP 171.72 RCA 146.74 APO 231.70 V2 23.807
RC 224.266 GL -2.26 GP 10.71 ZAL 61.20 ZAP 138.86 ETS 166.00 ZAE 168.06 ETE 93.42 ZAC 100.73 ETC 255.59 CLP 140.03

PLANETOCENTRIC CONIC

C3 11.005 VHL 3.317 DLA 14.45 RAL 135.87 RAD 6567.4 VEL 11.506 PTH 2.00 VHP 4.087 DPA 6.10 RAP 195.77 ECC 1.1811

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 33 54	2547.43	-26.01	63.70	352.20	101.61	14 16 21	1947.4	-24.14	55.53
90.00	5 23 43	4259.36	1.95	175.29	348.06	61.74	6 34 42	3659.4	-1.84	168.66
100.00	15 2 58	2260.19	-27.06	42.31	351.94	103.22	15 40 38	1660.2	-24.97	34.14
100.00	6 37 20	4021.83	2.89	157.31	347.54	60.24	7 44 21	3421.8	-1.09	150.78
110.00	16 28 30	1992.57	-29.80	21.13	351.08	107.57	17 1 42	1392.6	-27.11	12.98
110.00	7 28 17	3862.22	5.32	143.70	346.04	56.18	8 32 39	3262.2	.84	137.47

DIFFERENTIAL CORRECTIONS
TDE .1529 TRA -.3237 TC3 3.5617 BAU .5882
RDE -.1521 RRA .0975 RC3 1.8160 FAU .30338
FDE .1380 FRA-1.8595 FC-23.8664 BSP 9318
BDE .2157 BRA .3381 BC3 3.9979 FSP 4681

MID-COURSE EXECUTION ACCURACY
SGT 2446.9 SGR 1245.4 SG3 1398.0
RRT .8786 RRF -.9785 RTF -.8952
SGB 2745.6 R23 -.3162 R13 -.9290
SG1 2691.8 SG2 540.7 THA 25.18

ORBIT DETERMINATION ACCURACY
ST 323.7 SR 270.3 SS 398.3
CRT -.8671 CRS .4320 CST -.5522
LSA 497.4 MSA 280.1 SSA 103.2
EL1 408.0 EL2 106.9 ALF 140.90

LAUNCH DATE DEC 5 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 522.660 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.137 GAL 2.37 AZL 90.33 HCA 159.93 SMA 188.92 ECC .22338 INC .3323 V1 30.223
RP 230.62 LAP -.11 LOP 232.83 VP 21.176 GAP 2.01 AZP 89.69 TAL 13.05 TAP 172.97 RCA 146.72 APO 231.12 V2 23.847
RC 226.222 GL -3.32 GP 11.46 ZAL 60.81 ZAP 137.38 ETS 165.77 ZAE 167.11 ETE 99.83 ZAC 101.39 ETC 255.56 CLP 138.66

PLANETOCENTRIC CONIC

C3 10.979 VHL 3.313 DLA 13.54 RAL 135.14 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 4.011 DPA 6.93 RAP 195.77 ECC 1.1807

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 39 0	2515.40	-25.55	61.47	351.11	102.64	14 20 55	1915.4	-23.55	53.37
90.00	5 12 47	4290.42	2.95	177.03	347.19	61.82	6 24 18	3690.4	-.84	170.40
100.00	15 7 26	2230.16	-26.57	40.21	350.84	104.22	15 44 37	1630.2	-24.36	32.12
100.00	6 27 2	4050.89	3.87	158.91	346.68	60.34	7 34 33	3450.9	-.10	152.38
110.00	16 31 38	1966.70	-29.26	19.31	349.95	108.52	17 4 25	1366.7	-26.45	11.26
110.00	7 19 19	3887.12	6.26	145.01	345.21	56.33	8 24 6	3287.1	1.79	138.77

DIFFERENTIAL CORRECTIONS
TDE .1712 TRA -.3160 TC3 3.4515 BAU .5850
RDE -.1352 RRA .1216 RC3 1.9930 FAU .31419
FDE -.0008 FRA-2.0462 FC-24.7753 BSP 9253
BDE .2182 BRA .3386 BC3 3.9856 FSP 4877

MID-COURSE EXECUTION ACCURACY
SGT 2373.9 SGR 1358.6 SG3 1453.0
RRT .8775 RRF -.9835 RTF -.8895
SGB 2735.1 R23 -.3185 R13 -.9322
SG1 2673.3 SG2 578.5 THA 28.10

ORBIT DETERMINATION ACCURACY
ST 347.6 SR 245.8 SS 415.1
CRT -.9063 CRS .3058 CST -.3600
LSA 483.3 MSA 335.5 SSA 86.1
EL1 416.8 EL2 86.6 ALF 145.65

LAUNCH DATE DEC 5 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 526.467 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.122 GAL 2.40 AZL 90.45 HCA 160.95 SMA 188.64 ECC .22233 INC .4503 V1 30.223
RP 230.24 LAP -.15 LOP 233.85 VP 21.196 GAP 1.65 AZP 89.57 TAL 13.26 TAP 174.21 RCA 146.70 APO 230.58 V2 23.887
RC 228.159 GL -4.50 GP 12.30 ZAL 60.46 ZAP 135.85 ETS 165.53 ZAE 165.93 ETE 105.41 ZAC 102.12 ETC 255.53 CLP 137.25

PLANETOCENTRIC CONIC

C3 10.965 VHL 3.311 DLA 12.52 RAL 134.42 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 3.940 DPA 7.84 RAP 195.78 ECC 1.1805

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 44 55	2480.08	-25.00	59.03	350.01	103.75	14 26 15	1880.1	-22.86	51.01
90.00	5 1 3	4325.23	4.07	178.98	346.34	61.95	6 13 8	3725.2	.29	172.34
100.00	15 12 42	2196.98	-26.00	37.92	349.72	105.30	15 49 19	1597.0	-23.64	29.91
100.00	6 15 57	4083.56	4.97	160.71	345.85	60.49	7 24 1	3483.6	1.00	154.17
110.00	16 35 28	1938.01	-28.62	17.32	348.80	109.54	17 7 46	1338.0	-25.69	9.37
110.00	7 9 41	3915.29	7.32	146.50	344.40	56.52	8 14 56	3315.3	2.87	140.24

DIFFERENTIAL CORRECTIONS
TDE .1902 TRA -.3113 TC3 3.3254 BAU .5835
RDE -.1147 RRA .1488 RC3 2.1874 FAU .32487
FDE -.1666 FRA-2.2407 FC-25.6499 BSP 9216
BDE .2222 BRA .3451 BC3 3.9803 FSP 5073

MID-COURSE EXECUTION ACCURACY
SGT 2294.1 SGR 1485.8 SG3 1507.5
RRT .8741 RRF -.9875 RTF -.8823
SGB 2733.3 R23 -.3161 R13 -.9364
SG1 2661.5 SG2 622.1 THA 31.43

ORBIT DETERMINATION ACCURACY
ST 374.3 SR 218.1 SS 451.9
CRT -.9258 CRS .2046 CST -.1383
LSA 475.0 MSA 401.6 SSA 70.9
EL1 427.2 EL2 72.3 ALF 150.74

LAUNCH DATE DEC 5 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 530.287 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.107	GAL	2.43	AZL	90.58	HCA	161.97	SMA	188.37	ECC	.22133	INC	.5813
RP	229.86	LAP	-.18	LOP	234.87	VP	21.218	GAP	1.29	AZP	89.45	TAL	13.47	TAP	175.43	RCA	146.68	APO	230.07
RC	230.076	GL	-5.82	GP	13.22	ZAL	60.16	ZAP	134.26	ETS	165.27	ZAE	164.54	ETE	110.16	ZAC	102.93	ETC	255.49

V1	30.223	V2	23.927	CLP	135.80														

PLANETOCENTRIC CONIC

C3	10.967	VHL	3.312	DLA	11.36	RAL	133.68	RAD	6567.4	VEL	11.505	PTH	2.00	VHP	3.874	DPA	8.86	RAP	195.79
ECC	1.1805																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 51 44	2441.11	-24.34	56.36	348.89	104.93	14 32 25	1841.1	-22.06	48.43
90.00	4 48 23	4364.25	5.32	181.17	345.52	62.15	6 1 7	3764.2	1.55	174.51
100.00	15 18 48	2160.29	-25.31	35.41	348.59	106.45	15 54 49	1560.3	-22.82	27.50
100.00	6 4 0	4120.29	6.20	162.75	345.04	60.70	7 12 40	3520.3	2.25	156.19
110.00	16 40 1	1906.17	-27.88	15.15	347.63	110.63	17 11 47	1306.2	-24.81	7.31
110.00	6 59 17	3947.18	8.51	148.20	343.62	56.77	8 5 4	3347.2	4.08	141.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2249	TRA	-.2940	TC3	3.2367	BAU	.5919	SGT	2239.6	SGR	1637.7	SG3	1570.0	ST	424.0	SR	184.2	SS	529.2
RDE	-.0861	RRA	.1837	RC3	2.4132	FAU	.33700	RRT	.8725	RRF	-.9907	RTF	-.8789	CRT	-.8963	CRS	.1683	CST	.1515
FDE	-.4045	FRA	-2.4846	FC	-26.6035	BSP	8871	SGB	2774.5	R23	-.3016	R13	-.9441	LSA	539.1	MSA	447.5	SSA	54.1
BDE	.2408	BRA	.3466	BC3	4.0373	FSP	5178	SG1	2693.6	SG2	665.3	THA	34.98	EL1	456.0	EL2	76.0	ALF	158.08

LAUNCH DATE DEC 5 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 534.117 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.092	GAL	2.45	AZL	90.73	HCA	163.00	SMA	188.12	ECC	.22039	INC	.7278
RP	229.47	LAP	-.21	LOP	235.90	VP	21.242	GAP	.95	AZP	89.30	TAL	13.65	TAP	176.65	RCA	146.66	APO	229.58
RC	231.973	GL	-7.28	GP	14.25	ZAL	59.92	ZAP	132.62	ETS	165.00	ZAE	162.96	ETE	114.13	ZAC	103.83	ETC	255.44

V1	30.223	V2	23.968	CLP	134.31														

PLANETOCENTRIC CONIC

C3	10.986	VHL	3.314	DLA	10.04	RAL	132.94	RAD	6567.4	VEL	11.505	PTH	2.00	VHP	3.815	DPA	9.98	RAP	195.81
ECC	1.1808																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 59 34	2397.90	-23.55	53.44	347.75	106.19	14 39 32	1797.9	-21.11	45.62
90.00	4 34 39	4408.18	6.71	183.65	344.74	62.42	5 48 7	3808.2	2.96	176.97
100.00	15 25 53	2119.53	-24.50	32.65	347.44	107.69	16 1 12	1519.5	-21.85	24.86
100.00	5 51 1	4161.77	7.58	165.06	344.27	61.00	7 0 23	3561.8	3.65	158.47
110.00	16 45 25	1870.67	-27.00	12.76	346.44	111.80	17 16 35	1270.7	-23.80	5.06
110.00	6 47 59	3983.40	9.86	150.14	342.88	57.10	7 54 22	3383.4	5.45	143.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2411	TRA	-.2998	TC3	3.0560	BAU	.5935	SGT	2134.1	SGR	1797.1	SG3	1618.5	ST	449.8	SR	158.9	SS	616.2
RDE	-.0554	RRA	.2190	RC3	2.6443	FAU	.34639	RRT	.8627	RRF	-.9930	RTF	-.8663	CRT	-.7687	CRS	.2926	CST	.3160
FDE	-.6333	FRA	-2.6873	FC	-27.2973	BSP	9049	SGB	2790.0	R23	-.2894	R13	-.9501	LSA	644.8	MSA	435.4	SSA	44.8
BDE	.2474	BRA	.3713	BC3	4.0412	FSP	5386	SG1	2695.6	SG2	719.5	THA	39.34	EL1	466.9	EL2	97.9	ALF	164.09

LAUNCH DATE DEC 5 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 537.959 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.079	GAL	2.47	AZL	90.89	HCA	164.03	SMA	187.89	ECC	.21951	INC	.8939
RP	229.09	LAP	-.25	LOP	236.93	VP	21.267	GAP	.61	AZP	89.14	TAL	13.82	TAP	177.84	RCA	146.65	APO	229.13
RC	233.848	GL	-8.93	GP	15.40	ZAL	59.75	ZAP	130.91	ETS	164.70	ZAE	161.19	ETE	117.40	ZAC	104.84	ETC	255.39

V1	30.223	V2	24.009	CLP	132.78														

PLANETOCENTRIC CONIC

C3	11.029	VHL	3.321	DLA	8.54	RAL	132.18	RAD	6567.4	VEL	11.507	PTH	2.00	VHP	3.761	DPA	11.23	RAP	195.86
ECC	1.1815																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 8 32	2349.91	-22.61	50.24	346.60	107.52	14 47 42	1749.9	-20.00	42.54
90.00	4 19 39	4457.79	8.26	186.46	344.00	62.82	5 33 56	3857.8	4.55	179.75
100.00	15 34 1	2074.18	-23.53	29.63	346.27	108.99	16 8 35	1474.2	-20.72	21.96
100.00	5 36 50	4208.74	9.12	167.69	343.54	61.41	6 46 59	3608.7	5.23	161.06
110.00	16 51 43	1831.03	-25.97	10.14	345.23	113.05	17 22 14	1231.0	-22.62	2.58
110.00	6 35 38	4024.66	11.37	152.37	342.19	57.55	7 42 42	3424.7	7.01	145.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2588	TRA	-.3072	TC3	2.8591	BAU	.5999	SGT	2023.1	SGR	1975.8	SG3	1662.4	ST	477.9	SR	150.7	SS	728.2
RDE	-.0173	RRA	.2598	RC3	2.8949	FAU	.35485	RRT	.8494	RRF	-.9948	RTF	-.8508	CRT	-.4428	CRS	.5679	CST	.4500
FDE	-.9010	FRA	-2.8959	FC	-27.8537	BSP	9274	SGB	2827.8	R23	-.2694	R13	-.9577	LSA	774.9	MSA	423.9	SSA	36.6
BDE	.2594	BRA	.4023	BC3	4.0688	FSP	5584	SG1	2719.3	SG2	775.7	THA	44.20	EL1	483.0	EL2	133.7	ALF	171.39

LAUNCH DATE DEC 5 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 541.813 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.067	GAL	2.49	AZL	91.08	HCA	165.06	SMA	187.67	ECC	.21867	INC	1.0825
RP	228.70	LAP	-.28	LOP	237.96	VP	21.294	GAP	.27	AZP	88.95	TAL	13.97	TAP	179.03	RCA	146.63	APO	228.71
RC	235.703	GL	-10.79	GP	16.70	ZAL	59.65	ZAP	129.12	ETS	164.39	ZAE	159.24	ETE	120.07	ZAC	105.99	ETC	255.32

V1	30.223	V2	24.049	CLP	131.21														

PLANETOCENTRIC CONIC

C3	11.105	VHL	3.332	DLA	6.83	RAL	131.40	RAD	6567.4	VEL	11.511	PTH	2.00	VHP	3.716	DPA	12.63	RAP	195.94
ECC	1.1828																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 18 46	2296.39	-21.47	46.73	345.43	108.92	14 57 3	1696.4	-18.69	39.16
90.00	4 3 8	4514.12	10.00	189.69	343.33	63.37	5 18 23	3914.1	6.34	182.92
100.00	15 43 22	2023.52	-22.36	26.32	345.09	110.37	16 17 6	1423.5	-19.39	18.78
100.00	5 21 13	4262.23	10.84	170.72	342.88	61.97	6 32 16	3662.2	7.01	164.03
110.00	16 59 4	1786.63	-24.76	7.26	344.01	114.36	17 28 51	1186.6	-21.26	359.86
110.00	6 22 1	4071.87	13.09	154.96	341.56	58.14	7 29 53	3471.9	8.78	148.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2785	TRA	-.3162	TC3	2.6507	BAU	.6135	SGT	1910.6	SGR	2180.0	SG3	1703.2	ST	509.0	SR	181.0	SS	872.4
RDE	.0321	RRA	.3085	RC3	3.1701	FAU	.36261	RRT	.8323	RRF	-.9962	RTF	-.8320	CRT	.0374	CRS	.8373	CST	.5586
FDE	-1.2254	FRA	-3.1198	FC	-28.2690	BSP	9547	SGB	2898.7	R23	-.2415	R13	-.9664	LSA	938.7	MSA	413.5	SSA	29.6
BDE	.2804	BRA	.4418	BC3	4.1323	FSP	5748	SG1	2776.9	SG2	831.4	THA	49.52	EL1	509.1	EL2	180.8	ALF	.87

LAUNCH DATE DEC 5 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 545.677 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.055 GAL 2.51 AZL 91.30 HCA 166.10 SMA 187.47 ECC .21789 INC 1.2991 V1 30.223
RP 228.31 LAP -.31 LOP 239.00 VP 21.322 GAP -.06 AZP 88.74 TAL 14.11 TAP 180.21 RCA 146.62 APO 228.31 V2 24.090
RC 237.537 GL -12.91 GP 18.17 ZAL 59.65 ZAP 127.26 ETS 164.05 ZAE 157.09 ETE 122.21 ZAC 107.29 ETC 255.23 CLP 129.59

PLANETOCENTRIC CONIC

C3 11.225 VHL 3.350 DLA 4.85 RAL 130.58 RAD 6567.4 VEL 11.516 PTH 2.01 VHP 3.679 DPA 14.19 RAP 196.07 ECC 1.1847

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 30 31	2236.37	-20.09	42.87	344.26	110.38	15 7 47	1636.4	-17.14	35.44
90.00	3 44 49	4578.56	11.94	193.43	342.74	64.13	5 1 8	3978.6	8.36	186.58
100.00	15 54 9	1966.64	-20.97	22.67	343.90	111.80	16 26 55	1366.6	-17.83	15.28
100.00	5 3 53	4323.52	12.78	174.24	342.31	62.75	6 15 56	3723.5	9.03	167.47
110.00	17 7 37	1736.67	-23.32	4.09	342.78	115.73	17 36 34	1136.7	-19.66	356.86
110.00	6 6 53	4126.26	15.02	157.99	341.03	58.93	7 15 39	3526.3	10.79	151.43

DIFFERENTIAL CORRECTIONS
TDE .2998 TRA -.3269 TC3 2.4257 BAU .6350
RDE .0960 RRA .3670 RC3 3.4672 FAU .36903
FDE-1.6093 FRA-3.3561 FC-28.4626 BSP 9910
BDE .3148 BRA .4914 BC3 4.2315 FSP 5876

MID-COURSE EXECUTION ACCURACY
SGT 1794.3 SGR 2412.7 SG3 1737.7
RRT .8101 RRF -.9972 RTF -.8086
SGB 3006.8 R23 -.2072 R13 -.9754
SG1 2874.2 SG2 883.1 THA 55.18

ORBIT DETERMINATION ACCURACY
ST 541.9 SR 259.8 SS 1048.9
CRT .3961 CRS .9543 CST .6422
LSA 1138.9 MSA 404.6 SSA 23.7
EL1 553.8 EL2 233.5 ALF 13.12

LAUNCH DATE DEC 5 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 549.554 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.044 GAL 2.52 AZL 91.55 HCA 167.14 SMA 187.27 ECC .21715 INC 1.5509 V1 30.223
RP 227.92 LAP -.35 LOP 240.04 VP 21.352 GAP -.38 AZP 88.49 TAL 14.23 TAP 181.37 RCA 146.61 APO 227.94 V2 24.132
RC 239.350 GL -15.34 GP 19.84 ZAL 59.77 ZAP 125.31 ETS 163.70 ZAE 154.73 ETE 123.89 ZAC 108.78 ETC 255.12 CLP 127.92

PLANETOCENTRIC CONIC

C3 11.406 VHL 3.377 DLA 2.58 RAL 129.70 RAD 6567.4 VEL 11.524 PTH 2.01 VHP 3.653 DPA 15.95 RAP 196.26 ECC 1.1877

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 4	2168.64	-18.43	38.59	343.10	111.89	15 20 13	1568.6	-15.30	31.32
90.00	3 24 15	4652.92	14.11	197.81	342.28	65.19	4 41 48	4052.9	10.64	190.85
100.00	16 6 37	1902.39	-19.29	18.63	342.72	113.28	16 38 19	1302.4	-15.98	11.41
100.00	4 44 23	4394.40	14.95	178.39	341.87	63.81	5 57 38	3794.4	11.31	171.49
110.00	17 17 37	1680.17	-21.60	.60	341.56	117.16	17 45 37	1080.2	-17.79	353.55
110.00	5 49 53	4189.38	17.20	161.58	340.62	60.00	6 59 42	3589.4	13.09	154.89

DIFFERENTIAL CORRECTIONS
TDE .3201 TRA -.3418 TC3 2.1762 BAU .6651
RDE .1786 RRA .4370 RC3 3.7802 FAU .37327
FDE-2.0519 FRA-3.5956 FC-28.3522 BSP 10442
BDE .3666 BRA .5548 BC3 4.3619 FSP 5979

MID-COURSE EXECUTION ACCURACY
SGT 1671.1 SGR 2676.2 SG3 1761.4
RRT .7797 RRF -.9980 RTF -.7771
SGB 3155.1 R23 -.1693 R13 -.9835
SG1 3015.3 SG2 928.7 THA 61.03

ORBIT DETERMINATION ACCURACY
ST 572.0 SR 383.7 SS 1254.8
CRT .5884 CRS .9876 CST .7022
LSA 1375.2 MSA 396.7 SSA 18.9
EL1 628.2 EL2 282.5 ALF 27.57

LAUNCH DATE DEC 5 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 553.442 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.034 GAL 2.54 AZL 91.85 HCA 168.18 SMA 187.10 ECC .21646 INC 1.8473 V1 30.223
RP 227.53 LAP -.38 LOP 241.09 VP 21.383 GAP -.69 AZP 88.19 TAL 14.33 TAP 182.52 RCA 146.60 APO 227.59 V2 24.173
RC 241.142 GL -18.14 GP 21.76 ZAL 60.03 ZAP 123.27 ETS 163.33 ZAE 152.15 ETE 125.18 ZAC 110.50 ETC 254.98 CLP 126.20

PLANETOCENTRIC CONIC

C3 11.675 VHL 3.417 DLA -.07 RAL 128.74 RAD 6567.4 VEL 11.535 PTH 2.01 VHP 3.641 DPA 17.95 RAP 196.54 ECC 1.1921

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 59 51	2091.59	-16.41	33.84	341.98	113.41	15 34 42	1491.6	-13.10	26.72
90.00	3 0 50	4739.68	16.52	203.04	342.01	66.67	4 19 50	4139.7	13.22	195.92
100.00	16 21 9	1829.30	-17.27	14.15	341.58	114.79	16 51 39	1229.3	-13.78	7.10
100.00	4 22 13	4477.20	17.38	183.34	341.61	65.29	5 36 50	3877.2	13.90	176.27
110.00	17 29 20	1615.91	-19.56	356.74	340.37	118.61	17 56 16	1015.9	-15.58	349.87
110.00	5 30 31	4263.36	19.67	165.90	340.39	61.46	6 41 35	3663.4	15.70	159.02

DIFFERENTIAL CORRECTIONS
TDE .3407 TRA -.3604 TC3 1.9140 BAU .7075
RDE .2080 RRA .5227 RC3 4.1087 FAU .37529
FDE-2.5660 FRA-3.8404 FC-27.8299 BSP 11098
BDE .4461 BRA .6349 BC3 4.5327 FSP 6012

MID-COURSE EXECUTION ACCURACY
SGT 1549.9 SGR 2980.8 SG3 1774.2
RRT .7400 RRF -.9986 RTF -.7365
SGB 3359.7 R23 -.1313 R13 -.9899
SG1 3217.9 SG2 965.7 THA 66.74

ORBIT DETERMINATION ACCURACY
ST 600.6 SR 556.3 SS 1494.6
CRT .6929 CRS .9966 CST .7465
LSA 1658.8 MSA 390.1 SSA 15.0
EL1 753.7 EL2 319.6 ALF 41.85

LAUNCH DATE DEC 5 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 557.339 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.024 GAL 2.55 AZL 92.20 HCA 169.23 SMA 186.93 ECC .21580 INC 2.2021 V1 30.223
RP 227.14 LAP -.41 LOP 242.13 VP 21.415 GAP -1.00 AZP 87.84 TAL 14.42 TAP 183.65 RCA 146.59 APO 227.27 V2 24.214
RC 242.914 GL -21.39 GP 23.96 ZAL 60.48 ZAP 121.11 ETS 162.94 ZAE 149.31 ETE 126.11 ZAC 112.48 ETC 254.79 CLP 124.43

PLANETOCENTRIC CONIC

C3 12.073 VHL 3.475 DLA -3.15 RAL 127.68 RAD 6567.5 VEL 11.552 PTH 2.02 VHP 3.647 DPA 20.23 RAP 196.94 ECC 1.1987

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 29	2003.04	-13.94	28.51	340.96	114.90	15 51 52	1403.0	-10.47	21.55
90.00	2 33 43	4842.32	19.17	209.41	342.00	68.75	3 54 25	4242.3	16.11	202.06
100.00	16 38 21	1745.38	-14.80	9.14	340.53	116.27	17 7 27	1145.4	-11.15	2.25
100.00	3 56 32	4575.21	20.06	189.38	341.62	67.36	5 12 47	3975.2	16.82	182.09
110.00	17 43 14	1542.29	-17.10	352.45	339.25	120.06	18 8 56	942.3	-12.97	345.76
110.00	5 8 9	4351.06	22.43	171.20	340.46	63.50	6 20 40	3751.1	18.69	164.07

DIFFERENTIAL CORRECTIONS
TDE .3580 TRA -.3860 TC3 1.6240 BAU .7607
RDE .4310 RRA .6258 RC3 4.4241 FAU .37283
FDE-3.1306 FRA-4.0629 FC-26.7355 BSP 12044
BDE .5603 BRA .7352 BC3 4.7128 FSP 6022

MID-COURSE EXECUTION ACCURACY
SGT 1424.2 SGR 3320.4 SG3 1764.0
RRT .6831 RRF -.9990 RTF -.6788
SGB 3613.0 R23 -.0966 R13 -.9943
SG1 3473.4 SG2 994.3 THA 72.16

ORBIT DETERMINATION ACCURACY
ST 621.5 SR 780.9 SS 1754.5
CRT .7489 CRS .9991 CST .7748
LSA 1981.5 MSA 384.9 SSA 11.8
EL1 937.1 EL2 343.2 ALF 53.54

LAUNCH DATE DEC 5 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 561.248 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.015	GAL	2.55	AZL	92.63	HCA	170.28	SMA	186.78	ECC	.21519	INC	2.6326
RP	226.75	LAP	-.44	LOP	243.19	VP	21.448	GAP	-1.31	AZP	87.40	TAL	14.50	TAP	184.78	RCA	146.58	APO	226.97
RC	244.666	GL	-25.19	GP	26.53	ZAL	61.18	ZAP	118.82	ETS	162.54	ZAE	146.18	ETE	126.74	ZAC	114.80	ETC	254.54

V1	30.223	V2	24.256	CLP	122.60														

PLANETOCENTRIC CONIC

C3	12.668	VHL	3.559	DLA	-6.76	RAL	126.47	RAD	6567.5	VEL	11.578	PTH	2.02	VHP	3.676	DPA	22.83	RAP	197.50
ECC	1.2085																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 40 58	1899.92	-10.90	22.46	340.11	116.30	16 12 38	1299.9	-7.28	15.65
90.00	2 1 35	4965.90	22.02	217.35	342.40	71.73	3 24 21	4365.9	19.32	209.72
100.00	16 59 5	1647.91	-11.79	3.47	339.65	117.67	17 26 33	1047.9	-7.99	356.74
100.00	3 26 9	4693.14	22.96	196.94	342.05	70.32	4 44 22	4093.1	20.07	189.34
110.00	17 59 57	1457.32	-14.14	347.64	338.28	121.45	18 24 15	857.3	-9.87	341.14
110.00	4 41 46	4456.50	25.47	177.88	340.96	66.39	5 56 2	3856.5	22.06	170.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3798	TRA	-.4098	TC3	1.3403	BAU	.8345	SGT	1313.6	SGR	3738.2	SG3	1743.6	ST	643.7	SR	1090.6	SS	2065.2
RDE	.6337	RRA	.7656	RC3	4.7417	FAU	.36801	RRT	.6150	RRF	-.9993	RTF	-.6100	CRT	.7868	CRS	.9998	CST	.7988
FDE	-3.8078	FRA	-4.3256	FC	-25.1492	BSP	12941	SGB	3962.2	R23	-.0671	R13	-.9970	LSA	2392.5	MSA	380.6	SSA	9.2
BDE	.7388	BRA	.8684	BC3	4.9275	FSP	5828	SG1	3831.2	SG2	1010.7	THA	76.88	EL1	1215.2	EL2	356.6	ALF	62.53

LAUNCH DATE DEC 5 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 565.165 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.007	GAL	2.56	AZL	93.17	HCA	171.33	SMA	186.63	ECC	.21462	INC	3.1694
RP	226.36	LAP	-.48	LOP	244.24	VP	21.482	GAP	-1.60	AZP	86.87	TAL	14.56	TAP	185.89	RCA	146.58	APO	226.69
RC	246.398	GL	-29.66	GP	29.52	ZAL	62.21	ZAP	116.38	ETS	162.15	ZAE	142.70	ETE	127.11	ZAC	117.53	ETC	254.20

V1	30.223	V2	24.297	CLP	120.70														

PLANETOCENTRIC CONIC

C3	13.574	VHL	3.684	DLA	-11.00	RAL	125.05	RAD	6567.5	VEL	11.617	PTH	2.04	VHP	3.738	DPA	25.83	RAP	198.29
ECC	1.2234																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 3	1777.27	-7.12	15.43	339.61	117.48	16 38 40	1177.3	-3.38	8.75
90.00	1 22 14	5118.40	24.91	227.59	343.41	76.08	2 47 32	4518.4	22.75	219.58
100.00	17 24 52	1532.64	-8.07	356.94	339.10	118.88	17 50 25	932.6	-4.15	350.34
100.00	2 49 5	4838.26	25.95	206.68	343.11	74.61	4 9 44	4238.3	23.58	198.68
110.00	18 20 36	1358.08	-10.55	342.19	337.60	122.71	18 43 15	758.1	-6.16	335.85
110.00	4 9 50	4585.59	28.70	186.52	342.14	70.58	5 26 16	3985.6	25.79	178.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3891	TRA	-.4503	TC3	1.0166	BAU	.9197	SGT	1198.5	SGR	4186.7	SG3	1677.6	ST	642.2	SR	1471.6	SS	2356.5
RDE	.8995	RRA	.9336	RC3	4.9648	FAU	.35459	RRT	.5046	RRF	-.9995	RTF	-.4986	CRT	.7977	CRS	.9999	CST	.8031
FDE	-4.4737	FRA	-4.5035	FC	-22.6144	BSP	14393	SGB	4354.8	R23	-.0437	R13	-.9986	LSA	2826.4	MSA	377.6	SSA	7.2
BDE	.9801	BRA	1.0365	BC3	5.0678	FSP	5646	SG1	4232.9	SG2	1023.4	THA	81.27	EL1	1563.7	EL2	364.5	ALF	69.65

LAUNCH DATE DEC 5 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 569.089 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.000	GAL	2.56	AZL	93.86	HCA	172.39	SMA	186.50	ECC	.21408	INC	3.8554
RP	225.97	LAP	-.51	LOP	245.30	VP	21.518	GAP	-1.90	AZP	86.18	TAL	14.60	TAP	186.99	RCA	146.57	APO	226.43
RC	248.110	GL	-34.92	GP	33.03	ZAL	63.65	ZAP	113.76	ETS	161.79	ZAE	138.82	ETE	127.28	ZAC	120.73	ETC	253.72

V1	30.223	V2	24.339	CLP	118.73														

PLANETOCENTRIC CONIC

C3	14.997	VHL	3.873	DLA	-16.00	RAL	123.35	RAD	6567.6	VEL	11.678	PTH	2.05	VHP	3.850	DPA	29.30	RAP	199.37
ECC	1.2468																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 46 9	1625.82	-2.29	6.92	339.77	118.23	17 13 15	1025.8	1.50	.30
90.00	0 31 31	5313.89	27.39	241.35	345.28	82.53	2 0 5	4713.9	26.07	232.93
100.00	17 58 36	1392.07	-3.38	349.14	339.17	119.72	18 21 48	792.1	.61	342.61
100.00	2 1 46	5022.87	28.62	219.74	345.07	80.98	3 25 29	4422.9	27.08	211.28
110.00	18 47 6	1240.15	-6.15	335.90	337.45	123.69	19 7 46	640.1	-1.68	329.66
110.00	3 29 45	4747.56	31.81	198.10	344.35	76.78	4 48 53	4147.6	29.67	189.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3890	TRA	-.5062	TC3	.6789	BAU	1.0233	SGT	1102.2	SGR	4693.0	SG3	1569.0	ST	621.4	SR	1955.8	SS	2630.2
RDE	1.2695	RRA	1.1527	RC3	5.0582	FAU	.33285	RRT	.3401	RRF	-.9996	RTF	-.3329	CRT	.7887	CRS	1.0000	CST	.7904
FDE	-5.1379	FRA	-4.6182	FC	-19.2138	BSP	16160	SGB	4820.7	R23	-.0259	R13	-.9993	LSA	3314.7	MSA	376.9	SSA	5.6
BDE	1.3278	BRA	1.2589	BC3	5.1036	FSP	5323	SG1	4708.7	SG2	1033.0	THA	85.20	EL1	2018.5	EL2	370.2	ALF	75.43

LAUNCH DATE DEC 5 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 573.024 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	32.993	GAL	2.56	AZL	94.76	HCA	173.44	SMA	186.38	ECC	.21358	INC	4.7641
RP	225.58	LAP	-.54	LOP	246.37	VP	21.554	GAP	-2.18	AZP	85.27	TAL	14.64	TAP	188.08	RCA	146.57	APO	226.19
RC	249.803	GL	-41.12	GP	37.17	ZAL	65.61	ZAP	110.94	ETS	161.50	ZAE	134.44	ETE	127.33	ZAC	124.51	ETC	253.05

V1	30.223	V2	24.381	CLP	116.64														

PLANETOCENTRIC CONIC

C3	17.334	VHL	4.163	DLA	-21.87	RAL	121.21	RAD	6567.7	VEL	11.778	PTH	2.08	VHP	4.037	DPA	33.32	RAP	200.89
ECC	1.2853																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 28	1420.52	4.32	355.46	341.31	118.01	18 5 8	820.5	8.04	348.75
90.00	23 15 14	5585.10	28.23	261.09	348.02	92.35	24 48 19	4985.1	28.26	252.43
100.00	18 47 22	1207.79	2.87	339.02	340.51	119.77	19 7 30	607.8	6.81	332.45
100.00	0 55 56	5273.07	29.89	238.18	348.06	90.57	2 23 49	4673.1	29.65	229.39
110.00	19 23 28	1094.66	-.61	328.28	338.34	124.18	19 41 42	494.7	3.88	322.07
110.00	2 36 20	4958.96	33.98	214.18	347.92	86.04	3 58 59	4359.0	33.06	205.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3899	TRA	-.5688	TC3	.3800	BAU	1.1577	SGT	1048.6	SGR	5302.3	SG3	1419.4	ST	593.3	SR	2576.8	SS	2862.7
RDE	1.8094	RRA	1.4633	RC3	4.9814	FAU	.30309	RRT	.1472	RRF	-.9997	RTF	-.1389	CRT	.7669	CRS	1.0000	CST	.7664
FDE	-5.7625	FRA	-4.6777	FC	-15.1379	BSP	17918	SGB	5405.0	R23	-.0143	R13	-.9997	LSA	3878.7	MSA	378.3	SSA	4.3
BDE	1.8510	BRA	1.5699	BC3	4.9959	FSP	4738	SG1	5304.7	SG2	1036.7	THA	88.27	EL1	2617.5	EL2	374.8	ALF	79.77

LAUNCH DATE DEC 5 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 576.965 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	32.986	GAL	2.56	AZL	96.03	HCA	174.50	SMA	186.27	ECC	.21312	INC	6.0267
RP	225.19	LAP	-.58	LOP	247.43	VP	21.592	GAP	-2.46	AZP	84.00	TAL	14.66	TAP	189.16	RCA	146.57	APO	225.97
RC	251.477	GL	-48.38	GP	42.02	ZAL	68.21	ZAP	107.87	ETS	161.40	ZAE	129.49	ETE	127.39	ZAC	128.93	ETC	252.08

V1	30.223	V2	24.423	CLP	114.39														

PLANETOCENTRIC CONIC

C3	21.419	VHL	4.628	DLA	-28.70	RAL	118.40	RAD	6567.9	VEL	11.950	PTH	2.13	VHP	4.350	DPA	37.94	RAP	203.00
ECC	1.3525																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.12	19 36 20	1040.92	19.47	335.09	348.16	111.51	19 53 41	440.9	22.22	327.47
94.88	20 57 58	776.66	19.49	315.74	348.16	111.50	21 10 54	176.7	22.24	308.12
100.00	20 27 42	874.19	13.74	320.23	345.48	116.81	20 42 16	274.2	17.23	313.18
100.00	22 49 17	5706.67	25.43	269.43	350.36	106.27	24 24 24	5106.7	27.41	261.19
110.00	20 22 1	892.08	7.10	317.66	341.55	123.53	20 36 53	292.1	11.46	311.28
110.00	1 15 24	5261.53	32.91	237.63	352.34	99.81	2 43 5	4661.5	33.91	228.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3776	TRA	-.6578	TC3	.1113	BAU	1.3127	SGT	1044.6	SGR	5931.1	SG3	1196.5	ST	544.2	SR	3284.5
RDE	2.5718	RRA	1.8805	RC3	4.5831	FAU	.25917	RRT	-.0869	RRF	-.9998	RTF	.0967	CRT	.7089	CRS	1.0000
FDE	-6.0987	FRA	-4.5234	FC	-10.4756	BSP	20341	SGB	6022.3	R23	-.0070	R13	-.9998	LSA	4418.0	MSA	383.0
BDE	2.5994	BRA	1.9922	BC3	4.5844	FSP	4046	SG1	5931.8	SG2	1040.5	THA	90.91	EL1	3307.4	EL2	381.1

SS	2929.5																
CST	.7065																
SSA	3.4																
ALF	83.21																

LAUNCH DATE DEC 5 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 580.909 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	32.980	GAL	2.56	AZL	97.89	HCA	175.56	SMA	186.17	ECC	.21269	INC	7.8944
RP	224.80	LAP	-.61	LOP	248.50	VP	21.630	GAP	-2.74	AZP	82.13	TAL	14.67	TAP	190.23	RCA	146.57	APO	225.76
RC	253.132	GL	-56.80	GP	47.61	ZAL	71.49	ZAP	104.54	ETS	161.64	ZAE	123.95	ETE	127.66	ZAC	133.99	ETC	250.67

V1	30.223	V2	24.465	CLP	111.87														

PLANETOCENTRIC CONIC

C3	29.249	VHL	5.408	DLA	-36.50	RAL	114.48	RAD	6568.2	VEL	12.273	PTH	2.21	VHP	4.888	DPA	43.18	RAP	205.92
ECC	1.4814																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.94	17 8 51	1530.78	21.85	13.50	351.64	119.99	17 34 22	930.8	25.67	6.23
114.06	22 54 9	5728.19	21.87	269.41	351.65	119.98	24 29 37	5128.2	25.68	262.14
65.94	17 8 51	1530.78	21.85	13.50	351.64	119.99	17 34 22	930.8	25.67	6.23
114.06	22 54 9	5728.19	21.87	269.41	351.65	119.98	24 29 37	5128.2	25.68	262.14
65.94	17 8 51	1530.78	21.85	13.50	351.64	119.99	17 34 22	930.8	25.67	6.23
114.06	22 54 9	5728.19	21.87	269.41	351.65	119.98	24 29 37	5128.2	25.68	262.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3468	TRA	-.7941	TC3	-.1005	BAU	1.5220	SGT	1114.5	SGR	6663.0	SG3	920.8	ST	483.3	SR	4075.0
RDE	3.7271	RRA	2.5272	RC3	3.8909	FAU	.20508	RRT	-.3357	RRF	-.9998	RTF	.3473	CRT	.5771	CRS	1.0000
FDE	-5.9958	FRA	-4.1652	FC3	-6.0701	BSP	22391	SGB	6755.6	R23	-.0034	R13	-.9998	LSA	4936.5	MSA	394.8
BDE	3.7432	BRA	2.6490	BC3	3.8922	FSP	3030	SG1	6673.8	SG2	1048.2	THA	93.29	EL1	4084.6	EL2	393.8

SS	2772.4																
CST	.5724																
SSA	2.7																
ALF	86.05																

LAUNCH DATE DEC 5 1964 FLIGHT TIME 280.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 617.212 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	32.949	GAL	2.36	AZL	80.56	HCA	185.48	SMA	185.63	ECC	.20980	INC	9.4363
RP	221.32	LAP	-.90	LOP	258.31	VP	22.009	GAP	-4.91	AZP	99.39	TAL	13.69	TAP	199.17	RCA	146.69	APO	224.58
RC	267.114	GL	62.87	GP	-44.36	ZAL	74.68	ZAP	94.35	ETS	182.81	ZAE	118.32	ETE	208.66	ZAC	43.47	ETC	250.70

V1	30.223	V2	24.841	CLP	96.08														

PLANETOCENTRIC CONIC

C3	36.782	VHL	6.065	DLA	73.84	RAL	184.56	RAD	6568.4	VEL	12.576	PTH	2.28	VHP	4.244	DPA	-36.18	RAP	154.48
ECC	1.6053																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
13.72	9 59 57	4423.74	-44.39	242.30	125.00	17.00	11 13 41	3823.7	-51.99	238.93
13.72	4 20 44	4742.24	-23.43	247.73	46.73	13.16	5 39 47	4142.2	-31.20	246.02
18.43	7 19 52	4574.44	-33.27	240.40	83.61	19.44	8 36 6	3974.4	-40.77	237.31
161.57	18 6 8	2799.94	-33.27	85.78	83.59	19.44	18 52 48	2199.9	-40.76	82.69
18.43	7 19 52	4574.44	-33.27	240.40	83.61	19.44	8 36 6	3974.4	-40.77	237.31
161.57	18 6 8	2799.94	-33.27	85.78	83.59	19.44	18 52 48	2199.9	-40.76	82.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.1787	TRA	.2519	TC3	-1.2913	BAU	1.6511	SGT	3493.2	SGR	6596.1	SG3	1227.1	ST	3014.3	SR	4302.6
RDE	4.4184	RRA	1.0185	RC3	-3.0994	FAU	.29284	RRT	.9279	RRF	.9997	RTF	.9261	CRT	.9874	CRS	-1.0000
FDE	9.3793	FRA	2.1510	FC3	-6.8925	BSP	24836	SGB	7464.0	R23	.0840	R13	.9962	LSA	6215.5	MSA	416.6
BDE	5.4431	BRA	1.0491	BC3	3.3576	FSP	4238	SG1	7372.4	SG2	1165.5	THA	63.10	EL1	5238.8	EL2	391.1

SS	3347.8																
CST	-.9876																
SSA	3.6																
ALF	55.10																

LAUNCH DATE DEC 5 1964 FLIGHT TIME 282.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 621.259 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	32.948	GAL	2.33	AZL	81.87	HCA	186.58	SMA	185.61	ECC	.20961	INC	8.1280
RP	220.94	LAP	-.93	LOP	259.42	VP	22.053	GAP	-5.13	AZP	98.08	TAL	13.54	TAP	200.13	RCA	146.70	APO	224.52
RC	268.570	GL	58.52	GP	-39.84	ZAL	73.09	ZAP	93.31	ETS	181.43	ZAE	119.12	ETE	204.88	ZAC	47.65	ETC	252.14

V1	30.223	V2	24.883	CLP	94.31														

PLANETOCENTRIC CONIC

C3	29.788	VHL	5.458	DLA	70.69	RAL	174.32	RAD	6568.2	VEL	12.295	PTH	2.21	VHP	3.867	DPA	-32.01	RAP	156.69
ECC	1.4902																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
22.07	6 46 37	4512.78	-35.93	235.00	69.62	24.11	8 1 49	3912.8	-43.16	230.95
157.93	17 17 43	2755.34	-35.93	84.12	69.60	24.11	18 3 38	2155.3	-43.15	80.07
22.07	6 46 37	4512.78	-35.93	235.00	69.62	24.11	8 1 49	3912.8	-43.16	230.95
157.93	17 17 43	2755.34	-35.93	84.12	69.60	24.11	18 3 38	2155.3	-43.15	80.07
22.07	6 46 37	4512.78	-35.93	235.00	69.62	24.11	8 1 49	3912.8	-43.16	230.95
157.93	17 17 43	2755.34	-35.93	84.12	69.60	24.11	18 3 38	2155.3	-43.15	80.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.0923	TRA	.1290	TC3	-1.6644	BAU	1.5027	SGT	3742.5	SGR	6067.9	SG3	1517.0	ST	3249.0	SR	4246.5
RDE	3.9863	RRA	.7485	RC3	-3.3863	FAU	.34789	RRT	.9368	RRF	.9997	RTF	.9349	CRT	.9914	CRS	-1.0000
FDE	11.3399	FRA	2.1076	FC	-10.1108	BSP	23843	SGB	7129.3	R23	.0999	R13	.9947	LSA	6688.0	MSA	370.1
BDE	5.0451	BRA	.7595	BC3	3.7733	FSP	5293	SG1	7039.3	SG2	1129.0	THA	59.10	EL1	5336.1	EL2	338.2

SS	4034.5																
CST	-.9916																
SSA	4.2																
ALF	52.64																

LAUNCH DATE DEC 5 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 625.317 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.947 GAL 2.30 AZL 82.81 HCA 187.69 SMA 185.59 ECC .20945 INC 7.1900 V1 30.223
RP 220.56 LAP -.96 LOP 260.53 VP 22.099 GAP -5.35 AZP 97.13 TAL 13.37 TAP 201.06 RCA 146.72 APO 224.47 V2 24.924
RC 270.009 GL 54.86 GP -35.95 ZAL 71.85 ZAP 91.99 ETS 180.20 ZAE 119.21 ETE 201.35 ZAC 51.22 ETC 253.18 CLP 92.46

PLANETOCENTRIC CONIC

C3 25.392 VHL 5.039 DLA 67.71 RAL 168.07 RAD 6568.0 VEL 12.115 PTH 2.17 VHP 3.621 DPA -28.32 RAP 158.24 ECC 1.4179

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
25.52	6 29 9	4463.25	-37.51	229.71	59.74	28.56	7 43 32	3863.3	-44.43	224.78
154.48	16 45 18	2725.40	-37.51	82.49	59.72	28.56	17 30 43	2125.4	-44.42	77.57
25.52	6 29 9	4463.25	-37.51	229.71	59.74	28.56	7 43 32	3863.3	-44.43	224.78
154.48	16 45 18	2725.40	-37.51	82.49	59.72	28.56	17 30 43	2125.4	-44.42	77.57
25.52	6 29 9	4463.25	-37.51	229.71	59.74	28.56	7 43 32	3863.3	-44.43	224.78
154.48	16 45 18	2725.40	-37.51	82.49	59.72	28.56	17 30 43	2125.4	-44.42	77.57

DIFFERENTIAL CORRECTIONS
TDE 2.9698 TRA .0323 TC3-2.0843 BAU 1.4024
RDE 3.4324 RRA .5574 RC3-3.5670 FAU .39412
FDE12.2808 FRA 1.9573 FC-13.4378 BSP 22675
BDE 4.5388 BRA .5583 BC3 4.1313 FSP 6099

MID-COURSE EXECUTION ACCURACY
SGT 3978.0 SGR 5563.0 SG3 1755.5
RRT .9441 RRF .9996 RTF .9424
SGB 6839.0 R23 .1155 R13 .9929
SG1 6753.1 SG2 1080.4 THA 54.95

ORBIT DETERMINATION ACCURACY
ST 3377.5 SR 3936.4 SS 4404.9
CRT .9929 CRS-1.0000 CST -.9931
LSA 6796.0 MSA 346.2 SSA 4.9
EL1 5177.7 EL2 305.9 ALF 49.40

LAUNCH DATE DEC 5 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 629.389 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.946 GAL 2.27 AZL 83.51 HCA 188.80 SMA 185.58 ECC .20930 INC 6.4852 V1 30.223
RP 220.18 LAP -.99 LOP 261.65 VP 22.144 GAP -5.55 AZP 96.41 TAL 13.19 TAP 201.99 RCA 146.74 APO 224.42 V2 24.965
RC 271.430 GL 51.75 GP -32.63 ZAL 70.88 ZAP 90.49 ETS 179.14 ZAE 118.75 ETE 198.17 ZAC 54.27 ETC 253.95 CLP 90.58

PLANETOCENTRIC CONIC

C3 22.418 VHL 4.735 DLA 65.02 RAL 163.98 RAD 6567.9 VEL 11.992 PTH 2.14 VHP 3.454 DPA -25.07 RAP 159.32 ECC 1.3689

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
28.66	6 19 57	4422.29	-38.38	224.79	52.35	32.59	7 33 40	3822.3	-44.97	219.13
151.34	16 21 55	2705.38	-38.37	81.05	52.33	32.59	17 7 1	2105.4	-44.97	75.38
28.66	6 19 57	4422.29	-38.38	224.79	52.35	32.59	7 33 40	3822.3	-44.97	219.13
151.34	16 21 55	2705.38	-38.37	81.05	52.33	32.59	17 7 1	2105.4	-44.97	75.38
28.66	6 19 57	4422.29	-38.38	224.79	52.35	32.59	7 33 40	3822.3	-44.97	219.13
151.34	16 21 55	2705.38	-38.37	81.05	52.33	32.59	17 7 1	2105.4	-44.97	75.38

DIFFERENTIAL CORRECTIONS
TDE 2.8794 TRA -.0347 TC3-2.5194 BAU 1.3270
RDE 2.9435 RRA .4308 RC3-3.6409 FAU .42972
FDE12.6752 FRA 1.8032 FC-16.5948 BSP 22013
BDE 4.1176 BRA .4322 BC3 4.4276 FSP 6792

MID-COURSE EXECUTION ACCURACY
SGT 4224.0 SGR 5108.7 SG3 1949.1
RRT .9506 RRF .9995 RTF .9489
SGB 6628.8 R23 .1308 R13 .9909
SG1 6549.5 SG2 1022.6 THA 50.69

ORBIT DETERMINATION ACCURACY
ST 3485.2 SR 3582.6 SS 4603.0
CRT .9937 CRS-1.0000 CST -.9940
LSA 6786.7 MSA 331.1 SSA 5.5
EL1 4990.3 EL2 280.8 ALF 45.79

LAUNCH DATE DEC 5 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 633.470 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.946 GAL 2.24 AZL 84.06 HCA 189.92 SMA 185.58 ECC .20916 INC 5.9358 V1 30.223
RP 219.81 LAP -1.02 LOP 262.77 VP 22.190 GAP -5.76 AZP 95.85 TAL 12.99 TAP 202.90 RCA 146.76 APO 224.39 V2 25.006
RC 272.833 GL 49.09 GP -29.77 ZAL 70.14 ZAP 88.86 ETS 178.23 ZAE 117.88 ETE 195.38 ZAC 56.87 ETC 254.54 CLP 88.69

PLANETOCENTRIC CONIC

C3 20.293 VHL 4.505 DLA 62.63 RAL 161.19 RAD 6567.8 VEL 11.903 PTH 2.11 VHP 3.338 DPA -22.22 RAP 160.07 ECC 1.3340

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
31.49	6 15 27	4387.53	-38.79	220.34	46.61	36.15	7 28 35	3787.5	-45.07	214.08
148.51	16 4 8	2692.21	-38.78	79.83	46.60	36.14	16 49 1	2092.2	-45.06	73.57
31.49	6 15 27	4387.53	-38.79	220.34	46.61	36.15	7 28 35	3787.5	-45.07	214.08
148.51	16 4 8	2692.21	-38.78	79.83	46.60	36.14	16 49 1	2092.2	-45.06	73.57
31.49	6 15 27	4387.53	-38.79	220.34	46.61	36.15	7 28 35	3787.5	-45.07	214.08
148.51	16 4 8	2692.21	-38.78	79.83	46.60	36.14	16 49 1	2092.2	-45.06	73.57

DIFFERENTIAL CORRECTIONS
TDE 2.8158 TRA -.0862 TC3-2.9720 BAU 1.2759
RDE 2.5351 RRA .3423 RC3-3.6448 FAU .45726
FDE12.7267 FRA 1.6505 FC-19.5069 BSP 21605
BDE 3.7889 BRA .3530 BC3 4.7029 FSP 7340

MID-COURSE EXECUTION ACCURACY
SGT 4478.1 SGR 4698.5 SG3 2101.7
RRT .9560 RRF .9994 RTF .9542
SGB 6490.7 R23 .1451 R13 .9888
SG1 6419.1 SG2 961.5 THA 46.44

ORBIT DETERMINATION ACCURACY
ST 3583.0 SR 3238.3 SS 4687.5
CRT .9942 CRS-1.0000 CST -.9945
LSA 6722.7 MSA 321.0 SSA 6.2
EL1 4822.5 EL2 259.6 ALF 42.09

LAUNCH DATE DEC 5 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 637.562 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.946 GAL 2.20 AZL 84.50 HCA 191.04 SMA 185.58 ECC .20905 INC 5.4951 V1 30.223
RP 219.44 LAP -1.05 LOP 263.89 VP 22.236 GAP -5.96 AZP 95.39 TAL 12.77 TAP 203.81 RCA 146.78 APO 224.37 V2 25.047
RC 274.220 GL 46.79 GP -27.29 ZAL 69.59 ZAP 87.16 ETS 177.46 ZAE 116.71 ETE 192.95 ZAC 59.10 ETC 255.00 CLP 86.80

PLANETOCENTRIC CONIC

C3 18.708 VHL 4.325 DLA 60.49 RAL 159.22 RAD 6567.8 VEL 11.836 PTH 2.10 VHP 3.256 DPA -19.71 RAP 160.59 ECC 1.3079

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.03	6 13 48	4357.37	-38.89	216.32	42.06	39.26	7 26 26	3757.4	-44.88	209.60
145.97	15 50 5	2683.84	-38.88	78.84	42.05	39.26	16 34 49	2083.8	-44.87	72.12
34.03	6 13 48	4357.37	-38.89	216.32	42.06	39.26	7 26 26	3757.4	-44.88	209.60
145.97	15 50 5	2683.84	-38.88	78.84	42.05	39.26	16 34 49	2083.8	-44.87	72.12
34.03	6 13 48	4357.37	-38.89	216.32	42.06	39.26	7 26 26	3757.4	-44.88	209.60
145.97	15 50 5	2683.84	-38.88	78.84	42.05	39.26	16 34 49	2083.8	-44.87	72.12

DIFFERENTIAL CORRECTIONS
TDE 2.7706 TRA -.1296 TC3-3.4430 BAU 1.2468
RDE 2.1973 RRA .2767 RC3-3.6049 FAU .47883
FDE12.5552 FRA 1.4959 FC-22.1582 BSP 21328
BDE 3.5362 BRA .3055 BC3 4.9850 FSP 7724

MID-COURSE EXECUTION ACCURACY
SGT 4739.4 SGR 4330.2 SG3 2220.0
RRT .9605 RRF .9992 RTF .9585
SGB 6419.7 R23 .1576 R13 .9867
SG1 6356.5 SG2 898.7 THA 42.31

ORBIT DETERMINATION ACCURACY
ST 3672.7 SR 2920.7 SS 4694.3
CRT .9945 CRS-1.0000 CST -.9949
LSA 6630.0 MSA 313.4 SSA 7.0
EL1 4686.3 EL2 240.5 ALF 38.46

LAUNCH DATE DEC 5 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 641.664 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	32.946	GAL	2.16	AZL	84.87	HCA	192.16	SMA	185.59	ECC	.20895	INC	5.1337
RP	219.07	LAP	-1.08	LOP	265.02	VP	22.283	GAP	-6.15	AZP	95.02	TAL	12.54	TAP	204.70	RCA	146.81	APO	224.36
RC	275.589	GL	44.80	GP	-25.14	ZAL	69.20	ZAP	85.41	ETS	176.81	ZAE	115.33	ETE	190.85	ZAC	61.03	ETC	255.38

V1	30.223	V2	25.088	CLP	84.93														

PLANETOCENTRIC CONIC

C3	17.483	VHL	4.181	DLA	58.58	RAL	157.81	RAD	6567.7	VEL	11.784	PTH	2.08	VHP	3.199	DPA	-17.48	RAP	160.93
ECC	1.2877																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.31	6 14 3	4330.63	-38.81	212.72	38.40	41.99	7 26 13	3730.6	-44.52	205.63
143.69	15 38 37	2678.97	-38.79	78.07	38.39	41.98	16 23 16	2079.0	-44.51	70.99
36.31	6 14 3	4330.63	-38.81	212.72	38.40	41.99	7 26 13	3730.6	-44.52	205.63
143.69	15 38 37	2678.97	-38.79	78.07	38.39	41.98	16 23 16	2079.0	-44.51	70.99
36.31	6 14 3	4330.63	-38.81	212.72	38.40	41.99	7 26 13	3730.6	-44.52	205.63
143.69	15 38 37	2678.97	-38.79	78.07	38.39	41.98	16 23 16	2079.0	-44.51	70.99

DIFFERENTIAL CORRECTIONS

TDE	2.7409	TRA	-.1647	TC3	-3.9245	BAU	1.2344
RDE	1.9179	RRA	.2276	RC3	-3.5343	FAU	.49537
FDE	12.2404	FRA	1.3491	FC	-24.5297	BSP	21253
BDE	3.3452	BRA	.2809	BC3	5.2814	FSP	7988

MID-COURSE EXECUTION ACCURACY

SGT	5006.5	SGR	4000.0	SG3	2309.8		
RRT	.9643	RRF	.9990	RTF	.9622		
SGB	6408.1	R23	.1677	R13	.9849		
SG1	6353.6	SG2	834.2	THA	38.40		

ORBIT DETERMINATION ACCURACY

ST	3759.4	SR	2635.6	SS	4648.2
CRT	.9947	CRS	-1.0000	CST	-.9952
LSA	6526.2	MSA	305.9	SSA	7.8
EL1	4585.8	EL2	222.1	ALF	34.98

LAUNCH DATE DEC 5 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 645.773 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	32.947	GAL	2.11	AZL	85.17	HCA	193.29	SMA	185.60	ECC	.20887	INC	4.8320
RP	218.70	LAP	-1.11	LOP	266.15	VP	22.329	GAP	-6.34	AZP	94.70	TAL	12.29	TAP	205.58	RCA	146.83	APO	224.36
RC	276.940	GL	43.05	GP	-23.26	ZAL	68.94	ZAP	83.64	ETS	176.26	ZAE	113.79	ETE	189.04	ZAC	62.71	ETC	255.70

V1	30.223	V2	25.128	CLP	83.08														

PLANETOCENTRIC CONIC

C3	16.508	VHL	4.063	DLA	56.86	RAL	156.81	RAD	6567.7	VEL	11.743	PTH	2.07	VHP	3.159	DPA	-15.49	RAP	161.14
ECC	1.2717																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.39	6 15 31	4306.62	-38.59	209.47	35.42	44.38	7 27 18	3706.6	-44.06	202.10
141.61	15 29 8	2676.54	-38.58	77.48	35.41	44.37	16 13 44	2076.5	-44.05	70.12
38.39	6 15 31	4306.62	-38.59	209.47	35.42	44.38	7 27 18	3706.6	-44.06	202.10
141.61	15 29 8	2676.54	-38.58	77.48	35.41	44.37	16 13 44	2076.5	-44.05	70.12
38.39	6 15 31	4306.62	-38.59	209.47	35.42	44.38	7 27 18	3706.6	-44.06	202.10
141.61	15 29 8	2676.54	-38.58	77.48	35.41	44.37	16 13 44	2076.5	-44.05	70.12

DIFFERENTIAL CORRECTIONS

TDE	2.7296	TRA	-.1870	TC3	-4.4030	BAU	1.2299
RDE	1.6961	RRA	.2014	RC3	-3.4163	FAU	.50392
FDE	11.9129	FRA	1.2954	FC	-26.4267	BSP	21613
BDE	3.2136	BRA	.2748	BC3	5.5729	FSP	8298

MID-COURSE EXECUTION ACCURACY

SGT	5277.3	SGR	3701.0	SG3	2373.3		
RRT	.9671	RRF	.9987	RTF	.9650		
SGB	6445.8	R23	.1756	R13	.9832		
SG1	6398.8	SG2	776.7	THA	34.73		

ORBIT DETERMINATION ACCURACY

ST	3853.4	SR	2398.4	SS	4597.3
CRT	.9947	CRS	-1.0000	CST	-.9952
LSA	6453.1	MSA	305.5	SSA	8.6
EL1	4534.0	EL2	209.2	ALF	31.84

LAUNCH DATE DEC 5 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 649.894 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	32.948	GAL	2.07	AZL	85.42	HCA	194.43	SMA	185.61	ECC	.20881	INC	4.5756
RP	218.34	LAP	-1.14	LOP	267.28	VP	22.376	GAP	-6.53	AZP	94.43	TAL	12.02	TAP	206.45	RCA	146.86	APO	224.37
RC	278.273	GL	41.50	GP	-21.60	ZAL	68.79	ZAP	81.87	ETS	175.80	ZAE	112.15	ETE	187.48	ZAC	64.18	ETC	255.97

V1	30.223	V2	25.168	CLP	81.25														

PLANETOCENTRIC CONIC

C3	15.714	VHL	3.964	DLA	55.31	RAL	156.11	RAD	6567.6	VEL	11.709	PTH	2.06	VHP	3.134	DPA	-13.71	RAP	161.26
ECC	1.2586																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.28	6 17 55	4284.70	-38.30	206.52	32.98	46.49	7 29 20	3684.7	-43.55	198.93
139.72	15 21 6	2676.02	-38.29	77.05	32.97	46.48	16 5 42	2076.0	-43.54	69.47
40.28	6 17 55	4284.70	-38.30	206.52	32.98	46.49	7 29 20	3684.7	-43.55	198.93
139.72	15 21 6	2676.02	-38.29	77.05	32.97	46.48	16 5 42	2076.0	-43.54	69.47
40.28	6 17 55	4284.70	-38.30	206.52	32.98	46.49	7 29 20	3684.7	-43.55	198.93
139.72	15 21 6	2676.02	-38.29	77.05	32.97	46.48	16 5 42	2076.0	-43.54	69.47

DIFFERENTIAL CORRECTIONS

TDE	2.7158	TRA	-.2122	TC3	-4.9054	BAU	1.2436
RDE	1.5009	RRA	.1727	RC3	-3.3137	FAU	.51288
FDE	11.4535	FRA	1.1785	FC	-28.2564	BSP	21759
BDE	3.1029	BRA	.2736	BC3	5.9198	FSP	8350

MID-COURSE EXECUTION ACCURACY

SGT	5551.9	SGR	3435.2	SG3	2420.5		
RRT	.9698	RRF	.9984	RTF	.9676		
SGB	6528.7	R23	.1804	R13	.9819		
SG1	6489.3	SG2	716.5	THA	31.39		

ORBIT DETERMINATION ACCURACY

ST	3930.4	SR	2174.7	SS	4492.4
CRT	.9948	CRS	-1.0000	CST	-.9954
LSA	6345.8	MSA	299.7	SSA	9.6
EL1	4487.8	EL2	193.7	ALF	28.89

LAUNCH DATE DEC 5 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 654.023 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	32.949	GAL	2.02	AZL	85.64	HCA	195.57	SMA	185.64	ECC	.20876	INC	4.3553
RP	217.98	LAP	-1.17	LOP	268.42	VP	22.423	GAP	-6.71	AZP	94.20	TAL	11.75	TAP	207.31	RCA	146.88	APO	224.39
RC	279.589	GL	40.13	GP	-20.12	ZAL	68.74	ZAP	80.10	ETS	175.40	ZAE	110.44	ETE	186.13	ZAC	65.48	ETC	256.20

V1	30.223	V2	25.208	CLP	79.45														

PLANETOCENTRIC CONIC

C3	15.053	VHL	3.880	DLA	53.90	RAL	155.63	RAD	6567.6	VEL	11.681	PTH	2.05	VHP	3.119	DPA	-12.12	RAP	161.31
ECC	1.2477																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.01	6 20 58	4264.49	-37.96	203.83	30.97	48.36	7 32 2	3664.5	-43.00	196.07
137.99	15 14 17	2676.87	-37.95	76.75	30.96	48.35	15 58 54	2076.9	-42.99	69.00
42.01	6 20 58	4264.49	-37.96	203.83	30.97	48.36	7 32 2	3664.5	-43.00	196.07
137.99	15 14 17	2676.87	-37.95	76.75	30.96	48.35	15 58 54	2076.9	-42.99	69.00
42.01	6 20 58	4264.49	-37.96	203.83	30.97	48.36	7 32 2	3664.5	-43.00	196.07
137.99	15 14 17	2676.87	-37.95	76.75	30.96	48.35	15 58 54	2076.9	-42.99	69.00

DIFFERENTIAL CORRECTIONS

TDE	2.7132	TRA	-.2280	TC3	-5.4021	BAU	1.2621
RDE	1.3415	RRA	.1555	RC3	-3.1862	FAU	.51632
FDE	11.0081	FRA	1.1177	FC	-29.6952	BSP	22207
BDE	3.0267	BRA	.2760	BC3	6.2717	FSP	8435

MID-COURSE EXECUTION ACCURACY

SGT	5826.8	SGR	3192.1	SG3	2448.4		
RRT	.9720	RRF	.9979	RTF	.9697		
SGB	6643.9	R23	.1828	R13	.9810		
SG1	6610.9	SG2	661.1	THA	28.34		

ORBIT DETERMINATION ACCURACY

ST	4012.4	SR	1986.0	SS	4390.2
CRT	.9948	CRS	-1.0000	CST	-.9955
LSA	6263.4	MSA	296.6	SSA	10.5
EL1	4473.3	EL2	181.1	ALF	26.26

LAUNCH DATE DEC 5 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 658.160 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.951 GAL 1.97 AZL 85.84 HCA 196.71 SMA 185.66 ECC .20874 INC 4.1639 V1 30.223
RP 217.62 LAP -1.20 LOP 269.57 VP 22.469 GAP -6.88 AZP 93.99 TAL 11.45 TAP 208.16 RCA 146.91 APO 224.42 V2 25.248
RC 280.887 GL 38.91 GP -18.80 ZAL 68.78 ZAP 78.35 ETS 175.07 ZAE 108.69 ETE 184.97 ZAC 66.64 ETC 256.40 CLP 77.69

PLANETOCENTRIC CONIC

C3 14.492 VHL 3.807 DLA 52.61 RAL 155.35 RAD 6567.6 VEL 11.657 PTH 2.05 VHP 3.112 DPA -10.67 RAP 161.32 ECC 1.2385

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.62	6 24 33	4245.60	-37.59	201.35	29.32	50.03	7 35 18	3645.6	-42.45	193.46
136.38	15 8 24	2678.85	-37.58	76.56	29.30	50.02	15 53 3	2078.8	-42.43	68.67
43.62	6 24 33	4245.60	-37.59	201.35	29.32	50.03	7 35 18	3645.6	-42.45	193.46
136.38	15 8 24	2678.85	-37.58	76.56	29.30	50.02	15 53 3	2078.8	-42.43	68.67
43.62	6 24 33	4245.60	-37.59	201.35	29.32	50.03	7 35 18	3645.6	-42.45	193.46
136.38	15 8 24	2678.85	-37.58	76.56	29.30	50.02	15 53 3	2078.8	-42.43	68.67

DIFFERENTIAL CORRECTIONS

TDE 2.7172 TRA -.2354 TC3-5.8950 BAU 1.2880
RDE 1.2076 RRA .1458 RC3-3.0504 FAU .51646
FDE10.5586 FRA 1.1012 FC-30.8517 BSP 22816
BDE 2.9735 BRA .2770 BC3 6.6375 FSP 8487

MID-COURSE EXECUTION ACCURACY

SGT 6100.0 SGR 2971.2 SG3 2461.6
RRT .9736 RRF .9973 RTF .9714
SGB 6785.1 R23 .1835 R13 .9803
SG1 6757.5 SG2 612.1 THA 25.60

ORBIT DETERMINATION ACCURACY

ST 4095.5 SR 1822.1 SS 4283.3
CRT .9948 CRS -.9999 CST -.9955
LSA 6192.9 MSA 295.3 SSA 11.5
EL1 4479.3 EL2 170.4 ALF 23.91

LAUNCH DATE DEC 5 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 662.306 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.953 GAL 1.92 AZL 86.00 HCA 197.85 SMA 185.69 ECC .20872 INC 3.9956 V1 30.223
RP 217.27 LAP -1.22 LOP 270.71 VP 22.516 GAP -7.06 AZP 93.80 TAL 11.15 TAP 209.00 RCA 146.93 APO 224.45 V2 25.287
RC 282.167 GL 37.82 GP -17.62 ZAL 68.90 ZAP 76.63 ETS 174.78 ZAE 106.91 ETE 183.96 ZAC 67.68 ETC 256.58 CLP 75.95

PLANETOCENTRIC CONIC

C3 14.010 VHL 3.743 DLA 51.42 RAL 155.21 RAD 6567.6 VEL 11.636 PTH 2.04 VHP 3.113 DPA -9.36 RAP 161.29 ECC 1.2306

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.11	6 28 33	4227.83	-37.20	199.06	27.96	51.53	7 39 1	3627.8	-41.89	191.06
134.89	15 3 19	2681.67	-37.19	76.46	27.94	51.52	15 48 1	2081.7	-41.88	68.47
45.11	6 28 33	4227.83	-37.20	199.06	27.96	51.53	7 39 1	3627.8	-41.89	191.06
134.89	15 3 19	2681.67	-37.19	76.46	27.94	51.52	15 48 1	2081.7	-41.88	68.47
45.11	6 28 33	4227.83	-37.20	199.06	27.96	51.53	7 39 1	3627.8	-41.89	191.06
134.89	15 3 19	2681.67	-37.19	76.46	27.94	51.52	15 48 1	2081.7	-41.88	68.47

DIFFERENTIAL CORRECTIONS

TDE 2.7196 TRA -.2424 TC3-6.4005 BAU 1.3176
RDE 1.0922 RRA .1375 RC3-2.9191 FAU .51530
FDE10.0927 FRA 1.0804 FC-31.8421 BSP 23387
BDE 2.9307 BRA .2787 BC3 7.0347 FSP 8460

MID-COURSE EXECUTION ACCURACY

SGT 6375.1 SGR 2772.1 SG3 2464.9
RRT .9750 RRF .9966 RTF .9729
SGB 6951.7 R23 .1818 R13 .9799
SG1 6928.5 SG2 567.3 THA 23.14

ORBIT DETERMINATION ACCURACY

ST 4169.3 SR 1676.3 SS 4165.8
CRT .9947 CRS -.9999 CST -.9955
LSA 6120.4 MSA 293.7 SSA 12.5
EL1 4490.7 EL2 160.6 ALF 21.83

LAUNCH DATE DEC 5 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 666.460 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.955 GAL 1.86 AZL 86.15 HCA 199.00 SMA 185.73 ECC .20872 INC 3.8467 V1 30.223
RP 216.91 LAP -1.25 LOP 271.86 VP 22.563 GAP -7.22 AZP 93.64 TAL 10.82 TAP 209.83 RCA 146.96 APO 224.49 V2 25.327
RC 283.431 GL 36.83 GP -16.55 ZAL 69.08 ZAP 74.93 ETS 174.55 ZAE 105.12 ETE 183.09 ZAC 68.61 ETC 256.74 CLP 74.26

PLANETOCENTRIC CONIC

C3 13.589 VHL 3.686 DLA 50.31 RAL 155.20 RAD 6567.5 VEL 11.618 PTH 2.04 VHP 3.120 DPA -8.17 RAP 161.24 ECC 1.2236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.50	6 32 54	4210.96	-36.80	196.92	26.84	52.90	7 43 5	3611.0	-41.33	188.84
133.50	14 58 54	2685.19	-36.79	76.44	26.83	52.89	15 43 39	2085.2	-41.32	68.36
46.50	6 32 54	4210.96	-36.80	196.92	26.84	52.90	7 43 5	3611.0	-41.33	188.84
133.50	14 58 54	2685.19	-36.79	76.44	26.83	52.89	15 43 39	2085.2	-41.32	68.36
46.50	6 32 54	4210.96	-36.80	196.92	26.84	52.90	7 43 5	3611.0	-41.33	188.84
133.50	14 58 54	2685.19	-36.79	76.44	26.83	52.89	15 43 39	2085.2	-41.32	68.36

DIFFERENTIAL CORRECTIONS

TDE 2.7261 TRA -.2418 TC3-6.8977 BAU 1.3513
RDE .9934 RRA .1332 RC3-2.7834 FAU .51144
FDE 9.6321 FRA 1.0882 FC-32.5824 BSP 24092
BDE 2.9014 BRA .2760 BC3 7.4381 FSP 8422

MID-COURSE EXECUTION ACCURACY

SGT 6645.4 SGR 2588.5 SG3 2456.3
RRT .9759 RRF .9957 RTF .9742
SGB 7131.7 R23 .1785 R13 .9796
SG1 7112.2 SG2 527.5 THA 20.93

ORBIT DETERMINATION ACCURACY

ST 4243.5 SR 1548.3 SS 4046.5
CRT .9945 CRS -.9999 CST -.9955
LSA 6057.5 MSA 292.6 SSA 13.5
EL1 4514.6 EL2 151.8 ALF 19.97

LAUNCH DATE DEC 5 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 670.620 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.957 GAL 1.81 AZL 86.29 HCA 200.16 SMA 185.77 ECC .20874 INC 3.7137 V1 30.223
RP 216.57 LAP -1.28 LOP 273.02 VP 22.610 GAP -7.39 AZP 93.49 TAL 10.49 TAP 210.64 RCA 146.09 APO 224.54 V2 25.365
RC 284.679 GL 35.94 GP -15.58 ZAL 69.33 ZAP 73.26 ETS 174.34 ZAE 103.33 ETE 182.33 ZAC 69.45 ETC 256.88 CLP 72.60

PLANETOCENTRIC CONIC

C3 13.217 VHL 3.636 DLA 49.28 RAL 155.30 RAD 6567.5 VEL 11.602 PTH 2.03 VHP 3.133 DPA -7.09 RAP 161.19 ECC 1.2175

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.02	6 37 35	4194.75	-36.40	194.91	25.93	54.14	7 47 30	3594.7	-40.78	186.76
132.18	14 55 2	2689.33	-36.38	76.49	25.92	54.13	15 39 51	2089.3	-40.77	68.34
47.02	6 37 35	4194.75	-36.40	194.91	25.93	54.14	7 47 30	3594.7	-40.78	186.76
132.18	14 55 2	2689.33	-36.38	76.49	25.92	54.13	15 39 51	2089.3	-40.77	68.34
47.02	6 37 35	4194.75	-36.40	194.91	25.93	54.14	7 47 30	3594.7	-40.78	186.76
132.18	14 55 2	2689.33	-36.38	76.49	25.92	54.13	15 39 51	2089.3	-40.77	68.34

DIFFERENTIAL CORRECTIONS

TDE 2.7414 TRA -.2290 TC3-7.3758 BAU 1.3839
RDE .9132 RRA .1361 RC3-2.6333 FAU .50302
FDE 9.2370 FRA 1.1705 FC-32.9478 BSP 25062
BDE 2.8895 BRA .2664 BC3 7.8318 FSP 8483

MID-COURSE EXECUTION ACCURACY

SGT 6909.0 SGR 2417.7 SG3 2434.3
RRT .9761 RRF .9946 RTF .9751
SGB 7319.8 R23 .1741 R13 .9794
SG1 7302.9 SG2 497.3 THA 18.95

ORBIT DETERMINATION ACCURACY

ST 4326.6 SR 1443.7 SS 3951.5
CRT .9943 CRS -.9999 CST -.9953
LSA 6027.4 MSA 296.7 SSA 14.2
EL1 4558.8 EL2 146.0 ALF 18.37

LAUNCH DATE DEC 5 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 674.792 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.959 GAL 1.75 AZL 86.41 HCA 201.31 SMA 185.81 ECC .20878 INC 3.5942 V1 30.223
RP 216.22 LAP -1.31 LOP 274.17 VP 22.657 GAP -7.55 AZP 93.35 TAL 10.14 TAP 211.45 RCA 147.02 APO 224.60 V2 25.404
RC 285.910 GL 35.12 GP -14.69 ZAL 69.64 ZAP 71.62 ETS 174.17 ZAE 101.55 ETE 181.67 ZAC 70.22 ETC 257.00 CLP 70.98

PLANETOCENTRIC CONIC

C3 12.886 VHL 3.590 DLA 48.31 RAL 155.49 RAD 6567.5 VEL 11.588 PTH 2.03 VHP 3.149 DPA -6.10 RAP 161.13 ECC 1.2121

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.07	6 42 31	4179.17	-35.99	193.01	25.20	55.29	7 52 10	3579.2	-40.24	184.81
130.93	14 51 38	2693.96	-35.98	76.59	25.19	55.28	15 36 32	2094.0	-40.24	68.39
49.07	6 42 31	4179.17	-35.99	193.01	25.20	55.29	7 52 10	3579.2	-40.24	184.81
130.93	14 51 38	2693.96	-35.98	76.59	25.19	55.28	15 36 32	2094.0	-40.24	68.39
49.07	6 42 31	4179.17	-35.99	193.01	25.20	55.29	7 52 10	3579.2	-40.24	184.81
130.93	14 51 38	2693.96	-35.98	76.59	25.19	55.28	15 36 32	2094.0	-40.24	68.39

DIFFERENTIAL CORRECTIONS
TDE 2.7429 TRA -.2242 TC3-7.8847 BAU 1.4255
RDE .8359 RRA .1323 RC3-2.5112 FAU .49768
FDE 8.7572 FRA 1.1700 FC-33.4363 BSP 25695
BDE 2.8675 BRA .2603 BC3 8.2749 FSP 8316

MID-COURSE EXECUTION ACCURACY
SGT 7176.4 SGR 2265.2 SG3 2412.3
RRT .9766 RRF .9933 RTF .9761
SGB 7525.4 R23 .1673 R13 .9795
SG1 7511.0 SG2 465.3 THA 17.20

ORBIT DETERMINATION ACCURACY
ST 4384.3 SR 1338.7 SS 3815.3
CRT .9942 CRS -.9999 CST -.9952
LSA 5956.8 MSA 293.9 SSA 15.4
EL1 4582.0 EL2 138.1 ALF 16.90

LAUNCH DATE DEC 5 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 678.972 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.962 GAL 1.68 AZL 86.51 HCA 202.47 SMA 185.86 ECC .20883 INC 3.4861 V1 30.223
RP 215.88 LAP -1.33 LOP 275.34 VP 22.704 GAP -7.71 AZP 93.22 TAL 9.77 TAP 212.25 RCA 147.04 APO 224.67 V2 25.442
RC 287.127 GL 34.38 GP -13.89 ZAL 70.00 ZAP 70.02 ETS 174.03 ZAE 99.78 ETE 181.10 ZAC 70.92 ETC 257.11 CLP 69.39

PLANETOCENTRIC CONIC

C3 12.588 VHL 3.548 DLA 47.39 RAL 155.77 RAD 6567.5 VEL 11.575 PTH 2.02 VHP 3.170 DPA -5.20 RAP 161.08 ECC 1.2072

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.26	6 47 44	4163.97	-35.58	191.19	24.63	56.35	7 57 8	3564.0	-39.71	182.95
129.74	14 48 37	2699.11	-35.57	76.75	24.62	56.34	15 33 36	2099.1	-39.70	68.51
50.26	6 47 44	4163.97	-35.58	191.19	24.63	56.35	7 57 8	3564.0	-39.71	182.95
129.74	14 48 37	2699.11	-35.57	76.75	24.62	56.34	15 33 36	2099.1	-39.70	68.51
50.26	6 47 44	4163.97	-35.58	191.19	24.63	56.35	7 57 8	3564.0	-39.71	182.95
129.74	14 48 37	2699.11	-35.57	76.75	24.62	56.34	15 33 36	2099.1	-39.70	68.51

DIFFERENTIAL CORRECTIONS
TDE 2.7462 TRA -.2130 TC3-8.3871 BAU 1.4675
RDE .7696 RRA .1313 RC3-2.3880 FAU .49044
FDE 8.3044 FRA 1.1975 FC-33.7308 BSP 26411
BDE 2.8520 BRA .2503 BC3 8.7204 FSP 8164

MID-COURSE EXECUTION ACCURACY
SGT 7439.4 SGR 2124.6 SG3 2383.3
RRT .9767 RRF .9917 RTF .9769
SGB 7736.8 R23 .1595 R13 .9796
SG1 7724.3 SG2 439.6 THA 15.64

ORBIT DETERMINATION ACCURACY
ST 4441.1 SR 1247.4 SS 3686.0
CRT .9940 CRS -.9999 CST -.9951
LSA 5897.4 MSA 292.7 SSA 16.4
EL1 4611.1 EL2 131.6 ALF 15.61

LAUNCH DATE DEC 5 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 683.159 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.965 GAL 1.62 AZL 86.61 HCA 203.64 SMA 185.91 ECC .20890 INC 3.3878 V1 30.223
RP 215.54 LAP -1.36 LOP 276.50 VP 22.750 GAP -7.86 AZP 93.10 TAL 9.39 TAP 213.03 RCA 147.07 APO 224.74 V2 25.480
RC 288.329 GL 33.70 GP -13.15 ZAL 70.42 ZAP 68.45 ETS 173.91 ZAE 98.03 ETE 180.59 ZAC 71.57 ETC 257.21 CLP 67.84

PLANETOCENTRIC CONIC

C3 12.317 VHL 3.510 DLA 46.52 RAL 156.12 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 3.194 DPA -4.37 RAP 161.03 ECC 1.2027

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.41	6 53 12	4149.10	-35.18	189.44	24.19	57.34	8 2 21	3549.1	-39.19	181.17
128.59	14 45 56	2704.73	-35.17	76.96	24.18	57.33	15 31 1	2104.7	-39.18	68.69
51.41	6 53 12	4149.10	-35.18	189.44	24.19	57.34	8 2 21	3549.1	-39.19	181.17
128.59	14 45 56	2704.73	-35.17	76.96	24.18	57.33	15 31 1	2104.7	-39.18	68.69
51.41	6 53 12	4149.10	-35.18	189.44	24.19	57.34	8 2 21	3549.1	-39.19	181.17
128.59	14 45 56	2704.73	-35.17	76.96	24.18	57.33	15 31 1	2104.7	-39.18	68.69

DIFFERENTIAL CORRECTIONS
TDE 2.7489 TRA -.1961 TC3-8.8863 BAU 1.5101
RDE .7118 RRA .1320 RC3-2.2659 FAU .48176
FDE 7.8688 FRA 1.2421 FC-33.8622 BSP 27151
BDE 2.8396 BRA .2364 BC3 9.1707 FSP 8006

MID-COURSE EXECUTION ACCURACY
SGT 7698.2 SGR 1994.5 SG3 2348.2
RRT .9763 RRF .9898 RTF .9776
SGB 7952.4 R23 .1504 R13 .9797
SG1 7941.3 SG2 418.7 THA 14.24

ORBIT DETERMINATION ACCURACY
ST 4493.9 SR 1166.8 SS 3559.5
CRT .9938 CRS -.9998 CST -.9949
LSA 5843.0 MSA 292.4 SSA 17.4
EL1 4641.2 EL2 125.9 ALF 14.48

LAUNCH DATE DEC 5 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 687.353 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.968 GAL 1.55 AZL 86.70 HCA 204.81 SMA 185.96 ECC .20898 INC 3.2980 V1 30.223
RP 215.21 LAP -1.38 LOP 277.67 VP 22.796 GAP -8.01 AZP 92.99 TAL 9.00 TAP 213.81 RCA 147.10 APO 224.83 V2 25.517
RC 289.516 GL 33.08 GP -12.47 ZAL 70.88 ZAP 66.93 ETS 173.81 ZAE 96.31 ETE 180.15 ZAC 72.17 ETC 257.30 CLP 66.34

PLANETOCENTRIC CONIC

C3 12.070 VHL 3.474 DLA 45.68 RAL 156.54 RAD 6567.5 VEL 11.552 PTH 2.02 VHP 3.222 DPA -3.62 RAP 161.00 ECC 1.1986

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.52	6 58 55	4134.47	-34.77	187.76	23.87	58.27	8 7 49	3534.5	-38.67	179.45
127.48	14 43 33	2710.77	-34.76	77.22	23.86	58.25	15 28 44	2110.8	-38.66	68.92
52.52	6 58 55	4134.47	-34.77	187.76	23.87	58.27	8 7 49	3534.5	-38.67	179.45
127.48	14 43 33	2710.77	-34.76	77.22	23.86	58.25	15 28 44	2110.8	-38.66	68.92
52.52	6 58 55	4134.47	-34.77	187.76	23.87	58.27	8 7 49	3534.5	-38.67	179.45
127.48	14 43 33	2710.77	-34.76	77.22	23.86	58.25	15 28 44	2110.8	-38.66	68.92

DIFFERENTIAL CORRECTIONS
TDE 2.7514 TRA -.1735 TC3-9.3778 BAU 1.5523
RDE .6612 RRA .1340 RC3-2.1459 FAU .47189
FDE 7.4514 FRA 1.3022 FC-33.8484 BSP 27946
BDE 2.8298 BRA .2193 BC3 9.6202 FSP 7852

MID-COURSE EXECUTION ACCURACY
SGT 7950.8 SGR 1874.2 SG3 2308.0
RRT .9754 RRF .9875 RTF .9781
SGB 8168.7 R23 .1407 R13 .9798
SG1 8158.8 SG2 402.8 THA 12.98

ORBIT DETERMINATION ACCURACY
ST 4543.6 SR 1095.5 SS 3436.3
CRT .9935 CRS -.9998 CST -.9947
LSA 5793.6 MSA 293.0 SSA 18.4
EL1 4672.2 EL2 121.0 ALF 13.48

LAUNCH DATE DEC 5 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 691.556 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.972 GAL 1.48 AZL 86.78 HCA 205.98 SMA 186.02 ECC .20908 INC 3.2156 V1 30.223
RP 214.88 LAP -1.41 LOP 278.84 VP 22.843 GAP -8.16 AZP 92.89 TAL 8.59 TAP 214.57 RCA 147.13 APO 224.91 V2 25.554
RC 290.691 GL 32.50 GP -11.84 ZAL 71.39 ZAP 65.44 ETS 173.73 ZAE 94.61 ETE 179.77 ZAC 72.72 ETC 257.38 CLP 64.87

PLANETOCENTRIC CONIC

C3 11.842 VHL 3.441 DLA 44.88 RAL 157.02 RAD 6567.5 VEL 11.543 PTH 2.01 VHP 3.253 DPA -2.93 RAP 160.98 ECC 1.1949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.60	7 4 53	4119.95	-34.36	186.11	23.67	59.14	8 13 33	3519.9	-38.16	177.79
126.40	14 41 25	2717.29	-34.35	77.52	23.66	59.13	15 26 42	2117.3	-38.15	69.20
53.60	7 4 53	4119.95	-34.36	186.11	23.67	59.14	8 13 33	3519.9	-38.16	177.79
126.40	14 41 25	2717.29	-34.35	77.52	23.66	59.13	15 26 42	2117.3	-38.15	69.20
53.60	7 4 53	4119.95	-34.36	186.11	23.67	59.14	8 13 33	3519.9	-38.16	177.79
126.40	14 41 25	2717.29	-34.35	77.52	23.66	59.13	15 26 42	2117.3	-38.15	69.20

DIFFERENTIAL CORRECTIONS
TDE 2.7526 TRA -.1465 TC3-9.8668 BAU 1.5949
RDE .6165 RRA .1362 RC3-2.0312 FAU .46161
FDE 7.0480 FRA 1.3628 FC-33.7458 BSP 28733
BDE 2.8208 BRA .2001 BC310.0737 FSP 7683

MID-COURSE EXECUTION ACCURACY
SGT 8199.9 SGR 1763.7 SG3 2265.2
RRT .9741 RRF .9849 RTF .9787
SGB 8387.4 R23 .1298 R13 .9800
SG1 8378.3 SG2 390.0 THA 11.86

ORBIT DETERMINATION ACCURACY
ST 4588.7 SR 1031.8 SS 3314.5
CRT .9933 CRS -.9998 CST -.9945
LSA 5746.3 MSA 293.2 SSA 19.4
EL1 4701.8 EL2 116.3 ALF 12.60

LAUNCH DATE DEC 5 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 695.765 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.975 GAL 1.41 AZL 86.86 HCA 207.15 SMA 186.08 ECC .20920 INC 3.1396 V1 30.223
RP 214.56 LAP -1.43 LOP 280.02 VP 22.889 GAP -8.30 AZP 92.79 TAL 8.17 TAP 215.33 RCA 147.16 APO 225.01 V2 25.590
RC 291.851 GL 31.96 GP -11.26 ZAL 71.95 ZAP 63.99 ETS 173.66 ZAE 92.95 ETE 179.43 ZAC 73.24 ETC 257.45 CLP 63.44

PLANETOCENTRIC CONIC

C3 11.633 VHL 3.411 DLA 44.10 RAL 157.56 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 3.286 DPA -2.29 RAP 160.98 ECC 1.1914

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.66	7 11 6	4105.52	-33.95	184.50	23.55	59.97	8 19 32	3505.5	-37.65	176.17
125.34	14 39 29	2724.25	-33.94	77.86	23.55	59.96	15 24 53	2124.2	-37.64	69.53
54.66	7 11 6	4105.52	-33.95	184.50	23.55	59.97	8 19 32	3505.5	-37.65	176.17
125.34	14 39 29	2724.25	-33.94	77.86	23.55	59.96	15 24 53	2124.2	-37.64	69.53
54.66	7 11 6	4105.52	-33.95	184.50	23.55	59.97	8 19 32	3505.5	-37.65	176.17
125.34	14 39 29	2724.25	-33.94	77.86	23.55	59.96	15 24 53	2124.2	-37.64	69.53

DIFFERENTIAL CORRECTIONS
TDE 2.7511 TRA -.1150 TC-10.3537 BAU 1.6377
RDE .5767 RRA .1309 RC3-1.9203 FAU .45071
FDE 6.6552 FRA 1.4311 FC-33.5427 BSP 29525
BDE 2.8109 BRA .1804 BC310.5302 FSP 7513

MID-COURSE EXECUTION ACCURACY
SGT 8444.7 SGR 1661.3 SG3 2219.2
RRT .9723 RRF .9817 RTF .9791
SGB 8606.5 R23 .1188 R13 .9801
SG1 8598.1 SG2 381.1 THA 10.85

ORBIT DETERMINATION ACCURACY
ST 4627.1 SR 974.4 SS 3192.6
CRT .9931 CRS -.9997 CST -.9942
LSA 5697.8 MSA 294.1 SSA 20.4
EL1 4727.3 EL2 112.1 ALF 11.82

LAUNCH DATE DEC 5 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 699.982 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.979 GAL 1.34 AZL 86.93 HCA 208.33 SMA 186.15 ECC .20933 INC 3.0692 V1 30.223
RP 214.24 LAP -1.46 LOP 281.20 VP 22.934 GAP -8.44 AZP 92.70 TAL 7.74 TAP 216.07 RCA 147.18 APO 225.11 V2 25.626
RC 292.998 GL 31.46 GP -10.72 ZAL 72.55 ZAP 62.58 ETS 173.60 ZAE 91.31 ETE 179.13 ZAC 73.72 ETC 257.51 CLP 62.05

PLANETOCENTRIC CONIC

C3 11.439 VHL 3.382 DLA 43.34 RAL 158.15 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 3.321 DPA -1.72 RAP 161.00 ECC 1.1883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.71	7 17 35	4091.01	-33.54	182.92	23.53	60.76	8 25 46	3491.0	-37.14	174.57
124.29	14 37 42	2731.75	-33.53	78.26	23.53	60.75	15 23 14	2131.8	-37.13	69.91
55.71	7 17 35	4091.01	-33.54	182.92	23.53	60.76	8 25 46	3491.0	-37.14	174.57
124.29	14 37 42	2731.75	-33.53	78.26	23.53	60.75	15 23 14	2131.8	-37.13	69.91
55.71	7 17 35	4091.01	-33.54	182.92	23.53	60.76	8 25 46	3491.0	-37.14	174.57
124.29	14 37 42	2731.75	-33.53	78.26	23.53	60.75	15 23 14	2131.8	-37.13	69.91

DIFFERENTIAL CORRECTIONS
TDE 2.7479 TRA -.0781 TC-10.8320 BAU 1.6795
RDE .5413 RRA .1420 RC3-1.8121 FAU .43912
FDE 6.2772 FRA 1.5048 FC-33.2340 BSP 30313
BDE 2.8007 BRA .1621 BC310.9826 FSP 7332

MID-COURSE EXECUTION ACCURACY
SGT 8682.7 SGR 1566.1 SG3 2169.9
RRT .9700 RRF .9780 RTF .9795
SGB 8822.9 R23 .1076 R13 .9803
SG1 8814.9 SG2 375.3 THA 9.94

ORBIT DETERMINATION ACCURACY
ST 4660.7 SR 923.1 SS 3072.6
CRT .9929 CRS -.9997 CST -.9938
LSA 5650.4 MSA 295.2 SSA 21.3
EL1 4750.0 EL2 108.1 ALF 11.13

LAUNCH DATE DEC 5 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 704.207 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 32.983 GAL 1.26 AZL 87.00 HCA 209.52 SMA 186.22 ECC .20948 INC 3.0037 V1 30.223
RP 213.93 LAP -1.48 LOP 282.38 VP 22.980 GAP -8.57 AZP 92.61 TAL 7.29 TAP 216.80 RCA 147.21 APO 225.23 V2 25.662
RC 294.131 GL 31.00 GP -10.22 ZAL 73.19 ZAP 61.20 ETS 173.56 ZAE 89.70 ETE 178.87 ZAC 74.18 ETC 257.56 CLP 60.70

PLANETOCENTRIC CONIC

C3 11.259 VHL 3.355 DLA 42.60 RAL 158.79 RAD 6567.4 VEL 11.517 PTH 2.01 VHP 3.359 DPA -1.19 RAP 161.04 ECC 1.1853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.74	7 24 22	4076.34	-33.13	181.34	23.59	61.52	8 32 18	3476.3	-36.64	172.99
123.26	14 36 2	2739.85	-33.11	78.70	23.58	61.51	15 21 42	2139.8	-36.63	70.35
56.74	7 24 22	4076.34	-33.13	181.34	23.59	61.52	8 32 18	3476.3	-36.64	172.99
123.26	14 36 2	2739.85	-33.11	78.70	23.58	61.51	15 21 42	2139.8	-36.63	70.35
56.74	7 24 22	4076.34	-33.13	181.34	23.59	61.52	8 32 18	3476.3	-36.64	172.99
123.26	14 36 2	2739.85	-33.11	78.70	23.58	61.51	15 21 42	2139.8	-36.63	70.35

DIFFERENTIAL CORRECTIONS
TDE 2.7407 TRA -.0377 TC-11.3112 BAU 1.7219
RDE .5095 RRA .1450 RC3-1.7096 FAU .42758
FDE 5.9095 FRA 1.5762 FC-32.8784 BSP 31073
BDE 2.7877 BRA .1499 BC311.4397 FSP 7142

MID-COURSE EXECUTION ACCURACY
SGT 8917.9 SGR 1478.6 SG3 2119.9
RRT .9670 RRF .9736 RTF .9798
SGB 9039.7 R23 .0963 R13 .9804
SG1 9032.0 SG2 372.1 THA 9.12

ORBIT DETERMINATION ACCURACY
ST 4685.6 SR 876.5 SS 2952.4
CRT .9926 CRS -.9996 CST -.9934
LSA 5599.2 MSA 296.2 SSA 22.3
EL1 4765.7 EL2 104.3 ALF 10.52

LAUNCH DATE DEC 5 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 708.438 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	32.987	GAL	1.18	AZL	87.06	HCA	210.70	SMA	186.29	ECC	.20965	INC	2.9428
RP	213.62	LAP	-1.50	LOP	283.57	VP	23.025	GAP	-8.71	AZP	92.53	TAL	6.82	TAP	217.53	RCA	147.23	APO	225.34
RC	295.251	GL	30.56	GP	-9.76	ZAL	73.88	ZAP	59.87	ETS	173.52	ZAE	88.12	ETE	178.64	ZAC	74.60	ETC	257.61

V1	30.223	V2	25.697	CLP	59.38														

PLANETOCENTRIC CONIC

C3	11.091	VHL	3.330	DLA	41.87	RAL	159.47	RAD	6567.4	VEL	11.510	PTH	2.00	VHP	3.399	DPA	-.72	RAP	161.11

ECC	1.1825	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		57.77	7 31 25	4061.50	-32.70	179.77	23.73	62.25	8 39 6	3461.5	-36.13	171.41							
		122.23	14 34 28	2748.49	-32.69	79.19	23.72	62.24	15 20 17	2148.5	-36.12	70.84							
		57.77	7 31 25	4061.50	-32.70	179.77	23.73	62.25	8 39 6	3461.5	-36.13	171.41							
		122.23	14 34 28	2748.49	-32.69	79.19	23.72	62.24	15 20 17	2148.5	-36.12	70.84							
		57.77	7 31 25	4061.50	-32.70	179.77	23.73	62.25	8 39 6	3461.5	-36.13	171.41							
		122.23	14 34 28	2748.49	-32.69	79.19	23.72	62.24	15 20 17	2148.5	-36.12	70.84							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.7322	TRA	.0085	TC-11.7813	BAU	1.7631	SGT	9147.3	SGR	1397.4	SG3	2067.8	ST	4706.4	SR	834.8	SS	2834.7
RDE	.4812	RRA	.1484	RC3-1.6099	FAU	.41554	RRT	.9632	RRF	.9686	RTF	.9801	CRT	.9925	CRS	-.9996	CST	-.9929
FDE	5.5575	FRA	1.6537	FC-32.4359	BSP	31847	SGB	9253.4	R23	.0855	R13	.9806	LSA	5549.2	MSA	297.9	SSA	23.2
BDE	2.7742	BRA	.1487	BC311.8908	FSP	6956	SG1	9245.9	SG2	371.4	THA	8.38	EL1	4778.8	EL2	100.7	ALF	9.99

LAUNCH DATE DEC 5 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 712.676 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	32.992	GAL	1.10	AZL	87.11	HCA	211.89	SMA	186.36	ECC	.20983	INC	2.8857
RP	213.31	LAP	-1.52	LOP	284.76	VP	23.069	GAP	-8.84	AZP	92.45	TAL	6.35	TAP	218.24	RCA	147.26	APO	225.47
RC	296.356	GL	30.15	GP	-9.33	ZAL	74.60	ZAP	58.57	ETS	173.49	ZAE	86.58	ETE	178.43	ZAC	75.01	ETC	257.64

V1	30.223	V2	25.731	CLP	58.10														

PLANETOCENTRIC CONIC

C3	10.935	VHL	3.307	DLA	41.15	RAL	160.20	RAD	6567.4	VEL	11.503	PTH	2.00	VHP	3.441	DPA	-.29	RAP	161.20

ECC	1.1800	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		58.80	7 38 48	4046.29	-32.28	178.19	23.93	62.96	8 46 14	3446.3	-35.61	169.83							
		121.20	14 32 56	2757.89	-32.26	79.74	23.92	62.94	15 18 53	2157.9	-35.60	71.39							
		58.80	7 38 48	4046.29	-32.28	178.19	23.93	62.96	8 46 14	3446.3	-35.61	169.83							
		121.20	14 32 56	2757.89	-32.26	79.74	23.92	62.94	15 18 53	2157.9	-35.60	71.39							
		58.80	7 38 48	4046.29	-32.28	178.19	23.93	62.96	8 46 14	3446.3	-35.61	169.83							
		121.20	14 32 56	2757.89	-32.26	79.74	23.92	62.94	15 18 53	2157.9	-35.60	71.39							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.7203	TRA	.0584	TC-12.2477	BAU	1.8042	SGT	9372.6	SGR	1322.4	SG3	2015.3	ST	4719.7	SR	797.2	SS	2718.7
RDE	.4558	RRA	.1515	RC3-1.5148	FAU	.40356	RRT	.9588	RRF	.9627	RTF	.9804	CRT	.9924	CRS	-.9995	CST	-.9924
FDE	5.2192	FRA	1.7251	FC-31.9503	BSP	32621	SGB	9465.5	R23	.0748	R13	.9808	LSA	5496.6	MSA	298.9	SSA	24.1
BDE	2.7582	BRA	.1623	BC312.3410	FSP	6776	SG1	9458.1	SG2	372.2	THA	7.72	EL1	4785.6	EL2	97.0	ALF	9.52

LAUNCH DATE DEC 5 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 716.921 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	32.996	GAL	1.02	AZL	87.17	HCA	213.08	SMA	186.44	ECC	.21003	INC	2.8323
RP	213.01	LAP	-1.55	LOP	285.95	VP	23.113	GAP	-8.97	AZP	92.37	TAL	5.86	TAP	218.94	RCA	147.28	APO	225.60
RC	297.448	GL	29.75	GP	-8.92	ZAL	75.37	ZAP	57.31	ETS	173.47	ZAE	85.06	ETE	178.25	ZAC	75.39	ETC	257.67

V1	30.223	V2	25.765	CLP	56.86														

PLANETOCENTRIC CONIC

C3	10.790	VHL	3.285	DLA	40.43	RAL	160.98	RAD	6567.4	VEL	11.497	PTH	2.00	VHP	3.485	DPA	.11	RAP	161.31

ECC	1.1776	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		59.84	7 46 30	4030.69	-31.84	176.59	24.20	63.64	8 53 40	3430.7	-35.09	168.24							
		120.16	14 31 24	2768.02	-31.83	80.35	24.19	63.63	15 17 32	2168.0	-35.08	72.01							
		59.84	7 46 30	4030.69	-31.84	176.59	24.20	63.64	8 53 40	3430.7	-35.09	168.24							
		120.16	14 31 24	2768.02	-31.83	80.35	24.19	63.63	15 17 32	2168.0	-35.08	72.01							
		59.84	7 46 30	4030.69	-31.84	176.59	24.20	63.64	8 53 40	3430.7	-35.09	168.24							
		120.16	14 31 24	2768.02	-31.83	80.35	24.19	63.63	15 17 32	2168.0	-35.08	72.01							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.7049	TRA	.1148	TC-12.7056	BAU	1.8442	SGT	9591.8	SGR	1253.0	SG3	1961.8	ST	4725.4	SR	762.7	SS	2601.3
RDE	.4327	RRA	.1552	RC3-1.4230	FAU	.39141	RRT	.9533	RRF	.9559	RTF	.9805	CRT	.9922	CRS	-.9994	CST	-.9917
FDE	4.8878	FRA	1.8092	FC-31.4058	BSP	33342	SGB	9673.3	R23	.0656	R13	.9808	LSA	5439.3	MSA	301.9	SSA	25.0
BDE	2.7393	BRA	.1931	BC312.7850	FSP	6570	SG1	9666.0	SG2	375.5	THA	7.11	EL1	4785.6	EL2	93.7	ALF	9.10

LAUNCH DATE DEC 5 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 721.173 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.001	GAL	.93	AZL	87.22	HCA	214.28	SMA	186.52	ECC	.21026	INC	2.7820
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.157	GAP	-9.09	AZP	92.30	TAL	5.35	TAP	219.63	RCA	147.30	APO	225.74
RC	298.526	GL	29.38	GP	-8.55	ZAL	76.18	ZAP	56.08	ETS	173.46	ZAE	83.58	ETE	178.09	ZAC	75.76	ETC	257.69

V1	30.223	V2	25.798	CLP	55.65														

PLANETOCENTRIC CONIC

C3	10.655	VHL	3.264	DLA	39.72	RAL	161.79	RAD	6567.4	VEL	11.491	PTH	2.00	VHP	3.531	DPA	.46	RAP	161.45

ECC	1.1753	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		60.90	7 54 33	4014.56	-31.40	174.97	24.53	64.31	9 1 27	3414.6	-34.57	166.63							
		119.10	14 29 50	2779.00	-31.39	81.03	24.52	64.29	15 16 9	2179.0	-34.56	72.69							
		60.90	7 54 33	4014.56	-31.40	174.97	24.53	64.31	9 1 27	3414.6	-34.57	166.63							
		119.10	14 29 50	2779.00	-31.39	81.03	24.52	64.29	15 16 9	2179.0	-34.56	72.69							
		60.90	7 54 33	4014.56	-31.40	174.97	24.53	64.31	9 1 27	3414.6	-34.57	166.63							
		119.10	14 29 50	2779.00	-31.39	81.03	24.52	64.29	15 16 9	2179.0	-34.56	72.69							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.6875	TRA	.1751	TC-13.1577	BAU	1.8838	SGT	9808.0	SGR	1189.3	SG3	1908.8	ST	4725.9	SR	732.1	SS	2488.4
RDE	.4122	RRA	.1585	RC3-1.3356	FAU	.37944	RRT	.9470	RRF	.9482	RTF	.9807	CRT	.9922	CRS	-.9992	CST	-.9909
FDE	4.5754	FRA	1.8829	FC-30.8313	BSP	34091	SGB	9879.8	R23	.0563	R13	.9809	LSA	5382.3	MSA	303.7	SSA	25.9
BDE	2.7189	BRA	.2361	BC313.2253	FSP	6383	SG1	9872.5	SG2	379.4	THA	6.56	EL1	4781.4	EL2	90.0	ALF	8.74

LAUNCH DATE DEC 5 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 725.431 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.005 GAL .84 AZL 87.27 HCA 215.48 SMA 186.60 ECC .21050 INC 2.7345 V1 30.223
RP 212.43 LAP -1.59 LOP 288.35 VP 23.201 GAP -9.21 AZP 92.23 TAL 4.83 TAP 220.31 RCA 147.32 APO 225.88 V2 25.831
RC 299.592 GL 29.03 GP -8.19 ZAL 77.03 ZAP 54.89 ETS 173.45 ZAE 82.13 ETE 177.95 ZAC 76.11 ETC 257.71 CLP 54.47

PLANETOCENTRIC CONIC

C3 10.529 VHL 3.245 DLA 39.01 RAL 162.64 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 3.578 DPA .77 RAP 161.61 ECC 1.1733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.97	8 3 0	3997.76	-30.94	173.31	24.92	64.96	9 9 38	3397.8	-34.04	164.97
118.03	14 28 11	2791.00	-30.93	81.78	24.91	64.94	15 14 42	2191.0	-34.02	73.45
61.97	8 3 0	3997.76	-30.94	173.31	24.92	64.96	9 9 38	3397.8	-34.04	164.97
118.03	14 28 11	2791.00	-30.93	81.78	24.91	64.94	15 14 42	2191.0	-34.02	73.45
61.97	8 3 0	3997.76	-30.94	173.31	24.92	64.96	9 9 38	3397.8	-34.04	164.97
118.03	14 28 11	2791.00	-30.93	81.78	24.91	64.94	15 14 42	2191.0	-34.02	73.45

DIFFERENTIAL CORRECTIONS
TDE 2.6661 TRA .2404 TC-13.6000 BAU 1.9225
RDE .3936 RRA .1616 RC3-1.2503 FAU .36723
FDE 4.2721 FRA 1.9557 FC-30.1946 BSP 34809
BDE 2.6950 BRA .2897 BC313.6574 FSP 6190

MID-COURSE EXECUTION ACCURACY
SGT10017.9 SGR 1129.7 SG3 1854.3
RRT .9396 RRF .9393 RTF .9808
SGB10081.4 R23 .0478 R13 .9810
SG110074.1 SG2 384.5 THA 6.06

ORBIT DETERMINATION ACCURACY
ST 4718.0 SR 704.0 SS 2375.3
CRT .9923 CRS -.9990 CST -.9900
LSA 5320.1 MSA 305.8 SSA 26.7
EL1 4769.4 EL2 86.3 ALF 8.43

LAUNCH DATE DEC 5 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 729.696 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.010 GAL .75 AZL 87.31 HCA 216.68 SMA 186.69 ECC .21076 INC 2.6896 V1 30.223
RP 212.15 LAP -1.61 LOP 289.55 VP 23.243 GAP -9.33 AZP 92.16 TAL 4.30 TAP 220.98 RCA 147.34 APO 226.03 V2 25.863
RC 300.645 GL 28.69 GP -7.86 ZAL 77.91 ZAP 53.73 ETS 173.44 ZAE 80.71 ETE 177.83 ZAC 76.45 ETC 257.72 CLP 53.33

PLANETOCENTRIC CONIC

C3 10.413 VHL 3.227 DLA 38.29 RAL 163.53 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 3.627 DPA 1.05 RAP 161.79 ECC 1.1714

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.07	8 11 52	3980.23	-30.48	171.60	25.36	65.60	9 18 12	3380.2	-33.49	163.28
116.93	14 26 24	2804.04	-30.46	82.62	25.36	65.58	15 13 9	2204.0	-33.48	74.30
63.07	8 11 52	3980.23	-30.48	171.60	25.36	65.60	9 18 12	3380.2	-33.49	163.28
116.93	14 26 24	2804.04	-30.46	82.62	25.36	65.58	15 13 9	2204.0	-33.48	74.30
63.07	8 11 52	3980.23	-30.48	171.60	25.36	65.60	9 18 12	3380.2	-33.49	163.28
116.93	14 26 24	2804.04	-30.46	82.62	25.36	65.58	15 13 9	2204.0	-33.48	74.30

DIFFERENTIAL CORRECTIONS
TDE 2.6406 TRA .3105 TC-14.0358 BAU 1.9607
RDE .3767 RRA .1650 RC3-1.1688 FAU .35521
FDE 3.9794 FRA 2.0308 FC-29.5327 BSP 35506
BDE 2.6673 BRA .3516 BC314.0844 FSP 6000

MID-COURSE EXECUTION ACCURACY
SGT10224.1 SGR 1075.0 SG3 1800.6
RRT .9309 RRF .9292 RTF .9809
SGB10280.4 R23 .0404 R13 .9811
SG110273.0 SG2 390.9 THA 5.60

ORBIT DETERMINATION ACCURACY
ST 4701.2 SR 678.5 SS 2263.2
CRT .9924 CRS -.9986 CST -.9889
LSA 5252.4 MSA 308.9 SSA 27.5
EL1 4749.2 EL2 82.6 ALF 8.15

LAUNCH DATE DEC 5 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 733.964 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.015 GAL .65 AZL 87.35 HCA 217.89 SMA 186.77 ECC .21103 INC 2.6471 V1 30.223
RP 211.87 LAP -1.63 LOP 290.76 VP 23.286 GAP -9.45 AZP 92.09 TAL 3.75 TAP 221.64 RCA 147.36 APO 226.19 V2 25.895
RC 301.687 GL 28.36 GP -7.55 ZAL 78.84 ZAP 52.61 ETS 173.43 ZAE 79.32 ETE 177.72 ZAC 76.77 ETC 257.72 CLP 52.22

PLANETOCENTRIC CONIC

C3 10.306 VHL 3.210 DLA 37.57 RAL 164.46 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 3.678 DPA 1.30 RAP 162.00 ECC 1.1696

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.20	8 21 13	3961.71	-30.00	169.83	25.86	66.23	9 27 15	3361.7	-32.93	161.52
115.80	14 24 27	2818.39	-29.99	83.55	25.85	66.21	15 11 25	2218.4	-32.92	75.24
64.20	8 21 13	3961.71	-30.00	169.83	25.86	66.23	9 27 15	3361.7	-32.93	161.52
115.80	14 24 27	2818.39	-29.99	83.55	25.85	66.21	15 11 25	2218.4	-32.92	75.24
64.20	8 21 13	3961.71	-30.00	169.83	25.86	66.23	9 27 15	3361.7	-32.93	161.52
115.80	14 24 27	2818.39	-29.99	83.55	25.85	66.21	15 11 25	2218.4	-32.92	75.24

DIFFERENTIAL CORRECTIONS
TDE 2.6287 TRA .4015 TC-14.4008 BAU 1.9897
RDE .3658 RRA .1702 RC3-1.0807 FAU .34088
FDE 3.7469 FRA 2.1453 FC-28.6356 BSP 36565
BDE 2.6537 BRA .4361 BC314.4413 FSP 5894

MID-COURSE EXECUTION ACCURACY
SGT10407.6 SGR 1024.7 SG3 1741.1
RRT .9197 RRF .9178 RTF .9810
SGB10457.9 R23 .0362 R13 .9811
SG110450.2 SG2 400.6 THA 5.18

ORBIT DETERMINATION ACCURACY
ST 4707.6 SR 659.8 SS 2181.3
CRT .9927 CRS -.9981 CST -.9877
LSA 5220.7 MSA 314.5 SSA 27.9
EL1 4753.0 EL2 78.6 ALF 7.92

LAUNCH DATE DEC 5 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 738.241 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.021 GAL .56 AZL 87.39 HCA 219.10 SMA 186.87 ECC .21133 INC 2.6068 V1 30.223
RP 211.60 LAP -1.64 LOP 291.97 VP 23.328 GAP -9.57 AZP 92.02 TAL 3.19 TAP 222.29 RCA 147.37 APO 226.36 V2 25.926
RC 302.717 GL 28.04 GP -7.26 ZAL 79.80 ZAP 51.51 ETS 173.43 ZAE 77.95 ETE 177.63 ZAC 77.08 ETC 257.72 CLP 51.14

PLANETOCENTRIC CONIC

C3 10.208 VHL 3.195 DLA 36.85 RAL 165.41 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 3.730 DPA 1.52 RAP 162.24 ECC 1.1680

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.37	8 31 3	3942.11	-29.50	167.99	26.40	66.84	9 36 46	3342.1	-32.36	159.70
114.63	14 22 14	2834.16	-29.49	84.58	26.40	66.83	15 9 28	2234.2	-32.36	76.29
65.37	8 31 3	3942.11	-29.50	167.99	26.40	66.84	9 36 46	3342.1	-32.36	159.70
114.63	14 22 14	2834.16	-29.49	84.58	26.40	66.83	15 9 28	2234.2	-32.36	76.29
65.37	8 31 3	3942.11	-29.50	167.99	26.40	66.84	9 36 46	3342.1	-32.36	159.70
114.63	14 22 14	2834.16	-29.49	84.58	26.40	66.83	15 9 28	2234.2	-32.36	76.29

DIFFERENTIAL CORRECTIONS
TDE 2.5886 TRA .4746 TC-14.8394 BAU 2.0298
RDE .3489 RRA .1719 RC3-1.0095 FAU .33021
FDE 3.4522 FRA 2.1882 FC-28.0051 BSP 37072
BDE 2.6120 BRA .5048 BC314.8737 FSP 5658

MID-COURSE EXECUTION ACCURACY
SGT10611.0 SGR 977.8 SG3 1690.0
RRT .9090 RRF .9049 RTF .9811
SGB10656.0 R23 .0282 R13 .9812
SG110648.2 SG2 406.1 THA 4.79

ORBIT DETERMINATION ACCURACY
ST 4661.8 SR 636.5 SS 2057.7
CRT .9930 CRS -.9973 CST -.9863
LSA 5125.6 MSA 315.6 SSA 28.9
EL1 4704.5 EL2 74.3 ALF 7.72

LAUNCH DATE DEC 5 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 742.524 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.026 GAL .46 AZL 87.43 HCA 220.31 SMA 186.96 ECC .21165 INC 2.5684 V1 30.223
RP 211.33 LAP -1.66 LOP 293.18 VP 23.369 GAP -9.68 AZP 91.96 TAL 2.62 TAP 222.93 RCA 147.39 APO 226.53 V2 25.956
RC 303.736 GL 27.73 GP -6.99 ZAL 80.81 ZAP 50.45 ETS 173.43 ZAE 76.62 ETE 177.54 ZAC 77.38 ETC 257.71 CLP 50.10

PLANETOCENTRIC CONIC

C3 10.119 VHL 3.181 DLA 36.12 RAL 166.40 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 3.783 DPA 1.70 RAP 162.50 ECC 1.1665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.58	8 41 30	3921.11	-28.99	166.06	27.00	67.45	9 46 51	3321.1	-31.78	157.78
113.42	14 19 40	2851.65	-28.99	85.75	26.99	67.44	15 7 12	2251.7	-31.77	77.47
66.58	8 41 30	3921.11	-28.99	166.06	27.00	67.45	9 46 51	3321.1	-31.78	157.78
113.42	14 19 40	2851.65	-28.99	85.75	26.99	67.44	15 7 12	2251.7	-31.77	77.47
66.58	8 41 30	3921.11	-28.99	166.06	27.00	67.45	9 46 51	3321.1	-31.78	157.78
113.42	14 19 40	2851.65	-28.99	85.75	26.99	67.44	15 7 12	2251.7	-31.77	77.47

DIFFERENTIAL CORRECTIONS
TDE 2.5484 TRA .5569 TC-15.2597 BAU 2.0683
RDE .3358 RRA .1743 RC3 -.9404 FAU .31956
FDE 3.1803 FRA 2.2419 FC-27.3400 BSP 37679
BDE 2.5704 BRA .5836 BC315.2887 FSP 5472

MID-COURSE EXECUTION ACCURACY
SGT10810.2 SGR 935.4 SG3 1640.1
RRT .8968 RRF .8907 RTF .9813
SGB10850.6 R23 .0213 R13 .9813
SG110842.8 SG2 412.6 THA 4.44

ORBIT DETERMINATION ACCURACY
ST 4614.3 SR 616.3 SS 1942.7
CRT .9935 CRS -.9961 CST -.9845
LSA 5034.3 MSA 318.2 SSA 29.8
EL1 4654.8 EL2 69.8 ALF 7.56

LAUNCH DATE DEC 5 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 746.812 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.031 GAL .35 AZL 87.47 HCA 221.53 SMA 187.05 ECC .21200 INC 2.5317 V1 30.223
RP 211.08 LAP -1.68 LOP 294.40 VP 23.410 GAP -9.79 AZP 91.90 TAL 2.03 TAP 223.55 RCA 147.40 APO 226.71 V2 25.986
RC 304.746 GL 27.42 GP -6.73 ZAL 81.85 ZAP 49.42 ETS 173.44 ZAE 75.31 ETE 177.47 ZAC 77.67 ETC 257.69 CLP 49.08

PLANETOCENTRIC CONIC

C3 10.039 VHL 3.168 DLA 35.38 RAL 167.42 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 3.837 DPA 1.86 RAP 162.78 ECC 1.1652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.85	8 52 38	3898.41	-28.47	164.00	27.64	68.06	9 57 36	3298.4	-31.18	155.74
112.15	14 16 40	2871.18	-28.46	87.06	27.64	68.04	15 4 31	2271.2	-31.18	78.80
67.85	8 52 38	3898.41	-28.47	164.00	27.64	68.06	9 57 36	3298.4	-31.18	155.74
112.15	14 16 40	2871.18	-28.46	87.06	27.64	68.04	15 4 31	2271.2	-31.18	78.80
67.85	8 52 38	3898.41	-28.47	164.00	27.64	68.06	9 57 36	3298.4	-31.18	155.74
112.15	14 16 40	2871.18	-28.46	87.06	27.64	68.04	15 4 31	2271.2	-31.18	78.80

DIFFERENTIAL CORRECTIONS
TDE 2.5068 TRA .6460 TC-15.6592 BAU 2.1049
RDE .3246 RRA .1770 RC3 -.8723 FAU .30867
FDE 2.9316 FRA 2.3036 FC-26.6192 BSP 38285
BDE 2.5277 BRA .6698 BC315.6835 FSP 5282

MID-COURSE EXECUTION ACCURACY
SGT11003.1 SGR 896.8 SG3 1590.2
RRT .8825 RRF .8749 RTF .9814
SGB11039.6 R23 .0162 R13 .9814
SG111031.6 SG2 420.6 THA 4.12

ORBIT DETERMINATION ACCURACY
ST 4563.1 SR 599.0 SS 1837.3
CRT .9940 CRS -.9945 CST -.9824
LSA 4944.9 MSA 322.2 SSA 30.6
EL1 4601.8 EL2 65.2 ALF 7.43

LAUNCH DATE DEC 5 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 751.105 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.037 GAL .25 AZL 87.50 HCA 222.74 SMA 187.15 ECC .21236 INC 2.4967 V1 30.223
RP 210.82 LAP -1.69 LOP 295.62 VP 23.450 GAP -9.90 AZP 91.83 TAL 1.43 TAP 224.17 RCA 147.41 APO 226.89 V2 26.015
RC 305.746 GL 27.12 GP -6.49 ZAL 82.92 ZAP 48.42 ETS 173.44 ZAE 74.03 ETE 177.40 ZAC 77.96 ETC 257.68 CLP 48.09

PLANETOCENTRIC CONIC

C3 9.968 VHL 3.157 DLA 34.62 RAL 168.47 RAD 6567.4 VEL 11.461 PTH 1.99 VHP 3.893 DPA 2.00 RAP 163.08 ECC 1.1641

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.19	9 4 31	3873.75	-27.93	161.81	28.33	68.65	10 9 5	3273.7	-30.57	153.57
110.81	14 13 9	2893.03	-27.92	88.54	28.32	68.64	15 1 22	2293.0	-30.56	80.30
69.19	9 4 31	3873.75	-27.93	161.81	28.33	68.65	10 9 5	3273.7	-30.57	153.57
110.81	14 13 9	2893.03	-27.92	88.54	28.32	68.64	15 1 22	2293.0	-30.56	80.30
69.19	9 4 31	3873.75	-27.93	161.81	28.33	68.65	10 9 5	3273.7	-30.57	153.57
110.81	14 13 9	2893.03	-27.92	88.54	28.32	68.64	15 1 22	2293.0	-30.56	80.30

DIFFERENTIAL CORRECTIONS
TDE 2.4608 TRA .7400 TC-16.0413 BAU 2.1405
RDE .3145 RRA .1794 RC3 -.8051 FAU .29760
FDE 2.6925 FRA 2.3579 FC-25.8464 BSP 38817
BDE 2.4808 BRA .7615 BC316.0615 FSP 5069

MID-COURSE EXECUTION ACCURACY
SGT11189.7 SGR 860.7 SG3 1539.0
RRT .8664 RRF .8573 RTF .9815
SGB11222.7 R23 .0114 R13 .9815
SG111214.5 SG2 428.8 THA 3.82

ORBIT DETERMINATION ACCURACY
ST 4502.7 SR 583.2 SS 1733.1
CRT .9946 CRS -.9922 CST -.9799
LSA 4848.8 MSA 325.9 SSA 31.4
EL1 4539.9 EL2 60.2 ALF 7.34

LAUNCH DATE DEC 5 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 755.403 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.043 GAL .14 AZL 87.54 HCA 223.96 SMA 187.25 ECC .21275 INC 2.4632 V1 30.223
RP 210.58 LAP -1.71 LOP 296.84 VP 23.489 GAP -10.01 AZP 91.77 TAL .81 TAP 224.78 RCA 147.41 APO 227.09 V2 26.043
RC 306.737 GL 26.82 GP -6.26 ZAL 84.04 ZAP 47.44 ETS 173.45 ZAE 72.78 ETE 177.34 ZAC 78.23 ETC 257.65 CLP 47.13

PLANETOCENTRIC CONIC

C3 9.907 VHL 3.148 DLA 33.86 RAL 169.55 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 3.950 DPA 2.11 RAP 163.41 ECC 1.1630

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.61	9 17 19	3846.60	-27.37	159.45	29.06	69.25	10 21 26	3246.6	-29.94	151.23
109.39	14 8 55	2917.72	-27.36	90.23	29.05	69.23	14 57 33	2317.7	-29.93	82.01
70.61	9 17 19	3846.60	-27.37	159.45	29.06	69.25	10 21 26	3246.6	-29.94	151.23
109.39	14 8 55	2917.72	-27.36	90.23	29.05	69.23	14 57 33	2317.7	-29.93	82.01
110.00	14 48 25	2797.08	-30.05	81.88	30.11	72.88	15 35 3	2197.1	-32.09	73.26
110.00	13 37 0	3015.23	-24.75	96.61	27.85	65.63	14 27 15	2415.2	-27.82	88.79

DIFFERENTIAL CORRECTIONS
TDE 2.4105 TRA .8431 TC-16.4122 BAU 2.1759
RDE .3049 RRA .1822 RC3 -.7418 FAU .28717
FDE 2.4522 FRA 2.4209 FC-25.0950 BSP 39407
BDE 2.4298 BRA .8625 BC316.4289 FSP 4887

MID-COURSE EXECUTION ACCURACY
SGT11375.9 SGR 828.1 SG3 1490.6
RRT .8491 RRF .8382 RTF .9814
SGB11406.0 R23 .0070 R13 .9814
SG111397.6 SG2 436.7 THA 3.54

ORBIT DETERMINATION ACCURACY
ST 4433.8 SR 568.1 SS 1625.6
CRT .9952 CRS -.9888 CST -.9763
LSA 4744.7 MSA 332.5 SSA 32.1
EL1 4469.7 EL2 55.1 ALF 7.27

LAUNCH DATE DEC 5 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 759.706 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.048 GAL .03 AZL 87.57 HCA 225.19 SMA 187.35 ECC .21316 INC 2.4311 V1 30.223
RP 210.34 LAP -1.72 LOP 298.06 VP 23.528 GAP -10.12 AZP 91.71 TAL .18 TAP 225.37 RCA 147.41 APO 227.29 V2 26.071
RC 307.719 GL 26.52 GP -6.04 ZAL 85.19 ZAP 46.50 ETS 173.45 ZAE 71.55 ETE 177.29 ZAC 78.50 ETC 257.63 CLP 46.19

PLANETOCENTRIC CONIC

C3 9.855 VHL 3.139 DLA 33.08 RAL 170.65 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 4.008 DPA 2.19 RAP 163.76 ECC 1.1622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.14	9 31 14	3816.34	-26.79	156.86	29.83	69.84	10 34 50	3216.3	-29.29	148.67
107.86	14 3 48	2945.90	-26.78	92.17	29.83	69.82	14 52 54	2345.9	-29.28	83.97
72.14	9 31 14	3816.34	-26.79	156.86	29.83	69.84	10 34 50	3216.3	-29.29	148.67
107.86	14 3 48	2945.90	-26.78	92.17	29.83	69.82	14 52 54	2345.9	-29.28	83.97
110.00	15 22 44	2703.44	-31.73	75.10	31.54	76.56	16 7 48	2103.4	-33.25	66.21
110.00	13 11 28	3106.79	-22.05	102.36	27.57	63.20	14 3 15	2506.8	-25.47	94.87

DIFFERENTIAL CORRECTIONS
TDE 2.3597 TRA .9186 TC-16.7830 BAU 2.2131
RDE .2970 RRA .1769 RC3 -.6846 FAU .27799
FDE 2.2363 FRA 2.2880 FC-24.4208 BSP 39536
BDE 2.3783 BRA .9355 BC316.7970 FSP 4532

MID-COURSE EXECUTION ACCURACY
SGT11558.0 SGR 791.9 SG3 1436.9
RRT .8342 RRF .8142 RTF .9839
SGB11585.1 R23 -.0138 R13 .9838
SG111576.9 SG2 436.0 THA 3.28

ORBIT DETERMINATION ACCURACY
ST 4359.9 SR 554.4 SS 1513.8
CRT .9962 CRS -.9868 CST -.9771
LSA 4638.2 MSA 305.6 SSA 33.0
EL1 4394.8 EL2 47.7 ALF 7.22

LAUNCH DATE DEC 5 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 764.013 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.054 GAL -.08 AZL 87.60 HCA 226.42 SMA 187.45 ECC .21360 INC 2.4002 V1 30.223
RP 210.10 LAP -1.74 LOP 299.29 VP 23.566 GAP -10.22 AZP 91.66 TAL 359.54 TAP 225.95 RCA 147.41 APO 227.49 V2 26.098
RC 308.691 GL 26.23 GP -5.84 ZAL 86.38 ZAP 45.58 ETS 173.46 ZAE 70.35 ETE 177.25 ZAC 78.77 ETC 257.60 CLP 45.28

PLANETOCENTRIC CONIC

C3 9.813 VHL 3.133 DLA 32.28 RAL 171.77 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 4.068 DPA 2.25 RAP 164.13 ECC 1.1615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.80	9 46 31	3782.03	-26.20	153.99	30.65	70.42	10 49 33	3182.0	-28.62	145.82
106.20	13 57 30	2978.51	-26.19	94.43	30.65	70.41	14 47 8	2378.5	-28.61	86.25
73.80	9 46 31	3782.03	-26.20	153.99	30.65	70.42	10 49 33	3182.0	-28.62	145.82
106.20	13 57 30	2978.51	-26.19	94.43	30.65	70.41	14 47 8	2378.5	-28.61	86.25
110.00	15 47 27	2638.84	-32.65	70.29	32.66	79.27	16 31 26	2038.8	-33.79	61.24
110.00	12 55 44	3169.70	-20.07	106.16	27.70	61.73	13 48 34	2569.7	-23.69	98.89

DIFFERENTIAL CORRECTIONS
TDE 2.3158 TRA 1.0659 TC-17.0496 BAU 2.2382
RDE .2929 RRA .1876 RC3 -.6125 FAU .26426
FDE 2.1033 FRA 2.5428 FC-23.3133 BSP 40730
BDE 2.3342 BRA 1.0823 BC317.0606 FSP 4576

MID-COURSE EXECUTION ACCURACY
SGT11720.1 SGR 774.0 SG3 1388.9
RRT .8052 RRF .7956 RTF .9820
SGB11745.7 R23 .0063 R13 .9820
SG111736.7 SG2 458.3 THA 3.05

ORBIT DETERMINATION ACCURACY
ST 4303.7 SR 549.5 SS 1479.3
CRT .9967 CRS -.9802 CST -.9703
LSA 4571.2 MSA 339.5 SSA 33.3
EL1 4338.4 EL2 44.4 ALF 7.25

LAUNCH DATE DEC 5 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 768.324 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.060 GAL -.20 AZL 87.63 HCA 227.64 SMA 187.56 ECC .21406 INC 2.3705 V1 30.223
RP 209.88 LAP -1.75 LOP 300.52 VP 23.603 GAP -10.32 AZP 91.60 TAL 358.88 TAP 226.52 RCA 147.41 APO 227.71 V2 26.124
RC 309.654 GL 25.93 GP -5.65 ZAL 87.60 ZAP 44.68 ETS 173.46 ZAE 69.17 ETE 177.21 ZAC 79.03 ETC 257.56 CLP 44.40

PLANETOCENTRIC CONIC

C3 9.781 VHL 3.128 DLA 31.48 RAL 172.92 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 4.128 DPA 2.29 RAP 164.52 ECC 1.1610

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.65	10 3 36	3742.29	-25.58	150.73	31.51	71.00	11 5 58	3142.3	-27.93	142.58
104.35	13 49 35	3016.97	-25.57	97.11	31.50	70.99	14 39 52	2417.0	-27.92	88.96
75.65	10 3 36	3742.29	-25.58	150.73	31.51	71.00	11 5 58	3142.3	-27.93	142.58
104.35	13 49 35	3016.97	-25.57	97.11	31.50	70.99	14 39 52	2417.0	-27.92	88.96
110.00	16 8 30	2585.36	-33.26	66.24	33.65	81.60	16 51 36	1985.4	-34.06	57.09
110.00	12 43 51	3221.90	-18.36	109.24	28.02	60.65	13 37 33	2621.9	-22.13	102.14

DIFFERENTIAL CORRECTIONS
TDE 2.2471 TRA 1.1824 TC-17.3477 BAU 2.2697
RDE .2846 RRA .1894 RC3 -.5535 FAU .25381
FDE 1.8560 FRA 2.5817 FC-22.4638 BSP 41349
BDE 2.2651 BRA 1.1974 BC317.3565 FSP 4440

MID-COURSE EXECUTION ACCURACY
SGT11880.4 SGR 746.5 SG3 1337.8
RRT .7821 RRF .7694 RTF .9815
SGB11903.8 R23 .0010 R13 .9815
SG111894.7 SG2 464.6 THA 2.82

ORBIT DETERMINATION ACCURACY
ST 4199.2 SR 535.6 SS 1358.6
CRT .9972 CRS -.9708 CST -.9630
LSA 4432.0 MSA 349.5 SSA 33.9
EL1 4233.1 EL2 39.7 ALF 7.25

LAUNCH DATE DEC 5 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 772.638 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.066 GAL -.32 AZL 87.66 HCA 228.88 SMA 187.67 ECC .21455 INC 2.3419 V1 30.223
RP 209.66 LAP -1.76 LOP 301.75 VP 23.640 GAP -10.43 AZP 91.54 TAL 358.21 TAP 227.08 RCA 147.40 APO 227.93 V2 26.149
RC 310.607 GL 25.63 GP -5.46 ZAL 88.86 ZAP 43.81 ETS 173.47 ZAE 68.02 ETE 177.18 ZAC 79.28 ETC 257.53 CLP 43.54

PLANETOCENTRIC CONIC

C3 9.760 VHL 3.124 DLA 30.65 RAL 174.09 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 4.190 DPA 2.31 RAP 164.94 ECC 1.1606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.75	10 23 14	3694.66	-24.94	146.91	32.41	71.58	11 24 48	3094.7	-27.23	138.79
102.25	13 39 17	3063.75	-24.93	100.39	32.40	71.57	14 30 21	2463.7	-27.22	92.27
77.75	10 23 14	3694.66	-24.94	146.91	32.41	71.58	11 24 48	3094.7	-27.23	138.79
102.25	13 39 17	3063.75	-24.93	100.39	32.40	71.57	14 30 21	2463.7	-27.22	92.27
110.00	16 27 30	2538.14	-33.67	62.61	34.59	83.70	17 9 49	1938.1	-34.17	53.40
110.00	12 34 11	3268.27	-16.79	111.92	28.47	59.78	13 28 39	2668.3	-20.68	104.96

DIFFERENTIAL CORRECTIONS
TDE 2.1906 TRA 1.3136 TC-17.5998 BAU 2.2974
RDE .2794 RRA .1915 RC3 -.4960 FAU .24340
FDE 1.6726 FRA 2.6290 FC-21.5899 BSP 42147
BDE 2.2083 BRA 1.3275 BC317.6068 FSP 4314

MID-COURSE EXECUTION ACCURACY
SGT12038.0 SGR 724.7 SG3 1289.6
RRT .7576 RRF .7433 RTF .9815
SGB12059.8 R23 -.0023 R13 .9815
SG112050.5 SG2 472.5 THA 2.62

ORBIT DETERMINATION ACCURACY
ST 4117.5 SR 526.8 SS 1274.9
CRT .9976 CRS -.9601 CST -.9565
LSA 4327.7 MSA 356.3 SSA 34.4
EL1 4150.9 EL2 35.9 ALF 7.27

LAUNCH DATE DEC 5 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 776.959 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.073 GAL -.44 AZL 87.69 HCA 230.11 SMA 187.77 ECC .21507 INC 2.3143 V1 30.223
RP 209.44 LAP -1.78 LOP 302.99 VP 23.676 GAP -10.53 AZP 91.48 TAL 357.52 TAP 227.63 RCA 147.39 APO 228.16 V2 26.174
RC 311.551 GL 25.32 GP -5.29 ZAL 90.15 ZAP 42.97 ETS 173.47 ZAE 66.88 ETE 177.15 ZAC 79.53 ETC 257.49 CLP 42.70

PLANETOCENTRIC CONIC

C3 9.750 VHL 3.123 DLA 29.81 RAL 175.28 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 4.253 DPA 2.31 RAP 165.37 ECC 1.1605

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.27	10 46 49	3634.50	-24.29	142.18	33.34	72.16	11 47 23	3034.5	-26.50	134.09
99.73	13 25 11	3123.51	-24.28	104.61	33.34	72.15	14 17 15	2523.5	-26.49	96.52
100.00	13 46 0	3057.04	-25.53	100.10	33.76	73.90	14 36 57	2457.0	-27.49	91.84
100.00	13 8 41	3176.20	-23.04	108.07	32.88	70.41	14 1 38	2576.2	-25.50	100.14
110.00	16 45 9	2495.07	-33.94	59.28	35.50	85.66	17 26 44	1895.1	-34.17	50.04
110.00	12 26 1	3310.93	-15.31	114.35	29.02	59.06	13 21 12	2710.9	-19.30	107.50

DIFFERENTIAL CORRECTIONS
TDE 2.1120 TRA 1.4326 TC-17.8980 BAU 2.3338
RDE .2740 RRA .1927 RC3 -.4453 FAU .23466
FDE 1.4756 FRA 2.6518 FC-20.8358 BSP 42460
BDE 2.1297 BRA 1.4455 BC317.9036 FSP 4117

MID-COURSE EXECUTION ACCURACY
SGT12212.0 SGR 704.4 SG3 1246.4
RRT .7314 RRF .7150 RTF .9816
SGB12232.3 R23 -.0059 R13 .9816
SG112222.9 SG2 479.9 THA 2.42

ORBIT DETERMINATION ACCURACY
ST 3994.5 SR 517.5 SS 1180.1
CRT .9977 CRS -.9448 CST -.9473
LSA 4181.2 MSA 364.1 SSA 35.1
EL1 4027.7 EL2 35.1 ALF 7.36

LAUNCH DATE DEC 5 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 781.282 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.079 GAL -.56 AZL 87.71 HCA 231.35 SMA 187.89 ECC .21562 INC 2.2876 V1 30.223
RP 209.24 LAP -1.79 LOP 304.22 VP 23.711 GAP -10.63 AZP 91.43 TAL 356.82 TAP 228.17 RCA 147.37 APO 228.40 V2 26.198
RC 312.486 GL 25.01 GP -5.13 ZAL 91.48 ZAP 42.14 ETS 173.47 ZAE 65.77 ETE 177.12 ZAC 79.78 ETC 257.44 CLP 41.89

PLANETOCENTRIC CONIC

C3 9.752 VHL 3.123 DLA 28.95 RAL 176.49 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 4.317 DPA 2.30 RAP 165.82 ECC 1.1605

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.70	11 18 39	3547.79	-23.61	135.54	34.32	72.74	12 17 47	2947.8	-25.75	127.47
96.30	13 2 59	3210.28	-23.60	110.79	34.31	72.72	13 56 29	2610.3	-25.74	102.73
100.00	14 35 4	2914.59	-27.84	90.15	35.51	78.65	15 23 38	2314.6	-29.12	81.58
100.00	12 29 15	3318.72	-19.50	117.17	32.69	66.88	13 24 34	2718.7	-22.46	109.63
110.00	17 1 51	2454.96	-34.10	56.16	36.40	87.50	17 42 46	1855.0	-34.07	46.91
110.00	12 18 58	3351.11	-13.90	116.60	29.67	58.45	13 14 49	2751.1	-17.97	109.85

DIFFERENTIAL CORRECTIONS
TDE 2.0384 TRA 1.5663 TC-18.1372 BAU 2.3652
RDE .2699 RRA .1941 RC3 -.3944 FAU .22552
FDE 1.3011 FRA 2.6801 FC-20.0204 BSP 43010
BDE 2.0562 BRA 1.5783 BC318.1415 FSP 3965

MID-COURSE EXECUTION ACCURACY
SGT12373.1 SGR 686.6 SG3 1202.3
RRT .7037 RRF .6854 RTF .9817
SGB12392.1 R23 -.0092 R13 .9817
SG112382.5 SG2 487.5 THA 2.24

ORBIT DETERMINATION ACCURACY
ST 3882.4 SR 510.1 SS 1098.9
CRT .9972 CRS -.9253 CST -.9368
LSA 4049.8 MSA 372.4 SSA 35.5
EL1 3915.6 EL2 37.8 ALF 7.46

LAUNCH DATE DEC 5 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 785.608 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.085 GAL -.69 AZL 87.74 HCA 232.59 SMA 188.00 ECC .21619 INC 2.2618 V1 30.223
RP 209.04 LAP -1.80 LOP 305.46 VP 23.745 GAP -10.73 AZP 91.37 TAL 356.11 TAP 228.70 RCA 147.35 APO 228.64 V2 26.221
RC 313.411 GL 24.70 GP -4.97 ZAL 92.83 ZAP 41.34 ETS 173.48 ZAE 64.68 ETE 177.10 ZAC 80.02 ETC 257.40 CLP 41.10

PLANETOCENTRIC CONIC

C3 9.766 VHL 3.125 DLA 28.08 RAL 177.71 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 4.382 DPA 2.26 RAP 166.29 ECC 1.1607

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 48 2	3274.32	-24.99	115.91	35.95	76.23	13 42 37	2674.3	-26.64	107.63
90.00	11 43 22	3484.30	-20.86	129.90	34.61	70.40	12 41 26	2884.3	-23.34	122.11
100.00	15 4 19	2834.96	-28.77	84.41	36.78	81.53	15 51 34	2235.0	-29.65	75.72
100.00	12 9 46	3398.90	-17.28	122.10	33.06	65.22	13 6 25	2798.9	-20.48	114.76
110.00	17 17 50	2417.10	-34.18	53.20	37.29	89.25	17 58 7	1817.1	-33.90	43.97
110.00	12 12 45	3389.52	-12.52	118.72	30.40	57.93	13 9 14	2789.5	-16.66	112.06

DIFFERENTIAL CORRECTIONS
TDE 1.9613 TRA 1.7087 TC-18.3441 BAU 2.3954
RDE .2665 RRA .1957 RC3 -.3444 FAU .21627
FDE 1.1348 FRA 2.7162 FC-19.1723 BSP 43545
BDE 1.9793 BRA 1.7199 BC318.3473 FSP 3818

MID-COURSE EXECUTION ACCURACY
SGT12529.4 SGR 671.1 SG3 1158.4
RRT .6741 RRF .6547 RTF .9816
SGB12547.4 R23 -.0110 R13 .9816
SG112537.6 SG2 495.4 THA 2.07

ORBIT DETERMINATION ACCURACY
ST 3766.1 SR 503.7 SS 1024.7
CRT .9960 CRS -.8990 CST -.9231
LSA 3916.4 MSA 384.1 SSA 36.0
EL1 3799.4 EL2 44.7 ALF 7.59

LAUNCH DATE DEC 5 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 789.937 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.092 GAL -.82 AZL 87.76 HCA 233.83 SMA 188.11 ECC .21680 INC 2.2367 V1 30.223
RP 208.85 LAP -1.81 LOP 306.71 VP 23.778 GAP -10.83 AZP 91.32 TAL 355.38 TAP 229.21 RCA 147.33 APO 228.89 V2 26.243
RC 314.329 GL 24.37 GP -4.82 ZAL 94.22 ZAP 40.56 ETS 173.48 ZAE 63.61 ETE 177.08 ZAC 80.26 ETC 257.35 CLP 40.33

PLANETOCENTRIC CONIC

C3 9.792 VHL 3.129 DLA 27.19 RAL 178.95 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 4.448 DPA 2.21 RAP 166.78 ECC 1.1612

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 30 50	3150.72	-26.71	107.27	37.52	80.22	14 23 21	2550.7	-27.79	98.77
90.00	11 10 27	3608.97	-17.81	137.78	34.75	67.62	12 10 36	3009.0	-20.69	130.29
100.00	15 28 26	2771.60	-29.32	79.78	37.93	83.91	16 14 38	2171.6	-29.86	71.02
100.00	11 55 32	3463.33	-15.40	125.96	33.63	64.06	12 53 15	2863.3	-18.77	118.78
110.00	17 33 15	2381.04	-34.17	50.38	38.19	90.91	18 12 56	1781.0	-33.67	41.18
110.00	12 7 13	3426.65	-11.17	120.75	31.19	57.48	13 4 20	2826.7	-15.38	114.17

DIFFERENTIAL CORRECTIONS
TDE 1.8805 TRA 1.8557 TC-18.5242 BAU 2.4253
RDE .2639 RRA .1969 RC3 -.2969 FAU .20740
FDE .9807 FRA 2.7425 FC-18.3365 BSP 44109
BDE 1.8990 BRA 1.8661 BC318.5266 FSP 3680

MID-COURSE EXECUTION ACCURACY
SGT12682.7 SGR 657.5 SG3 1115.8
RRT .6435 RRF .6227 RTF .9817
SGB12699.7 R23 -.0130 R13 .9816
SG112689.7 SG2 503.0 THA 1.91

ORBIT DETERMINATION ACCURACY
ST 3645.6 SR 498.4 SS 957.7
CRT .9937 CRS -.8660 CST -.9073
LSA 3781.3 MSA 395.3 SSA 36.3
EL1 3679.0 EL2 55.5 ALF 7.74

LAUNCH DATE DEC 5 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 794.269 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.098 GAL -.96 AZL 87.79 HCA 235.07 SMA 188.23 ECC .21744 INC 2.2124 V1 30.223
RP 208.67 LAP -1.81 LOP 307.95 VP 23.811 GAP -10.92 AZP 91.27 TAL 354.64 TAP 229.71 RCA 147.30 APO 229.16 V2 26.264
RC 315.238 GL 24.04 GP -4.68 ZAL 95.63 ZAP 30.81 ETS 173.48 ZAE 62.56 ETE 177.06 ZAC 80.50 ETC 257.30 CLP 39.58

PLANETOCENTRIC CONIC

C3 9.832 VHL 3.136 DLA 26.28 RAL 180.20 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 4.515 DPA 2.14 RAP 167.29 ECC 1.1618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 59 47	3071.60	-27.50	101.61	38.79	82.95	14 50 59	2471.6	-28.19	93.01
90.00	10 51 29	3680.69	-15.65	142.71	35.27	66.10	11 52 59	3089.7	-18.75	135.41
100.00	15 49 52	2716.75	-29.65	75.74	39.03	86.01	16 35 8	2116.8	-29.89	66.94
100.00	11 44 6	3519.77	-13.70	129.28	34.32	63.17	12 42 46	2919.8	-17.19	122.23
110.00	17 48 13	2346.44	-34.10	47.68	39.10	92.51	18 27 19	1746.4	-33.38	38.52
110.00	12 2 14	3462.85	-9.83	122.70	32.05	57.10	12 59 57	2862.8	-14.10	116.20

DIFFERENTIAL CORRECTIONS
TDE 1.7960 TRA 2.0094 TC-18.6716 BAU 2.4544
RDE .2620 RRA .1980 RC3 -.2508 FAU .19860
FDE .8333 FRA 2.7669 FC-17.4878 BSP 44628
BDE 1.8150 BRA 2.0192 BC318.6733 FSP 3535

MID-COURSE EXECUTION ACCURACY
SGT12831.3 SGR 645.5 SG3 1073.5
RRT .6115 RRF .5896 RTF .9816
SGB12847.5 R23 -.0147 R13 .9816
SG112837.4 SG2 510.5 THA 1.76

ORBIT DETERMINATION ACCURACY
ST 3521.7 SR 493.8 SS 897.1
CRT .9898 CRS -.8236 CST -.8879
LSA 3644.5 MSA 408.7 SSA 36.6
EL1 3555.5 EL2 69.5 ALF 7.91

LAUNCH DATE DEC 5 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 798.603 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.105 GAL -1.09 AZL 87.81 HCA 236.32 SMA 188.34 ECC .21811 INC 2.1888 V1 30.223
RP 208.49 LAP -1.82 LOP 309.20 VP 23.843 GAP -11.02 AZP 91.21 TAL 353.89 TAP 230.21 RCA 147.26 APO 229.42 V2 26.285
RC 316.140 GL 23.71 GP -4.55 ZAL 97.07 ZAP 30.07 ETS 173.48 ZAE 61.52 ETE 177.04 ZAC 80.73 ETC 257.25 CLP 38.84

PLANETOCENTRIC CONIC

C3 9.885 VHL 3.144 DLA 25.35 RAL 181.47 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 4.583 DPA 2.05 RAP 167.81 ECC 1.1627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 24 5	3007.45	-27.95	96.97	39.98	85.24	15 14 12	2407.4	-28.31	88.33
90.00	10 37 17	3756.01	-13.78	146.69	35.96	65.02	11 39 53	3156.0	-17.04	139.52
100.00	16 9 34	2867.35	-29.83	72.08	40.10	87.93	16 54 2	2067.3	-29.80	63.27
100.00	11 34 28	3571.34	-12.09	132.26	35.11	62.45	12 34 0	2971.3	-15.69	125.32
110.00	18 2 48	2313.10	-33.97	45.09	40.02	94.04	18 41 21	1713.1	-33.04	35.97
110.00	11 57 44	3480.35	-8.51	124.61	32.98	56.77	12 56 3	2898.4	-12.83	118.17

DIFFERENTIAL CORRECTIONS
TDE 1.7061 TRA 2.1676 TC-18.7920 BAU 2.4836
RDE .2606 RRA .1987 RC3 -.2067 FAU .19003
FDE .6908 FRA 2.7836 FC-16.6421 BSP 45157
BDE 1.7259 BRA 2.1767 BC318.7931 FSP 3408

MID-COURSE EXECUTION ACCURACY
SGT12977.2 SGR 634.9 SG3 1031.8
RRT .5783 RRF .5550 RTF .9815
SGB12998.7 R23 -.0166 R13 .9815
SG112982.4 SG2 517.7 THA 1.62

ORBIT DETERMINATION ACCURACY
ST 3392.9 SR 489.9 SS 841.8
CRT .9840 CRS -.7696 CST -.8642
LSA 3504.2 MSA 423.7 SSA 36.7
EL1 3427.0 EL2 86.5 ALF 8.09

LAUNCH DATE DEC 5 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 802.938 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.112 GAL -1.23 AZL 87.83 HCA 237.57 SMA 188.46 ECC .21882 INC 2.1658 V1 30.223
RP 208.32 LAP -1.83 LOP 310.45 VP 23.873 GAP -11.12 AZP 91.16 TAL 353.12 TAP 230.68 RCA 147.22 APO 229.70 V2 26.304
RC 317.035 GL 23.36 GP -4.42 ZAL 98.54 ZAP 30.35 ETS 173.48 ZAE 60.51 ETE 177.03 ZAC 80.97 ETC 257.20 CLP 38.13

PLANETOCENTRIC CONIC

C3 9.954 VHL 3.155 DLA 24.41 RAL 182.74 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 4.652 DPA 1.95 RAP 168.35 ECC 1.1638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 45 48	2951.53	-28.20	92.90	41.12	87.26	15 35 0	2351.5	-28.28	84.24
90.00	10 25 43	3814.66	-12.07	150.14	36.76	64.19	11 29 17	3214.7	-15.44	143.09
100.00	16 28 5	2621.80	-29.89	68.69	41.17	89.71	17 11 46	2021.8	-29.61	59.90
100.00	11 26 8	3619.62	-10.56	135.03	35.98	61.87	12 26 27	3019.6	-14.24	128.17
110.00	18 17 3	2280.84	-33.79	42.59	40.96	95.51	18 55 4	1680.8	-32.66	33.53
110.00	11 53 38	3533.35	-7.20	126.47	33.96	56.49	12 52 31	2933.4	-11.56	120.08

DIFFERENTIAL CORRECTIONS
TDE 1.6133 TRA 2.3334 TC-18.8832 BAU 2.5129
RDE .2600 RRA .1995 RC3 -.1654 FAU .18194
FDE .5593 FRA 2.8010 FC-15.8241 BSP 45662
BDE 1.6341 BRA 2.3419 BC318.8839 FSP 3276

MID-COURSE EXECUTION ACCURACY
SGT13122.9 SGR 626.1 SG3 992.4
RRT .5450 RRF .5206 RTF .9815
SGB13137.8 R23 -.0181 R13 .9815
SG113127.3 SG2 524.8 THA 1.49

ORBIT DETERMINATION ACCURACY
ST 3265.2 SR 487.0 SS 796.8
CRT .9754 CRS -.7048 CST -.8377
LSA 3367.2 MSA 440.6 SSA 36.8
EL1 3299.6 EL2 106.2 ALF 8.29

LAUNCH DATE DEC 5 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 807.275 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.118 GAL -1.38 AZL 87.86 HCA 238.82 SMA 188.58 ECC .21956 INC 2.1434 V1 30.223
RP 208.16 LAP -1.83 LOP 311.70 VP 23.903 GAP -11.22 AZP 91.11 TAL 352.33 TAP 231.15 RCA 147.18 APO 229.99 V2 26.323
RC 317.924 GL 23.01 GP -4.30 ZAL 100.03 ZAP 37.65 ETS 173.48 ZAE 59.51 ETE 177.02 ZAC 81.20 ETC 257.14 CLP 37.44

PLANETOCENTRIC CONIC

C3 10.038 VHL 3.168 DLA 23.46 RAL 184.02 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 4.723 DPA 1.84 RAP 168.91 ECC 1.1652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 5 51	2901.02	-28.30	89.21	42.24	89.11	15 54 12	2301.0	-28.13	80.55
90.00	10 15 53	3868.52	-10.45	153.27	37.66	63.53	11 20 22	3268.5	-13.92	146.32
100.00	16 45 40	2579.19	-29.86	65.52	42.23	91.38	17 28 39	1979.2	-29.35	56.76
100.00	11 18 46	3665.58	-9.07	137.63	36.93	61.39	12 19 51	3065.6	-12.82	130.85
110.00	18 31 2	2249.55	-33.56	40.17	41.92	96.92	19 8 32	1649.6	-32.24	31.19
110.00	11 49 53	3567.98	-5.90	128.30	34.99	56.27	12 49 21	2968.0	-10.29	121.96

DIFFERENTIAL CORRECTIONS
TDE 1.5182 TRA 2.5063 TC-18.9323 BAU 2.5406
RDE .2601 RRA .2000 RC3 -.1254 FAU .17379
FDE .4377 FRA 2.8147 FC-14.9895 BSP 46193
BDE 1.5403 BRA 2.5143 BC318.9327 FSP 3851

MID-COURSE EXECUTION ACCURACY
SGT13261.3 SGR 618.8 SG3 952.9
RRT .5108 RRF .4856 RTF .9814
SGB13275.8 R23 -.0192 R13 .9814
SG113265.1 SG2 531.8 THA 1.37

ORBIT DETERMINATION ACCURACY
ST 3140.9 SR 485.0 SS 761.1
CRT .9634 CRS -.6300 CST -.8097
LSA 3235.4 MSA 458.7 SSA 36.8
EL1 3175.5 EL2 128.6 ALF 8.47

LAUNCH DATE DEC 5 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 811.613 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.125 GAL -1.53 AZL 87.88 HCA 240.07 SMA 188.70 ECC .22035 INC 2.1216 V1 30.223
RP 208.01 LAP -1.84 LOP 312.95 VP 23.932 GAP -11.31 AZP 91.06 TAL 351.54 TAP 231.61 RCA 147.12 APO 230.28 V2 26.341
RC 318.808 GL 22.65 GP -4.19 ZAL 101.54 ZAP 36.97 ETS 173.48 ZAE 58.54 ETE 177.00 ZAC 81.43 ETC 257.09 CLP 36.76

PLANETOCENTRIC CONIC

C3 10.138 VHL 3.184 DLA 22.49 RAL 185.31 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 4.794 DPA 1.71 RAP 169.48 ECC 1.1668

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 24 42	2854.41	-28.31	85.80	43.36	90.82	16 12 16	2254.4	-27.89	77.16
90.00	10 7 19	3919.09	-8.90	156.18	38.63	63.01	11 12 38	3319.1	-12.45	140.30
100.00	17 2 33	2538.93	-29.76	62.54	43.31	92.95	17 44 52	1938.9	-29.03	53.81
100.00	11 12 10	3709.81	-7.62	140.11	37.94	61.01	12 13 59	3109.8	-11.43	133.39
110.00	18 44 45	2219.15	-33.29	37.84	42.90	98.28	19 21 44	1619.2	-31.78	28.94
110.00	11 46 26	3602.34	-4.60	130.11	36.08	56.09	12 46 29	3002.3	-9.02	123.81

DIFFERENTIAL CORRECTIONS
TDE 1.4184 TRA 2.6856 TC-18.9498 BAU 2.5683
RDE .2607 RRA .2002 RC3 -.0874 FAU .16588
FDE .3196 FRA 2.8227 FC-14.1657 BSP 46686
BDE 1.4422 BRA 2.6931 BC318.9500 FSP 3025

MID-COURSE EXECUTION ACCURACY
SGT13397.5 SGR 612.5 SG3 914.1
RRT .4763 RRF .4499 RTF .9812
SGB13411.4 R23 -.0207 R13 .9812
SG113400.6 SG2 538.4 THA 1.25

ORBIT DETERMINATION ACCURACY
ST 3018.0 SR 483.4 SS 732.1
CRT .9468 CRS -.5420 CST -.7787
LSA 3106.0 MSA 479.4 SSA 36.7
EL1 3052.6 EL2 153.8 ALF 8.65

LAUNCH DATE DEC 5 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 815.952 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.132 GAL -1.68 AZL 87.90 HCA 241.32 SMA 188.83 ECC .22117 INC 2.1003 V1 30.223
RP 207.86 LAP -1.84 LOP 314.21 VP 23.961 GAP -11.41 AZP 91.01 TAL 350.73 TAP 232.05 RCA 147.07 APO 230.59 V2 26.357
RC 319.685 GL 22.27 GP -4.08 ZAL 103.07 ZAP 36.30 ETS 173.48 ZAE 57.57 ETE 176.99 ZAC 81.66 ETC 257.03 CLP 36.11

PLANETOCENTRIC CONIC

C3 10.255 VHL 3.202 DLA 21.51 RAL 186.60 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 4.866 DPA 1.57 RAP 170.07 ECC 1.1688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 42 37	2810.82	-28.22	82.61	44.49	92.42	16 29 28	2210.8	-27.59	74.01
90.00	9 59 43	3967.30	-7.40	158.93	39.67	62.59	11 5 50	3367.3	-11.02	152.12
100.00	17 18 50	2500.61	-29.59	59.70	44.39	94.43	18 0 30	1900.6	-28.66	51.02
100.00	11 6 11	3752.74	-6.19	142.50	39.01	60.70	12 8 44	3152.7	-10.05	135.84
110.00	18 58 15	2189.59	-32.97	35.59	43.91	99.57	19 34 44	1589.6	-31.30	26.77
110.00	11 43 16	3636.53	-3.30	131.90	37.22	55.96	12 43 52	3036.5	-7.74	125.63

DIFFERENTIAL CORRECTIONS
TDE 1.3147 TRA 2.8703 TC-18.9399 BAU 2.5967
RDE .2619 RRA .2002 RC3 -.0518 FAU .15831
FDE .2093 FRA 2.8280 FC-13.3650 BSP 47172
BDE 1.3405 BRA 2.8773 BC318.9400 FSP 2906

MID-COURSE EXECUTION ACCURACY
SGT13533.3 SGR 607.4 SG3 876.8
RRT .4417 RRF .4143 RTF .9810
SGB13546.9 R23 -.0219 R13 .9810
SG113536.0 SG2 544.8 THA 1.14

ORBIT DETERMINATION ACCURACY
ST 2899.6 SR 482.6 SS 712.1
CRT .9246 CRS -.4456 CST -.7486
LSA 2982.3 MSA 501.9 SSA 36.5
EL1 2933.9 EL2 181.7 ALF 8.78

LAUNCH DATE DEC 5 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 820.291 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.139 GAL -1.83 AZL 87.92 HCA 242.58 SMA 188.95 ECC .22203 INC 2.0794 V1 30.223
RP 207.73 LAP -1.85 LOP 315.46 VP 23.988 GAP -11.51 AZP 90.96 TAL 349.90 TAP 232.48 RCA 147.00 APO 230.90 V2 26.373
RC 320.558 GL 21.89 GP -3.97 ZAL 104.62 ZAP 35.66 ETS 173.47 ZAE 56.63 ETE 176.99 ZAC 81.89 ETC 256.97 CLP 35.46

PLANETOCENTRIC CONIC

C3 10.390 VHL 3.223 DLA 20.52 RAL 187.90 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 4.940 DPA 1.41 RAP 170.67 ECC 1.1710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 49	2769.67	-28.07	79.61	45.62	93.91	16 45 58	2169.7	-27.23	71.05
90.00	9 52 52	4013.73	-5.94	161.56	40.77	62.26	10 59 46	3413.7	-9.61	154.80
100.00	17 34 37	2463.97	-29.37	57.00	45.50	95.84	18 15 41	1864.0	-28.25	48.37
100.00	11 0 45	3794.66	-4.79	144.82	40.15	60.46	12 4 0	3194.7	-8.69	138.21
110.00	19 11 31	2160.80	-32.63	33.42	44.94	100.82	19 47 32	1560.8	-30.79	24.68
110.00	11 40 20	3670.59	-2.00	133.68	38.41	55.87	12 41 31	3070.6	-6.46	127.44

DIFFERENTIAL CORRECTIONS
TDE 1.2094 TRA 3.0628 TC-18.8874 BAU 2.6237
RDE .2638 RRA .2000 RC3 -.0180 FAU .15083
FDE .1088 FRA 2.8291 FC-12.5675 BSP 47691
BDE 1.2379 BRA 3.0694 BC318.8874 FSP 2792

MID-COURSE EXECUTION ACCURACY
SGT13663.0 SGR 603.4 SG3 840.0
RRT .4071 RRF .3790 RTF .9808
SGB13676.3 R23 -.0230 R13 .9808
SG113665.2 SG2 551.1 THA 1.03

ORBIT DETERMINATION ACCURACY
ST 2792.1 SR 482.6 SS 700.2
CRT .8957 CRS -.3464 CST -.7235
LSA 2871.0 MSA 524.8 SSA 36.1
EL1 2825.6 EL2 212.1 ALF 8.85

LAUNCH DATE DEC 5 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 824.630 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.146 GAL -1.99 AZL 87.94 HCA 243.84 SMA 189.08 ECC .22293 INC 2.0590 V1 30.223
RP 207.60 LAP -1.85 LOP 316.72 VP 24.014 GAP -11.61 AZP 90.91 TAL 349.06 TAP 232.90 RCA 146.93 APO 231.23 V2 26.388
RC 321.425 GL 21.50 GP -3.87 ZAL 106.18 ZAP 35.03 ETS 173.47 ZAE 55.70 ETE 176.98 ZAC 82.12 ETC 256.91 CLP 34.84

PLANETOCENTRIC CONIC

C3 10.545 VHL 3.247 DLA 19.52 RAL 189.20 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 5.014 DPA 1.25 RAP 171.29 ECC 1.1735

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 16 23	2730.57	-27.85	76.77	46.77	95.32	17 1 54	2130.6	-26.82	68.26
90.00	9 46 39	4058.80	-4.51	164.09	41.94	62.01	10 54 17	3458.8	-8.21	157.38
100.00	17 49 58	2428.81	-29.10	54.42	46.62	97.17	18 30 27	1828.8	-27.80	45.86
100.00	10 55 45	3835.79	-3.41	147.09	41.33	60.28	11 59 41	3235.8	-7.34	140.51
110.00	19 24 35	2132.78	-32.25	31.32	46.00	102.00	20 0 8	1532.8	-30.26	22.67
110.00	11 37 37	3704.58	-.70	135.45	39.64	55.82	12 39 22	3104.6	-5.18	129.23

DIFFERENTIAL CORRECTIONS
TDE 1.1003 TRA 3.2620 TC-18.8032 BAU 2.6508
RDE .2663 RRA .1995 RC3 .0136 FAU .14359
FDE .0132 FRA 2.8263 FC-11.7884 BSP 48190
BDE 1.1321 BRA 3.2681 BC318.8032 FSP 2681

MID-COURSE EXECUTION ACCURACY
SGT13790.9 SGR 600.3 SG3 804.1
RRT .3727 RRF .3436 RTF .9806
SGB13804.0 R23 -.0242 R13 .9805
SG113792.7 SG2 557.0 THA .93

ORBIT DETERMINATION ACCURACY
ST 2694.3 SR 483.1 SS 694.9
CRT .8586 CRS -.2436 CST -.7028
LSA 2769.9 MSA 549.3 SSA 35.7
EL1 2726.3 EL2 244.8 ALF 8.82

LAUNCH DATE DEC 5 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 828.969 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.153 GAL -2.15 AZL 87.96 HCA 245.09 SMA 189.20 ECC .22388 INC 2.0390 V1 30.223
RP 207.48 LAP -1.85 LOP 317.98 VP 24.039 GAP -11.71 AZP 90.86 TAL 348.21 TAP 233.30 RCA 146.85 APO 231.56 V2 26.402
RC 322.286 GL 21.10 GP -3.78 ZAL 107.75 ZAP 34.41 ETS 173.46 ZAE 54.78 ETE 176.97 ZAC 82.35 ETC 256.86 CLP 34.23

PLANETOCENTRIC CONIC

C3 10.720 VHL 3.274 DLA 18.51 RAL 190.50 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 5.090 DPA 1.07 RAP 171.92 ECC 1.1764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 32 26	2693.25	-27.59	74.07	47.94	96.65	17 17 20	2093.3	-26.38	65.62
90.00	9 40 57	4102.79	-3.10	166.56	43.16	61.84	10 49 20	3502.8	-6.84	159.87
100.00	18 4 56	2394.99	-28.79	51.95	47.76	98.43	18 44 51	1795.0	-27.32	43.46
100.00	10 51 8	3876.29	-2.04	149.32	42.57	60.17	11 55 45	3276.3	-5.99	142.76
110.00	19 37 27	2105.51	-31.84	29.29	47.09	103.14	20 12 33	1505.5	-29.71	20.74
110.00	11 35 6	3738.54	.60	137.22	40.92	55.82	12 37 25	3138.5	-3.89	131.01

DIFFERENTIAL CORRECTIONS

TDE .9887 TRA 3.4686 TC-18.6830 BAU 2.6775
RDE .2695 RRA .1988 RC3 .0431 FAU .13653
FDE -.0747 FRA 2.8201 FC-11.0268 BSP 48688
BDE 1.0247 BRA 3.4743 BC318.6831 FSP 2575

MID-COURSE EXECUTION ACCURACY

SGT13915.4 SGR 598.2 SG3 769.1
RRT .3388 RRF .3089 RTF .9803
SGB13928.3 R23 -.0253 R13 .9802
SG113916.9 SG2 562.7 THA .84

ORBIT DETERMINATION ACCURACY

ST 2610.8 SR 484.2 SS 695.6
CRT .8123 CRS -.1437 CST -.6906
LSA 2684.1 MSA 573.6 SSA 35.2
EL1 2640.6 EL2 279.2 ALF 8.67

LAUNCH DATE DEC 5 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 833.306 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.160 GAL -2.31 AZL 87.98 HCA 246.35 SMA 189.33 ECC .22487 INC 2.0194 V1 30.223
RP 207.36 LAP -1.85 LOP 319.24 VP 24.064 GAP -11.81 AZP 90.81 TAL 347.34 TAP 233.70 RCA 146.76 APO 231.91 V2 26.416
RC 323.141 GL 20.70 GP -3.69 ZAL 109.34 ZAP 33.81 ETS 173.45 ZAE 53.88 ETE 176.96 ZAC 82.58 ETC 256.80 CLP 33.64

PLANETOCENTRIC CONIC

C3 10.916 VHL 3.304 DLA 17.50 RAL 191.79 RAD 6567.4 VEL 11.502 PTH 2.00 VHP 5.167 DPA .88 RAP 172.56 ECC 1.1796

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 2	2657.52	-27.28	71.51	49.13	97.90	17 32 20	2057.5	-25.90	63.11
90.00	9 35 42	4145.92	-1.71	168.96	44.43	61.73	10 44 48	3545.9	-5.47	162.31
100.00	18 19 33	2362.40	-28.44	49.60	48.93	99.62	18 58 56	1762.4	-26.81	41.17
100.00	10 46 52	3916.28	-.68	151.51	43.86	60.11	11 52 8	3316.3	-4.65	144.98
110.00	19 50 8	2078.97	-31.42	27.34	48.21	104.22	20 24 47	1479.0	-29.14	18.88
110.00	11 32 46	3772.47	1.90	138.99	42.25	55.86	12 35 38	3172.5	-2.59	132.79

DIFFERENTIAL CORRECTIONS

TDE .8742 TRA 3.6825 TC-18.5304 BAU 2.7042
RDE .2732 RRA .1979 RC3 .0704 FAU .12971
FDE -.1559 FRA 2.8122 FC-10.2875 BSP 49175
BDE .9159 BRA 3.6878 BC318.5306 FSP 2470

MID-COURSE EXECUTION ACCURACY

SGT14037.9 SGR 596.8 SG3 735.3
RRT .3055 RRF .2749 RTF .9799
SGB14050.5 R23 -.0261 R13 .9798
SG114039.0 SG2 568.2 THA .75

ORBIT DETERMINATION ACCURACY

ST 2543.4 SR 486.0 SS 701.4
CRT .7563 CRS -.0488 CST -.6875
LSA 2615.1 MSA 597.2 SSA 34.6
EL1 2570.2 EL2 314.6 ALF 8.35

LAUNCH DATE DEC 5 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 837.642 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.168 GAL -2.48 AZL 88.00 HCA 247.62 SMA 189.46 ECC .22591 INC 2.0002 V1 30.223
RP 207.26 LAP -1.85 LOP 320.50 VP 24.087 GAP -11.91 AZP 90.76 TAL 346.46 TAP 234.08 RCA 146.66 APO 232.26 V2 26.428
RC 323.990 GL 20.28 GP -3.60 ZAL 110.93 ZAP 33.23 ETS 173.45 ZAE 53.00 ETE 176.95 ZAC 82.81 ETC 256.74 CLP 33.06

PLANETOCENTRIC CONIC

C3 11.134 VHL 3.337 DLA 16.48 RAL 193.09 RAD 6567.4 VEL 11.512 PTH 2.01 VHP 5.245 DPA .68 RAP 173.22 ECC 1.1832

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 14	2623.23	-26.94	69.05	50.35	99.08	17 46 57	2023.2	-25.40	60.72
90.00	9 30 50	4188.35	-.34	171.33	45.76	61.68	10 40 38	3588.4	-4.12	164.69
100.00	18 33 51	2330.97	-28.06	47.34	50.13	100.76	19 12 42	1731.0	-26.29	38.98
100.00	10 42 53	3955.85	.66	153.68	45.20	60.11	11 48 49	3355.8	-3.32	147.16
110.00	20 2 38	2053.18	-30.97	25.47	49.35	105.25	20 36 52	1453.2	-28.57	17.09
110.00	11 30 35	3806.41	3.19	140.77	43.62	55.95	12 34 2	3206.4	-1.30	134.56

DIFFERENTIAL CORRECTIONS

TDE .7566 TRA 3.9027 TC-18.3489 BAU 2.7313
RDE .2775 RRA .1966 RC3 .0956 FAU .12307
FDE -.2322 FRA 2.7972 FC3-9.5692 BSP 49655
BDE .8059 BRA 3.9076 BC318.3492 FSP 2366

MID-COURSE EXECUTION ACCURACY

SGT14158.7 SGR 596.0 SG3 702.1
RRT .2724 RRF .2409 RTF .9794
SGB14171.3 R23 -.0274 R13 .9794
SG114159.7 SG2 573.4 THA .66

ORBIT DETERMINATION ACCURACY

ST 2493.6 SR 488.1 SS 709.9
CRT .6900 CRS .0414 CST -.6919
LSA 2564.3 MSA 619.2 SSA 33.9
EL1 2516.7 EL2 350.1 ALF 7.85

LAUNCH DATE DEC 5 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 841.976 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.175 GAL -2.66 AZL 88.02 HCA 248.88 SMA 189.59 ECC .22700 INC 1.9812 V1 30.223
RP 207.16 LAP -1.85 LOP 321.77 VP 24.109 GAP -12.01 AZP 90.71 TAL 345.57 TAP 234.45 RCA 146.55 APO 232.63 V2 26.439
RC 324.833 GL 19.86 GP -3.52 ZAL 112.52 ZAP 32.66 ETS 173.44 ZAE 52.13 ETE 176.95 ZAC 83.04 ETC 256.68 CLP 32.49

PLANETOCENTRIC CONIC

C3 11.376 VHL 3.373 DLA 15.45 RAL 194.38 RAD 6567.4 VEL 11.522 PTH 2.01 VHP 5.324 DPA .46 RAP 173.89 ECC 1.1872

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 3	2590.28	-26.56	66.72	51.59	100.20	18 1 13	1990.3	-24.88	58.45
90.00	9 26 18	4230.20	1.01	173.66	47.13	61.70	10 36 48	3630.2	-2.78	167.04
100.00	18 47 51	2300.64	-27.65	45.17	51.35	101.83	19 26 12	1700.6	-25.74	36.89
100.00	10 39 11	3995.07	1.99	155.84	46.59	60.17	11 45 46	3395.1	-2.00	149.32
110.00	20 14 57	2028.12	-30.51	23.66	50.53	106.23	20 48 45	1428.1	-27.98	15.38
110.00	11 28 34	3840.35	4.49	142.55	45.03	56.08	12 32 34	3240.4	.00	136.33

DIFFERENTIAL CORRECTIONS

TDE .6364 TRA 4.1298 TC-18.1342 BAU 2.7580
RDE .2825 RRA .1951 RC3 .1188 FAU .11658
FDE -.3013 FRA 2.7801 FC3-8.8723 BSP 50116
BDE .6963 BRA 4.1344 BC318.1346 FSP 2266

MID-COURSE EXECUTION ACCURACY

SGT14275.4 SGR 595.8 SG3 669.8
RRT .2401 RRF .2079 RTF .9789
SGB14287.8 R23 -.0284 R13 .9789
SG114276.1 SG2 578.4 THA .58

ORBIT DETERMINATION ACCURACY

ST 2464.0 SR 490.9 SS 720.8
CRT .6145 CRS .1228 CST -.7051
LSA 2534.6 MSA 637.7 SSA 33.2
EL1 2482.9 EL2 384.3 ALF 7.15

LAUNCH DATE DEC 5 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 846.307 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.182 GAL -2.83 AZL 88.04 HCA 250.14 SMA 189.72 ECC .22814 INC 1.9626 V1 30.223
RP 207.08 LAP -1.85 LOP 323.03 VP 24.130 GAP -12.12 AZP 90.67 TAL 344.66 TAP 234.80 RCA 146.44 APO 233.00 V2 26.449
RC 325.671 GL 19.43 GP -3.44 ZAL 114.12 ZAP 32.10 ETS 173.42 ZAE 51.27 ETE 176.94 ZAC 83.26 ETC 256.63 CLP 31.94

PLANETOCENTRIC CONIC

C3 11.643 VHL 3.412 DLA 14.43 RAL 195.66 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 5.405 DPA .24 RAP 174.57 ECC 1.1916

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 31	2558.59	-26.16	64.48	52.85	101.25	18 15 10	1958.6	-24.34	56.28
90.00	9 22 4	4271.55	2.35	175.97	48.55	61.77	10 33 16	3671.5	-1.45	169.34
100.00	19 1 35	2271.38	-27.23	43.10	52.59	102.84	19 39 26	1671.4	-25.19	34.89
100.00	10 35 42	4033.99	3.30	157.98	48.02	60.27	11 42 56	3434.0	-.68	151.45
110.00	20 27 5	2003.83	-30.03	21.93	51.74	107.15	21 0 29	1403.8	-27.39	13.73
110.00	11 26 41	3874.31	5.77	144.33	46.49	56.25	12 31 15	3274.3	1.30	138.10

DIFFERENTIAL CORRECTIONS
TDE .5148 TRA 4.3653 TC-17.8894 BAU 2.7847
RDE .2881 RRA .1933 RC3 .1398 FAU .11031
FDE -.3649 FRA 2.7590 FC3-8.2021 BSP 50596
BDE .5899 BRA 4.3696 BC317.8900 FSP 2169

MID-COURSE EXECUTION ACCURACY
SGT14390.3 SGR 596.2 SG3 638.4
RRT .2087 RRF .1755 RTF .9783
SGB14402.6 R23 -.0296 R13 .9783
SG114390.8 SG2 583.0 THA .50

ORBIT DETERMINATION ACCURACY
ST 2457.1 SR 494.0 SS 732.9
CRT .5317 CRS .1967 CST -.7237
LSA 2528.2 MSA 652.4 SSA 32.4
EL1 2471.5 EL2 416.0 ALF 6.28

LAUNCH DATE DEC 5 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 850.635 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.189 GAL -3.01 AZL 88.06 HCA 251.41 SMA 189.85 ECC .22933 INC 1.9443 V1 30.223
RP 207.00 LAP -1.84 LOP 324.30 VP 24.151 GAP -12.22 AZP 90.62 TAL 343.74 TAP 235.15 RCA 146.31 APO 233.39 V2 26.459
RC 326.503 GL 18.99 GP -3.36 ZAL 115.72 ZAP 31.56 ETS 173.41 ZAE 50.42 ETE 176.93 ZAC 83.49 ETC 256.57 CLP 31.40

PLANETOCENTRIC CONIC

C3 11.936 VHL 3.455 DLA 13.41 RAL 196.94 RAD 6567.5 VEL 11.547 PTH 2.02 VHP 5.486 DPA .01 RAP 175.26 ECC 1.1964

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 41	2528.10	-25.74	62.35	54.14	102.24	18 28 49	1928.1	-23.79	54.22
90.00	9 18 7	4312.47	3.66	178.26	50.02	61.90	10 29 59	3712.5	-.12	171.63
100.00	19 15 2	2243.15	-26.79	41.12	53.87	103.79	19 52 25	1643.1	-24.62	32.99
100.00	10 32 27	4072.65	4.61	160.11	49.49	60.43	11 40 19	3472.7	.64	153.57
110.00	20 39 3	1980.29	-29.55	20.27	52.98	108.02	21 12 3	1380.3	-26.80	12.16
110.00	11 24 56	3908.27	7.05	146.13	47.98	56.47	12 30 4	3308.3	2.60	139.88

DIFFERENTIAL CORRECTIONS
TDE .3914 TRA 4.6096 TC-17.6119 BAU 2.8106
RDE .2942 RRA .1912 RC3 .1589 FAU .10415
FDE -.4220 FRA 2.7352 FC3-7.5539 BSP 51069
BDE .4896 BRA 4.6136 BC317.6126 FSP 2076

MID-COURSE EXECUTION ACCURACY
SGT14500.9 SGR 597.0 SG3 607.7
RRT .1782 RRF .1442 RTF .9776
SGB14513.2 R23 -.0307 R13 .9775
SG114501.3 SG2 587.5 THA .42

ORBIT DETERMINATION ACCURACY
ST 2472.4 SR 497.7 SS 745.2
CRT .4438 CRS .2623 CST -.7464
LSA 2544.8 MSA 662.3 SSA 31.6
EL1 2482.6 EL2 444.1 ALF 5.27

LAUNCH DATE DEC 5 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 854.960 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.197 GAL -3.20 AZL 88.07 HCA 252.67 SMA 189.99 ECC .23058 INC 1.9262 V1 30.223
RP 206.93 LAP -1.84 LOP 325.56 VP 24.170 GAP -12.33 AZP 90.57 TAL 342.80 TAP 235.48 RCA 146.18 APO 233.80 V2 26.467
RC 327.330 GL 18.55 GP -3.29 ZAL 117.32 ZAP 31.04 ETS 173.40 ZAE 49.59 ETE 176.93 ZAC 83.72 ETC 256.51 CLP 30.88

PLANETOCENTRIC CONIC

C3 12.258 VHL 3.501 DLA 12.39 RAL 198.21 RAD 6567.5 VEL 11.560 PTH 2.02 VHP 5.569 DPA -.23 RAP 175.96 ECC 1.2017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 33	2498.76	-25.30	60.31	55.46	103.17	18 42 11	1898.8	-23.23	52.25
90.00	9 14 23	4353.02	4.96	180.54	51.53	62.09	10 26 56	3753.0	1.18	173.89
100.00	19 28 14	2215.94	-26.33	39.23	55.17	104.69	20 5 10	1615.9	-24.05	31.17
100.00	10 29 23	4111.08	5.89	162.23	51.01	60.64	11 37 54	3511.1	1.94	155.68
110.00	20 50 49	1957.54	-29.06	18.68	54.24	108.85	21 23 27	1357.5	-26.21	10.65
110.00	11 23 17	3942.24	8.33	147.93	49.52	56.73	12 29 0	3342.2	3.89	141.65

DIFFERENTIAL CORRECTIONS
TDE .2661 TRA 4.8596 TC-17.3138 BAU 2.8374
RDE .3010 RRA .1888 RC3 .1760 FAU .09819
FDE -.4730 FRA 2.7058 FC3-6.9348 BSP 51554
BDE .4018 BRA 4.8633 BC317.3147 FSP 1984

MID-COURSE EXECUTION ACCURACY
SGT14610.4 SGR 598.3 SG3 577.9
RRT .1483 RRF .1136 RTF .9768
SGB14622.7 R23 -.0319 R13 .9768
SG114610.7 SG2 591.6 THA .35

ORBIT DETERMINATION ACCURACY
ST 2507.7 SR 501.7 SS 756.3
CRT .3537 CRS .3206 CST -.7708
LSA 2581.9 MSA 667.1 SSA 30.8
EL1 2514.2 EL2 468.0 ALF 4.19

LAUNCH DATE DEC 5 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 859.280 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.204 GAL -3.39 AZL 88.09 HCA 253.94 SMA 190.12 ECC .23189 INC 1.9084 V1 30.223
RP 206.86 LAP -1.83 LOP 326.83 VP 24.188 GAP -12.44 AZP 90.53 TAL 341.86 TAP 235.80 RCA 146.03 APO 234.21 V2 26.474
RC 328.152 GL 18.11 GP -3.22 ZAL 118.91 ZAP 30.52 ETS 173.39 ZAE 48.77 ETE 176.92 ZAC 83.95 ETC 256.46 CLP 30.37

PLANETOCENTRIC CONIC

C3 12.608 VHL 3.551 DLA 11.37 RAL 199.47 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 5.654 DPA -.48 RAP 176.68 ECC 1.2075

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 7	2470.56	-24.84	58.37	56.80	104.04	18 55 18	1870.6	-22.67	50.38
90.00	9 10 53	4393.24	6.24	182.80	53.08	62.32	10 24 6	3793.2	2.48	176.13
100.00	19 41 12	2189.73	-25.87	37.42	56.50	105.53	20 17 41	1589.7	-23.48	29.43
100.00	10 26 30	4149.30	7.16	164.36	52.57	60.90	11 35 39	3549.3	3.23	157.78
110.00	21 2 25	1935.58	-28.57	17.16	55.54	109.63	21 34 40	1335.6	-25.62	9.22
110.00	11 21 46	3976.21	9.59	149.75	51.10	57.03	12 28 2	3376.2	5.18	143.44

DIFFERENTIAL CORRECTIONS
TDE .1377 TRA 5.1171 TC-16.9941 BAU 2.8648
RDE .3084 RRA .1860 RC3 .1910 FAU .09245
FDE -.5201 FRA 2.6727 FC3-6.3476 BSP 51979
BDE .3377 BRA 5.1205 BC316.9952 FSP 1892

MID-COURSE EXECUTION ACCURACY
SGT14718.5 SGR 599.8 SG3 549.0
RRT .1192 RRF .0834 RTF .9759
SGB14730.7 R23 -.0333 R13 .9758
SG114718.7 SG2 595.5 THA .28

ORBIT DETERMINATION ACCURACY
ST 2562.1 SR 506.0 SS 766.8
CRT .2632 CRS .3738 CST -.7949
LSA 2638.4 MSA 668.2 SSA 30.0
EL1 2565.7 EL2 487.5 ALF 3.09

LAUNCH DATE DEC 5 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 863.596 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.212 GAL -3.58 AZL 88.11 HCA 255.21 SMA 190.26 ECC .23326 INC 1.8907 V1 30.223
RP 206.81 LAP -1.83 LOP 328.10 VP 24.205 GAP -12.55 AZP 90.48 TAL 340.89 TAP 236.10 RCA 145.88 APO 234.64 V2 26.480
RC 328.970 GL 17.66 GP -3.15 ZAL 120.49 ZAP 30.02 ETS 173.37 ZAE 47.96 ETE 176.91 ZAC 84.18 ETC 256.41 CLP 29.87

PLANETOCENTRIC CONIC

C3 12.990 VHL 3.604 DLA 10.36 RAL 200.72 RAD 6567.5 VEL 11.592 PTH 2.03 VHP 5.739 DPA -.74 RAP 177.40 ECC 1.2138

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 27 25	2443.45	-24.38	56.52	58.17	104.86	19 8 9	1843.4	-22.11	48.59
90.00	9 7 34	4433.14	7.49	185.06	54.68	62.61	10 21 27	3833.1	3.76	178.36
100.00	19 53 54	2164.52	-25.39	35.69	57.86	106.32	20 29 59	1564.5	-22.91	27.77
100.00	10 23 46	4187.31	8.42	166.49	54.18	61.21	11 33 34	3587.3	4.51	159.88
110.00	21 13 50	1914.42	-28.07	15.71	56.86	110.36	21 45 44	1314.4	-25.04	7.85
110.00	11 20 20	4010.17	10.84	151.59	52.72	57.38	12 27 10	3410.2	6.47	145.23

DIFFERENTIAL CORRECTIONS

TDE .0085 TRA 5.3831 TC-16.6506 BAU 2.8919
RDE .3163 RRA .1829 RC3 .2042 FAU .08683
FDE -.5617 FRA 2.6358 FC3-5.7870 BSP 52419
BDE .3164 BRA 5.3862 BC316.6518 FSP 1804

MID-COURSE EXECUTION ACCURACY

SGT14823.4 SGR 601.6 SG3 520.9
RRT .0911 RRF .0541 RTF .9748
SGB14835.6 R23 -.0349 R13 .9748
SG114823.5 SG2 599.1 THA .21

ORBIT DETERMINATION ACCURACY

ST 2634.5 SR 510.6 SS 775.5
CRT .1760 CRS .4210 CST -.8174
LSA 2712.7 MSA 665.7 SSA 29.2
EL1 2636.1 EL2 502.3 ALF 2.03

LAUNCH DATE DEC 5 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 867.906 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.219 GAL -3.78 AZL 88.13 HCA 256.47 SMA 190.39 ECC .23469 INC 1.8733 V1 30.223
RP 206.77 LAP -1.82 LOP 329.37 VP 24.221 GAP -12.66 AZP 90.44 TAL 339.92 TAP 236.39 RCA 145.71 APO 235.08 V2 26.486
RC 329.784 GL 17.21 GP -3.09 ZAL 122.07 ZAP 29.53 ETS 173.35 ZAE 47.17 ETE 176.90 ZAC 84.41 ETC 256.35 CLP 29.38

PLANETOCENTRIC CONIC

C3 13.405 VHL 3.661 DLA 9.35 RAL 201.97 RAD 6567.5 VEL 11.610 PTH 2.03 VHP 5.826 DPA -1.01 RAP 178.14 ECC 1.2206

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 28	2417.42	-23.92	54.75	59.56	105.63	19 20 45	1817.4	-21.54	46.89
90.00	9 4 26	4472.77	8.73	187.32	56.32	62.95	10 18 59	3872.8	5.03	180.59
100.00	20 6 23	2140.29	-24.92	34.05	59.24	107.07	20 42 3	1540.3	-22.35	26.20
100.00	10 21 12	4225.13	9.65	168.62	55.82	61.57	11 31 37	3625.1	5.78	161.97
110.00	21 25 4	1894.08	-27.58	14.33	58.21	111.04	21 56 38	1294.1	-24.47	6.54
110.00	11 19 1	4044.11	12.08	153.43	54.37	57.78	12 26 25	3444.1	7.74	147.03

DIFFERENTIAL CORRECTIONS

TDE -.1217 TRA 5.6569 TC-16.2892 BAU 2.9194
RDE .3248 RRA .1795 RC3 .2156 FAU .08137
FDE -.5982 FRA 2.5956 FC3-5.2551 BSP 52849
BDE .3469 BRA 5.6598 BC316.2907 FSP 1719

MID-COURSE EXECUTION ACCURACY

SGT14926.6 SGR 603.7 SG3 493.5
RRT .0638 RRF .0257 RTF .9736
SGB14938.8 R23 -.0365 R13 .9736
SG114926.7 SG2 602.4 THA .15

ORBIT DETERMINATION ACCURACY

ST 2722.0 SR 515.5 SS 782.2
CRT .0936 CRS .4630 CST -.8378
LSA 2801.7 MSA 660.5 SSA 28.4
EL1 2722.4 EL2 513.1 ALF 1.05

LAUNCH DATE DEC 5 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 872.209 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.227 GAL -3.98 AZL 88.14 HCA 257.74 SMA 190.53 ECC .23618 INC 1.8560 V1 30.223
RP 206.73 LAP -1.81 LOP 330.64 VP 24.236 GAP -12.78 AZP 90.39 TAL 338.93 TAP 236.67 RCA 145.53 APO 235.53 V2 26.490
RC 330.595 GL 16.76 GP -3.03 ZAL 123.63 ZAP 29.05 ETS 173.34 ZAE 46.38 ETE 176.89 ZAC 84.64 ETC 256.30 CLP 28.91

PLANETOCENTRIC CONIC

C3 13.854 VHL 3.722 DLA 8.36 RAL 203.20 RAD 6567.5 VEL 11.629 PTH 2.04 VHP 5.915 DPA -1.28 RAP 178.89 ECC 1.2280

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 15	2392.46	-23.45	53.07	60.98	106.34	19 33 7	1792.5	-20.99	45.27
90.00	9 1 29	4512.12	9.94	189.58	57.99	63.35	10 16 41	3912.1	6.28	182.81
100.00	20 18 38	2117.05	-24.45	32.48	60.65	107.76	20 53 55	1517.0	-21.79	24.70
100.00	10 18 46	4262.77	10.86	170.75	57.51	61.98	11 29 49	3662.8	7.03	164.06
110.00	21 36 7	1874.58	-27.10	13.02	59.59	111.68	22 7 22	1274.6	-23.91	5.30
110.00	11 17 47	4078.00	13.31	155.30	56.07	58.22	12 25 45	3478.0	9.01	148.84

DIFFERENTIAL CORRECTIONS

TDE -.2540 TRA 5.9382 TC-15.9109 BAU 2.9472
RDE .3339 RRA .1757 RC3 .2253 FAU .07605
FDE -.6297 FRA 2.5511 FC3-4.7522 BSP 53283
BDE .4196 BRA 5.9408 BC315.9125 FSP 1635

MID-COURSE EXECUTION ACCURACY

SGT15026.7 SGR 605.9 SG3 467.0
RRT .0372 RRF -.0019 RTF .9722
SGB15039.0 R23 -.0382 R13 .9722
SG115026.8 SG2 605.5 THA .09

ORBIT DETERMINATION ACCURACY

ST 2821.6 SR 520.6 SS 786.5
CRT .0167 CRS .5007 CST -.8560
LSA 2902.4 MSA 653.0 SSA 27.6
EL1 2821.7 EL2 520.5 ALF .18

LAUNCH DATE DEC 5 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 876.506 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.234 GAL -4.19 AZL 88.16 HCA 259.01 SMA 190.67 ECC .23774 INC 1.8389 V1 30.223
RP 206.70 LAP -1.81 LOP 331.90 VP 24.250 GAP -12.90 AZP 90.35 TAL 337.93 TAP 236.94 RCA 145.34 APO 236.00 V2 26.493
RC 331.403 GL 16.31 GP -2.97 ZAL 125.18 ZAP 28.59 ETS 173.32 ZAE 45.61 ETE 176.88 ZAC 84.88 ETC 256.26 CLP 28.45

PLANETOCENTRIC CONIC

C3 14.340 VHL 3.787 DLA 7.38 RAL 204.42 RAD 6567.6 VEL 11.650 PTH 2.05 VHP 6.004 DPA -1.56 RAP 179.64 ECC 1.2360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 47	2368.55	-22.98	51.48	62.43	107.01	19 45 15	1768.6	-20.44	43.73
90.00	8 58 40	4551.21	11.12	191.84	59.71	63.79	10 14 31	3951.2	7.51	185.02
100.00	20 30 40	2094.78	-23.98	31.00	62.08	108.41	21 5 34	1494.8	-21.24	23.27
100.00	10 16 28	4300.22	12.05	172.90	59.23	62.44	11 28 8	3700.2	8.27	166.16
110.00	21 46 59	1855.91	-26.62	11.77	61.00	112.28	22 17 55	1255.9	-23.37	4.13
110.00	11 16 38	4111.85	14.51	157.18	57.81	58.71	12 25 9	3511.8	10.26	150.66

DIFFERENTIAL CORRECTIONS

TDE -.3881 TRA 6.2271 TC-15.5210 BAU 2.9759
RDE .3436 RRA .1716 RC3 .2333 FAU .07092
FDE -.6570 FRA 2.5025 FC3-4.2814 BSP 53666
BDE .5184 BRA 6.2295 BC315.5227 FSP 1552

MID-COURSE EXECUTION ACCURACY

SGT15125.6 SGR 608.3 SG3 441.2
RRT .0114 RRF -.0291 RTF .9706
SGB15137.8 R23 -.0401 R13 .9706
SG115125.6 SG2 608.3 THA .03

ORBIT DETERMINATION ACCURACY

ST 2931.3 SR 525.8 SS 788.4
CRT -.0541 CRS .5349 CST -.8715
LSA 3012.4 MSA 644.5 SSA 26.8
EL1 2931.5 EL2 525.0 ALF 179.43

LAUNCH DATE DEC 5 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 880.795 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.242 GAL -4.40 AZL 88.18 HCA 260.28 SMA 190.81 ECC .23938 INC 1.8219 V1 30.223
RP 206.68 LAP -1.80 LOP 333.17 VP 24.263 GAP -13.02 AZP 90.31 TAL 336.91 TAP 237.19 RCA 145.13 APO 236.48 V2 26.495
RC 332.208 GL 15.86 GP -2.91 ZAL 126.72 ZAP 28.13 ETS 173.30 ZAE 44.85 ETE 176.87 ZAC 85.11 ETC 256.21 CLP 28.00

PLANETOCENTRIC CONIC

C3 14.864 VHL 3.855 DLA 6.41 RAL 205.62 RAD 6567.6 VEL 11.673 PTH 2.05 VHP 6.096 DPA -1.85 RAP 180.41 ECC 1.2446

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 5	2345.68	-22.52	49.96	63.90	107.64	19 57 10	1745.7	-19.90	42.27
90.00	8 55 59	4590.05	12.28	194.10	61.47	64.28	10 12 29	3990.1	8.72	187.23
100.00	20 42 28	2073.50	-23.51	29.59	63.54	109.01	21 17 1	1473.5	-20.70	21.92
100.00	10 14 17	4337.47	13.21	175.05	60.99	62.94	11 26 35	3737.5	9.48	168.25
110.00	21 57 41	1838.10	-26.16	10.60	62.43	112.83	22 28 19	1238.1	-22.84	3.02
110.00	11 15 34	4145.63	15.70	159.08	59.58	59.24	12 24 39	3545.6	11.50	152.49

DIFFERENTIAL CORRECTIONS
TDE -.5229 TRA 6.5249 TC-15.1201 BAU 3.0051
RDE .3539 RRA .1670 RC3 .2398 FAU .06590
FDE -.6798 FRA 2.4496 FC3-3.8383 BSP 54045
BDE .6314 BRA 6.5270 BC315.1220 FSP 1470

MID-COURSE EXECUTION ACCURACY
SGT15223.1 SGR 610.9 SG3 416.2
RRT -.0137 RRF -.0555 RTF .9688
SGB15235.4 R23 .0423 R13 -.9688
SG115223.1 SG2 610.8 THA 179.97

ORBIT DETERMINATION ACCURACY
ST 3048.8 SR 531.2 SS 787.6
CRT -.1181 CRS .5657 CST -.8846
LSA 3129.4 MSA 635.3 SSA 26.1
EL1 3049.4 EL2 527.4 ALF 178.79

LAUNCH DATE DEC 5 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 885.076 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.250 GAL -4.62 AZL 88.19 HCA 261.55 SMA 190.95 ECC .24108 INC 1.8051 V1 30.223
RP 206.67 LAP -1.79 LOP 334.44 VP 24.275 GAP -13.14 AZP 90.27 TAL 335.88 TAP 237.43 RCA 144.91 APO 236.98 V2 26.497
RC 333.009 GL 15.41 GP -2.86 ZAL 128.24 ZAP 27.69 ETS 173.28 ZAE 44.10 ETE 176.86 ZAC 85.34 ETC 256.16 CLP 27.56

PLANETOCENTRIC CONIC

C3 15.430 VHL 3.928 DLA 5.45 RAL 206.82 RAD 6567.6 VEL 11.697 PTH 2.06 VHP 6.189 DPA -2.15 RAP 181.19 ECC 1.2539

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 8	2323.84	-22.06	48.52	65.40	108.22	20 8 52	1723.8	-19.37	40.89
90.00	8 53 27	4628.64	13.41	196.37	63.27	64.82	10 10 36	4028.6	9.91	189.45
100.00	20 54 3	2053.18	-23.05	28.25	65.03	109.57	21 28 16	1453.2	-20.18	20.64
100.00	10 12 13	4374.53	14.35	177.22	62.79	63.49	11 25 8	3774.5	10.68	170.35
110.00	22 8 11	1821.15	-25.71	9.49	63.88	113.35	22 38 33	1221.1	-22.32	1.97
110.00	11 14 34	4179.33	16.86	161.00	61.39	59.81	12 24 13	3579.3	12.72	154.33

DIFFERENTIAL CORRECTIONS
TDE -.6587 TRA 6.8310 TC-14.7078 BAU 3.0344
RDE .3647 RRA .1621 RC3 .2449 FAU .06101
FDE -.6984 FRA 2.3934 FC3-3.4233 BSP 54429
BDE .7529 BRA 6.8330 BC314.7099 FSP 1392

MID-COURSE EXECUTION ACCURACY
SGT15317.2 SGR 613.5 SG3 391.9
RRT -.0379 RRF -.0812 RTF .9667
SGB15329.5 R23 .0446 R13 -.9667
SG115317.2 SG2 613.1 THA 179.91

ORBIT DETERMINATION ACCURACY
ST 3171.7 SR 536.7 SS 784.2
CRT -.1757 CRS .5937 CST -.8955
LSA 3251.2 MSA 625.9 SSA 25.4
EL1 3173.1 EL2 528.1 ALF 178.25

LAUNCH DATE DEC 5 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 889.348 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.257 GAL -4.84 AZL 88.21 HCA 262.82 SMA 191.09 ECC .24286 INC 1.7884 V1 30.223
RP 206.67 LAP -1.77 LOP 335.71 VP 24.286 GAP -13.27 AZP 90.22 TAL 334.84 TAP 237.66 RCA 144.68 APO 237.50 V2 26.497
RC 333.807 GL 14.97 GP -2.81 ZAL 129.74 ZAP 27.26 ETS 173.26 ZAE 43.36 ETE 176.84 ZAC 85.57 ETC 256.12 CLP 27.13

PLANETOCENTRIC CONIC

C3 16.039 VHL 4.005 DLA 4.51 RAL 207.99 RAD 6567.6 VEL 11.723 PTH 2.07 VHP 6.283 DPA -2.45 RAP 181.97 ECC 1.2640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 58	2303.02	-21.61	47.16	66.91	108.75	20 20 21	1703.0	-18.85	39.58
90.00	8 51 2	4666.97	14.51	198.65	65.10	65.41	10 8 49	4067.0	11.07	191.66
100.00	21 5 26	2033.83	-22.61	26.99	66.53	110.09	21 39 19	1433.8	-19.67	19.43
100.00	10 10 15	4411.40	15.46	179.39	64.63	64.09	11 23 47	3811.4	11.85	172.46
110.00	22 18 31	1805.06	-25.27	8.44	65.36	113.83	22 48 36	1205.1	-21.83	.98
110.00	11 13 39	4212.94	18.00	162.94	63.24	60.44	12 23 52	3612.9	13.93	156.19

DIFFERENTIAL CORRECTIONS
TDE -.7960 TRA 7.1445 TC-14.2920 BAU 3.0650
RDE .3760 RRA .1569 RC3 .2486 FAU .05628
FDE -.7130 FRA 2.3329 FC3-3.0378 BSP 54765
BDE .8804 BRA 7.1462 BC314.2941 FSP 1314

MID-COURSE EXECUTION ACCURACY
SGT15409.9 SGR 616.2 SG3 368.3
RRT -.0615 RRF -.1064 RTF .9643
SGB15422.2 R23 .0471 R13 -.9643
SG115410.0 SG2 615.0 THA 179.86

ORBIT DETERMINATION ACCURACY
ST 3297.9 SR 542.2 SS 778.1
CRT -.2276 CRS .6194 CST -.9046
LSA 3375.7 MSA 616.5 SSA 24.7
EL1 3300.3 EL2 527.6 ALF 177.80

LAUNCH DATE DEC 5 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 893.610 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.265 GAL -5.07 AZL 88.23 HCA 264.09 SMA 191.23 ECC .24472 INC 1.7718 V1 30.223
RP 206.68 LAP -1.76 LOP 336.98 VP 24.296 GAP -13.40 AZP 90.18 TAL 333.78 TAP 237.87 RCA 144.43 APO 238.03 V2 26.496
RC 334.601 GL 14.52 GP -2.76 ZAL 131.22 ZAP 26.84 ETS 173.24 ZAE 42.63 ETE 176.83 ZAC 85.81 ETC 256.08 CLP 26.71

PLANETOCENTRIC CONIC

C3 16.693 VHL 4.086 DLA 3.58 RAL 209.16 RAD 6567.7 VEL 11.751 PTH 2.07 VHP 6.379 DPA -2.77 RAP 182.77 ECC 1.2747

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 34	2283.21	-21.17	45.88	68.45	109.25	20 31 38	1683.2	-18.35	38.34
90.00	8 48 43	4705.06	15.57	200.94	66.97	66.05	10 7 9	4105.1	12.20	193.88
100.00	21 16 35	2015.44	-22.17	25.79	68.06	110.58	21 50 11	1415.4	-19.17	18.28
100.00	10 8 24	4448.06	16.54	181.58	66.51	64.74	11 22 32	3848.1	13.00	174.58
110.00	22 28 40	1789.83	-24.85	7.46	66.86	114.27	22 58 30	1189.8	-21.36	.05
110.00	11 12 48	4246.43	19.11	164.90	65.13	61.11	12 23 34	3646.4	15.11	158.06

DIFFERENTIAL CORRECTIONS
TDE -.9337 TRA 7.4675 TC-13.8707 BAU 3.0961
RDE .3879 RRA .1512 RC3 .2510 FAU .05165
FDE -.7235 FRA 2.2684 FC3-2.6787 BSP 55101
BDE 1.0111 BRA 7.4690 BC313.8730 FSP 1237

MID-COURSE EXECUTION ACCURACY
SGT15500.8 SGR 619.0 SG3 345.4
RRT -.0843 RRF -.1310 RTF .9615
SGB15513.1 R23 .0500 R13 -.9616
SG115500.8 SG2 616.8 THA 179.81

ORBIT DETERMINATION ACCURACY
ST 3426.1 SR 547.8 SS 769.3
CRT -.2738 CRS .6428 CST -.9119
LSA 3501.5 MSA 607.5 SSA 24.1
EL1 3429.4 EL2 526.3 ALF 177.43

LAUNCH DATE DEC 5 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 897.860 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.273 GAL -5.30 AZL 88.24 HCA 265.36 SMA 191.37 ECC .24666 INC 1.7552 V1 30.223
RP 206.69 LAP -1.75 LOP 330.25 VP 24.304 GAP -13.54 AZP 90.14 TAL 332.72 TAP 238.07 RCA 144.17 APO 238.58 V2 26.494
RC 335.390 GL 14.08 GP -2.71 ZAL 132.69 ZAP 26.43 ETS 173.22 ZAE 41.92 ETE 176.81 ZAC 86.04 ETC 256.04 CLP 26.30

PLANETOCENTRIC CONIC

C3 17.396 VHL 4.171 DLA 2.67 RAL 210.31 RAD 6567.7 VEL 11.780 PTH 2.08 VHP 6.477 DPA -3.08 RAP 183.57 ECC 1.2863

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 58	2264.39	-20.75	44.66	70.01	109.72	20 42 42	1664.4	-17.87	37.17
90.00	8 46 32	4742.89	16.60	203.24	68.87	66.73	10 5 35	4142.9	13.31	196.11
100.00	21 27 33	1990.00	-21.75	24.67	69.61	111.03	22 0 51	1398.0	-18.70	17.21
100.00	10 6 38	4484.51	17.58	183.78	68.42	65.43	11 21 22	3884.5	14.12	176.70
110.00	22 38 39	1775.47	-24.44	6.54	68.38	114.68	23 8 14	1175.5	-20.91	359.18
110.00	11 12 1	4279.81	20.20	166.88	67.05	61.82	12 23 21	3679.8	16.27	159.95

DIFFERENTIAL CORRECTIONS

TDE-1.0716 TRA 7.7983 TC-13.4489 BAU 3.1284
RDE .4004 RRA .1451 RC3 .2524 FAU .04715
FDE -.7303 FRA 2.2001 FC3-2.3466 BSP 55417
BDE 1.1439 BRA 7.7997 BC313.4512 FSP 1163

MID-COURSE EXECUTION ACCURACY

SGT15589.6 SGR 621.8 SG3 323.2
RRT -.1065 RRF -.1549 RTF .9583
SGB15602.0 R23 .0530 R13 -.9583
SG115589.8 SG2 618.2 THA 179.76

ORBIT DETERMINATION ACCURACY

ST 3554.0 SR 553.3 SS 757.8
CRT -.3149 CRS .6644 CST -.9177
LSA 3626.6 MSA 598.9 SSA 23.5
EL1 3558.4 EL2 524.5 ALF 177.13

LAUNCH DATE DEC 5 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 902.099 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.281 GAL -5.54 AZL 88.26 HCA 266.63 SMA 191.52 ECC .24869 INC 1.7388 V1 30.223
RP 206.72 LAP -1.74 LOP 339.52 VP 24.312 GAP -13.68 AZP 90.10 TAL 331.64 TAP 238.26 RCA 143.89 APO 239.15 V2 26.491
RC 336.176 GL 13.65 GP -2.67 ZAL 134.13 ZAP 26.04 ETS 173.20 ZAE 41.21 ETE 176.80 ZAC 86.28 ETC 256.01 CLP 25.91

PLANETOCENTRIC CONIC

C3 18.150 VHL 4.260 DLA 1.78 RAL 211.45 RAD 6567.7 VEL 11.812 PTH 2.09 VHP 6.576 DPA -3.41 RAP 184.38 ECC 1.2987

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 16 8	2246.55	-20.33	43.52	71.60	110.14	20 53 35	1646.5	-17.40	36.06
90.00	8 44 26	4780.47	17.60	205.55	70.81	67.45	10 4 6	4180.5	14.39	198.34
100.00	21 38 18	1981.51	-21.34	23.61	71.18	111.44	22 11 20	1381.5	-18.24	16.19
100.00	10 4 57	4520.74	18.60	186.00	70.37	66.17	11 20 18	3920.7	15.22	178.84
110.00	22 48 27	1761.97	-24.05	5.69	69.92	115.05	23 17 49	1162.0	-20.48	358.37
110.00	11 11 18	4313.05	21.25	168.88	69.01	62.58	12 23 11	3713.1	17.41	161.86

DIFFERENTIAL CORRECTIONS

TDE-1.2117 TRA 8.1385 TC-13.0261 BAU 3.1614
RDE .4133 RRA .1385 RC3 .2527 FAU .04278
FDE -.7339 FRA 2.1275 FC3-2.0406 BSP 55704
BDE 1.2803 BRA 8.1396 BC313.0286 FSP 1090

MID-COURSE EXECUTION ACCURACY

SGT15676.6 SGR 624.6 SG3 301.7
RRT -.1281 RRF -.1785 RTF .9546
SGB15689.1 R23 .0566 R13 -.9546
SG115676.8 SG2 619.4 THA 179.71

ORBIT DETERMINATION ACCURACY

ST 3682.2 SR 558.7 SS 744.0
CRT -.3521 CRS .6848 CST -.9224
LSA 3751.7 MSA 590.8 SSA 22.9
EL1 3687.6 EL2 522.2 ALF 176.88

LAUNCH DATE DEC 5 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 906.325 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.289 GAL -5.78 AZL 88.28 HCA 267.89 SMA 191.66 ECC .25080 INC 1.7223 V1 30.223
RP 206.75 LAP -1.72 LOP 340.79 VP 24.318 GAP -13.82 AZP 90.06 TAL 330.54 TAP 238.44 RCA 143.59 APO 239.73 V2 26.488
RC 336.957 GL 13.22 GP -2.62 ZAL 135.55 ZAP 25.65 ETS 173.18 ZAE 40.51 ETE 176.78 ZAC 86.52 ETC 255.98 CLP 25.52

PLANETOCENTRIC CONIC

C3 18.958 VHL 4.354 DLA .90 RAL 212.57 RAD 6567.8 VEL 11.847 PTH 2.10 VHP 6.678 DPA -3.73 RAP 185.21 ECC 1.3120

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 27 6	2229.67	-19.93	42.44	73.20	110.54	21 4 15	1629.7	-16.96	35.03
90.00	8 42 26	4817.79	18.56	207.87	72.79	68.22	10 2 44	4217.8	15.44	200.58
100.00	21 48 51	1965.94	-20.95	22.62	72.77	111.82	22 21 37	1365.9	-17.81	15.24
100.00	10 3 21	4556.75	19.57	188.23	72.35	66.94	11 19 18	3956.8	16.28	180.98
110.00	22 58 4	1749.32	-23.69	4.89	71.48	115.40	23 27 13	1149.3	-20.07	357.61
110.00	11 10 38	4346.14	22.28	170.90	71.00	63.38	12 23 4	3746.1	18.52	163.78

DIFFERENTIAL CORRECTIONS

TDE-1.3519 TRA 8.4863 TC-12.6061 BAU 3.1957
RDE .4268 RRA .1316 RC3 .2520 FAU .03853
FDE -.7342 FRA 2.0509 FC3-1.7595 BSP 55959
BDE 1.4177 BRA 8.4873 BC312.6086 FSP 1017

MID-COURSE EXECUTION ACCURACY

SGT15761.0 SGR 627.3 SG3 280.8
RRT -.1490 RRF -.2017 RTF .9503
SGB15773.5 R23 .0606 R13 -.9503
SG115761.3 SG2 620.3 THA 179.66

ORBIT DETERMINATION ACCURACY

ST 3807.8 SR 564.0 SS 727.8
CRT -.3851 CRS .7039 CST -.9258
LSA 3873.9 MSA 583.2 SSA 22.3
EL1 3814.1 EL2 519.7 ALF 176.67

LAUNCH DATE DEC 5 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 910.537 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.296 GAL -6.03 AZL 88.29 HCA 269.16 SMA 191.81 ECC .25301 INC 1.7059 V1 30.223
RP 206.79 LAP -1.71 LOP 342.06 VP 24.324 GAP -13.97 AZP 90.02 TAL 329.43 TAP 238.60 RCA 143.28 APO 240.34 V2 26.483
RC 337.733 GL 12.79 GP -2.58 ZAL 136.94 ZAP 25.27 ETS 173.15 ZAE 39.82 ETE 176.76 ZAC 86.75 ETC 255.95 CLP 25.15

PLANETOCENTRIC CONIC

C3 19.824 VHL 4.462 DLA .05 RAL 213.68 RAD 6567.8 VEL 11.883 PTH 2.11 VHP 6.781 DPA -4.07 RAP 186.04 ECC 1.3263

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 37 51	2213.74	-19.55	41.43	74.82	110.90	21 14 45	1613.7	-16.53	34.05
90.00	8 40 31	4854.85	19.48	210.20	74.79	69.03	10 1 26	4254.8	16.45	202.83
100.00	21 59 13	1951.29	-20.58	21.69	74.38	112.17	22 31 44	1351.3	-17.39	14.35
100.00	10 1 50	4592.53	20.51	190.47	74.36	67.76	11 18 23	3992.5	17.31	183.14
110.00	23 7 31	1737.52	-23.34	4.15	73.06	115.71	23 36 28	1137.5	-19.69	356.91
110.00	11 10 2	4379.07	23.27	172.94	73.03	64.22	12 23 1	3779.1	19.61	165.72

DIFFERENTIAL CORRECTIONS

TDE-1.4923 TRA 8.8433 TC-12.1898 BAU 3.2313
RDE .4407 RRA .1243 RC3 .2505 FAU .03437
FDE -.7310 FRA 1.9701 FC3-1.5009 BSP 56182
BDE 1.5561 BRA 8.8442 BC312.1924 FSP 946

MID-COURSE EXECUTION ACCURACY

SGT15843.6 SGR 630.1 SG3 260.6
RRT -.1694 RRF -.2243 RTF .9451
SGB15856.1 R23 .0649 R13 -.9451
SG115843.9 SG2 621.0 THA 179.61

ORBIT DETERMINATION ACCURACY

ST 3930.6 SR 569.2 SS 709.2
CRT -.4146 CRS .7218 CST -.9283
LSA 3993.0 MSA 576.0 SSA 21.8
EL1 3937.8 EL2 517.1 ALF 176.50

LAUNCH DATE DEC 5 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 914.734 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.304 GAL -6.29 AZL 88.31 HCA 270.43 SMA 191.95 ECC .25531 INC 1.6895 V1 30.223
RP 206.84 LAP -1.69 LOP 343.33 VP 24.328 GAP -14.12 AZP 89.99 TAL 328.32 TAP 238.75 RCA 142.95 APO 240.96 V2 26.477
RC 338.506 GL 12.37 GP -2.54 ZAL 138.32 ZAP 24.91 ETS 173.13 ZAE 39.15 ETE 176.74 ZAC 86.99 ETC 255.92 CLP 24.78

PLANETOCENTRIC CONIC

C3 20.750 VHL 4.555 DLA -.79 RAL 214.78 RAD 6567.8 VEL 11.922 PTH 2.12 VHP 6.886 DPA -4.41 RAP 186.88 ECC 1.3415

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 48 25	2198.74	-19.18	40.48	76.45	111.24	21 25 3	1598.7	-16.13	33.14
90.00	8 38 41	4891.64	20.36	212.54	76.83	69.88	10 0 13	4291.6	17.43	205.08
100.00	22 9 23	1937.54	-20.22	20.83	76.01	112.49	22 41 41	1337.5	-17.00	13.52
100.00	10 0 24	4628.08	21.41	192.73	76.40	68.62	11 17 32	4028.1	18.31	185.30
110.00	23 16 47	1726.55	-23.02	3.46	74.65	116.00	23 45 34	1126.5	-19.33	356.26
110.00	11 9 29	4411.83	24.22	175.01	75.10	65.11	12 23 1	3811.8	20.66	167.67

DIFFERENTIAL CORRECTIONS
TDE-1.6333 TRA 9.2110 TC-11.7758 BAU 3.2674
RDE .4552 RRA .1164 RC3 .2483 FAU .03030
FDE -.7246 FRA 1.8855 FC3-1.2640 BSP 56401
BDE 1.6955 BRA 9.2117 BC311.7785 FSP 877

MID-COURSE EXECUTION ACCURACY
SGT15923.8 SGR 632.8 SG3 241.0
RRT -.1891 RRF -.2464 RTF .9389
SGB15936.4 R23 .0698 R13 -.9389
SG115924.3 SG2 621.4 THA 179.57

ORBIT DETERMINATION ACCURACY
ST 4050.5 SR 574.3 SS 688.3
CRT -.4409 CRS .7388 CST -.9298
LSA 4109.2 MSA 569.4 SSA 21.3
EL1 4058.5 EL2 514.4 ALF 176.36

LAUNCH DATE DEC 5 1964 FLIGHT TIME 422.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 918.915 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.312 GAL -6.55 AZL 88.33 HCA 271.70 SMA 192.10 ECC .25771 INC 1.6731 V1 30.223
RP 206.90 LAP -1.67 LOP 344.60 VP 24.332 GAP -14.28 AZP 89.95 TAL 327.18 TAP 238.88 RCA 142.59 APO 241.61 V2 26.470
RC 339.274 GL 11.96 GP -2.50 ZAL 139.67 ZAP 24.55 ETS 173.11 ZAE 38.48 ETE 176.72 ZAC 87.23 ETC 255.90 CLP 24.43

PLANETOCENTRIC CONIC

C3 21.740 VHL 4.663 DLA -1.61 RAL 215.86 RAD 6567.9 VEL 11.963 PTH 2.13 VHP 6.994 DPA -4.75 RAP 187.72 ECC 1.3578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 58 46	2184.65	-18.83	39.60	78.10	111.55	21 35 11	1584.7	-15.74	32.28
90.00	8 36 57	4928.16	21.19	214.89	78.90	70.77	9 59 5	4328.2	18.38	207.35
100.00	22 19 22	1924.67	-19.89	20.02	77.65	112.79	22 51 27	1324.7	-16.63	12.74
100.00	9 59 2	4663.38	22.27	195.00	78.48	69.52	11 16 45	4063.4	19.28	187.48
110.00	23 25 54	1716.41	-22.71	2.83	76.26	116.26	23 54 30	1116.4	-19.00	355.66
110.00	11 9 0	4444.41	25.14	177.10	77.20	66.04	12 23 4	3844.4	21.69	169.66

DIFFERENTIAL CORRECTIONS
TDE-1.7748 TRA 9.5870 TC-11.3713 BAU 3.3058
RDE .4701 RRA .1082 RC3 .2454 FAU .02633
FDE -.7154 FRA 1.7967 FC3-1.0485 BSP 56588
BDE 1.8361 BRA 9.5876 BC311.3740 FSP 809

MID-COURSE EXECUTION ACCURACY
SGT16003.0 SGR 635.5 SG3 222.1
RRT -.2084 RRF -.2681 RTF .9315
SGB16015.6 R23 .0753 R13 -.9315
SG116003.6 SG2 621.5 THA 179.53

ORBIT DETERMINATION ACCURACY
ST 4166.3 SR 579.1 SS 665.4
CRT -.4646 CRS .7552 CST -.9305
LSA 4221.2 MSA 563.2 SSA 20.8
EL1 4175.1 EL2 511.8 ALF 176.25

LAUNCH DATE DEC 5 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 923.078 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.320 GAL -6.82 AZL 88.34 HCA 272.96 SMA 192.25 ECC .26021 INC 1.6567 V1 30.223
RP 206.97 LAP -1.65 LOP 345.86 VP 24.334 GAP -14.44 AZP 89.91 TAL 326.04 TAP 239.00 RCA 142.22 APO 242.27 V2 26.462
RC 340.039 GL 11.56 GP -2.46 ZAL 141.00 ZAP 24.20 ETS 173.08 ZAE 37.82 ETE 176.70 ZAC 87.47 ETC 255.88 CLP 24.08

PLANETOCENTRIC CONIC

C3 22.799 VHL 4.775 DLA -2.40 RAL 216.92 RAD 6567.9 VEL 12.007 PTH 2.14 VHP 7.103 DPA -5.10 RAP 188.58 ECC 1.3752

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 8 56	2171.45	-18.50	38.77	79.77	111.83	21 45 8	1571.5	-15.37	31.49
90.00	8 35 17	4964.41	21.99	217.25	80.99	71.69	9 58 1	4364.4	19.28	209.62
100.00	22 29 10	1912.67	-19.57	19.27	79.30	113.06	23 1 2	1312.7	-16.28	12.02
100.00	9 57 44	4698.42	23.08	197.28	80.58	70.46	11 16 3	4098.4	20.21	189.67
110.00	23 34 50	1707.07	-22.43	2.25	77.89	116.50	24 3 17	1107.1	-18.69	355.11
110.00	11 8 33	4476.79	26.02	179.20	79.33	67.01	12 23 10	3876.8	22.68	171.64

DIFFERENTIAL CORRECTIONS
TDE-1.9159 TRA 9.9729 TC-10.9711 BAU 3.3448
RDE .4855 RRA .0995 RC3 .2419 FAU .02244
FDE -.7035 FRA 1.7038 FC3 -.8521 BSP 56744
BDE 1.9765 BRA 9.9734 BC310.9738 FSP 742

MID-COURSE EXECUTION ACCURACY
SGT16078.4 SGR 638.0 SG3 203.8
RRT -.2270 RRF -.2893 RTF .9224
SGB16091.1 R23 .0817 R13 -.9224
SG116079.1 SG2 621.4 THA 179.48

ORBIT DETERMINATION ACCURACY
ST 4277.4 SR 583.8 SS 640.8
CRT -.4857 CRS .7711 CST -.9302
LSA 4328.5 MSA 557.6 SSA 20.4
EL1 4286.9 EL2 509.1 ALF 176.15

LAUNCH DATE DEC 5 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 927.223 EARTH TO MARS

RL 147.41 LAL -.00 LOL 72.90 VL 33.328 GAL -7.09 AZL 88.36 HCA 274.23 SMA 192.40 ECC .26282 INC 1.6403 V1 30.223
RP 207.04 LAP -1.64 LOP 347.13 VP 24.335 GAP -14.61 AZP 89.88 TAL 324.88 TAP 239.11 RCA 141.83 APO 242.96 V2 26.453
RC 340.800 GL 11.16 GP -2.42 ZAL 142.30 ZAP 23.87 ETS 173.06 ZAE 37.17 ETE 176.67 ZAC 87.71 ETC 255.86 CLP 23.75

PLANETOCENTRIC CONIC

C3 23.929 VHL 4.892 DLA -3.18 RAL 217.97 RAD 6568.0 VEL 12.054 PTH 2.15 VHP 7.215 DPA -5.45 RAP 189.44 ECC 1.3938

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 18 55	2159.11	-18.18	38.00	81.45	112.09	21 54 54	1559.1	-15.03	30.74
90.00	8 33 41	5000.38	22.74	219.82	83.11	72.65	9 57 1	4400.4	20.15	211.90
100.00	22 38 47	1901.50	-19.27	18.58	80.97	113.30	23 10 28	1301.5	-15.95	11.36
100.00	9 56 30	4733.22	23.86	199.58	82.72	71.43	11 15 24	4133.2	21.10	191.87
110.00	23 43 37	1698.52	-22.17	1.73	79.53	116.71	24 11 56	1098.5	-18.40	354.61
110.00	11 8 10	4508.96	26.86	181.33	81.49	68.01	12 23 18	3909.0	23.63	173.65

DIFFERENTIAL CORRECTIONS
TDE-2.0584 TRA10.3677 TC-10.5820 BAU 3.3862
RDE .5014 RRA .0904 RC3 .2380 FAU .01864
FDE -.6886 FRA 1.6068 FC3 -.6745 BSP 56865
BDE 2.1186 BRA10.3681 BC310.5847 FSP 678

MID-COURSE EXECUTION ACCURACY
SGT16152.8 SGR 640.6 SG3 186.1
RRT -.2452 RRF -.3099 RTF .9112
SGB16165.5 R23 .0888 R13 -.9112
SG116153.5 SG2 621.0 THA 179.44

ORBIT DETERMINATION ACCURACY
ST 4384.2 SR 588.2 SS 614.2
CRT -.5049 CRS .7866 CST -.9292
LSA 4431.6 MSA 552.1 SSA 19.9
EL1 4394.4 EL2 506.5 ALF 176.07

LAUNCH DATE DEC 5 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 6 1966

HELIOCENTRIC CONIC DISTANCE 931.347 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.336	GAL	-7.38	AZL	88.38	HCA	275.49	SMA	192.55	ECC	.26554	INC	1.6238
RP	207.13	LAP	-1.62	LOP	348.39	VP	24.336	GAP	-14.79	AZP	89.84	TAL	323.72	TAP	239.21	RCA	141.42	APO	243.67
RC	341.558	GL	10.77	GP	-2.39	ZAL	143.58	ZAP	23.54	ETS	173.04	ZAE	36.54	ETE	176.65	ZAC	87.95	ETC	255.85

V1	30.223	V2	26.444	CLP	23.43														

PLANETOCENTRIC CONIC

C3	25.136	VHL	5.014	DLA	-3.94	RAL	219.01	RAD	6568.0	VEL	12.104	PTH	2.17	VHP	7.329	DPA	-5.81	RAP	190.32
ECC	1.4137																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 28 43	2147.61	-17.89	37.29	83.15	112.32	22 4 31	1547.6	-14.71	30.05
90.00	8 32 9	5036.06	23.44	222.00	85.26	73.64	9 56 6	4436.1	20.98	214.19
100.00	22 48 13	1891.15	-18.99	17.94	82.66	113.53	23 19 44	1291.2	-15.65	10.74
100.00	9 55 21	4767.74	24.58	201.89	84.88	72.44	11 14 48	4167.7	21.95	194.08
110.00	23 52 14	1690.74	-21.93	1.25	81.18	116.90	24 20 25	1090.7	-18.14	354.16
110.00	11 7 49	4540.92	27.65	183.47	83.68	69.05	12 23 30	3940.9	24.55	175.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.2005	TRA	10.7728	TC	-10.1998	BAU	3.4286	SGT	16223.8	SGR	643.0	SG3	169.0	ST	4485.9	SR	592.3	SS	586.0
RDE	.5177	RRA	.0807	RC3	.2336	FAU	.01493	RRT	-.2628	RRF	-.3300	RTF	.8973	CRT	-.5221	CRS	.8020	CST	-.9272
FDE	-.6713	FRA	1.5054	FC3	-.5141	BSP	56953	SGB	16236.5	R23	.0972	R13	-.8973	LSA	4529.7	MSA	547.1	SSA	19.5
BDE	2.2605	BRA	10.7731	BC3	10.2025	FSP	614	SG1	16224.7	SG2	620.4	THA	179.40	EL1	4496.7	EL2	504.0	ALF	176.01

LAUNCH DATE DEC 5 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 8 1966

HELIOCENTRIC CONIC DISTANCE 935.451 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.344	GAL	-7.66	AZL	88.39	HCA	276.75	SMA	192.70	ECC	.26838	INC	1.6073
RP	207.22	LAP	-1.60	LOP	349.66	VP	24.335	GAP	-14.97	AZP	89.81	TAL	322.53	TAP	239.29	RCA	140.98	APO	244.41
RC	342.314	GL	10.39	GP	-2.36	ZAL	144.84	ZAP	23.22	ETS	173.01	ZAE	35.91	ETE	176.62	ZAC	88.19	ETC	255.84

V1	30.223	V2	26.433	CLP	23.11														

PLANETOCENTRIC CONIC

C3	26.424	VHL	5.140	DLA	-4.67	RAL	220.03	RAD	6568.1	VEL	12.157	PTH	2.18	VHP	7.445	DPA	-6.18	RAP	191.20
ECC	1.4349																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 21	2136.92	-17.61	36.62	84.85	112.54	22 13 58	1536.9	-14.40	29.41
90.00	8 30 42	5071.45	24.10	224.38	87.42	74.67	9 55 13	4471.5	21.76	216.49
100.00	22 57 29	1881.60	-18.73	17.35	84.35	113.73	23 28 51	1281.6	-15.36	10.17
100.00	9 54 14	4802.00	25.27	204.20	87.06	73.47	11 14 16	4202.0	22.76	196.30
110.00	0 4 38	1683.71	-21.71	.82	82.84	117.07	0 32 42	1083.7	-17.91	353.75
110.00	11 7 31	4572.66	28.41	185.63	85.90	70.13	12 23 44	3972.7	25.44	177.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.3427	TRA	11.1890	TC3	-9.8272	BAU	3.4726	SGT	16293.1	SGR	645.3	SG3	152.7	ST	4582.8	SR	596.2	SS	556.3
RDE	.5344	RRA	.0706	RC3	.2288	FAU	.01126	RRT	-.2800	RRF	-.3491	RTF	.8794	CRT	-.5375	CRS	.8174	CST	-.9241
FDE	-.6514	FRA	1.3999	FC3	-.3690	BSP	57034	SGB	16305.9	R23	.1068	R13	-.8795	LSA	4623.0	MSA	542.3	SSA	19.1
BDE	2.4029	BRA	11.1892	BC3	9.8298	FSP	552	SG1	16294.1	SG2	619.5	THA	179.36	EL1	4594.1	EL2	501.5	ALF	175.95

LAUNCH DATE DEC 5 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 10 1966

HELIOCENTRIC CONIC DISTANCE 939.531 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.352	GAL	-7.96	AZL	88.41	HCA	278.02	SMA	192.85	ECC	.27133	INC	1.5907
RP	207.32	LAP	-1.58	LOP	350.92	VP	24.333	GAP	-15.16	AZP	89.78	TAL	321.34	TAP	239.36	RCA	140.52	APO	245.17
RC	343.066	GL	10.02	GP	-2.32	ZAL	146.07	ZAP	22.92	ETS	172.99	ZAE	35.29	ETE	176.59	ZAC	88.43	ETC	255.83

V1	30.223	V2	26.421	CLP	22.81														

PLANETOCENTRIC CONIC

C3	27.799	VHL	5.272	DLA	-5.39	RAL	221.04	RAD	6568.1	VEL	12.214	PTH	2.19	VHP	7.564	DPA	-6.54	RAP	192.09
ECC	1.4575																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 48	2127.01	-17.35	36.01	86.57	112.73	22 23 15	1527.0	-14.12	28.82
90.00	8 29 19	5106.55	24.71	226.77	89.61	75.71	9 54 25	4506.6	22.51	218.80
100.00	23 6 36	1872.82	-18.49	16.81	86.06	113.92	23 37 48	1272.8	-15.10	9.65
100.00	9 53 12	4835.98	25.91	206.52	89.26	74.54	11 13 48	4236.0	23.53	198.53
110.00	0 12 56	1677.41	-21.52	.43	84.51	117.23	0 40 54	1077.4	-17.70	353.39
110.00	11 7 16	4604.16	29.12	187.81	88.15	71.24	12 24 0	4004.2	26.28	179.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.4848	TRA	11.6154	TC3	-9.4654	BAU	3.5187	SGT	16360.3	SGR	647.5	SG3	137.0	ST	4674.2	SR	599.8	SS	525.3
RDE	.5516	RRA	.0601	RC3	.2238	FAU	.80767	RRT	-.2966	RRF	-.3672	RTF	.8564	CRT	-.5514	CRS	.8331	CST	-.9197
FDE	-.6293	FRA	1.2902	FC3	-.2390	BSP	57072	SGB	16373.1	R23	.1181	R13	-.8564	LSA	4711.1	MSA	537.9	SSA	18.7
BDE	2.5453	BRA	11.6156	BC3	9.4680	FSP	491	SG1	16361.5	SG2	618.3	THA	179.33	EL1	4686.0	EL2	499.1	ALF	175.91

LAUNCH DATE DEC 5 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 12 1966

HELIOCENTRIC CONIC DISTANCE 943.586 EARTH TO MARS

RL	147.41	LAL	-.00	LOL	72.90	VL	33.361	GAL	-8.27	AZL	88.43	HCA	279.28	SMA	193.00	ECC	.27441	INC	1.5740
RP	207.43	LAP	-1.55	LOP	352.18	VP	24.331	GAP	-15.35	AZP	89.75	TAL	320.14	TAP	239.41	RCA	140.04	APO	245.96
RC	343.815	GL	9.65	GP	-2.29	ZAL	147.29	ZAP	22.62	ETS	172.97	ZAE	34.68	ETE	176.56	ZAC	88.67	ETC	255.83

V1	30.223	V2	26.408	CLP	22.51														

PLANETOCENTRIC CONIC

C3	29.264	VHL	5.410	DLA	-6.09	RAL	222.04	RAD	6568.2	VEL	12.273	PTH	2.21	VHP	7.685	DPA	-6.91	RAP	192.99
ECC	1.4816																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 5	2117.87	-17.11	35.45	88.30	112.91	22 32 23	1517.9	-13.86	28.28
90.00	8 27 59	5141.36	25.27	229.17	91.82	76.79	9 53 40	4541.4	23.21	221.11
100.00	23 15 32	1864.78	-18.26	16.31	87.77	114.08	23 46 37	1264.8	-14.86	9.18
100.00	9 52 13	4869.68	26.50	208.85	91.48	75.63	11 13 22	4269.7	24.26	200.77
110.00	0 21 6	1671.81	-21.34	.09	86.19	117.36	0 48 58	1071.8	-17.51	353.06
110.00	11 7 4	4635.41	29.78	190.00	90.42	72.39	12 24 19	4035.4	27.08	181.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.6279	TRA	12.0516	TC3	-9.1161	BAU	3.5675	SGT	16425.8	SGR	649.6	SG3	122.1	ST	4760.8	SR	603.1	SS	493.1
RDE	.5691	RRA	.0491	RC3	.2185	FAU	.00415	RRT	-.3129	RRF	-.3836	RTF	.8260	CRT	-.5641	CRS	.8491	CST	-.9139
FDE	-.6048	FRA	1.1760	FC3	-.1228	BSP	57051	SGB	16438.7	R23	.1313	R13	-.8260	LSA	4794.5	MSA	533.6	SSA	18.3
BDE	2.6888	BRA	12.0517	BC3	9.1187	FSP	432	SG1	16427.1	SG2	616.9	THA	179.29	EL1	4773.1	EL2	496.7	ALF	175.87

LAUNCH DATE DEC 6 1964 FLIGHT TIME 140.00 ARRIVAL DATE APR 25 1965

HELIOCENTRIC CONIC DISTANCE 376.360 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	35.893	GAL	-1.98	AZL	88.69	HCA	115.47	SMA	258.94	ECC	.43191	INC	1.3146	V1	30.227
RP	244.91	LAP	1.19	LOP	189.39	VP	23.901	GAP	25.41	AZP	90.57	TAL	353.43	TAP	108.90	RCA	147.10	APO	370.78	V2	22.396
RC	126.220	GL	8.18	GP	1.60	ZAL	99.99	ZAP	175.84	ETS	156.14	ZAE	153.31	ETE	.59	ZAC	90.46	ETC	256.03	CLP	176.16

PLANETOCENTRIC CONIC

C3	33.444	VHL	5.783	DLA	9.88	RAL	177.78	RAD	6568.3	VEL	12.442	PTH	2.25	VHP	11.551	DPA	.42	RAP	186.27	ECC	1.5504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 47	2652.80	-27.24	71.17	51.71	98.07	17 40 0	2052.8	-25.84	62.78
90.00	7 28 17	4673.54	14.69	199.05	45.76	65.52	8 46 11	4073.5	11.26	192.04
100.00	18 22 1	2374.73	-28.57	50.49	51.48	99.17	19 1 35	1774.7	-27.01	42.03
100.00	8 44 45	4426.85	15.92	180.31	45.17	64.36	9 58 32	3826.8	12.34	173.35
110.00	19 41 20	2126.48	-32.16	30.85	50.69	102.27	20 16 47	1526.5	-30.14	22.22
110.00	9 41 54	4247.85	19.16	164.98	43.42	61.13	10 52 42	3647.9	15.16	158.14

DIFFERENTIAL CORRECTIONS

TDE	.5800	TRA	-1.5498	TC3	.8062	BAU	.3607
RDE	-.5665	RRA	-.2542	RC3	-.0298	FAU	.05499
FDE	-.1211	FRA	.7266	FC3	-1.4235	BSP	5982
BDE	.8107	BRA	1.5705	BC3	.8068	FSP	416

MID-COURSE EXECUTION ACCURACY

SGT	1905.0	SGR	617.7	SG3	156.0		
RRT	.0373	RRF	-.0563	RTF	-.7977		
SGB	2002.7	R23	-.0231	R13	-.7978		
SG1	1905.2	SG2	617.2	THA	.77		

ORBIT DETERMINATION ACCURACY

ST	741.4	SR	566.4	SS	254.2
CRT	-.6826	CRS	-.3504	CST	.9151
LSA	885.9	MSA	386.3	SSA	33.6
EL1	862.5	EL2	355.8	ALF	145.88

LAUNCH DATE DEC 6 1964 FLIGHT TIME 142.00 ARRIVAL DATE APR 27 1965

HELIOCENTRIC CONIC DISTANCE 377.907 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	35.752	GAL	-1.81	AZL	88.70	HCA	116.38	SMA	253.95	ECC	.42057	INC	1.2995	V1	30.227
RP	244.68	LAP	1.16	LOP	190.30	VP	23.710	GAP	24.79	AZP	90.58	TAL	353.89	TAP	110.27	RCA	147.15	APO	360.75	V2	22.418
RC	128.267	GL	8.28	GP	1.64	ZAL	99.10	ZAP	175.34	ETS	158.05	ZAE	153.06	ETE	.83	ZAC	90.59	ETC	256.01	CLP	175.64

PLANETOCENTRIC CONIC

C3	31.687	VHL	5.629	DLA	10.33	RAL	176.99	RAD	6568.3	VEL	12.372	PTH	2.23	VHP	11.272	DPA	.30	RAP	186.64	ECC	1.5215

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 49 2	2653.83	-27.25	71.24	50.09	98.03	17 33 16	2053.8	-25.85	62.85
90.00	7 28 45	4645.33	13.89	197.36	44.08	65.07	8 46 10	4045.3	10.41	190.41
100.00	18 15 31	2374.95	-28.58	50.50	49.86	99.17	18 55 6	1774.9	-27.01	42.05
100.00	8 44 58	4399.44	15.10	178.69	43.48	63.89	9 58 17	3799.4	11.47	171.78
110.00	19 35 24	2124.96	-32.14	30.74	49.08	102.33	20 10 49	1525.0	-30.10	22.11
110.00	9 41 34	4222.19	18.31	163.48	41.72	60.62	10 51 56	3622.2	14.26	156.71

DIFFERENTIAL CORRECTIONS

TDE	.5571	TRA	-1.5239	TC3	.8753	BAU	.3710
RDE	-.5469	RRA	-.2461	RC3	-.0289	FAU	.05672
FDE	-.1131	FRA	.7252	FC3	-1.5498	BSP	6230
BDE	.7820	BRA	1.5436	BC3	.8758	FSP	438

MID-COURSE EXECUTION ACCURACY

SGT	1943.8	SGR	614.8	SG3	164.4		
RRT	.0441	RRF	-.0599	RTF	-.8024		
SGB	2038.7	R23	-.0206	R13	-.8025		
SG1	1944.0	SG2	614.2	THA	.89		

ORBIT DETERMINATION ACCURACY

ST	739.0	SR	563.9	SS	251.4
CRT	-.6736	CRS	-.3239	CST	.9082
LSA	879.7	MSA	390.1	SSA	34.6
EL1	857.3	EL2	359.2	ALF	146.06

LAUNCH DATE DEC 6 1964 FLIGHT TIME 144.00 ARRIVAL DATE APR 29 1965

HELIOCENTRIC CONIC DISTANCE 379.637 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	35.618	GAL	-1.64	AZL	88.72	HCA	117.28	SMA	249.37	ECC	.40977	INC	1.2842	V1	30.227
RP	244.46	LAP	1.14	LOP	191.20	VP	23.529	GAP	24.17	AZP	90.59	TAL	354.37	TAP	111.65	RCA	147.19	APO	351.56	V2	22.440
RC	130.354	GL	8.37	GP	1.69	ZAL	98.18	ZAP	174.83	ETS	159.59	ZAE	152.87	ETE	1.07	ZAC	90.72	ETC	256.00	CLP	175.11

PLANETOCENTRIC CONIC

C3	30.061	VHL	5.483	DLA	10.78	RAL	176.17	RAD	6568.2	VEL	12.306	PTH	2.22	VHP	11.000	DPA	.19	RAP	187.00	ECC	1.4947

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 42 6	2655.49	-27.26	71.36	48.48	97.97	17 26 21	2055.5	-25.88	62.97
90.00	7 29 10	4617.20	13.07	195.70	42.40	64.66	8 46 7	4017.2	9.56	188.79
100.00	18 8 50	2375.77	-28.59	50.56	48.25	99.14	18 48 25	1775.8	-27.03	42.11
100.00	8 45 7	4372.15	14.28	177.08	41.80	63.46	9 58 0	3772.2	10.60	170.22
110.00	19 29 17	2123.99	-32.12	30.66	47.47	102.37	20 4 41	1524.0	-30.09	22.04
110.00	9 41 9	4196.70	17.45	162.00	40.03	60.13	10 51 6	3596.7	13.35	155.29

DIFFERENTIAL CORRECTIONS

TDE	.5348	TRA	-1.4964	TC3	.9522	BAU	.3828
RDE	-.5320	RRA	-.2383	RC3	-.0276	FAU	.05856
FDE	-.1030	FRA	.7236	FC3	-1.6865	BSP	6434
BDE	.7543	BRA	1.5153	BC3	.9526	FSP	464

MID-COURSE EXECUTION ACCURACY

SGT	1984.1	SGR	611.8	SG3	173.3		
RRT	.0505	RRF	-.0647	RTF	-.8081		
SGB	2076.3	R23	-.0196	R13	-.8082		
SG1	1984.3	SG2	610.9	THA	.99		

ORBIT DETERMINATION ACCURACY

ST	735.8	SR	561.1	SS	247.8
CRT	-.6646	CRS	-.2893	CST	.8974
LSA	872.4	MSA	394.1	SSA	35.6
EL1	851.5	EL2	362.3	ALF	146.21

LAUNCH DATE DEC 6 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 381.532 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	35.489	GAL	-1.47	AZL	88.73	HCA	118.19	SMA	245.17	ECC	.39949	INC	1.2686	V1	30.227
RP	244.23	LAP	1.12	LOP	192.11	VP	23.356	GAP	23.55	AZP	90.60	TAL	354.85	TAP	113.04	RCA	147.22	APO	343.11	V2	22.463
RC	132.477	GL	8.45	GP	1.74	ZAL	97.24	ZAP	174.31	ETS	160.85	ZAE	152.72	ETE	1.31	ZAC	90.86	ETC	255.98	CLP	174.58

PLANETOCENTRIC CONIC

C3	28.556	VHL	5.344	DLA	11.24	RAL	175.33	RAD	6568.1	VEL	12.245	PTH	2.20	VHP	10.735	DPA	.08	RAP	187.37	ECC	1.4700

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 34 58	2657.76	-27.28	71.52	46.86	97.89	17 19 16	2057.8	-25.91	63.12
90.00	7 29 33	4589.22	12.25	194.05	40.73	64.27	8 46 2	3989.2	8.69	187.18
100.00	18 1 58	2377.18	-28.60	50.66	46.64	99.08	18 41 35	1777.2	-27.05	42.20
100.00	8 45 14	4345.03	13.45	175.49	40.13	63.05	9 57 39	3745.0	9.73	168.68
110.00	19 23 1	2123.56	-32.12	30.63	45.87	102.39	19 58 24	1523.6	-30.08	22.01
110.00	9 40 41	4171.41	16.59	160.54	38.35	59.67	10 50 12	3571.4	12.44	153.90

DIFFERENTIAL CORRECTIONS

TDE	.5128	TRA	-1.4678	TC3	1.0326	BAU	.3943
RDE	-.5158	RRA	-.2307	RC3	-.0259	FAU	.06043
FDE	-.0918	FRA	.7215	FC3	-1.8320	BSP	6615
BDE	.7273	BRA	1.4858	BC3	1.0330	FSP	492

MID-COURSE EXECUTION ACCURACY

SGT	2023.6	SGR	608.5	SG3	182.6		
RRT	.0569	RRF	-.0706	RTF	-.8139		
SGB	2113.1	R23	-.0197	R13	-.8140		
SG1	2023.9	SG2	607.4	THA	1.08		

ORBIT DETERMINATION ACCURACY

ST	731.5	SR	558.2	SS	243.6
CRT	-.6555	CRS	-.2467	CST	.8825
LSA	863.8	MSA	398.1	SSA	36.6
EL1	844.6	EL2	365.1	ALF	146.33

LAUNCH DATE DEC 6 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 383.574 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	35.367	GAL	-1.31	AZL	88.75	HCA	119.10	SMA	241.29	ECC	.38971	INC	1.2527
RP	243.99	LAP	1.09	LOP	193.02	VP	23.192	GAP	22.93	AZP	90.61	TAL	355.34	TAP	114.44	RCA	147.26	APO	335.32
RC	134.631	GL	8.53	GP	1.80	ZAL	96.27	ZAP	173.78	ETS	161.90	ZAE	152.62	ETE	1.56	ZAC	90.99	ETC	255.97

V1	30.227	V2	22.486	CLP	174.04														

PLANETOCENTRIC CONIC

C3	27.163	VHL	5.212	DLA	11.70	RAL	174.45	RAD	6568.1	VEL	12.188	PTH	2.19	VHP	10.477	DPA	-.03	RAP	187.73

ECC	1.4470	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	16 27 40	2660.62	-27.31	71.73	45.25	97.79	17 12 1	2060.6	-25.95	63.32							
		90.00	7 29 53	4561.43	11.43	192.43	39.08	63.91	8 45 54	3961.4	7.83	185.60							
		100.00	17 54 56	2379.16	-28.62	50.81	45.03	99.01	18 34 35	1779.2	-27.08	42.34							
		100.00	8 45 17	4318.13	12.61	173.93	38.47	62.67	9 57 16	3718.1	8.85	167.16							
		110.00	19 16 35	2123.67	-32.12	30.64	44.26	102.39	19 51 59	1523.7	-30.08	22.02							
		110.00	9 40 8	4146.39	15.72	159.12	36.69	59.25	10 49 14	3546.4	11.53	152.53							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4922	TRA	-1.4376	TC3	1.1191	BAU	.4065	SGT	2063.6	SGR	605.0	SG3	192.3	ST	726.9	SR	555.1	SS	239.3
RDE	-.5003	RRA	-.2234	RC3	-.0237	FAU	.06239	RRT	.0628	RRF	-.0765	RTF	-.8199	CRT	-.6473	CRS	-.2028	CST	.8656
FDE	-.0793	FRA	.7179	FC3	-1.9886	BSP	6795	SG8	2150.4	R23	-.0202	R13	-.8201	LSA	855.1	MSA	401.5	SSA	37.6
BDE	.7018	BRA	1.4549	BC3	1.1194	FSP	523	SG1	2064.0	SG2	603.7	THA	1.15	EL1	837.7	EL2	367.2	ALF	146.43

LAUNCH DATE DEC 6 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 385.750 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	35.249	GAL	-1.15	AZL	88.76	HCA	120.01	SMA	237.71	ECC	.38039	INC	1.2365
RP	243.75	LAP	1.07	LOP	193.93	VP	23.036	GAP	22.31	AZP	90.62	TAL	355.84	TAP	115.86	RCA	147.29	APO	328.13
RC	136.814	GL	8.60	GP	1.85	ZAL	95.27	ZAP	173.24	ETS	162.77	ZAE	152.56	ETE	1.81	ZAC	91.13	ETC	255.96

V1	30.227	V2	22.510	CLP	173.49														

PLANETOCENTRIC CONIC

C3	25.875	VHL	5.087	DLA	12.16	RAL	173.55	RAD	6568.0	VEL	12.135	PTH	2.17	VHP	10.226	DPA	-.13	RAP	188.08

ECC	1.4258	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	16 20 12	2664.07	-27.34	71.97	43.64	97.67	17 4 36	2064.1	-26.00	63.57							
		90.00	7 30 9	4533.89	10.60	190.83	37.43	63.59	8 45 43	3933.9	6.97	184.04							
		100.00	17 47 45	2381.70	-28.65	50.99	43.42	98.92	18 27 27	1781.7	-27.12	42.52							
		100.00	8 45 17	4291.49	11.78	172.40	36.82	62.33	9 56 49	3691.5	7.98	165.67							
		110.00	19 10 1	2124.28	-32.13	30.69	42.67	102.36	19 45 26	1524.3	-30.09	22.06							
		110.00	9 39 30	4121.68	14.86	157.73	35.04	58.86	10 48 12	3521.7	10.62	151.19							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4717	TRA	-1.4063	TC3	1.2090	BAU	.4183	SGT	2102.6	SGR	601.2	SG3	202.4	ST	721.1	SR	551.8	SS	234.7
RDE	-.4854	RRA	-.2163	RC3	-.0210	FAU	.06443	RRT	.0688	RRF	-.0832	RTF	-.8257	CRT	-.6388	CRS	-.1518	CST	.8441
FDE	-.0660	FRA	.7129	FC3	-2.1558	BSP	6956	SG8	2186.9	R23	-.0214	R13	-.8259	LSA	845.1	MSA	404.8	SSA	38.7
BDE	.6769	BRA	1.4229	BC3	1.2092	FSP	555	SG1	2103.0	SG2	599.7	THA	1.23	EL1	829.7	EL2	369.0	ALF	146.48

LAUNCH DATE DEC 6 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 388.048 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	35.137	GAL	-.99	AZL	88.78	HCA	120.93	SMA	234.39	ECC	.37152	INC	1.2199
RP	243.50	LAP	1.05	LOP	194.85	VP	22.888	GAP	21.70	AZP	90.63	TAL	356.35	TAP	117.28	RCA	147.31	APO	321.48
RC	139.022	GL	8.66	GP	1.91	ZAL	94.26	ZAP	172.69	ETS	163.52	ZAE	152.55	ETE	2.07	ZAC	91.26	ETC	255.94

V1	30.227	V2	22.535	CLP	172.94														

PLANETOCENTRIC CONIC

C3	24.683	VHL	4.968	DLA	12.62	RAL	172.63	RAD	6568.0	VEL	12.086	PTH	2.16	VHP	9.981	DPA	-.22	RAP	188.43

ECC	1.4062	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	16 12 36	2668.05	-27.38	72.26	42.04	97.54	16 57 4	2068.1	-26.05	63.84							
		90.00	7 30 22	4506.65	9.77	189.26	35.80	63.29	8 45 29	3906.6	6.11	182.50							
		100.00	17 40 26	2384.76	-28.68	51.21	41.82	98.81	18 20 11	1784.8	-27.17	42.74							
		100.00	8 45 13	4265.18	10.94	170.89	35.19	62.01	9 56 18	3665.2	7.11	164.20							
		110.00	19 3 20	2125.37	-32.14	30.77	41.08	102.32	19 38 45	1525.4	-30.11	22.14							
		110.00	9 38 48	4097.33	14.00	156.37	33.40	58.49	10 47 6	3497.3	9.72	149.87							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4509	TRA	-1.3751	TC3	1.3026	BAU	.4299	SGT	2141.6	SGR	597.3	SG3	213.1	ST	713.9	SR	548.4	SS	230.1
RDE	-.4712	RRA	-.2094	RC3	-.0177	FAU	.06657	RRT	.0757	RRF	-.0907	RTF	-.8313	CRT	-.6293	CRS	-.0933	CST	.8177
FDE	-.0514	FRA	.7071	FC3	-2.3349	BSP	7114	SG8	2223.4	R23	-.0226	R13	-.8315	LSA	833.6	MSA	408.4	SSA	39.8
BDE	.6521	BRA	1.3910	BC3	1.3027	FSP	589	SG1	2142.1	SG2	595.4	THA	1.31	EL1	820.2	EL2	370.9	ALF	146.48

LAUNCH DATE DEC 6 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 390.456 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	35.030	GAL	-.83	AZL	88.80	HCA	121.84	SMA	231.32	ECC	.36308	INC	1.2031
RP	243.25	LAP	1.02	LOP	195.76	VP	22.748	GAP	21.09	AZP	90.63	TAL	356.87	TAP	118.71	RCA	147.33	APO	315.31
RC	141.251	GL	8.71	GP	1.98	ZAL	93.23	ZAP	172.13	ETS	164.15	ZAE	152.59	ETE	2.34	ZAC	91.40	ETC	255.93

V1	30.227	V2	22.560	CLP	172.38														

PLANETOCENTRIC CONIC

C3	23.581	VHL	4.856	DLA	13.07	RAL	171.68	RAD	6568.0	VEL	12.040	PTH	2.15	VHP	9.742	DPA	-.31	RAP	188.78

ECC	1.3881	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	16 4 51	2672.55	-27.42	72.58	40.44	97.38	16 49 24	2072.5	-26.11	64.16							
		90.00	7 30 31	4479.76	8.94	187.72	34.19	63.02	8 45 11	3879.8	5.25	180.98							
		100.00	17 33 0	2388.30	-28.72	51.47	40.23	98.68	18 12 48	1788.3	-27.22	42.99							
		100.00	8 45 4	4239.23	10.11	169.42	33.57	61.72	9 55 44	3639.2	6.25	162.75							
		110.00	18 56 32	2126.92	-32.16	30.88	39.49	102.25	19 31 59	1526.9	-30.14	22.25							
		110.00	9 38 2	4073.39	13.14	155.04	31.78	58.16	10 45 55	3473.4	8.84	148.59							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4290	TRA	-1.3427	TC3	1.4030	BAU	.4423	SGT	2181.3	SGR	593.2	SG3	224.5	ST	704.2	SR	544.8	SS	225.4
RDE	-.4575	RRA	-.2027	RC3	-.0137	FAU	.06888	RRT	.0833	RRF	-.0993	RTF	-.8372	CRT	-.6185	CRS	-.0240	CST	.7839
FDE	-.0348	FRA	.6993	FC3	-2.5289	BSP	7245	SG8	2260.6	R23	-.0241	R13	-.8374	LSA	819.7	MSA	412.4	SSA	41.0
BDE	.6272	BRA	1.3580	BC3	1.4031	FSP	623	SG1	2181.9	SG2	591.0	THA	1.40	EL1	808.6	EL2	372.9	ALF	146.38

LAUNCH DATE DEC 6 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 392.965 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 34.928 GAL -.68 AZL 88.81 HCA 122.76 SMA 228.47 ECC .35504 INC 1.1858 V1 30.227
RP 243.00 LAP 1.00 LOP 196.68 VP 22.615 GAP 20.49 AZP 90.64 TAL 357.39 TAP 120.15 RCA 147.35 APO 309.58 V2 22.585
RC 143.499 GL 8.75 GP 2.04 ZAL 92.17 ZAP 171.56 ETS 164.70 ZAE 152.66 ETE 2.61 ZAC 91.54 ETC 255.92 CLP 171.81

PLANETOCENTRIC CONIC

C3 22.563 VHL 4.750 DLA 13.53 RAL 170.70 RAD 6567.9 VEL 11.998 PTH 2.14 VHP 9.510 DPA -.40 RAP 189.12 ECC 1.3713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 0	2677.52	-27.46	72.94	38.85	97.20	16 41 38	2077.5	-26.18	64.51
90.00	7 30 36	4453.28	8.12	186.21	32.58	62.78	8 44 50	3853.3	4.41	179.49
100.00	17 25 26	2392.30	-28.76	51.76	38.64	98.53	18 5 19	1792.3	-27.28	43.27
100.00	8 44 51	4213.73	9.28	167.97	31.96	61.46	9 55 5	3613.7	5.40	161.34
110.00	18 49 37	2128.89	-32.19	31.03	37.92	102.17	19 25 6	1528.9	-30.18	22.39
110.00	9 37 10	4049.91	12.29	153.75	30.17	57.85	10 44 39	3449.9	7.96	147.34

DIFFERENTIAL CORRECTIONS
TDE .4074 TRA-1.3106 TC3 1.5039 BAU .4536
RDE -.4445 RRA -.1961 RC3 -.0090 FAU .07126
FDE -.0176 FRA .6893 FC3-2.7343 BSP 7441
BDE .6030 BRA 1.3251 BC3 1.5039 FSP 665

MID-COURSE EXECUTION ACCURACY
SGT 2219.5 SGR 588.9 SG3 236.3
RRT .0917 RRF -.1083 RTF -.8422
SGB 2296.3 R23 -.0254 R13 -.8424
SG1 2220.3 SG2 586.2 THA 1.50

ORBIT DETERMINATION ACCURACY
ST 693.8 SR 541.1 SS 221.0
CRT -.6071 CRS .0503 CST .7445
LSA 804.9 MSA 416.3 SSA 42.3
EL1 796.1 EL2 374.7 ALF 146.23

LAUNCH DATE DEC 6 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 395.565 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 34.830 GAL -.54 AZL 88.83 HCA 123.68 SMA 225.81 ECC .34738 INC 1.1681 V1 30.227
RP 242.74 LAP .97 LOP 197.60 VP 22.489 GAP 19.89 AZP 90.65 TAL 357.91 TAP 121.59 RCA 147.37 APO 304.25 V2 22.611
RC 145.763 GL 8.78 GP 2.11 ZAL 91.11 ZAP 170.98 ETS 165.17 ZAE 152.78 ETE 2.90 ZAC 91.68 ETC 255.91 CLP 171.23

PLANETOCENTRIC CONIC

C3 21.622 VHL 4.650 DLA 13.98 RAL 169.71 RAD 6567.9 VEL 11.958 PTH 2.13 VHP 9.284 DPA -.48 RAP 189.46 ECC 1.3558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 49 3	2682.91	-27.50	73.33	37.26	97.01	16 33 46	2082.9	-26.25	64.89
90.00	7 30 37	4427.26	7.31	184.73	31.00	62.57	8 44 24	3827.3	3.57	178.04
100.00	17 17 48	2396.70	-28.80	52.08	37.06	98.37	17 57 44	1796.7	-27.35	43.58
100.00	8 44 33	4188.70	8.46	166.56	30.38	61.22	9 54 22	3588.7	4.56	159.95
110.00	18 42 38	2131.23	-32.23	31.20	36.35	102.07	19 18 9	1531.2	-30.23	22.56
110.00	9 36 12	4026.93	11.46	152.50	28.58	57.57	10 43 19	3426.9	7.10	146.11

DIFFERENTIAL CORRECTIONS
TDE .3850 TRA-1.2788 TC3 1.6066 BAU .4644
RDE -.4321 RRA -.1898 RC3 -.0036 FAU .07371
FDE .0007 FRA .6789 FC3-2.9512 BSP 7590
BDE .5787 BRA 1.2928 BC3 1.6067 FSP 705

MID-COURSE EXECUTION ACCURACY
SGT 2257.1 SGR 584.4 SG3 248.6
RRT .1014 RRF -.1183 RTF -.8471
SGB 2331.5 R23 -.0265 R13 -.8473
SG1 2257.9 SG2 581.2 THA 1.61

ORBIT DETERMINATION ACCURACY
ST 681.5 SR 537.3 SS 217.7
CRT -.5936 CRS .1311 CST .6990
LSA 788.4 MSA 420.7 SSA 43.6
EL1 781.6 EL2 377.0 ALF 146.01

LAUNCH DATE DEC 6 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 398.249 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 34.736 GAL -.39 AZL 88.85 HCA 124.60 SMA 223.34 ECC .34010 INC 1.1500 V1 30.227
RP 242.47 LAP .95 LOP 198.52 VP 22.371 GAP 19.29 AZP 90.65 TAL 358.45 TAP 123.04 RCA 147.38 APO 299.29 V2 22.638
RC 148.041 GL 8.80 GP 2.18 ZAL 90.03 ZAP 170.39 ETS 165.58 ZAE 152.93 ETE 3.20 ZAC 91.83 ETC 255.90 CLP 170.64

PLANETOCENTRIC CONIC

C3 20.752 VHL 4.555 DLA 14.43 RAL 168.69 RAD 6567.8 VEL 11.922 PTH 2.12 VHP 9.063 DPA -.55 RAP 189.79 ECC 1.3415

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 41 1	2688.67	-27.55	73.74	35.69	96.81	16 25 50	2088.7	-26.32	65.29
90.00	7 30 32	4401.77	6.50	183.28	29.43	62.38	8 43 54	3801.8	2.76	176.61
100.00	17 10 5	2401.46	-28.85	52.43	35.50	98.19	17 50 6	1801.5	-27.42	43.92
100.00	8 44 10	4164.20	7.66	165.19	28.80	61.02	9 53 34	3564.2	3.73	158.60
110.00	18 35 35	2133.92	-32.26	31.40	34.79	101.96	19 11 9	1533.9	-30.28	22.75
110.00	9 35 9	4004.51	10.64	151.28	27.00	57.32	10 41 54	3404.5	6.25	144.93

DIFFERENTIAL CORRECTIONS
TDE .3626 TRA-1.2474 TC3 1.7164 BAU .4762
RDE -.4202 RRA -.1836 RC3 .0028 FAU .07640
FDE .0214 FRA .6675 FC3-3.1871 BSP 7734
BDE .5550 BRA 1.2609 BC3 1.7164 FSP 746

MID-COURSE EXECUTION ACCURACY
SGT 2297.4 SGR 579.8 SG3 261.8
RRT .1120 RRF -.1299 RTF -.8522
SGB 2369.4 R23 -.0282 R13 -.8524
SG1 2298.4 SG2 575.9 THA 1.73

ORBIT DETERMINATION ACCURACY
ST 668.1 SR 533.3 SS 215.8
CRT -.5789 CRS .2232 CST .6421
LSA 770.8 MSA 425.7 SSA 45.0
EL1 766.2 EL2 379.3 ALF 145.72

LAUNCH DATE DEC 6 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 401.012 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 34.646 GAL -.25 AZL 88.87 HCA 125.52 SMA 221.02 ECC .33316 INC 1.1315 V1 30.227
RP 242.20 LAP .92 LOP 199.44 VP 22.259 GAP 18.70 AZP 90.66 TAL 358.98 TAP 124.50 RCA 147.39 APO 294.66 V2 22.664
RC 150.330 GL 8.81 GP 2.26 ZAL 88.93 ZAP 169.79 ETS 165.93 ZAE 153.13 ETE 3.51 ZAC 91.97 ETC 255.89 CLP 170.04

PLANETOCENTRIC CONIC

C3 19.949 VHL 4.466 DLA 14.87 RAL 167.65 RAD 6567.8 VEL 11.888 PTH 2.11 VHP 8.847 DPA -.62 RAP 190.12 ECC 1.3283

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 32 55	2694.79	-27.60	74.19	34.13	96.60	16 17 50	2094.8	-26.40	65.72
90.00	7 30 22	4376.80	5.71	181.87	27.87	62.22	8 43 19	3776.8	1.95	175.21
100.00	17 2 17	2406.56	-28.90	52.80	33.94	98.00	17 42 24	1806.6	-27.49	44.28
100.00	8 43 41	4140.25	6.86	163.86	27.25	60.84	9 52 41	3540.3	2.92	157.28
110.00	18 28 28	2136.93	-32.31	31.63	33.24	101.83	19 4 5	1536.9	-30.34	22.96
110.00	9 34 0	3982.65	9.83	150.10	25.44	57.09	10 40 23	3382.7	5.43	143.78

DIFFERENTIAL CORRECTIONS
TDE .3556 TRA-1.2043 TC3 1.8501 BAU .4934
RDE -.4090 RRA -.1778 RC3 .0097 FAU .07904
FDE .0420 FRA .6580 FC3-3.4302 BSP 7649
BDE .5420 BRA 1.2174 BC3 1.8501 FSP 801

MID-COURSE EXECUTION ACCURACY
SGT 2344.0 SGR 575.4 SG3 275.3
RRT .1128 RRF -.1423 RTF -.8615
SGB 2413.6 R23 -.0392 R13 -.8619
SG1 2345.0 SG2 571.5 THA 1.69

ORBIT DETERMINATION ACCURACY
ST 663.7 SR 529.5 SS 216.2
CRT -.5845 CRS .3129 CST .5626
LSA 764.8 MSA 424.9 SSA 45.7
EL1 762.2 EL2 374.1 ALF 145.65

LAUNCH DATE DEC 6 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 403.844 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	34.561	GAL	-.12	AZL	88.89	HCA	126.45	SMA	218.87	ECC	.32656	INC	1.1124	V1	30.227
RP	241.93	LAP	.89	LOP	200.37	VP	22.154	GAP	18.11	AZP	90.66	TAL	359.52	TAP	125.97	RCA	147.39	APO	290.34	V2	22.692
RC	152.629	GL	8.81	GP	2.34	ZAL	87.83	ZAP	169.18	ETS	166.24	ZAE	153.36	ETE	3.84	ZAC	92.12	ETC	255.88	CLP	169.44

PLANETOCENTRIC CONIC

C3	19.208	VHL	4.383	DLA	15.29	RAL	166.61	RAD	6567.8	VEL	11.857	PTH	2.10	VHP	8.638	DPA	-.68	RAP	190.44	ECC	1.3161

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 24 49	2701.11	-27.65	74.64	32.58	96.37	16 9 50	2101.1	-26.48	66.17
90.00	7 30 7	4352.54	4.94	180.51	26.34	62.08	8 42 39	3752.5	1.17	173.86
100.00	16 54 30	2411.86	-26.95	53.18	32.39	97.80	17 34 42	1811.9	-27.57	44.65
100.00	8 43 6	4117.02	6.09	162.56	25.71	60.68	9 51 43	3517.0	2.14	156.01
110.00	18 21 21	2140.14	-32.35	31.87	31.71	101.70	18 57 1	1540.1	-30.40	23.19
110.00	9 32 45	3961.51	9.05	148.96	23.91	56.89	10 38 47	3361.5	4.62	142.66

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3197	TRA	-1.1740	TC3	1.9236	BAU	.4940	SGT	2355.6	SGR	570.5	SG3	288.3	ST	636.4	SR	525.3	SS	216.8
RDE	-.3983	RRA	-.1717	RC3	.0177	FAU	.08157	RRT	.1331	RRF	-.1564	RTF	-.8608	CRT	-.5511	CRS	.4279	CST	.4889
FDE	.0693	FRA	.6356	FC3	-3.6764	BSP	8155	SGB	2423.8	R23	-.0351	R13	-.8611	LSA	733.0	MSA	434.2	SSA	47.6
BDE	.5107	BRA	1.1864	BC3	1.9236	FSP	854	SG1	2356.9	SG2	565.1	THA	1.96	EL1	731.9	EL2	381.2	ALF	144.65

LAUNCH DATE DEC 6 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 406.746 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	34.479	GAL	.01	AZL	88.91	HCA	127.37	SMA	216.85	ECC	.32029	INC	1.0930	V1	30.227
RP	241.65	LAP	.87	LOP	201.29	VP	22.054	GAP	17.53	AZP	90.66	TAL	.06	TAP	127.43	RCA	147.39	APO	286.30	V2	22.720
RC	154.936	GL	8.79	GP	2.42	ZAL	86.73	ZAP	168.56	ETS	166.51	ZAE	153.63	ETE	4.19	ZAC	92.27	ETC	255.87	CLP	168.82

PLANETOCENTRIC CONIC

C3	18.525	VHL	4.304	DLA	15.71	RAL	165.54,	RAD	6567.8	VEL	11.828	PTH	2.09	VHP	8.433	DPA	-.73	RAP	190.76	ECC	1.3049

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 42	2707.62	-27.70	75.11	31.04	96.14	16 1 49	2107.6	-26.56	66.63
90.00	7 29 44	4328.97	4.19	179.18	24.83	61.97	8 41 53	3729.0	.41	172.55
100.00	16 46 42	2417.35	-29.00	53.58	30.86	97.60	17 27 0	1817.3	-27.64	45.04
100.00	8 42 25	4094.47	5.34	161.31	24.19	60.54	9 50 39	3494.5	1.38	154.77
110.00	18 14 13	2143.54	-32.40	32.12	30.19	101.55	18 49 56	1543.5	-30.47	23.44
110.00	9 31 24	3941.05	8.28	147.87	22.39	56.72	10 37 5	3341.0	3.85	141.59

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2943	TRA	-1.2873	TC3	2.0484	BAU	.5074	SGT	2536.0	SGR	567.4	SG3	307.5	ST	664.4	SR	521.4	SS	253.7
RDE	-.3881	RRA	-.1687	RC3	.0270	FAU	.08468	RRT	.1765	RRF	-.1905	RTF	-.8614	CRT	-.4762	CRS	.4878	CST	.5113
FDE	.0975	FRA	.7388	FC3	-3.9572	BSP	7474	SGB	2598.7	R23	-.0312	R13	-.8617	LSA	738.7	MSA	479.3	SSA	47.3
BDE	.4871	BRA	1.2983	BC3	2.0486	FSP	857	SG1	2538.1	SG2	558.0	THA	2.38	EL1	736.3	EL2	413.7	ALF	148.60

LAUNCH DATE DEC 6 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 409.703 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	34.401	GAL	.14	AZL	88.93	HCA	128.30	SMA	214.95	ECC	.31431	INC	1.0729	V1	30.227
RP	241.36	LAP	.84	LOP	202.22	VP	21.961	GAP	16.95	AZP	90.67	TAL	.60	TAP	128.91	RCA	147.39	APO	282.52	V2	22.748
RC	157.250	GL	8.76	GP	2.51	ZAL	85.61	ZAP	167.93	ETS	166.75	ZAE	153.93	ETE	4.56	ZAC	92.42	ETC	255.87	CLP	168.19

PLANETOCENTRIC CONIC

C3	17.895	VHL	4.230	DLA	16.12	RAL	164.46	RAD	6567.7	VEL	11.802	PTH	2.09	VHP	8.233	DPA	-.77	RAP	191.07	ECC	1.2945

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 35	2714.26	-27.74	75.59	29.51	95.90	15 53 50	2114.3	-26.64	67.10
90.00	7 29 15	4306.14	3.46	177.91	23.33	61.88	8 41 1	3706.1	-.33	171.27
100.00	16 38 55	2422.96	-29.05	53.99	29.34	97.39	17 19 18	1823.0	-27.72	45.44
100.00	8 41 36	4072.68	4.61	160.11	22.70	60.43	9 49 29	3472.7	.64	153.57
110.00	18 7 6	2147.08	-32.45	32.39	28.69	101.40	18 42 53	1547.1	-30.53	23.69
110.00	9 29 55	3921.32	7.54	146.82	20.89	56.56	10 35 17	3321.3	3.10	140.56

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2914	TRA	-1.1087	TC3	2.1897	BAU	.5239	SGT	2455.8	SGR	560.2	SG3	322.2	ST	615.4	SR	516.1	SS	216.4
RDE	-.3778	RRA	-.1601	RC3	.0387	FAU	.08873	RRT	.1538	RRF	-.1799	RTF	-.8713	CRT	-.5356	CRS	.5462	CST	.3762
FDE	.0991	FRA	.5916	FC3	-4.2930	BSP	7977	SGB	2518.9	R23	-.0392	R13	-.8717	LSA	708.3	MSA	433.0	SSA	51.7
BDE	.4771	BRA	1.1202	BC3	2.1900	FSP	919	SG1	2457.4	SG2	553.2	THA	2.12	EL1	708.3	EL2	378.7	ALF	144.14

LAUNCH DATE DEC 6 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 412.719 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	34.326	GAL	.27	AZL	88.95	HCA	129.24	SMA	213.18	ECC	.30863	INC	1.0523	V1	30.227
RP	241.08	LAP	.82	LOP	203.16	VP	21.874	GAP	16.38	AZP	90.67	TAL	1.14	TAP	130.38	RCA	147.39	APO	278.97	V2	22.777
RC	159.568	GL	8.71	GP	2.60	ZAL	84.50	ZAP	167.28	ETS	166.95	ZAE	154.27	ETE	4.96	ZAC	92.57	ETC	255.86	CLP	167.55

PLANETOCENTRIC CONIC

C3	17.313	VHL	4.161	DLA	16.50	RAL	163.38	RAD	6567.7	VEL	11.777	PTH	2.08	VHP	8.039	DPA	-.81	RAP	191.37	ECC	1.2849

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 32	2720.96	-27.79	76.08	28.01	95.67	15 45 53	2121.0	-26.71	67.58
90.00	7 28 38	4284.12	2.75	176.67	21.85	61.81	8 40 3	3684.1	-1.04	170.05
100.00	16 31 11	2428.62	-29.10	54.41	27.84	97.17	17 11 39	1828.6	-27.80	45.84
100.00	8 40 41	4051.68	3.90	158.95	21.22	60.34	9 48 12	3451.7	-.08	152.42
110.00	18 0 0	2150.69	-32.49	32.66	27.20	101.25	18 35 51	1550.7	-30.60	23.95
110.00	9 28 20	3902.38	6.83	145.82	19.40	56.43	10 33 22	3302.4	2.37	139.57

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2662	TRA	-1.0698	TC3	2.2891	BAU	.5300	SGT	2474.6	SGR	555.3	SG3	337.8	ST	591.7	SR	511.7	SS	222.2
RDE	-.3685	RRA	-.1545	RC3	.0501	FAU	.09182	RRT	.1705	RRF	-.1968	RTF	-.8744	CRT	-.5127	CRS	.6380	CST	.2899
FDE	.1262	FRA	.5641	FC3	-4.5912	BSP	8332	SGB	2536.2	R23	-.0406	R13	-.8748	LSA	684.0	MSA	436.6	SSA	53.5
BDE	.4546	BRA	1.0809	BC3	2.2896	FSP	991	SG1	2476.5	SG2	546.8	THA	2.30	EL1	683.6	EL2	380.2	ALF	142.93

LAUNCH DATE DEC 6 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 415.787 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	34.255	GAL	.39	AZL	88.97	HCA	130.17	SMA	211.51	ECC	.30322	INC	1.0311
RP	240.79	LAP	.79	LOP	204.09	VP	21.792	GAP	15.81	AZP	90.67	TAL	1.69	TAP	131.86	RCA	147.38	APO	275.65
RC	161.890	GL	8.66	GP	2.70	ZAL	83.39	ZAP	166.62	ETS	167.13	ZAE	154.65	ETE	5.38	ZAC	92.73	ETC	255.85

V1	30.227	V2	22.806	CLP	166.89														

PLANETOCENTRIC CONIC

C3	16.778	VHL	4.096	DLA	16.88	RAL	162.28	RAD	6567.7	VEL	11.754	PTH	2.07	VHP	7.849	DPA	-.84	RAP	191.66
ECC	1.2761																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 32	2727.62	-27.83	76.56	26.51	95.43	15 38 0	2127.6	-26.79	68.05
90.00	7 27 54	4262.98	2.07	175.49	20.40	61.75	8 38 57	3663.0	-1.72	168.87
100.00	16 23 30	2434.27	-29.14	54.82	26.35	96.96	17 4 4	1834.3	-27.87	46.25
100.00	8 39 37	4031.56	3.22	157.84	19.76	60.27	9 46 48	3431.6	-.76	151.32
110.00	17 52 59	2154.32	-32.54	32.93	25.72	101.09	18 28 53	1554.3	-30.67	24.21
110.00	9 26 37	3884.27	6.15	144.86	17.94	56.31	10 31 22	3284.3	1.68	138.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2449	TRA	-1.0395	TC3	2.4053	BAU	.5397	SGT	2511.7	SGR	550.6	SG3	355.5	ST	573.2	SR	507.2	SS	231.3
RDE	-.3596	RRA	-.1491	RC3	.0633	FAU	.09539	RRT	.1887	RRF	-.2156	RTF	-.8781	CRT	-.4897	CRS	.7097	CST	.2173
FDE	.1522	FRA	.5415	FC3	-4.9220	BSP	8475	SGB	2571.4	R23	-.0426	R13	-.8785	LSA	664.8	MSA	440.8	SSA	55.4
BDE	.4350	BRA	1.0501	BC3	2.4061	FSP	1050	SG1	2514.0	SG2	540.2	THA	2.48	EL1	663.1	EL2	382.3	ALF	142.03

LAUNCH DATE DEC 6 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 418.904 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	34.186	GAL	.51	AZL	88.99	HCA	131.11	SMA	209.95	ECC	.29808	INC	1.0092
RP	240.49	LAP	.78	LOP	205.02	VP	21.716	GAP	15.25	AZP	90.66	TAL	2.23	TAP	133.33	RCA	147.37	APO	272.53
RC	164.213	GL	8.58	GP	2.80	ZAL	82.28	ZAP	165.95	ETS	167.28	ZAE	155.06	ETE	5.84	ZAC	92.89	ETC	255.84

V1	30.227	V2	22.836	CLP	166.23														

PLANETOCENTRIC CONIC

C3	16.285	VHL	4.035	DLA	17.23	RAL	161.18	RAD	6567.7	VEL	11.733	PTH	2.07	VHP	7.663	DPA	-.86	RAP	191.95
ECC	1.2680																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 38	2734.17	-27.88	77.03	25.04	95.19	15 30 13	2134.2	-26.86	68.51
90.00	7 27 0	4242.76	1.42	174.37	18.96	61.72	8 37 43	3642.8	-2.37	167.74
100.00	16 15 55	2439.82	-29.19	55.23	24.88	96.75	16 56 35	1839.8	-27.95	46.64
100.00	8 38 24	4012.35	2.57	156.79	18.32	60.21	9 45 17	3412.3	-1.41	150.26
110.00	17 46 1	2157.89	-32.59	33.20	24.26	100.94	18 21 59	1557.9	-30.74	24.47
110.00	9 24 47	3867.03	5.50	143.95	16.50	56.21	10 29 14	3267.0	1.02	137.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2255	TRA	-1.0066	TC3	2.5165	BAU	.5481	SGT	2542.9	SGR	546.0	SG3	374.0	ST	554.7	SR	502.6	SS	241.6
RDE	-.3511	RRA	-.1437	RC3	.0779	FAU	.09913	RRT	.2072	RRF	-.2357	RTF	-.8812	CRT	-.4689	CRS	.7710	CST	.1453
FDE	.1787	FRA	.5138	FC3	-5.2702	BSP	8603	SGB	2600.9	R23	-.0456	R13	-.8817	LSA	647.7	MSA	442.6	SSA	57.4
BDE	.4173	BRA	1.0168	BC3	2.5177	FSP	1109	SG1	2545.6	SG2	533.6	THA	2.66	EL1	643.2	EL2	382.8	ALF	140.95

LAUNCH DATE DEC 6 1964 FLIGHT TIME 176.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 422.066 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	34.121	GAL	.63	AZL	89.01	HCA	132.04	SMA	208.48	ECC	.29319	INC	.9866
RP	240.19	LAP	.73	LOP	205.96	VP	21.645	GAP	14.69	AZP	90.66	TAL	2.77	TAP	134.81	RCA	147.35	APO	269.60
RC	166.536	GL	8.49	GP	2.90	ZAL	81.17	ZAP	165.26	ETS	167.41	ZAE	155.50	ETE	6.33	ZAC	93.05	ETC	255.84

V1	30.227	V2	22.866	CLP	165.54														

PLANETOCENTRIC CONIC

C3	15.831	VHL	3.979	DLA	17.57	RAL	160.08	RAD	6567.6	VEL	11.714	PTH	2.06	VHP	7.482	DPA	-.87	RAP	192.23
ECC	1.2605																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 52	2740.52	-27.91	77.50	23.58	94.96	15 22 33	2140.5	-26.93	68.97
90.00	7 25 57	4223.55	.80	173.29	17.54	61.69	8 36 20	3623.5	-2.99	166.66
100.00	16 8 27	2445.20	-29.23	55.62	23.43	96.55	16 49 12	1845.2	-28.02	47.03
100.00	8 37 3	3994.11	1.96	155.78	16.90	60.17	9 43 37	3394.1	-2.03	149.26
110.00	17 39 10	2161.36	-32.63	33.46	22.82	100.79	18 15 12	1561.4	-30.80	24.72
110.00	9 22 49	3850.70	4.88	143.09	15.08	56.12	10 27 0	3250.7	.40	136.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2067	TRA	-.9727	TC3	2.6330	BAU	.5576	SGT	2576.3	SGR	541.5	SG3	393.5	ST	535.6	SR	497.9	SS	253.2
RDE	-.3430	RRA	-.1383	RC3	.0940	FAU	.10310	RRT	.2270	RRF	-.2570	RTF	-.8847	CRT	-.4471	CRS	.8216	CST	.0789
FDE	.2056	FRA	.4816	FC3	-5.6380	BSP	8760	SGB	2632.6	R23	-.0486	R13	-.8852	LSA	632.1	MSA	442.5	SSA	59.6
BDE	.4005	BRA	.9825	BC3	2.6347	FSP	1177	SG1	2579.4	SG2	526.8	THA	2.85	EL1	623.0	EL2	382.8	ALF	139.63

LAUNCH DATE DEC 6 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 425.271 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	34.059	GAL	.74	AZL	89.04	HCA	132.99	SMA	207.09	ECC	.28855	INC	.9634
RP	239.88	LAP	.70	LOP	206.90	VP	21.579	GAP	14.14	AZP	90.66	TAL	3.30	TAP	136.29	RCA	147.34	APO	266.85
RC	168.857	GL	8.39	GP	3.02	ZAL	80.07	ZAP	164.56	ETS	167.52	ZAE	155.97	ETE	6.86	ZAC	93.21	ETC	255.83

V1	30.227	V2	22.897	CLP	164.85														

PLANETOCENTRIC CONIC

C3	15.413	VHL	3.926	DLA	17.88	RAL	158.97	RAD	6567.6	VEL	11.696	PTH	2.06	VHP	7.306	DPA	-.86	RAP	192.50
ECC	1.2537																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 29 16	2746.61	-27.95	77.94	22.14	94.75	15 15 2	2146.6	-27.00	69.40
90.00	7 24 44	4205.37	.21	172.28	16.15	61.68	8 34 49	3605.4	-3.57	165.65
100.00	16 1 8	2450.34	-29.27	56.00	21.99	96.35	16 41 58	1850.3	-28.08	47.40
100.00	8 35 32	3976.88	1.37	154.84	15.50	60.14	9 41 49	3376.9	-2.61	148.32
110.00	17 32 26	2164.67	-32.67	33.71	21.40	100.65	18 8 31	1564.7	-30.86	24.96
110.00	9 20 43	3835.31	4.29	142.28	13.68	56.06	10 24 39	3235.3	-.19	136.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1918	TRA	-.9350	TC3	2.7470	BAU	.5665	SGT	2605.1	SGR	537.4	SG3	413.4	ST	517.3	SR	493.3	SS	267.0
RDE	-.3354	RRA	-.1331	RC3	.1114	FAU	.10709	RRT	.2459	RRF	-.2801	RTF	-.8885	CRT	-.4330	CRS	.8628	CST	.0098
FDE	.2339	FRA	.4473	FC3	-6.0152	BSP	8778	SGB	2659.9	R23	-.0542	R13	-.8891	LSA	621.5	MSA	438.3	SSA	61.5
BDE	.3863	BRA	.9444	BC3	2.7492	FSP	1244	SG1	2608.5	SG2	520.2	THA	3.02	EL1	605.5	EL2	379.8	ALF	138.13

1791A

LAUNCH DATE DEC 6 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 428.515 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.999 GAL .85 AZL 89.06 HCA 133.93 SMA 205.79 ECC .28413 INC .9392 V1 30.227
RP 239.58 LAP .68 LOP 207.85 VP 21.518 GAP 13.60 AZP 90.65 TAL 3.84 TAP 137.76 RCA 147.32 APO 264.26 V2 22.928
RC 171.174 GL 8.27 GP 3.14 ZAL 78.99 ZAP 163.84 ETS 167.62 ZAE 156.48 ETE 7.44 ZAC 93.38 ETC 255.83 CLP 164.14

PLANETOCENTRIC CONIC

C3 15.029 VHL 3.877 DLA 18.18 RAL 157.86 RAD 6567.6 VEL 11.680 PTH 2.05 VHP 7.134 DPA -.85 RAP 192.76 ECC 1.2473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 21 51	2752.31	-27.98	78.35	20.72	94.54	15 7 43	2152.3	-27.06	69.81
90.00	7 23 20	4188.33	-.34	171.33	14.78	61.68	8 33 8	3588.3	-4.12	164.69
100.00	15 54 0	2455.13	-29.31	56.35	20.57	96.17	16 34 55	1855.1	-28.14	47.74
100.00	8 33 51	3960.75	.83	153.95	14.13	60.12	9 39 52	3360.7	-3.16	147.43
110.00	17 25 52	2167.71	-32.71	33.94	19.99	100.52	18 2 0	1567.7	-30.92	25.18
110.00	9 18 29	3820.93	3.75	141.53	12.31	56.00	10 22 10	3220.9	-.74	135.32

DIFFERENTIAL CORRECTIONS

TDE .1711 TRA -.9057 TC3 2.8493 BAU .5731
RDE -.3280 RRA -.1277 RC3 .1310 FAU .11149
FDE .2620 FRA .4101 FC3-6.4223 BSP 8975
BDE .3699 BRA .9146 BC3 2.8523 FSP 1315

MID-COURSE EXECUTION ACCURACY

SGT 2632.3 SGR 533.7 SG3 435.0
RRT .2718 RRF -.3053 RTF -.8904
SGB 2685.9 R23 -.0558 R13 -.8911
SG1 2636.5 SG2 512.8 THA 3.28

ORBIT DETERMINATION ACCURACY

ST 497.0 SR 488.4 SS 281.7
CRT -.4004 CRS .8941 CST -.0314
LSA 608.4 MSA 436.5 SSA 64.0
EL1 583.1 EL2 381.4 ALF 136.24

LAUNCH DATE DEC 6 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 431.797 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.942 GAL .95 AZL 89.09 HCA 134.87 SMA 204.56 ECC .27993 INC .9143 V1 30.227
RP 239.26 LAP .65 LOP 208.79 VP 21.461 GAP 13.06 AZP 90.65 TAL 4.36 TAP 139.24 RCA 147.30 APO 261.83 V2 22.959
RC 173.485 GL 8.13 GP 3.27 ZAL 77.91 ZAP 163.11 ETS 167.69 ZAE 157.01 ETE 8.08 ZAC 93.55 ETC 255.82 CLP 163.42

PLANETOCENTRIC CONIC

C3 14.676 VHL 3.831 DLA 18.45 RAL 156.76 RAD 6567.6 VEL 11.665 PTH 2.05 VHP 6.966 DPA -.83 RAP 193.02 ECC 1.2415

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 14 39	2757.58	-28.01	78.73	19.32	94.35	15 0 36	2157.6	-27.11	70.18
90.00	7 21 44	4172.46	-.85	170.44	13.43	61.69	8 31 17	3572.5	-4.63	163.80
100.00	15 47 4	2450.53	-29.34	56.67	19.18	96.00	16 28 4	1859.5	-28.20	48.05
100.00	8 32 0	3945.73	.32	153.13	12.78	60.11	9 37 46	3345.7	-3.66	146.60
110.00	17 19 28	2170.47	-32.75	34.15	18.60	100.40	17 55 38	1570.5	-30.97	25.38
110.00	9 16 6	3807.56	3.24	140.83	10.95	55.95	10 19 33	3207.6	-1.25	134.62

DIFFERENTIAL CORRECTIONS

TDE .1554 TRA -.8717 TC3 2.9554 BAU .5806
RDE -.3209 RRA -.1224 RC3 .1523 FAU .11605
FDE .2895 FRA .3683 FC3-6.8459 BSP 9071
BDE .3566 BRA .8802 BC3 2.9594 FSP 1390

MID-COURSE EXECUTION ACCURACY

SGT 2659.0 SGR 530.3 SG3 457.5
RRT .2964 RRF -.3319 RTF -.8931
SGB 2711.4 R23 -.0600 R13 -.8939
SG1 2663.8 SG2 505.6 THA 3.51

ORBIT DETERMINATION ACCURACY

ST 478.2 SR 483.5 SS 296.4
CRT -.3784 CRS .9174 CST -.0771
LSA 601.4 MSA 429.1 SSA 66.5
EL1 564.6 EL2 379.1 ALF 134.16

LAUNCH DATE DEC 6 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 435.114 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.888 GAL 1.06 AZL 89.11 HCA 135.82 SMA 203.41 ECC .27594 INC .8886 V1 30.227
RP 238.95 LAP .62 LOP 209.74 VP 21.409 GAP 12.53 AZP 90.64 TAL 4.89 TAP 140.71 RCA 147.28 APO 259.54 V2 22.991
RC 175.790 GL 7.97 GP 3.40 ZAL 76.85 ZAP 162.36 ETS 167.75 ZAE 157.58 ETE 8.77 ZAC 93.73 ETC 255.81 CLP 162.68

PLANETOCENTRIC CONIC

C3 14.351 VHL 3.788 DLA 18.69 RAL 155.66 RAD 6567.6 VEL 11.651 PTH 2.05 VHP 6.802 DPA -.79 RAP 193.26 ECC 1.2362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 7 42	2762.31	-28.03	79.08	17.94	94.18	14 53 44	2162.3	-27.16	70.52
90.00	7 19 56	4157.80	-1.32	169.63	12.10	61.71	8 29 14	3557.8	-5.10	162.98
100.00	15 40 22	2463.46	-29.37	56.96	17.80	95.86	16 21 25	1863.5	-28.24	48.34
100.00	8 29 57	3931.88	-.15	152.37	11.45	60.11	9 35 29	3331.9	-4.13	145.84
110.00	17 13 15	2172.87	-32.78	34.33	17.24	100.30	17 49 28	1572.9	-31.01	25.55
110.00	9 13 34	3795.23	2.77	140.18	9.62	55.92	10 16 49	3195.2	-1.72	133.98

DIFFERENTIAL CORRECTIONS

TDE .1418 TRA -.8366 TC3 3.0633 BAU .5887
RDE -.3142 RRA -.1171 RC3 .1755 FAU .12081
FDE .3182 FRA .3239 FC3-7.2882 BSP 9140
BDE .3447 BRA .8448 BC3 3.0683 FSP 1469

MID-COURSE EXECUTION ACCURACY

SGT 2686.4 SGR 527.7 SG3 481.0
RRT .3219 RRF -.3607 RTF -.8962
SGB 2737.8 R23 -.0653 R13 -.8971
SG1 2692.0 SG2 498.6 THA 3.75

ORBIT DETERMINATION ACCURACY

ST 459.8 SR 478.6 SS 312.7
CRT -.3597 CRS .9349 CST -.1205
LSA 598.4 MSA 418.8 SSA 68.9
EL1 547.6 EL2 374.9 ALF 131.82

LAUNCH DATE DEC 6 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 438.464 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.836 GAL 1.16 AZL 89.14 HCA 136.77 SMA 202.31 ECC .27216 INC .8617 V1 30.227
RP 238.63 LAP .59 LOP 210.69 VP 21.362 GAP 12.00 AZP 90.63 TAL 5.40 TAP 142.18 RCA 147.25 APO 257.38 V2 23.024
RC 178.086 GL 7.80 GP 3.54 ZAL 75.81 ZAP 161.59 ETS 167.80 ZAE 158.17 ETE 9.54 ZAC 93.91 ETC 255.81 CLP 161.92

PLANETOCENTRIC CONIC

C3 14.053 VHL 3.749 DLA 18.91 RAL 154.58 RAD 6567.6 VEL 11.638 PTH 2.04 VHP 6.642 DPA -.74 RAP 193.50 ECC 1.2313

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 1 1	2766.40	-28.05	79.38	16.58	94.03	14 47 8	2166.4	-27.20	70.81
90.00	7 17 55	4144.44	-1.75	168.88	10.79	61.73	8 27 0	3544.4	-5.52	162.23
100.00	15 33 55	2466.82	-29.39	57.21	16.45	95.73	16 15 2	1866.8	-28.28	48.58
100.00	8 27 42	3919.26	-.58	151.68	10.14	60.11	9 33 2	3319.3	-4.55	145.14
110.00	17 7 15	2174.84	-32.80	34.48	15.89	100.21	17 43 30	1574.8	-31.04	25.69
110.00	9 10 52	3784.00	2.34	139.60	8.31	55.89	10 13 56	3184.0	-2.15	133.39

DIFFERENTIAL CORRECTIONS

TDE .1239 TRA -.8053 TC3 3.1517 BAU .5933
RDE -.3079 RRA -.1117 RC3 .2007 FAU .12575
FDE .3492 FRA .2759 FC3-7.7468 BSP 9275
BDE .3319 BRA .8130 BC3 3.1581 FSP 1552

MID-COURSE EXECUTION ACCURACY

SGT 2704.1 SGR 525.9 SG3 505.4
RRT .3524 RRF -.3919 RTF -.8979
SGB 2754.8 R23 -.0691 R13 -.8989
SG1 2710.7 SG2 491.0 THA 4.05

ORBIT DETERMINATION ACCURACY

ST 439.6 SR 473.7 SS 331.2
CRT -.3250 CRS .9480 CST -.1440
LSA 595.8 MSA 408.9 SSA 71.4
EL1 527.5 EL2 373.3 ALF 128.52

LAUNCH DATE DEC 6 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 441.845 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.786 GAL 1.25 AZL 89.17 HCA 137.73 SMA 201.28 ECC .26856 INC .8338 V1 30.227
RP 238.31 LAP .56 LOP 211.64 VP 21.319 GAP 11.48 AZP 90.62 TAL 5.91 TAP 143.64 RCA 147.23 APO 255.34 V2 23.056
RC 180.373 GL 7.61 GP 3.69 ZAL 74.78 ZAP 160.80 ETS 167.83 ZAE 158.80 ETE 10.38 ZAC 94.10 ETC 255.80 CLP 161.14

PLANETOCENTRIC CONIC

C3 13.779 VHL 3.712 DLA 19.10 RAL 153.50 RAD 6567.5 VEL 11.626 PTH 2.04 VHP 6.486 DPA -.68 RAP 193.72 ECC 1.2268

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 54 39	2769.79	-28.07	79.62	15.24	93.91	14 40 49	2169.8	-27.23	71.06
90.00	7 15 41	4132.41	-2.14	168.21	9.51	61.76	8 24 33	3532.4	-5.90	161.55
100.00	15 27 46	2469.55	-29.41	57.41	15.11	95.62	16 8 55	1869.6	-28.32	48.78
100.00	8 25 15	3907.89	-.97	151.05	8.85	60.12	9 30 23	3307.9	-4.94	144.51
110.00	17 1 29	2176.33	-32.82	34.59	14.56	100.15	17 37 45	1576.3	-31.07	25.80
110.00	9 8 1	3773.88	1.95	139.07	7.03	55.87	10 10 55	3173.9	-2.54	132.86

DIFFERENTIAL CORRECTIONS
TDE .1128 TRA -.7728 TC3 3.2484 BAU .5999
RDE -.3016 RRA -.1062 RC3 .2284 FAU .13106
FDE .3752 FRA .2238 FC3-8.2347 BSP 9376
BDE .3220 BRA .7801 BC3 3.2564 FSP 1641

MID-COURSE EXECUTION ACCURACY
SGT 2727.6 SGR 524.9 SG3 531.5
RRT .3819 RRF -.4241 RTF -.9002
SGB 2777.6 R23 -.0748 R13 -.9013
SG1 2735.2 SG2 483.8 THA 4.34

ORBIT DETERMINATION ACCURACY
ST 423.0 SR 468.5 SS 346.0
CRT -.3076 CRS .9553 CST -.1761
LSA 596.5 MSA 396.0 SSA 74.2
EL1 513.3 EL2 367.4 ALF 125.80

LAUNCH DATE DEC 6 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 445.255 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.739 GAL 1.34 AZL 89.19 HCA 138.68 SMA 200.31 ECC .26515 INC .8049 V1 30.227
RP 237.98 LAP .53 LOP 212.60 VP 21.279 GAP 10.97 AZP 90.60 TAL 6.41 TAP 145.10 RCA 147.20 APO 253.42 V2 23.089
RC 182.651 GL 7.40 GP 3.85 ZAL 73.77 ZAP 159.99 ETS 167.85 ZAE 159.45 ETE 11.32 ZAC 94.29 ETC 255.80 CLP 160.35

PLANETOCENTRIC CONIC

C3 13.528 VHL 3.678 DLA 19.26 RAL 152.43 RAD 6567.5 VEL 11.615 PTH 2.04 VHP 6.334 DPA -.60 RAP 193.94 ECC 1.2226

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 48 37	2772.40	-28.08	79.81	13.93	93.81	14 34 49	2172.4	-27.26	71.24
90.00	7 13 11	4121.77	-2.48	167.62	8.24	61.78	8 21 53	3521.8	-6.24	160.95
100.00	15 21 54	2471.58	-29.42	57.56	13.80	95.55	16 3 6	1871.6	-28.34	48.92
100.00	8 22 35	3897.82	-1.31	150.50	7.59	60.13	9 27 33	3297.8	-5.27	143.96
110.00	16 55 58	2177.28	-32.83	34.66	13.26	100.11	17 32 15	1577.3	-31.09	25.87
110.00	9 5 1	3764.89	1.61	138.60	5.77	55.85	10 7 46	3164.9	-2.88	132.39

DIFFERENTIAL CORRECTIONS
TDE .0993 TRA -.7417 TC3 3.3367 BAU .6053
RDE -.2957 RRA -.1006 RC3 .2583 FAU .13656
FDE .4054 FRA .1693 FC3-8.7393 BSP 9456
BDE .3120 BRA .7485 BC3 3.3467 FSP 1733

MID-COURSE EXECUTION ACCURACY
SGT 2747.1 SGR 525.3 SG3 558.6
RRT .4146 RRF -.4589 RTF -.9021
SGB 2796.8 R23 -.0805 R13 -.9034
SG1 2756.0 SG2 476.5 THA 4.67

ORBIT DETERMINATION ACCURACY
ST 405.2 SR 463.4 SS 364.3
CRT -.2799 CRS .9603 CST -.1955
LSA 599.1 MSA 383.1 SSA 76.7
EL1 497.8 EL2 362.1 ALF 122.15

LAUNCH DATE DEC 6 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 448.693 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.693 GAL 1.43 AZL 89.23 HCA 139.64 SMA 199.39 ECC .26191 INC .7747 V1 30.227
RP 237.65 LAP .50 LOP 213.56 VP 21.244 GAP 10.47 AZP 90.59 TAL 6.91 TAP 146.55 RCA 147.17 APO 251.62 V2 23.123
RC 184.919 GL 7.18 GP 4.02 ZAL 72.79 ZAP 159.16 ETS 167.85 ZAE 160.12 ETE 12.37 ZAC 94.49 ETC 255.79 CLP 159.54

PLANETOCENTRIC CONIC

C3 13.297 VHL 3.647 DLA 19.40 RAL 151.37 RAD 6567.5 VEL 11.605 PTH 2.03 VHP 6.186 DPA -.50 RAP 194.14 ECC 1.2188

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 42 56	2774.13	-28.09	79.94	12.64	93.75	14 29 10	2174.1	-27.27	71.37
90.00	7 10 27	4112.56	-2.78	167.10	7.00	61.81	8 19 0	3512.6	-6.53	160.43
100.00	15 16 22	2472.83	-29.43	57.65	12.52	95.50	15 57 35	1872.8	-28.36	49.01
100.00	8 19 42	3889.10	-1.60	150.02	6.35	60.15	9 24 31	3289.1	-5.57	143.47
110.00	16 50 44	2177.64	-32.83	34.69	11.97	100.09	17 27 1	1577.6	-31.09	25.90
110.00	9 1 50	3757.06	1.31	138.19	4.53	55.84	10 4 27	3157.1	-3.18	131.98

DIFFERENTIAL CORRECTIONS
TDE .0892 TRA -.7081 TC3 3.4246 BAU .6110
RDE -.2900 RRA -.0949 RC3 .2909 FAU .14240
FDE .4335 FRA .1081 FC3-9.2709 BSP 9510
BDE .3034 BRA .7145 BC3 3.4369 FSP 1830

MID-COURSE EXECUTION ACCURACY
SGT 2765.7 SGR 526.9 SG3 587.3
RRT .4477 RRF -.4950 RTF -.9044
SGB 2815.5 R23 -.0874 R13 -.9058
SG1 2776.1 SG2 469.4 THA 5.02

ORBIT DETERMINATION ACCURACY
ST 387.9 SR 458.2 SS 380.9
CRT -.2623 CRS .9622 CST -.2212
LSA 603.1 MSA 368.1 SSA 79.6
EL1 485.3 EL2 353.5 ALF 118.73

LAUNCH DATE DEC 6 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 452.158 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.650 GAL 1.52 AZL 89.26 HCA 140.60 SMA 198.53 ECC .25883 INC .7434 V1 30.227
RP 237.31 LAP .47 LOP 214.52 VP 21.213 GAP 9.97 AZP 90.57 TAL 7.39 TAP 148.00 RCA 147.14 APO 249.91 V2 23.157
RC 187.176 GL 6.93 GP 4.20 ZAL 71.82 ZAP 158.32 ETS 167.85 ZAE 160.82 ETE 13.55 ZAC 94.69 ETC 255.79 CLP 158.71

PLANETOCENTRIC CONIC

C3 13.086 VHL 3.617 DLA 19.50 RAL 150.33 RAD 6567.5 VEL 11.596 PTH 2.03 VHP 6.041 DPA -.39 RAP 194.33 ECC 1.2154

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 37 38	2774.93	-28.09	80.00	11.37	93.72	14 23 53	2174.9	-27.28	71.42
90.00	7 7 27	4104.83	-3.03	166.67	5.79	61.83	8 15 51	3504.8	-6.77	159.99
100.00	15 11 12	2473.25	-29.43	57.68	11.25	95.48	15 52 25	1873.2	-28.36	49.04
100.00	8 16 34	3881.74	-1.85	149.62	5.13	60.16	9 21 16	3281.7	-5.81	143.07
110.00	16 45 46	2177.35	-32.83	34.67	10.71	100.10	17 22 3	1577.4	-31.09	25.88
110.00	8 58 29	3750.40	1.06	137.84	3.32	55.83	10 1 0	3150.4	-3.43	131.64

DIFFERENTIAL CORRECTIONS
TDE .0835 TRA -.6729 TC3 3.5130 BAU .6172
RDE -.2845 RRA -.0890 RC3 .3261 FAU .14849
FDE .4589 FRA .0420 FC3-9.8236 BSP 9474
BDE .2965 BRA .6788 BC3 3.5281 FSP 1928

MID-COURSE EXECUTION ACCURACY
SGT 2784.9 SGR 530.1 SG3 617.3
RRT .4803 RRF -.5320 RTF -.9070
SGB 2834.9 R23 -.0957 R13 -.9086
SG1 2796.9 SG2 463.0 THA 5.37

ORBIT DETERMINATION ACCURACY
ST 372.0 SR 452.8 SS 395.5
CRT -.2601 CRS .9615 CST -.2578
LSA 607.6 MSA 351.9 SSA 82.6
EL1 476.2 EL2 341.5 ALF 116.36

1793A

LAUNCH DATE DEC 6 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 455.647 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.609	GAL	1.60	AZL	89.29	HCA	141.57	SMA	197.71	ECC	.25591	INC	.7103	V1	30.227
RP	236.98	LAP	.44	LOP	215.48	VP	21.185	GAP	9.48	AZP	90.56	TAL	7.87	TAP	149.43	RCA	147.11	APO	248.30	V2	23.191
RC	189.421	GL	6.66	GP	4.39	ZAL	70.88	ZAP	157.45	ETS	167.83	ZAE	161.54	ETE	14.87	ZAC	94.90	ETC	255.78	CLP	157.86

PLANETOCENTRIC CONIC

C3	12.892	VHL	3.591	DLA	19.57	RAL	149.31	RAD	6567.5	VEL	11.588	PTH	2.03	VHP	5.900	DPA	-.26	RAP	194.51	ECC	1.2122

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 32 46	2774.67	-28.09	79.98	10.13	93.73	14 19 0	2174.7	-27.28	71.41
90.00	7 4 10	4098.65	-3.23	166.32	4.59	61.85	8 12 28	3498.6	-6.97	159.64
100.00	15 6 24	2472.72	-29.43	57.64	10.01	95.50	15 47 37	1872.7	-28.35	49.00
100.00	8 13 13	3875.83	-2.05	149.29	3.94	60.17	9 17 48	3275.8	-6.01	142.74
110.00	16 41 8	2176.34	-32.82	34.59	9.46	100.15	17 17 24	1576.3	-31.07	25.80
110.00	8 54 58	3744.98	.85	137.56	2.13	55.83	9 57 23	3145.0	-3.64	131.35

DIFFERENTIAL CORRECTIONS

TDE	.0699	TRA	-.6471	TC3	3.5685	BAU	.6182
RDE	-.2792	RRA	-.0829	RC3	.3641	FAU	.15474
FDE	.4876	FRA	-.0259	FC-10	3.3915	BSP	9659
BDE	.2878	BRA	.6523	BC3	3.5870	FSP	2041

MID-COURSE EXECUTION ACCURACY

SGT	2789.3	SGR	535.3	SG3	648.2		
RRT	.5186	RRF	-.5706	RTF	-.9073		
SGB	2840.2	R23	-.1020	R13	-.9091		
SG1	2803.4	SG2	455.4	THA	5.84		

ORBIT DETERMINATION ACCURACY

ST	355.6	SR	447.5	SS	412.8		
CRT	-.2213	CRS	.9598	CST	-.2565		
LSA	611.5	MSA	340.4	SSA	85.2		
EL1	463.0	EL2	335.2	ALF	111.82		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 459.160 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.570	GAL	1.68	AZL	89.32	HCA	142.53	SMA	196.93	ECC	.25315	INC	.6760	V1	30.227
RP	236.64	LAP	.41	LOP	216.45	VP	21.161	GAP	8.99	AZP	90.54	TAL	8.33	TAP	150.86	RCA	147.08	APO	246.78	V2	23.226
RC	191.655	GL	6.38	GP	4.60	ZAL	69.97	ZAP	156.55	ETS	167.81	ZAE	162.27	ETE	16.38	ZAC	95.12	ETC	255.78	CLP	156.98

PLANETOCENTRIC CONIC

C3	12.714	VHL	3.566	DLA	19.61	RAL	148.30	RAD	6567.5	VEL	11.580	PTH	2.03	VHP	5.763	DPA	-.11	RAP	194.68	ECC	1.2092

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 28 18	2773.33	-28.08	79.88	8.91	93.78	14 14 31	2173.3	-27.26	71.31
90.00	7 0 35	4094.02	-3.38	166.06	3.42	61.87	8 8 49	3494.0	-7.11	159.38
100.00	15 1 59	2471.24	-29.42	57.53	8.78	95.56	15 43 10	1871.2	-28.34	48.90
100.00	8 9 36	3871.35	-2.21	149.05	2.77	60.18	9 14 7	3271.3	-6.16	142.49
110.00	16 36 48	2174.58	-32.80	34.46	8.24	100.22	17 13 3	1574.6	-31.04	25.68
110.00	8 51 16	3740.77	.69	137.34	.96	55.82	9 53 36	3140.8	-3.80	131.13

DIFFERENTIAL CORRECTIONS

TDE	.0628	TRA	-.6173	TC3	3.6363	BAU	.6219
RDE	-.2739	RRA	-.0765	RC3	.4057	FAU	.16147
FDE	.5122	FRA	-.0997	FC-10	3.9950	BSP	9710
BDE	.2810	BRA	.6221	BC3	3.6589	FSP	2154

MID-COURSE EXECUTION ACCURACY

SGT	2800.7	SGR	542.7	SG3	681.3		
RRT	.5549	RRF	-.6096	RTF	-.9088		
SGB	2852.7	R23	-.1106	R13	-.9109		
SG1	2817.2	SG2	448.8	THA	6.30		

ORBIT DETERMINATION ACCURACY

ST	340.6	SR	442.0	SS	426.9		
CRT	-.2082	CRS	.9559	CST	-.2767		
LSA	615.6	MSA	326.9	SSA	88.3		
EL1	454.1	EL2	324.3	ALF	109.16		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 462.696 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.532	GAL	1.76	AZL	89.36	HCA	143.50	SMA	196.20	ECC	.25052	INC	.6400	V1	30.227
RP	236.29	LAP	.38	LOP	217.42	VP	21.140	GAP	8.51	AZP	90.51	TAL	8.79	TAP	152.29	RCA	147.05	APO	245.35	V2	23.261
RC	193.877	GL	6.07	GP	4.82	ZAL	69.08	ZAP	155.63	ETS	167.77	ZAE	163.03	ETE	18.09	ZAC	95.35	ETC	255.77	CLP	156.08

PLANETOCENTRIC CONIC

C3	12.551	VHL	3.543	DLA	19.62	RAL	147.31	RAD	6567.5	VEL	11.573	PTH	2.02	VHP	5.629	DPA	.06	RAP	194.84	ECC	1.2066

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 24 18	2770.84	-28.07	79.70	7.71	93.87	14 10 28	2170.8	-27.24	71.13
90.00	6 56 43	4090.99	-3.47	165.90	2.27	61.88	8 4 54	3491.0	-7.21	159.21
100.00	14 57 59	2468.72	-29.40	57.35	7.59	95.65	15 39 8	1868.7	-28.31	48.72
100.00	8 5 43	3868.34	-2.31	148.88	1.62	60.19	9 10 11	3268.3	-6.26	142.32
110.00	16 32 49	2172.02	-32.77	34.26	7.03	100.33	17 9 1	1572.0	-30.99	25.49
110.00	8 47 22	3737.81	.57	137.19	359.82	55.82	9 49 40	3137.8	-3.91	130.98

DIFFERENTIAL CORRECTIONS

TDE	.0574	TRA	-.5884	TC3	3.6897	BAU	.6237
RDE	-.2688	RRA	-.0699	RC3	.4503	FAU	.16834
FDE	.5348	FRA	-.1790	FC-11	6.6119	BSP	9744
BDE	.2748	BRA	.5925	BC3	3.7171	FSP	2271

MID-COURSE EXECUTION ACCURACY

SGT	2804.2	SGR	552.4	SG3	715.3		
RRT	.5907	RRF	-.6482	RTF	-.9097		
SGB	2850.1	R23	-.1204	R13	-.9121		
SG1	2823.6	SG2	442.7	THA	6.80		

ORBIT DETERMINATION ACCURACY

ST	326.5	SR	436.3	SS	439.8		
CRT	-.2015	CRS	.9507	CST	-.3012		
LSA	619.4	MSA	313.6	SSA	91.4		
EL1	446.4	EL2	312.6	ALF	107.23		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 466.254 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.496	GAL	1.83	AZL	89.40	HCA	144.47	SMA	195.51	ECC	.24804	INC	.6022	V1	30.227
RP	235.94	LAP	.35	LOP	218.39	VP	21.122	GAP	8.04	AZP	90.49	TAL	9.23	TAP	153.70	RCA	147.01	APO	244.00	V2	23.297
RC	196.086	GL	5.74	GP	5.05	ZAL	68.21	ZAP	154.69	ETS	167.72	ZAE	163.79	ETE	20.06	ZAC	95.59	ETC	255.77	CLP	155.16

PLANETOCENTRIC CONIC

C3	12.401	VHL	3.521	DLA	19.59	RAL	146.35	RAD	6567.5	VEL	11.567	PTH	2.02	VHP	5.499	DPA	.25	RAP	194.98	ECC	1.2041

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 20 45	2767.12	-28.06	79.43	6.54	94.01	14 6 52	2167.1	-27.20	70.87
90.00	6 52 33	4089.60	-3.52	165.82	1.14	61.88	8 0 43	3489.6	-7.25	159.13
100.00	14 54 24	2465.10	-29.38	57.08	6.41	95.79	15 35 29	1865.1	-28.26	48.46
100.00	8 1 35	3866.85	-2.36	148.80	.49	60.19	9 6 1	3266.8	-6.31	142.24
110.00	16 29 11	2168.60	-32.72	34.00	5.85	100.48	17 5 19	1568.6	-30.93	25.24
110.00	8 43 18	3736.12	.51	137.10	358.70	55.82	9 45 34	3136.1	-3.98	130.89

DIFFERENTIAL CORRECTIONS

TDE	.0539	TRA	-.5591	TC3	3.7443	BAU	.6262
RDE	-.2637	RRA	-.0629	RC3	.4989	FAU	.17564
FDE	.5560	FRA	-.2636	FC-12	6.2621	BSP	9741
BDE	.2692	BRA	.5626	BC3	3.7774	FSP	2394

MID-COURSE EXECUTION ACCURACY

SGT	2809.7	SGR	565.1	SG3	751.3		
RRT	.6260	RRF	-.6865	RTF	-.9110		
SGB	2865.9	R23	-.1309	R13	-.9137		
SG1	2832.4	SG2	437.2	THA	7.35		

ORBIT DETERMINATION ACCURACY

ST	312.8	SR	430.4	SS	451.8		
CRT	-.2030	CRS	.9442	CST	-.3307		
LSA	623.0	MSA	300.2	SSA	94.7		
EL1	439.5	EL2	300.0	ALF	106.01		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 469.833 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.462 GAL 1.90 AZL 89.44 HCA 145.45 SMA 194.85 ECC .24568 INC .5623 V1 30.227
RP 235.59 LAP .32 LOP 219.36 VP 21.108 GAP 7.58 AZP 90.46 TAL 9.66 TAP 155.11 RCA 146.98 APO 242.72 V2 23.333
RC 198.280 GL 5.38 GP 5.30 ZAL 67.38 ZAP 153.72 ETS 167.66 ZAE 164.56 ETE 22.32 ZAC 95.84 ETC 255.76 CLP 154.22

PLANETOCENTRIC CONIC

C3 12.264 VHL 3.502 DLA 19.53 RAL 145.40 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 5.372 DPA .46 RAP 195.11 ECC 1.2018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 17 39	2762.15	-28.03	79.07	5.38	94.19	14 3 42	2162.1	-27.16	70.51
90.00	6 48 3	4089.85	-3.51	165.83	.02	61.88	7 56 13	3489.8	-7.24	159.14
100.00	14 51 15	2460.37	-29.34	56.73	5.25	95.97	15 32 15	1860.4	-28.21	48.12
100.00	7 57 9	3866.86	-2.36	148.80	359.39	60.19	9 1 36	3266.9	-6.31	142.24
110.00	16 25 53	2164.29	-32.67	33.68	4.68	100.67	17 1 57	1564.3	-30.85	24.93
110.00	8 39 1	3735.70	.49	137.08	357.60	55.82	9 41 16	3135.7	-3.99	130.87

DIFFERENTIAL CORRECTIONS
TDE .0657 TRA -.5172 TC3 3.8326 BAU .6349
RDE -.2583 RRA -.0550 RC3 .5528 FAU .18368
FDE .5635 FRA -.3646 FC-12.9665 BSP 9410
BDE .2665 BRA .5201 BC3 3.8723 FSP 2502

MID-COURSE EXECUTION ACCURACY
SGT 2832.5 SGR 581.0 SG3 790.6
RRT .6561 RRF -.7233 RTF -.9148
SGB 2891.5 R23 -.1439 R13 -.9180
SG1 2858.7 SG2 434.5 THA 7.85

ORBIT DETERMINATION ACCURACY
ST 301.0 SR 423.7 SS 454.8
CRT -.2881 CRS .9328 CST -.4348
LSA 623.9 MSA 278.4 SSA 101.0
EL1 439.0 EL2 278.1 ALF 109.78

LAUNCH DATE DEC 6 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 473.430 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.430 GAL 1.97 AZL 89.48 HCA 146.43 SMA 194.23 ECC .24344 INC .5203 V1 30.227
RP 235.24 LAP .29 LOP 220.34 VP 21.096 GAP 7.12 AZP 90.43 TAL 10.08 TAP 156.50 RCA 146.95 APO 241.52 V2 23.369
RC 200.460 GL 5.00 GP 5.57 ZAL 66.57 ZAP 152.72 ETS 167.59 ZAE 165.33 ETE 24.94 ZAC 96.10 ETC 255.75 CLP 153.25

PLANETOCENTRIC CONIC

C3 12.138 VHL 3.484 DLA 19.43 RAL 144.47 RAD 6567.5 VEL 11.555 PTH 2.02 VHP 5.249 DPA .70 RAP 195.23 ECC 1.1998

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 15 7	2755.74	-28.00	78.60	4.25	94.42	14 1 3	2155.7	-27.09	70.05
90.00	6 43 15	4091.88	-3.45	165.94	358.94	61.88	7 51 26	3491.9	-7.18	159.26
100.00	14 48 35	2454.34	-29.30	56.29	4.11	96.20	15 29 29	1854.3	-28.13	47.68
100.00	7 52 28	3868.51	-2.30	148.89	358.31	60.19	8 56 56	3268.5	-6.25	142.33
110.00	16 23 0	2158.96	-32.60	33.28	3.53	100.90	16 58 59	1559.0	-30.76	24.55
110.00	8 34 32	3736.66	.53	137.13	356.54	55.82	9 36 49	3136.7	-3.96	130.92

DIFFERENTIAL CORRECTIONS
TDE .0487 TRA -.5063 TC3 3.8186 BAU .6275
RDE -.2536 RRA -.0476 RC3 .6087 FAU .19119
FDE .5892 FRA -.4496 FC-13.6368 BSP 9788
BDE .2583 BRA .5085 BC3 3.8668 FSP 2660

MID-COURSE EXECUTION ACCURACY
SGT 2804.5 SGR 600.7 SG3 828.0
RRT .6936 RRF -.7590 RTF -.9120
SGB 2868.1 R23 -.1545 R13 -.9158
SG1 2836.0 SG2 427.9 THA 8.65

ORBIT DETERMINATION ACCURACY
ST 288.0 SR 418.1 SS 470.4
CRT -.2140 CRS .9271 CST -.3921
LSA 626.3 MSA 276.3 SSA 101.7
EL1 426.1 EL2 276.0 ALF 104.65

LAUNCH DATE DEC 6 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 477.047 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.399 GAL 2.03 AZL 89.52 HCA 147.41 SMA 193.65 ECC .24133 INC .4760 V1 30.227
RP 234.89 LAP .26 LOP 221.32 VP 21.088 GAP 6.67 AZP 90.40 TAL 10.48 TAP 157.89 RCA 146.92 APO 240.38 V2 23.405
RC 202.623 GL 4.59 GP 5.85 ZAL 65.80 ZAP 151.69 ETS 167.52 ZAE 166.09 ETE 27.98 ZAC 96.38 ETC 255.74 CLP 152.26

PLANETOCENTRIC CONIC

C3 12.022 VHL 3.467 DLA 19.29 RAL 143.57 RAD 6567.5 VEL 11.550 PTH 2.02 VHP 5.129 DPA .97 RAP 195.33 ECC 1.1979

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 13 3	2747.97	-27.96	78.04	3.14	94.70	13 58 51	2148.0	-27.01	69.50
90.00	6 38 5	4095.61	-3.33	166.15	357.87	61.86	7 46 21	3495.6	-7.06	159.47
100.00	14 46 22	2447.08	-29.25	55.76	2.99	96.48	15 27 9	1847.1	-28.04	47.16
100.00	7 47 28	3871.74	-2.19	149.07	357.25	60.18	8 52 0	3271.7	-6.15	142.51
110.00	16 20 28	2152.64	-32.52	32.80	2.40	101.16	16 56 21	1552.6	-30.64	24.09
110.00	8 29 51	3738.94	.62	137.25	355.49	55.82	9 32 10	3138.9	-3.87	131.04

DIFFERENTIAL CORRECTIONS
TDE .0488 TRA -.4803 TC3 3.8438 BAU .6271
RDE -.2486 RRA -.0392 RC3 .6705 FAU .19942
FDE .6009 FRA -.5526 FC-14.3604 BSP 9775
BDE .2533 BRA .4819 BC3 3.9018 FSP 2802

MID-COURSE EXECUTION ACCURACY
SGT 2796.1 SGR 624.2 SG3 868.7
RRT .7242 RRF -.7922 RTF -.9124
SGB 2865.0 R23 -.1679 R13 -.9168
SG1 2833.3 SG2 424.8 THA 9.40

ORBIT DETERMINATION ACCURACY
ST 276.6 SR 411.5 SS 477.2
CRT -.2357 CRS .9164 CST -.4345
LSA 626.6 MSA 264.1 SSA 105.6
EL1 420.2 EL2 263.3 ALF 105.02

LAUNCH DATE DEC 6 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 480.682 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.370 GAL 2.09 AZL 89.57 HCA 148.39 SMA 193.09 ECC .23932 INC .4292 V1 30.227
RP 234.53 LAP .22 LOP 222.31 VP 21.082 GAP 6.23 AZP 90.37 TAL 10.87 TAP 159.26 RCA 146.88 APO 239.31 V2 23.442
RC 204.770 GL 4.15 GP 6.16 ZAL 65.05 ZAP 150.64 ETS 167.43 ZAE 166.83 ETE 31.52 ZAC 96.67 ETC 255.74 CLP 151.23

PLANETOCENTRIC CONIC

C3 11.916 VHL 3.452 DLA 19.10 RAL 142.69 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 5.013 DPA 1.26 RAP 195.42 ECC 1.1961

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 11 30	2738.74	-27.90	77.37	2.04	95.03	13 57 9	2138.7	-26.91	68.84
90.00	6 32 36	4101.12	-3.15	166.46	356.83	61.84	7 40 57	3501.1	-6.89	159.78
100.00	14 44 37	2438.49	-29.18	55.13	1.89	96.80	15 25 16	1838.5	-27.93	46.55
100.00	7 42 10	3876.61	-2.03	149.34	356.21	60.17	8 46 47	3276.6	-5.98	142.78
110.00	16 18 21	2145.24	-32.42	32.25	1.28	101.48	16 54 6	1545.2	-30.50	23.56
110.00	8 24 56	3742.61	.76	137.44	354.46	55.82	9 27 18	3142.6	-3.73	131.23

DIFFERENTIAL CORRECTIONS
TDE .0508 TRA -.4563 TC3 3.8541 BAU .6251
RDE -.2433 RRA -.0302 RC3 .7372 FAU .20788
FDE .6066 FRA -.6606 FC-15.1026 BSP 9772
BDE .2486 BRA .4573 BC3 3.9240 FSP 2953

MID-COURSE EXECUTION ACCURACY
SGT 2780.3 SGR 651.9 SG3 910.6
RRT .7519 RRF -.8226 RTF -.9122
SGB 2855.7 R23 -.1826 R13 -.9175
SG1 2824.1 SG2 423.1 THA 10.23

ORBIT DETERMINATION ACCURACY
ST 267.0 SR 404.5 SS 480.9
CRT -.2683 CRS .9038 CST -.4842
LSA 624.8 MSA 252.5 SSA 110.0
EL1 414.7 EL2 250.9 ALF 106.06

LAUNCH DATE DEC 6 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 484.335 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.342 GAL 2.15 AZL 89.62 HCA 149.38 SMA 192.57 ECC .23743 INC .3790 V1 30.227
RP 234.17 LAP .19 LOP 223.29 VP 21.079 GAP 5.79 AZP 90.33 TAL 11.25 TAP 160.63 RCA 146.85 APO 238.29 V2 23.479
RC 206.900 GL 3.68 GP 6.49 ZAL 64.34 ZAP 149.55 ETS 167.33 ZAE 167.53 ETE 35.66 ZAC 96.98 ETC 255.73 CLP 150.18

PLANETOCENTRIC CONIC

C3 11.819 VHL 3.438 DLA 18.88 RAL 141.83 RAD 6567.5 VEL 11.542 PTH 2.01 VHP 4.900 DPA 1.59 RAP 195.50 ECC 1.1945

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 10 30	2727.98	-27.84	76.59	.96	95.41	13 55 58	2128.0	-26.79	68.07
90.00	6 26 45	4108.45	-2.91	166.87	355.80	61.82	7 35 13	3508.4	-6.66	160.19
100.00	14 43 22	2428.50	-29.10	54.40	.80	97.18	15 23 50	1828.5	-27.80	45.84
100.00	7 36 34	3883.16	-1.81	149.70	355.19	60.16	8 41 17	3283.2	-5.76	143.15
110.00	16 16 38	2136.71	-32.30	31.61	.18	101.84	16 52 14	1536.7	-30.34	22.95
110.00	8 19 47	3747.71	.95	137.70	353.46	55.83	9 22 15	3147.7	-3.54	131.50

DIFFERENTIAL CORRECTIONS

TDE .0536 TRA -.4336 TC3 3.8633 BAU .6238
RDE -.2379 RRA -.0205 RC3 .8105 FAU .21690
FDE .6070 FRA -.7766 FC-15.8875 BSP 9734
BDE .2439 BRA .4341 BC3 3.9474 FSP 3104

MID-COURSE EXECUTION ACCURACY

SGT 2765.4 SGR 684.9 SG3 955.2
RRT .7774 RRF -.8505 RTF -.9120
SGB 2849.0 R23 -.1978 R13 -.9183
SG1 2817.4 SG2 422.8 THA 11.15

ORBIT DETERMINATION ACCURACY

ST 258.5 SR 397.0 SS 482.6
CRT -.3083 CRS .8887 CST -.5374
LSA 621.3 MSA 241.2 SSA 114.9
EL1 409.3 EL2 238.5 ALF 107.44

LAUNCH DATE DEC 6 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 488.005 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.315 GAL 2.21 AZL 89.67 HCA 150.37 SMA 192.08 ECC .23563 INC .3266 V1 30.227
RP 233.80 LAP .16 LOP 224.28 VP 21.079 GAP 5.37 AZP 90.28 TAL 11.61 TAP 161.98 RCA 146.82 APO 237.34 V2 23.517
RC 209.011 GL 3.18 GP 6.84 ZAL 63.65 ZAP 148.42 ETS 167.23 ZAE 168.17 ETE 40.47 ZAC 97.30 ETC 255.72 CLP 149.10

PLANETOCENTRIC CONIC

C3 11.731 VHL 3.425 DLA 18.61 RAL 140.99 RAD 6567.4 VEL 11.538 PTH 2.01 VHP 4.791 DPA 1.95 RAP 195.56 ECC 1.1931

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 10 1	2715.63	-27.75	75.69	359.90	95.86	13 55 17	2115.6	-26.65	67.20
90.00	6 20 32	4117.64	-2.62	167.39	354.79	61.79	7 29 9	3517.6	-6.37	160.71
100.00	14 42 36	2417.06	-29.00	53.56	359.73	97.61	15 22 53	1817.1	-27.64	45.02
100.00	7 30 37	3891.44	-1.53	150.15	354.19	60.14	8 35 29	3291.4	-5.49	143.60
110.00	16 15 19	2126.98	-32.17	30.89	359.08	102.25	16 50 46	1527.0	-30.15	22.26
110.00	8 14 24	3754.28	1.20	138.05	352.48	55.84	9 16 58	3154.3	-3.29	131.84

DIFFERENTIAL CORRECTIONS

TDE .0586 TRA -.4121 TC3 3.8578 BAU .6209
RDE -.2322 RRA -.0100 RC3 .8893 FAU .22605
FDE .6017 FRA -.8978 FC-16.6827 BSP 9704
BDE .2395 BRA .4123 BC3 3.9590 FSP 3268

MID-COURSE EXECUTION ACCURACY

SGT 2742.7 SGR 722.7 SG3 1000.6
RRT .7994 RRF -.8751 RTF -.9114
SGB 2836.3 R23 -.2141 R13 -.9189
SG1 2804.3 SG2 424.7 THA 12.18

ORBIT DETERMINATION ACCURACY

ST 252.1 SR 389.0 SS 482.1
CRT -.3621 CRS .8714 CST -.5971
LSA 616.5 MSA 229.8 SSA 120.3
EL1 404.8 EL2 225.8 ALF 109.49

LAUNCH DATE DEC 6 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 491.692 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.290 GAL 2.26 AZL 89.73 HCA 151.36 SMA 191.61 ECC .23393 INC .2698 V1 30.227
RP 233.44 LAP .13 LOP 225.28 VP 21.081 GAP 4.94 AZP 90.24 TAL 11.96 TAP 163.32 RCA 146.79 APO 236.43 V2 23.555
RC 211.104 GL 2.64 GP 7.23 ZAL 63.00 ZAP 147.27 ETS 167.11 ZAE 168.72 ETE 46.03 ZAC 97.65 ETC 255.71 CLP 147.99

PLANETOCENTRIC CONIC

C3 11.649 VHL 3.413 DLA 18.29 RAL 140.17 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 4.685 DPA 2.35 RAP 195.61 ECC 1.1917

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 10 6	2701.62	-27.65	74.68	358.84	96.35	13 55 7	2101.6	-26.48	66.21
90.00	6 13 56	4128.75	-2.26	168.01	353.81	61.77	7 22 45	3528.7	-6.02	161.34
100.00	14 42 22	2404.08	-28.87	52.62	358.67	98.09	15 22 26	1804.1	-27.45	44.10
100.00	7 24 21	3901.52	-1.18	150.70	353.21	60.13	8 29 22	3301.5	-5.15	144.16
110.00	16 14 27	2115.97	-32.00	30.07	358.00	102.71	16 49 43	1516.0	-29.92	21.47
110.00	8 8 45	3762.39	1.51	138.47	351.52	55.85	9 11 27	3162.4	-2.98	132.26

DIFFERENTIAL CORRECTIONS

TDE .0648 TRA -.3922 TC3 3.8417 BAU .6173
RDE -.2262 RRA .0014 RC3 .9754 FAU .23561
FDE .5881 FRA-1.0273 FC-17.5092 BSP 9652
BDE .2353 BRA .3922 BC3 3.9636 FSP 3433

MID-COURSE EXECUTION ACCURACY

SGT 2714.8 SGR 766.5 SG3 1048.0
RRT .8184 RRF -.8968 RTF -.9104
SGB 2820.9 R23 -.2307 R13 -.9194
SG1 2788.1 SG2 428.8 THA 13.33

ORBIT DETERMINATION ACCURACY

ST 247.6 SR 380.2 SS 479.0
CRT -.4240 CRS .8500 CST -.6574
LSA 609.6 MSA 218.7 SSA 126.3
EL1 400.8 EL2 212.8 ALF 111.90

LAUNCH DATE DEC 6 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 495.394 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.266 GAL 2.31 AZL 89.79 HCA 152.36 SMA 191.17 ECC .23233 INC .2102 V1 30.227
RP 233.07 LAP .10 LOP 226.27 VP 21.086 GAP 4.53 AZP 90.19 TAL 12.30 TAP 164.66 RCA 146.76 APO 235.58 V2 23.593
RC 213.179 GL 2.05 GP 7.64 ZAL 62.38 ZAP 146.08 ETS 166.98 ZAE 169.16 ETE 52.37 ZAC 98.02 ETC 255.69 CLP 146.85

PLANETOCENTRIC CONIC

C3 11.576 VHL 3.402 DLA 17.92 RAL 139.37 RAD 6567.4 VEL 11.531 PTH 2.01 VHP 4.583 DPA 2.78 RAP 195.65 ECC 1.1905

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 10 44	2685.87	-27.53	73.54	357.80	96.91	13 55 30	2085.9	-26.29	65.10
90.00	6 6 56	4141.84	-1.84	168.74	352.84	61.74	7 15 58	3541.8	-5.60	162.08
100.00	14 42 38	2389.48	-28.73	51.55	357.62	98.63	15 22 28	1789.5	-27.24	43.07
100.00	7 17 43	3913.46	-.78	151.36	352.25	60.12	8 22 56	3313.5	-4.75	144.82
110.00	16 14 1	2103.60	-31.81	29.15	356.93	103.22	16 49 5	1503.6	-29.67	20.60
110.00	8 2 50	3772.11	1.89	138.98	350.58	55.86	9 5 42	3172.1	-2.61	132.77

DIFFERENTIAL CORRECTIONS

TDE .0722 TRA -.3742 TC3 3.8138 BAU .6129
RDE -.2197 RRA .0138 RC3 1.0688 FAU .24536
FDE .5675 FRA-1.1627 FC-18.3503 BSP 9604
BDE .2313 BRA .3745 BC3 3.9608 FSP 3609

MID-COURSE EXECUTION ACCURACY

SGT 2681.1 SGR 816.3 SG3 1096.5
RRT .8343 RRF -.9155 RTF -.9089
SGB 2802.6 R23 -.2476 R13 -.9198
SG1 2768.5 SG2 435.8 THA 14.62

ORBIT DETERMINATION ACCURACY

ST 245.6 SR 370.8 SS 474.3
CRT -.4916 CRS .8249 CST -.7129
LSA 601.4 MSA 208.6 SSA 132.4
EL1 397.5 EL2 199.5 ALF 114.63

LAUNCH DATE DEC 6 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 499.111 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.243 GAL 2.36 AZL 89.85 HCA 153.36 SMA 190.75 ECC .23081 INC .1452 V1 30.227
RP 232.70 LAP .07 LOP 227.27 VP 21.093 GAP 4.12 AZP 90.13 TAL 12.62 TAP 165.97 RCA 146.73 APO 234.78 V2 23.631
RC 215.236 GL 1.42 GP 8.09 ZAL 61.79 ZAP 144.85 ETS 166.85 ZAE 169.45 ETE 59.43 ZAC 98.42 ETC 255.68 CLP 145.67

PLANETOCENTRIC CONIC

C3 11.509 VHL 3.392 DLA 17.49 RAL 138.60 RAD 6567.4 VEL 11.528 PTH 2.01 VHP 4.485 DPA 3.26 RAP 195.68 ECC 1.1894

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 11 57	2668.29	-27.38	72.28	356.77	97.53	13 56 25	2068.3	-26.05	63.86
90.00	5 59 31	4157.00	-1.35	169.58	351.89	61.71	7 8 48	3557.0	-5.12	162.93
100.00	14 43 27	2373.18	-28.56	50.37	356.67	99.23	15 23 0	1773.2	-26.99	41.92
100.00	7 10 42	3927.34	-.31	152.12	351.31	60.11	8 16 9	3327.3	-4.28	145.59
110.00	16 14 2	2089.78	-31.59	28.14	355.86	103.78	16 48 52	1489.8	-29.38	19.63
110.00	7 56 36	3783.51	2.32	139.57	349.67	55.89	8 59 40	3183.5	-2.17	133.37

DIFFERENTIAL CORRECTIONS
TDE .0820 TRA -.3571 TC3 3.7787 BAU .6087
RDE -.2125 RRA .0276 RC3 1.1711 FAU .25552
FDE .5344 FRA-1.3075 FC-19.2217 BSP 9521
BDE .2278 BRA .3582 BC3 3.9560 FSP 3786

MID-COURSE EXECUTION ACCURACY
SGT 2644.3 SGR 873.3 SG3 1147.1
RRT .8473 RRF -.9315 RTF -.9072
SGB 2784.7 R23 -.2640 R13 -.9205
SG1 2748.8 SG2 446.2 THA 16.07

ORBIT DETERMINATION ACCURACY
ST 247.2 SR 360.0 SS 466.6
CRT -.5695 CRS .7922 CST -.7617
LSA 591.0 MSA 200.3 SSA 138.2
EL1 395.7 EL2 184.9 ALF 117.97

LAUNCH DATE DEC 6 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 502.843 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.221 GAL 2.40 AZL 89.92 HCA 154.36 SMA 190.36 ECC .22937 INC .0737 V1 30.227
RP 232.32 LAP .03 LOP 228.27 VP 21.102 GAP 3.72 AZP 90.07 TAL 12.92 TAP 167.28 RCA 146.70 APO 234.02 V2 23.670
RC 217.275 GL .74 GP 8.57 ZAL 61.23 ZAP 143.58 ETS 166.70 ZAE 169.55 ETE 67.06 ZAC 98.85 ETC 255.67 CLP 144.46

PLANETOCENTRIC CONIC

C3 11.449 VHL 3.384 DLA 17.01 RAL 137.84 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 4.390 DPA 3.79 RAP 195.69 ECC 1.1884

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 13 45	2648.78	-27.20	70.88	355.74	98.21	13 57 53	2048.8	-25.78	62.50
90.00	5 51 40	4174.33	-.79	170.55	350.96	61.69	7 1 14	3574.3	-4.57	163.91
100.00	14 44 49	2355.07	-28.35	49.07	355.53	99.89	15 24 4	1755.1	-26.69	40.66
100.00	7 3 16	3943.28	.23	153.00	350.39	60.11	8 9 0	3343.3	-3.75	146.47
110.00	16 14 32	2074.40	-31.34	27.01	354.79	104.40	16 49 6	1474.4	-29.04	18.56
110.00	7 50 3	3796.71	2.82	140.26	348.77	55.92	8 53 20	3196.7	-1.67	134.06

DIFFERENTIAL CORRECTIONS
TDE .0933 TRA -.3414 TC3 3.7320 BAU .6040
RDE -.2044 RRA .0428 RC3 1.2831 FAU .26601
FDE .4887 FRA-1.4620 FC-20.1157 BSP 9434
BDE .2247 BRA .3440 BC3 3.9464 FSP 3968

MID-COURSE EXECUTION ACCURACY
SGT 2601.7 SGR 937.8 SG3 1199.3
RRT .8576 RRF -.9450 RTF -.9050
SGB 2765.5 R23 -.2792 R13 -.9213
SG1 2727.0 SG2 460.2 THA 17.70

ORBIT DETERMINATION ACCURACY
ST 252.2 SR 347.9 SS 457.5
CRT -.6479 CRS .7501 CST -.7912
LSA 578.8 MSA 198.3 SSA 140.2
EL1 395.0 EL2 169.2 ALF 121.59

LAUNCH DATE DEC 6 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 506.590 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.201 GAL 2.44 AZL 90.00 HCA 155.36 SMA 189.99 ECC .22801 INC .0000 V1 30.227
RP 231.95 LAP .00 LOP 229.28 VP 21.114 GAP 3.33 AZP 90.00 TAL 13.21 TAP 168.57 RCA 146.67 APO 233.31 V2 23.709
RC 219.295 GL .01 GP 9.10 ZAL 60.71 ZAP 142.26 ETS 166.55 ZAE 169.44 ETE 74.98 ZAC 99.31 ETC 255.65 CLP 143.22

PLANETOCENTRIC CONIC

C3 11.395 VHL 3.376 DLA 16.46 RAL 137.10 RAD 6567.4 VEL 11.523 PTH 2.01 VHP 4.299 DPA 4.37 RAP 195.70 ECC 1.1875

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 16 9	2627.22	-26.98	69.34	354.71	98.95	13 59 56	2027.2	-25.46	61.00
90.00	5 43 20	4193.96	-.16	171.64	350.05	61.68	6 53 14	3594.0	-3.94	165.01
100.00	14 46 46	2335.02	-28.11	47.63	354.49	100.61	15 25 41	1735.0	-26.36	39.26
100.00	6 55 25	3961.39	.85	153.99	349.49	60.12	8 1 26	3361.4	-3.13	147.47
110.00	16 15 31	2057.34	-31.04	25.77	353.72	105.08	16 49 48	1457.3	-28.66	17.38
110.00	7 43 9	3811.84	3.40	141.05	347.90	55.97	8 46 41	3211.8	-1.09	134.85

DIFFERENTIAL CORRECTIONS
TDE .1056 TRA -.3288 TC3 3.6713 BAU .5988
RDE -.1955 RRA .0592 RC3 1.4046 FAU .27656
FDE .4316 FRA-1.6193 FC-21.0115 BSP 9357
BDE .2222 BRA .3341 BC3 3.9308 FSP 4161

MID-COURSE EXECUTION ACCURACY
SGT 2552.3 SGR 1010.1 SG3 1252.0
RRT .8650 RRF -.9562 RTF -.9020
SGB 2744.9 R23 -.2933 R13 -.9222
SG1 2702.9 SG2 478.7 THA 19.53

ORBIT DETERMINATION ACCURACY
ST 261.0 SR 334.5 SS 448.3
CRT -.7199 CRS .6990 CST -.7927
LSA 565.8 MSA 206.4 SSA 135.2
EL1 395.7 EL2 153.2 ALF 125.41

LAUNCH DATE DEC 6 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 510.351 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.181 GAL 2.48 AZL 90.08 HCA 156.37 SMA 189.64 ECC .22673 INC .0773 V1 30.227
RP 231.57 LAP -.03 LOP 230.29 VP 21.128 GAP 2.94 AZP 89.93 TAL 13.48 TAP 169.86 RCA 146.64 APO 232.64 V2 23.748
RC 221.297 GL -.79 GP 9.68 ZAL 60.23 ZAP 140.91 ETS 166.38 ZAE 169.09 ETE 82.84 ZAC 99.81 ETC 255.63 CLP 141.94

PLANETOCENTRIC CONIC

C3 11.349 VHL 3.369 DLA 15.83 RAL 136.37 RAD 6567.4 VEL 11.521 PTH 2.01 VHP 4.212 DPA 5.00 RAP 195.70 ECC 1.1868

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 19 11	2603.46	-26.71	67.65	353.68	99.76	14 2 35	2003.5	-25.09	59.36
90.00	5 34 30	4216.03	.56	172.87	349.16	61.69	6 44 46	3616.0	-3.23	166.24
100.00	14 49 18	2312.88	-27.82	46.04	353.45	101.40	15 27 51	1712.9	-25.97	37.73
100.00	6 47 5	3981.85	1.54	155.11	348.61	60.14	7 53 27	3381.8	-2.44	148.59
110.00	16 17 0	2038.46	-30.70	24.40	352.65	105.83	16 50 59	1438.5	-28.23	16.08
110.00	7 35 52	3829.03	4.06	141.95	347.04	56.03	8 39 41	3229.0	-.43	135.74

DIFFERENTIAL CORRECTIONS
TDE .1205 TRA -.3168 TC3 3.5985 BAU .5938
RDE -.1848 RRA .0780 RC3 1.5382 FAU .28745
FDE .3535 FRA-1.7915 FC-21.9274 BSP 9260
BDE .2206 BRA .3263 BC3 3.9135 FSP 4350

MID-COURSE EXECUTION ACCURACY
SGT 2496.8 SGR 1091.8 SG3 1306.5
RRT .8699 RRF -.9654 RTF -.8985
SGB 2725.1 R23 -.3050 R13 -.9236
SG1 2678.4 SG2 502.0 THA 21.62

ORBIT DETERMINATION ACCURACY
ST 274.8 SR 318.5 SS 439.8
CRT -.7893 CRS .6288 CST -.7546
LSA 551.1 MSA 226.7 SSA 123.7
EL1 398.4 EL2 134.9 ALF 129.68

LAUNCH DATE DEC 6 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 514.125 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.163	GAL	2.52	AZL	90.17	HCA	157.39	SMA	189.31	ECC	.22551	INC	.1657	V1	30.227
RP	231.20	LAP	-.06	LOP	231.30	VP	21.143	GAP	2.56	AZP	89.84	TAL	13.74	TAP	171.12	RCA	146.62	APO	232.00	V2	23.788
RC	223.281	GL	-1.66	GP	10.31	ZAL	59.78	ZAP	139.51	ETS	166.20	ZAE	168.51	ETE	90.32	ZAC	100.36	ETC	255.61	CLP	140.62

PLANETOCENTRIC CONIC

C3	11.311	VHL	3.363	DLA	15.13	RAL	135.65	RAD	6567.4	VEL	11.519	PTH	2.01	VHP	4.129	DPA	5.70	RAP	195.68	ECC	1.1861

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 22 53	2577.33	-26.40	65.80	352.65	100.63	14 5 51	1977.3	-24.66	57.56
90.00	5 25 6	4240.75	1.36	174.25	348.28	61.71	6 35 47	3640.8	-2.44	167.63
100.00	14 52 27	2288.49	-27.48	44.31	352.41	102.25	15 30 36	1688.5	-25.52	36.06
100.00	6 38 14	4004.83	2.32	156.37	347.75	60.19	7 44 58	3404.8	-1.67	149.85
110.00	16 19 2	2017.59	-30.30	22.91	351.58	106.63	16 52 40	1417.6	-27.73	14.66
110.00	7 28 8	3848.49	4.80	142.97	346.21	56.11	8 32 17	3248.5	.31	136.76

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1356	TRA	-.3082	TC3	3.5103	BAU	.5887	SGT	2433.9	SGR	1183.2	SG3	1361.4	ST	291.5	SR	300.5	SS	436.0
RDE	-.1725	RRA	.0986	RC3	1.6842	FAU	.29840	RRT	.8723	RRF	-.9729	RTF	-.8939	CRT	-.8449	CRS	.5442	CST	-.6718
FDE	.2591	FRA	-1.9687	FC	-22.8406	BSP	9161	SGB	2706.3	R23	-.3141	R13	-.9254	LSA	536.4	MSA	256.1	SSA	110.0
BDE	.2194	BRA	.3236	BC3	3.8934	FSP	4538	SG1	2653.8	SG2	530.6	THA	24.00	EL1	402.1	EL2	116.5	ALF	133.98

LAUNCH DATE DEC 6 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 517.912 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.146	GAL	2.55	AZL	90.27	HCA	158.40	SMA	189.00	ECC	.22437	INC	.2640	V1	30.227
RP	230.82	LAP	-.10	LOP	232.32	VP	21.161	GAP	2.19	AZP	89.75	TAL	13.98	TAP	172.38	RCA	146.59	APO	231.40	V2	23.827
RC	225.247	GL	-2.62	GP	11.00	ZAL	59.37	ZAP	138.06	ETS	166.01	ZAE	167.68	ETE	97.16	ZAC	100.96	ETC	255.59	CLP	139.27

PLANETOCENTRIC CONIC

C3	11.280	VHL	3.359	DLA	14.33	RAL	134.95	RAD	6567.4	VEL	11.518	PTH	2.01	VHP	4.050	DPA	6.46	RAP	195.67	ECC	1.1856

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 27 16	2548.62	-26.02	63.78	351.62	101.58	14 9 45	1948.6	-24.17	55.61
90.00	5 15 6	4268.36	2.24	175.79	347.43	61.76	6 26 14	3668.4	-1.55	169.17
100.00	14 56 16	2261.63	-27.08	42.42	351.36	103.17	15 33 58	1661.6	-25.00	34.23
100.00	6 28 48	4030.58	3.19	157.79	346.91	60.26	7 35 58	3430.6	-.79	151.26
110.00	16 21 38	1994.53	-29.84	21.27	350.49	107.50	16 54 52	1394.5	-27.16	13.11
110.00	7 19 55	3870.44	5.63	144.13	345.39	56.23	8 24 26	3270.4	1.15	137.90

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1523	TRA	-.3010	TC3	3.4098	BAU	.5846	SGT	2365.2	SGR	1285.5	SG3	1416.4	ST	312.2	SR	279.9	SS	440.7
RDE	-.1582	RRA	.1218	RC3	1.8437	FAU	.30933	RRT	.8724	RRF	-.9789	RTF	-.8884	CRT	-.8900	CRS	.4478	CST	-.5403
FDE	.1451	FRA	-2.1549	FC	-23.7402	BSP	9094	SGB	2692.0	R23	-.3193	R13	-.9280	LSA	523.2	MSA	295.4	SSA	95.3
BDE	.2196	BRA	.3247	BC3	3.8763	FSP	4740	SG1	2632.2	SG2	564.5	THA	26.69	EL1	407.8	EL2	97.7	ALF	138.51

LAUNCH DATE DEC 6 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 521.712 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.129	GAL	2.58	AZL	90.37	HCA	159.42	SMA	188.71	ECC	.22329	INC	.3703	V1	30.227
RP	230.43	LAP	-.13	LOP	233.33	VP	21.180	GAP	1.83	AZP	89.65	TAL	14.21	TAP	173.63	RCA	146.57	APO	230.84	V2	23.867
RC	227.193	GL	-3.66	GP	11.75	ZAL	59.01	ZAP	136.57	ETS	165.81	ZAE	166.63	ETE	103.20	ZAC	101.62	ETC	255.56	CLP	137.88

PLANETOCENTRIC CONIC

C3	11.260	VHL	3.356	DLA	13.44	RAL	134.25	RAD	6567.4	VEL	11.517	PTH	2.01	VHP	3.976	DPA	7.30	RAP	195.65	ECC	1.1853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 32 24	2517.09	-25.57	61.58	350.57	102.59	14 14 21	1917.1	-23.59	53.48
90.00	5 4 25	4299.14	3.23	177.51	346.60	61.85	6 16 4	3699.1	-.55	170.88
100.00	15 0 47	2232.07	-26.60	40.35	350.30	104.16	15 37 59	1632.1	-24.40	32.24
100.00	6 18 43	4059.39	4.16	159.38	346.09	60.37	7 26 23	3459.4	.19	152.85
110.00	16 24 50	1969.06	-29.31	19.48	349.40	108.43	16 57 39	1369.1	-26.51	11.41
110.00	7 11 9	3895.16	6.56	145.43	344.60	56.38	8 16 5	3295.2	2.10	139.19

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1701	TRA	-.2967	TC3	3.2931	BAU	.5814	SGT	2289.1	SGR	1400.0	SG3	1471.3	ST	336.4	SR	256.2	SS	457.8
RDE	-.1410	RRA	.1479	RC3	2.0183	FAU	.32019	RRT	.8701	RRF	-.9837	RTF	-.8816	CRT	-.9210	CRS	.3481	CST	-.3643
FDE	.0058	FRA	-2.3487	FC	-24.6186	BSP	9038	SGB	2683.3	R23	-.3203	R13	-.9316	LSA	512.6	MSA	345.1	SSA	80.9
BDE	.2209	BRA	.3315	BC3	3.8624	FSP	4938	SG1	2614.4	SG2	604.2	THA	29.77	EL1	415.0	EL2	80.9	ALF	143.33

LAUNCH DATE DEC 6 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 525.525 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.114	GAL	2.61	AZL	90.49	HCA	160.44	SMA	188.43	ECC	.22227	INC	.4872	V1	30.227
RP	230.05	LAP	-.16	LOP	234.36	VP	21.201	GAP	1.47	AZP	89.54	TAL	14.41	TAP	174.86	RCA	146.55	APO	230.32	V2	23.907
RC	229.120	GL	-4.82	GP	12.59	ZAL	58.69	ZAP	135.02	ETS	165.60	ZAE	165.38	ETE	108.41	ZAC	102.34	ETC	255.52	CLP	136.45

PLANETOCENTRIC CONIC

C3	11.251	VHL	3.354	DLA	12.43	RAL	133.56	RAD	6567.4	VEL	11.517	PTH	2.01	VHP	3.907	DPA	8.23	RAP	195.64	ECC	1.1852

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 38 19	2482.42	-25.04	59.19	349.51	103.68	14 19 41	1882.4	-22.91	51.16
90.00	4 52 58	4333.48	4.33	179.44	345.80	61.99	6 5 11	3733.5	.55	172.80
100.00	15 6 2	2199.50	-26.04	38.09	349.22	105.22	15 42 42	1599.5	-23.70	30.07
100.00	6 7 55	4091.64	5.24	161.16	345.30	60.53	7 16 7	3491.6	1.28	154.61
110.00	16 28 41	1940.90	-28.69	17.52	348.29	109.44	17 1 2	1340.9	-25.77	9.56
110.00	7 1 46	3923.00	7.61	146.91	343.84	56.57	8 7 9	3323.0	3.16	140.65

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1881	TRA	-.2949	TC3	3.1597	BAU	.5799	SGT	2205.1	SGR	1528.2	SG3	1525.4	ST	362.3	SR	229.9	SS	492.8
RDE	-.1203	RRA	.1775	RC3	2.2094	FAU	.33086	RRT	.8652	RRF	-.9875	RTF	-.8730	CRT	-.9317	CRS	.2725	CST	-.1643
FDE	-.1599	FRA	-2.5526	FC	-25.4590	BSP	9007	SGB	2682.9	R23	-.3159	R13	-.9364	LSA	513.2	MSA	398.7	SSA	67.8
BDE	.2233	BRA	.3442	BC3	3.8555	FSP	5133	SG1	2603.2	SG2	649.1	THA	33.29	EL1	423.1	EL2	71.5	ALF	148.40

LAUNCH DATE DEC 6 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 529.352 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.099	GAL	2.63	AZL	90.62	HCA	161.47	SMA	188.17	ECC	.22131	INC	.6175	V1	30.227
RP	229.67	LAP	-.20	LOP	235.38	VP	21.224	GAP	1.11	AZP	89.41	TAL	14.61	TAP	176.08	RCA	146.53	APO	229.82	V2	23.948
RC	231.027	GL	-6.10	GP	13.51	ZAL	58.42	ZAP	133.41	ETS	165.37	ZAE	163.93	ETE	112.83	ZAC	103.14	ETC	255.48	CLP	134.97

PLANETOCENTRIC CONIC

C3	11.257	VHL	3.355	DLA	11.30	RAL	132.86	RAD	6567.4	VEL	11.517	PTH	2.01	VHP	3.843	DPA	9.25	RAP	195.63	ECC	1.1853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 45 4	2444.30	-24.40	56.58	348.43	104.84	14 25 49	1844.3	-22.12	48.64
90.00	4 40 38	4371.83	5.56	181.59	345.02	62.19	5 53 30	3771.8	1.79	174.94
100.00	15 12 6	2163.61	-25.38	35.63	348.13	106.35	15 48 10	1563.6	-22.89	27.71
100.00	5 56 17	4127.75	6.45	163.16	344.53	60.75	7 5 5	3527.7	2.50	156.60
110.00	16 33 14	1909.75	-27.96	15.39	347.17	110.51	17 5 3	1309.8	-24.91	7.54
110.00	6 51 39	3954.37	8.78	148.58	343.11	56.83	7 57 33	3354.4	4.35	142.29

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.2211	TRA	-.2823	TC3	3.0603	BAU .5881	SGT 2145.1	SGR 1680.2	SG3 1586.8	ST 410.1	SR 198.4	SS 563.1
RDE	-.0915	RRA	.2145	RC3	2.4301	FAU .34285	RRT .8618	RRF -.9906	RTF -.8679	CRT -.8914	CRS .2504	CST .1036
FDE	-.3956	FRA	-2.7996	FC	-26.3676	BSP 8710	SGB 2724.8	R23 -.3002	R13 -.9445	LSA 567.4	MSA 447.1	SSA 52.9
BDE	.2393	BRA	.3546	BC3	3.9078	FSP 5245	SG1 2635.0	SG2 693.9	THA 37.01	EL1 448.0	EL2 82.3	ALF 155.80

LAUNCH DATE DEC 6 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 533.189 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.085	GAL	2.65	AZL	90.76	HCA	162.50	SMA	187.93	ECC	.22040	INC	.7623	V1	30.227
RP	229.28	LAP	-.23	LOP	236.41	VP	21.248	GAP	.77	AZP	89.27	TAL	14.79	TAP	177.28	RCA	146.51	APO	229.35	V2	23.988
RC	232.913	GL	-7.53	GP	14.54	ZAL	58.21	ZAP	131.75	ETS	165.13	ZAE	162.30	ETE	116.51	ZAC	104.04	ETC	255.44	CLP	133.46

PLANETOCENTRIC CONIC

C3	11.280	VHL	3.359	DLA	10.01	RAL	132.16	RAD	6567.4	VEL	11.518	PTH	2.01	VHP	3.784	DPA	10.38	RAP	195.64	ECC	1.1856

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 52 48	2402.16	-23.63	53.73	347.35	106.07	14 32 50	1802.2	-21.21	45.90
90.00	4 27 17	4414.81	6.92	184.02	344.28	62.47	5 40 52	3814.8	3.17	177.34
100.00	15 19 6	2123.86	-24.59	32.94	347.03	107.56	15 54 29	1523.9	-21.95	25.13
100.00	5 43 41	4168.34	7.79	165.42	343.81	61.05	6 53 10	3568.3	3.87	158.83
110.00	16 38 35	1875.14	-27.11	13.06	346.03	111.66	17 9 50	1275.1	-23.93	5.34
110.00	6 40 42	3989.83	10.10	150.49	342.42	57.17	7 47 11	3389.8	5.70	144.15

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.2359	TRA	-.2914	TC3	2.8750	BAU .5902	SGT 2036.3	SGR 1839.3	SG3 1634.4	ST 433.8	SR 175.7	SS 642.3
RDE	-.0610	RRA	.2523	RC3	2.6553	FAU .35214	RRT .8496	RRF -.9929	RTF -.8530	CRT -.7690	CRS .3591	CST .2588
FDE	-.6201	FRA	-3.0073	FC	-27.0259	BSP 8899	SGB 2744.0	R23 -.2852	R13 -.9512	LSA 659.5	MSA 441.2	SSA 44.4
BDE	.2436	BRA	.3855	BC3	3.9136	FSP 5452	SG1 2640.0	SG2 748.3	THA 41.58	EL1 455.7	EL2 106.9	ALF 161.65

LAUNCH DATE DEC 6 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 537.037 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.073	GAL	2.67	AZL	90.93	HCA	163.53	SMA	187.71	ECC	.21955	INC	.9249	V1	30.227
RP	228.89	LAP	-.26	LOP	237.44	VP	21.274	GAP	.43	AZP	89.11	TAL	14.95	TAP	178.47	RCA	146.50	APO	228.92	V2	24.029
RC	234.778	GL	-9.12	GP	15.68	ZAL	58.06	ZAP	130.02	ETS	164.88	ZAE	160.49	ETE	119.56	ZAC	105.04	ETC	255.38	CLP	131.91

PLANETOCENTRIC CONIC

C3	11.327	VHL	3.366	DLA	8.55	RAL	131.44	RAD	6567.4	VEL	11.520	PTH	2.01	VHP	3.733	DPA	11.63	RAP	195.66	ECC	1.1864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 1 36	2355.53	-22.72	50.61	346.24	107.37	14 40 51	1755.5	-20.13	42.90
90.00	4 12 46	4463.15	8.43	186.77	343.59	62.87	5 27 9	3863.2	4.72	180.05
100.00	15 27 5	2079.80	-23.65	30.00	345.91	108.83	16 1 45	1479.8	-20.86	22.32
100.00	5 29 58	4214.12	9.29	168.00	343.13	61.46	6 40 12	3614.1	5.41	161.36
110.00	16 44 47	1836.63	-26.12	10.50	344.87	112.88	17 15 24	1236.6	-22.79	2.93
110.00	6 28 45	4030.05	11.57	152.67	341.77	57.61	7 35 55	3430.0	7.21	146.28

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.2528	TRA	-.3019	TC3	2.6798	BAU .5982	SGT 1925.9	SGR 2019.3	SG3 1679.5	ST 461.0	SR 168.3	SS 748.6
RDE	-.0223	RRA	.2964	RC3	2.9020	FAU .36088	RRT .8337	RRF -.9947	RTF -.8349	CRT -.4778	CRS .5891	CST .3954
FDE	-.8908	FRA	-3.2269	FC	-27.5823	BSP 9105	SGB 2790.4	R23 -.2621	R13 -.9596	LSA 783.2	MSA 431.8	SSA 36.7
BDE	.2538	BRA	.4230	BC3	3.9501	FSP 5630	SG1 2672.2	SG2 803.8	THA 46.63	EL1 468.7	EL2 145.4	ALF 169.04

LAUNCH DATE DEC 6 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 540.897 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.060	GAL	2.69	AZL	91.11	HCA	164.56	SMA	187.49	ECC	.21874	INC	1.1098	V1	30.227
RP	228.51	LAP	-.30	LOP	238.48	VP	21.302	GAP	.10	AZP	88.93	TAL	15.09	TAP	179.65	RCA	146.48	APO	228.51	V2	24.070
RC	236.623	GL	-10.92	GP	16.97	ZAL	58.00	ZAP	128.23	ETS	164.62	ZAE	158.51	ETE	122.04	ZAC	106.16	ETC	255.31	CLP	130.31

PLANETOCENTRIC CONIC

C3	11.405	VHL	3.377	DLA	6.88	RAL	130.70	RAD	6567.4	VEL	11.524	PTH	2.01	VHP	3.689	DPA	13.02	RAP	195.72	ECC	1.1877

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 11 36	2303.71	-21.63	47.21	345.13	108.74	14 50 0	1703.7	-18.87	39.62
90.00	3 56 51	4517.81	10.11	189.90	342.97	63.41	5 12 9	3917.8	6.46	183.13
100.00	15 36 14	2030.75	-22.54	26.79	344.78	110.18	16 10 5	1430.7	-19.58	19.23
100.00	5 14 54	4266.01	10.97	170.94	342.52	62.02	6 26 0	3666.0	7.14	164.24
110.00	16 51 59	1793.65	-24.95	7.71	343.71	114.16	17 21 53	1193.7	-21.48	.28
110.00	6 15 38	4075.86	13.23	155.18	341.19	58.19	7 23 34	3475.9	8.93	148.72

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.2709	TRA	-.3142	TC3	2.4701	BAU .6126	SGT 1811.8	SGR 2222.1	SG3 1719.7	ST 489.6	SR 194.9	SS 882.6
RDE	.0266	RRA	.3480	RC3	3.1693	FAU .36856	RRT .8128	RRF -.9961	RTF -.8124	CRT -.0504	CRS .8243	CST .5061
FDE	-1.2094	FRA	-3.4551	FC	-27.9778	BSP 9392	SGB 2867.1	R23 -.2313	R13 -.9688	LSA 936.7	MSA 422.4	SSA 30.0
BDE	.2722	BRA	.4689	BC3	4.0181	FSP 5792	SG1 2736.0	SG2 857.2	THA 52.10	EL1 489.7	EL2 194.6	ALF 178.64

LAUNCH DATE DEC 6 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 544.768 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.049	GAL	2.71	AZL	91.32	HCA	165.60	SMA	187.30	ECC	.21798	INC	1.3216
RP	228.12	LAP	-.33	LOP	239.52	VP	21.330	GAP	-.23	AZP	88.72	TAL	15.22	TAP	180.82	RCA	146.47	APO	228.12
RC	238.446	GL	-12.96	GP	18.41	ZAL	58.02	ZAP	126.36	ETS	164.34	ZAE	156.35	ETE	124.04	ZAC	107.43	ETC	255.23

PLANETOCENTRIC CONIC

C3	11.524	VHL	3.395	DLA	4.98	RAL	129.92	RAD	6567.4	VEL	11.529	PTH	2.01	VHP	3.653	DPA	14.57	RAP	195.82

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 23 1	2245.82	-20.31	43.47	344.01	110.16	15 0 27	1645.8	-17.39	36.02
90.00	3 39 14	4580.03	11.98	193.52	342.42	64.15	4 55 34	3980.0	8.41	186.66
100.00	15 46 42	1975.89	-21.20	23.26	343.65	111.58	16 19 38	1375.9	-18.09	15.85
100.00	4 58 14	4325.20	12.83	174.34	341.99	62.77	6 10 19	3725.2	9.08	167.56
110.00	17 0 19	1745.48	-23.58	4.65	342.53	115.50	17 29 25	1145.5	-19.95	357.38
110.00	6 1 6	4128.37	15.09	158.11	340.69	58.96	7 9 54	3528.4	10.87	151.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2881	TRA	-.3306	TC3	2.2392	BAU	.6340	SGT	1691.6	SGR	2448.4	SG3	1750.8	ST	516.5	SR	264.7
RDE	.0881	RRA	.4080	RC3	3.4526	FAU	.37441	RRT	.7844	RRF	-.9971	RTF	-.7827	CRT	.2973	CRS	.9427
FDE	-1.5736	FRA	-3.6812	FC	-28.1270	BSP	9819	SGB	2975.9	R23	-.1953	R13	-.9778	LSA	1117.9	MSA	413.5
BDE	.3013	BRA	.5251	BC3	4.1151	FSP	5941	SG1	2834.6	SG2	906.3	THA	57.87	EL1	524.2	EL2	249.0

SS	1041.3	CST	.5888	SSA	24.4
ALF	11.22				

LAUNCH DATE DEC 6 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 548.651 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.039	GAL	2.72	AZL	91.57	HCA	166.64	SMA	187.11	ECC	.21727	INC	1.5658
RP	227.73	LAP	-.36	LOP	240.56	VP	21.361	GAP	-.55	AZP	88.48	TAL	15.33	TAP	181.97	RCA	146.46	APO	227.77
RC	240.248	GL	-15.29	GP	20.04	ZAL	58.16	ZAP	124.41	ETS	164.05	ZAE	154.00	ETE	125.63	ZAC	108.88	ETC	255.12

PLANETOCENTRIC CONIC

C3	11.702	VHL	3.421	DLA	2.79	RAL	129.09	RAD	6567.4	VEL	11.536	PTH	2.01	VHP	3.629	DPA	16.31	RAP	195.99

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 6	2180.77	-18.73	39.35	342.90	111.63	15 12 27	1580.8	-15.63	32.05
90.00	3 19 33	4651.46	14.06	197.73	342.00	65.17	4 37 4	4051.5	10.60	190.76
100.00	15 58 45	1914.19	-19.61	19.37	342.52	113.02	16 30 39	1314.2	-16.32	12.11
100.00	4 39 35	4393.27	14.92	178.32	341.58	63.79	5 52 48	3793.3	11.28	171.42
110.00	17 9 59	1691.23	-21.94	1.28	341.36	116.89	17 38 10	1091.2	-18.16	354.19
110.00	5 44 50	4188.99	17.19	161.55	340.31	59.99	6 54 39	3589.0	13.07	154.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3068	TRA	-.3490	TC3	1.9994	BAU	.6661	SGT	1574.1	SGR	2710.6	SG3	1776.6	ST	544.6	SR	381.1
RDE	.1695	RRA	.4813	RC3	3.7594	FAU	.37905	RRT	.7481	RRF	-.9979	RTF	-.7454	CRT	.5136	CRS	.9834
FDE	-2.0119	FRA	-3.9250	FC	-28.0441	BSP	10311	SGB	3134.5	R23	-.1564	R13	-.9855	LSA	1345.0	MSA	405.6
BDE	.3506	BRA	.5945	BC3	4.2580	FSP	6017	SG1	2987.8	SG2	947.6	THA	63.67	EL1	593.0	EL2	300.3

SS	1237.8	CST	.6552	SSA	19.6
ALF	27.31				

LAUNCH DATE DEC 6 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 552.544 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.029	GAL	2.73	AZL	91.85	HCA	167.69	SMA	186.94	ECC	.21660	INC	1.8517
RP	227.34	LAP	-.39	LOP	241.61	VP	21.392	GAP	-.86	AZP	88.19	TAL	15.43	TAP	183.12	RCA	146.45	APO	227.43
RC	242.030	GL	-17.96	GP	21.90	ZAL	58.45	ZAP	122.37	ETS	163.75	ZAE	151.45	ETE	126.84	ZAC	110.54	ETC	254.99

PLANETOCENTRIC CONIC

C3	11.961	VHL	3.458	DLA	.27	RAL	128.20	RAD	6567.5	VEL	11.548	PTH	2.02	VHP	3.617	DPA	18.26	RAP	196.23

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 51 15	2107.12	-16.82	34.79	341.83	113.12	15 26 22	1507.1	-13.55	27.64
90.00	2 57 15	4734.32	16.37	202.72	341.74	66.57	4 16 9	4134.3	13.06	195.60
100.00	16 12 43	1844.33	-17.69	15.06	341.43	114.49	16 43 28	1244.3	-14.24	7.97
100.00	4 18 28	4472.34	17.24	183.05	341.34	65.19	5 33 0	3872.3	13.75	175.99
110.00	17 21 15	1629.81	-20.01	357.57	340.22	118.31	17 48 25	1029.8	-16.07	350.66
110.00	5 26 25	4259.63	19.55	165.68	340.11	61.38	6 37 24	3659.6	15.57	158.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3230	TRA	-.3729	TC3	1.7381	BAU	.7084	SGT	1453.7	SGR	3006.5	SG3	1788.3	ST	567.4	SR	542.5
RDE	.2747	RRA	.5689	RC3	4.0747	FAU	.38087	RRT	.6978	RRF	-.9985	RTF	-.6942	CRT	.6309	CRS	.9951
FDE	-2.5063	FRA	-4.1623	FC	-27.5671	BSP	10998	SGB	3339.5	R23	-.1186	R13	-.9914	LSA	1609.5	MSA	398.7
BDE	.4240	BRA	.6802	BC3	4.4299	FSP	6058	SG1	3192.3	SG2	980.7	THA	69.31	EL1	709.1	EL2	336.8

SS	1460.7	CST	.7009	SSA	15.7
ALF	42.96				

LAUNCH DATE DEC 6 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 556.447 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.020	GAL	2.74	AZL	92.19	HCA	168.74	SMA	186.78	ECC	.21597	INC	2.1914
RP	226.95	LAP	-.43	LOP	242.66	VP	21.425	GAP	-1.17	AZP	87.85	TAL	15.51	TAP	184.25	RCA	146.44	APO	227.12
RC	243.792	GL	-21.04	GP	24.04	ZAL	58.92	ZAP	120.23	ETS	163.44	ZAE	148.66	ETE	127.74	ZAC	112.46	ETC	254.81

PLANETOCENTRIC CONIC

C3	12.340	VHL	3.513	DLA	-2.66	RAL	127.21	RAD	6567.5	VEL	11.564	PTH	2.02	VHP	3.622	DPA	20.47	RAP	196.59

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 1	2022.96	-14.51	29.70	340.84	114.59	15 42 44	1423.0	-11.07	22.71
90.00	2 31 35	4831.67	18.91	208.74	341.73	68.52	3 52 6	4231.7	15.82	201.42
100.00	16 29 7	1764.56	-15.38	10.27	340.41	115.95	16 58 32	1164.6	-11.76	3.35
100.00	3 54 9	4565.30	19.80	188.76	341.35	67.14	5 10 15	3965.3	16.53	181.49
110.00	17 34 31	1559.81	-17.69	353.46	339.14	119.74	18 0 31	959.8	-13.60	346.73
110.00	5 5 15	4342.81	22.18	170.70	340.17	63.29	6 17 37	3742.8	18.41	163.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3362	TRA	-.4023	TC3	1.4583	BAU	.7622	SGT	1334.9	SGR	3339.6	SG3	1780.9	ST	583.5	SR	754.6
RDE	.4120	RRA	.6747	RC3	4.3842	FAU	.37888	RRT	.6282	RRF	-.9989	RTF	-.6238	CRT	.6955	CRS	.9986
FDE	-3.0551	FRA	-4.3847	FC	-26.5812	BSP	11910	SGB	3596.5	R23	-.0848	R13	-.9953	LSA	1915.6	MSA	392.9
BDE	.5318	BRA	.7855	BC3	4.6204	FSP	6053	SG1	3453.4	SG2	1004.4	THA	74.57	EL1	884.2	EL2	357.8

SS	1707.1	CST	.7309	SSA	12.5
ALF	55.24				

LAUNCH DATE DEC 6 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 560.362 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.011 GAL 2.74 AZL 92.60 HCA 169.79 SMA 186.63 ECC .21538 INC 2.6011 V1 30.227
RP 226.56 LAP -.46 LOP 243.71 VP 21.459 GAP -1.47 AZP 87.44 TAL 15.57 TAP 185.36 RCA 146.43 APO 226.83 V2 24.277
RC 245.534 GL -24.63 GP 26.49 ZAL 59.62 ZAP 117.98 ETS 163.14 ZAE 145.61 ETE 128.37 ZAC 114.67 ETC 254.57 CLP 121.62

PLANETOCENTRIC CONIC

C3 12.898 VHL 3.591 DLA -6.07 RAL 126.08 RAD 6567.5 VEL 11.588 PTH 2.03 VHP 3.649 DPA 22.99 RAP 197.09 ECC 1.2123

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 30 13	1925.62	-11.67	23.96	340.01	115.98	16 2 19	1325.6	-8.08	17.11
90.00	2 1 25	4947.89	21.63	216.17	342.09	71.27	3 23 53	4347.9	18.87	208.58
100.00	16 48 41	1672.50	-12.56	4.89	339.55	117.35	17 16 34	1072.5	-8.80	358.12
100.00	3 25 38	4676.25	22.57	195.84	341.74	69.86	4 43 35	4076.2	19.62	188.28
110.00	17 50 21	1479.46	-14.92	348.88	338.19	121.12	18 15 0	879.5	-10.69	342.33
110.00	4 40 28	4442.05	25.07	176.94	340.63	65.97	5 54 30	3842.1	21.61	169.50

DIFFERENTIAL CORRECTIONS
TDE .3503 TRA -.4337 TC3 1.1772 BAU .8328
RDE .6000 RRA .8110 RC3 4.6844 FAU .37348
FDE-3.6869 FRA-4.6171 FC-25.0691 BSP 12890
BDE .6948 BRA .9197 BC3 4.8300 FSP 5908

MID-COURSE EXECUTION ACCURACY
SGT 1229.4 SGR 3732.3 SG3 1757.3
RRT .5393 RRF -.9992 RTF -.5342
SGB 3929.6 R23 -.0569 R13 -.9976
SG1 3795.4 SG2 1018.1 THA 79.14

ORBIT DETERMINATION ACCURACY
ST 597.2 SR 1038.7 SS 1989.7
CRT .7353 CRS .9996 CST .7529
LSA 2289.8 MSA 388.4 SSA 9.9
EL1 1140.0 EL2 368.7 ALF 64.19

LAUNCH DATE DEC 6 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 564.284 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.003 GAL 2.74 AZL 93.11 HCA 170.84 SMA 186.50 ECC .21483 INC 3.1062 V1 30.227
RP 226.17 LAP -.49 LOP 244.77 VP 21.494 GAP -1.76 AZP 86.93 TAL 15.63 TAP 186.47 RCA 146.43 APO 226.56 V2 24.318
RC 247.256 GL -28.82 GP 29.34 ZAL 60.63 ZAP 115.60 ETS 162.85 ZAE 142.25 ETE 128.76 ZAC 117.25 ETC 254.26 CLP 119.72

PLANETOCENTRIC CONIC

C3 13.732 VHL 3.706 DLA -10.06 RAL 124.78 RAD 6567.5 VEL 11.624 PTH 2.04 VHP 3.706 DPA 25.86 RAP 197.80 ECC 1.2260

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 56 19	1810.97	-8.17	17.35	339.46	117.21	16 26 30	1211.0	-4.46	10.64
90.00	1 24 56	5089.73	24.42	225.63	343.00	75.21	2 49 46	4489.7	22.15	217.69
100.00	17 12 41	1564.59	-9.11	358.73	338.96	118.59	17 38 46	964.6	-5.23	352.10
100.00	2 51 15	4811.34	25.45	204.84	342.68	73.76	4 11 26	4211.3	22.98	196.91
110.00	18 9 38	1386.29	-11.58	343.73	337.48	122.39	18 32 44	786.3	-7.22	337.34
110.00	4 10 48	4562.41	28.17	184.93	341.68	69.78	5 26 50	3962.4	25.15	177.05

DIFFERENTIAL CORRECTIONS
TDE .3531 TRA -.4796 TC3 .8705 BAU .9149
RDE .8447 RRA .9737 RC3 4.9072 FAU .36048
FDE-4.3153 FRA-4.7713 FC-22.7266 BSP 14334
BDE .9155 BRA 1.0854 BC3 4.9838 FSP 5750

MID-COURSE EXECUTION ACCURACY
SGT 1132.0 SGR 4155.8 SG3 1693.9
RRT .4056 RRF -.9994 RTF -.3995
SGB 4307.2 R23 -.0352 R13 -.9988
SG1 4182.7 SG2 1028.1 THA 83.29

ORBIT DETERMINATION ACCURACY
ST 591.1 SR 1388.6 SS 2260.4
CRT .7449 CRS .9999 CST .7536
LSA 2690.5 MSA 385.0 SSA 7.8
EL1 1462.0 EL2 374.6 ALF 71.12

LAUNCH DATE DEC 6 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 568.215 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.996 GAL 2.75 AZL 93.74 HCA 171.90 SMA 186.37 ECC .21431 INC 3.7424 V1 30.227
RP 225.78 LAP -.53 LOP 245.83 VP 21.530 GAP -2.05 AZP 86.29 TAL 15.66 TAP 187.56 RCA 146.43 APO 226.31 V2 24.360
RC 248.959 GL -33.73 GP 32.66 ZAL 62.03 ZAP 113.08 ETS 162.60 ZAE 138.53 ETE 128.96 ZAC 120.27 ETC 253.83 CLP 117.75

PLANETOCENTRIC CONIC

C3 15.015 VHL 3.875 DLA -14.74 RAL 123.23 RAD 6567.6 VEL 11.679 PTH 2.05 VHP 3.807 DPA 29.15 RAP 198.79 ECC 1.2471

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 0	1671.72	-3.77	9.49	339.47	118.09	16 57 52	1071.7	.02	2.86
90.00	0 38 50	5268.52	26.95	238.10	344.66	80.96	2 6 39	4668.5	25.42	229.76
100.00	17 43 25	1434.87	-4.82	351.50	338.89	119.54	18 7 19	834.9	-.85	344.96
100.00	2 8 7	4980.60	28.13	216.69	344.43	79.44	3 31 8	4380.6	26.38	208.32
110.00	18 33 55	1276.65	-7.52	337.83	337.22	123.44	18 55 12	676.6	-3.07	331.57
110.00	3 34 6	4711.59	31.22	195.46	343.63	75.32	4 52 37	4111.6	28.89	187.04

DIFFERENTIAL CORRECTIONS
TDE .3452 TRA -.5396 TC3 .5547 BAU 1.0179
RDE 1.1884 RRA 1.1910 RC3 5.0403 FAU .34128
FDE-4.9798 FRA-4.8993 FC-19.6773 BSP 15881
BDE 1.2376 BRA 1.3075 BC3 5.0707 FSP 5396

MID-COURSE EXECUTION ACCURACY
SGT 1061.1 SGR 4654.2 SG3 1599.9
RRT .2175 RRF -.9996 RTF -.2104
SGB 4773.6 R23 -.0187 R13 -.9994
SG1 4660.2 SG2 1034.3 THA 87.01

ORBIT DETERMINATION ACCURACY
ST 567.4 SR 1843.9 SS 2536.9
CRT .7295 CRS 1.0000 CST .7331
LSA 3164.0 MSA 383.3 SSA 6.1
EL1 1891.8 EL2 378.3 ALF 76.81

LAUNCH DATE DEC 6 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 572.156 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.989 GAL 2.74 AZL 94.57 HCA 172.96 SMA 186.25 ECC .21383 INC 4.5734 V1 30.227
RP 225.38 LAP -.56 LOP 246.90 VP 21.567 GAP -2.33 AZP 85.46 TAL 15.68 TAP 188.64 RCA 146.43 APO 226.08 V2 24.402
RC 250.643 GL -39.49 GP 36.53 ZAL 63.91 ZAP 110.38 ETS 162.42 ZAE 134.39 ETE 129.04 ZAC 123.80 ETC 253.23 CLP 115.68

PLANETOCENTRIC CONIC

C3 17.067 VHL 4.131 DLA -20.21 RAL 121.30 RAD 6567.7 VEL 11.766 PTH 2.08 VHP 3.974 DPA 32.93 RAP 200.15 ECC 1.2809

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 17 39	1490.60	2.07	359.38	340.55	118.25	17 42 30	890.6	5.83	352.72
90.00	23 31 52	5507.85	28.31	255.44	347.20	89.52	25 3 40	4907.9	27.95	246.80
100.00	18 25 56	1270.24	.75	342.45	339.81	119.88	18 47 7	670.2	4.72	335.91
100.00	1 10 12	5203.45	29.82	233.01	347.16	87.85	2 36 56	4603.4	29.21	224.26
110.00	19 6 16	1143.86	-2.49	330.85	337.79	124.10	19 25 20	543.9	2.00	324.64
110.00	2 46 22	4902.59	33.63	209.82	346.82	83.48	4 8 5	4302.6	32.36	200.82

DIFFERENTIAL CORRECTIONS
TDE .3339 TRA -.6083 TC3 .2726 BAU 1.1386
RDE 1.6602 RRA 1.4710 RC3 4.9827 FAU .31161
FDE-5.5523 FRA-4.9055 FC-15.8069 BSP 17864
BDE 1.6935 BRA 1.5918 BC3 4.9902 FSP 4942

MID-COURSE EXECUTION ACCURACY
SGT 1036.1 SGR 5193.9 SG3 1452.0
RRT .0073 RRF -.9997 RTF .0006
SGB 5296.3 R23 -.0082 R13 -.9997
SG1 5193.9 SG2 1036.1 THA 89.91

ORBIT DETERMINATION ACCURACY
ST 536.0 SR 2396.3 SS 2750.8
CRT .6940 CRS 1.0000 CST .6946
LSA 3667.3 MSA 383.7 SSA 4.7
EL1 2425.8 EL2 381.2 ALF 80.95

LAUNCH DATE DEC 6 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 576.103 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	32.983	GAL	2.74	AZL	95.70	HCA	174.02	SMA	186.15	ECC	.21338	INC	5.6998
RP	224.99	LAP	-.59	LOP	247.97	VP	21.605	GAP	-2.61	AZP	84.33	TAL	15.69	TAP	189.72	RCA	146.43	APO	225.87
RC	252.307	GL	-46.23	GP	41.04	ZAL	66.39	ZAP	107.49	ETS	162.39	ZAE	129.77	ETE	129.09	ZAC	127.92	ETC	252.37

V1	30.227	V2	24.444	CLP	113.49														

PLANETOCENTRIC CONIC

C3	20.534	VHL	4.531	DLA	-26.57	RAL	118.81	RAD	6567.8	VEL	11.913	PTH	2.12	VHP	4.246	DPA	37.26	RAP	202.05

ECC	1.3379	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 47 39	1184.33	11.66	341.99	344.44	115.99	19 7 24	584.3	15.06	334.96							
		90.00	21 42 1	613.00	25.26	305.76	349.53	103.24	21 52 14	13.0	26.84	297.44							
		100.00	19 38 19	1020.68	9.10	328.63	343.09	118.60	19 55 20	420.7	12.85	321.84							
		100.00	23 34 2	5539.91	28.08	257.76	350.20	100.69	25 6 22	4939.9	29.27	249.16							
		110.00	19 54 34	969.68	4.17	321.75	340.08	123.96	20 10 44	369.7	8.60	315.46							
		110.00	1 38 12	5163.69	33.80	230.14	351.14	95.46	3 4 16	4563.7	34.18	220.91							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3058	TRA	-.7036	TC3	.0199	BAU	1.2941	SGT	1067.3	SGR	5839.2	SG3	1260.5	ST	488.5	SR	3078.4	SS	2879.1
RDE	2.3500	RRA	1.8734	RC3	4.7141	FAU	.27348	RRT	-.2260	RRF	-.9997	RTF	.2347	CRT	.6065	CRS	1.0000	CST	.6049
FDE	-5.9878	FRA	-4.8145	FC	-11.5305	BSP	19680	SGB	5936.0	R23	-.0014	R13	-.9998	LSA	4225.4	MSA	387.7	SSA	3.7
BDE	2.3698	BRA	2.0012	BC3	4.7142	FSP	4191	SG1	5844.4	SG2	1038.8	THA	92.44	EL1	3092.9	EL2	386.5	ALF	84.42

LAUNCH DATE DEC 6 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 580.055 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	32.977	GAL	2.74	AZL	97.32	HCA	175.09	SMA	186.05	ECC	.21297	INC	7.3181
RP	224.60	LAP	-.63	LOP	249.04	VP	21.644	GAP	-2.88	AZP	82.71	TAL	15.69	TAP	190.78	RCA	146.43	APO	225.68
RC	253.951	GL	-54.05	GP	46.23	ZAL	69.54	ZAP	104.41	ETS	162.64	ZAE	124.62	ETE	129.28	ZAC	132.62	ETC	251.14

V1	30.227	V2	24.485	CLP	111.09														

PLANETOCENTRIC CONIC

C3	26.866	VHL	5.183	DLA	-33.85	RAL	115.41	RAD	6568.1	VEL	12.175	PTH	2.19	VHP	4.699	DPA	42.14	RAP	204.67

ECC	1.4422	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		70.62	17 35 24	1428.99	21.07	4.99	350.35	117.13	17 59 13	829.0	24.53	357.59							
		109.38	22 27 11	5787.61	21.08	273.65	350.36	117.12	24 3 38	5187.6	24.54	266.24							
		70.62	17 35 24	1428.99	21.07	4.99	350.35	117.13	17 59 13	829.0	24.53	357.59							
		109.38	22 27 11	5787.61	21.08	273.65	350.36	117.12	24 3 38	5187.6	24.54	266.24							
		110.00	21 54 57	5886.05	17.68	279.37	348.41	119.74	23 33 3	5286.1	21.51	272.32							
		110.00	23 6 49	5666.58	24.54	266.04	352.18	114.58	24 41 15	5066.6	27.64	258.24							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2619	TRA	-.8347	TC3	-.1685	BAU	1.4771	SGT	1161.3	SGR	6493.5	SG3	999.8	ST	441.5	SR	3808.1	SS	2785.0
RDE	3.3291	RRA	2.4320	RC3	4.1090	FAU	.22176	RRT	-.4343	RRF	-.9998	RTF	.4441	CRT	.4407	CRS	1.0000	CST	.4366
FDE	-5.9893	FRA	-4.4570	FC3	-7.1459	BSP	22042	SGB	6596.5	R23	.0017	R13	-.9998	LSA	4721.9	MSA	396.4	SSA	3.0
BDE	3.3394	BRA	2.5712	BC3	4.1124	FSP	3326	SG1	6513.6	SG2	1042.8	THA	94.56	EL1	3813.2	EL2	395.8	ALF	87.04

LAUNCH DATE DEC 6 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 584.007 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	32.972	GAL	2.73	AZL	99.83	HCA	176.14	SMA	185.97	ECC	.21259	INC	9.8326
RP	224.21	LAP	-.66	LOP	250.12	VP	21.683	GAP	-3.15	AZP	80.19	TAL	15.69	TAP	191.83	RCA	146.43	APO	225.50
RC	255.576	GL	-62.99	GP	52.02	ZAL	73.35	ZAP	101.16	ETS	163.40	ZAE	119.02	ETE	129.90	ZAC	137.79	ETC	249.40

V1	30.227	V2	24.527	CLP	108.33														

PLANETOCENTRIC CONIC

C3	39.856	VHL	6.313	DLA	-41.99	RAL	110.41	RAD	6568.5	VEL	12.697	PTH	2.31	VHP	5.495	DPA	47.46	RAP	208.22

ECC	1.6559	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		57.59	16 8 56	1722.33	21.63	29.35	354.26	126.91	16 37 39	1122.3	26.28	22.64							
		122.41	23 13 44	5692.61	21.65	266.28	354.27	126.91	24 48 36	5092.6	26.29	259.57							
		57.59	16 8 56	1722.33	21.63	29.35	354.26	126.91	16 37 39	1122.3	26.28	22.64							
		122.41	23 13 44	5692.61	21.65	266.28	354.27	126.91	24 48 36	5092.6	26.29	259.57							
		57.59	16 8 56	1722.33	21.63	29.35	354.26	126.91	16 37 39	1122.3	26.28	22.64							
		122.41	23 13 44	5692.61	21.65	266.28	354.27	126.91	24 48 36	5092.6	26.29	259.57							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1866	TRA	-1.0465	TC3	-.2848	BAU	1.7285	SGT	1338.3	SGR	7190.6	SG3	691.6	ST	419.3	SR	4501.3	SS	2382.6
RDE	4.7752	RRA	3.3040	RC3	3.2314	FAU	.16064	RRT	-.6119	RRF	-.9997	RTF	.6239	CRT	.1424	CRS	1.0000	CST	.1343
FDE	-5.3113	FRA	-3.7916	FC3	-3.4893	BSP	24070	SGB	7314.1	R23	.0015	R13	-.9998	LSA	5093.3	MSA	415.4	SSA	2.4
BDE	4.7788	BRA	3.4658	BC3	3.2439	FSP	2242	SG1	7238.1	SG2	1051.5	THA	96.64	EL1	4501.7	EL2	415.0	ALF	89.23

LAUNCH DATE DEC 6 1964 FLIGHT TIME 282.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 620.468 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	32.948	GAL	2.50	AZL	81.12	HCA	186.13	SMA	185.54	ECC	.20997	INC	8.8761
RP	220.75	LAP	-.94	LOP	259.97	VP	22.071	GAP	-5.25	AZP	98.83	TAL	14.46	TAP	200.60	RCA	146.58	APO	224.50
RC	269.292	GL	60.79	GP	-42.62	ZAL	73.30	ZAP	92.38	ETS	180.82	ZAE	117.08	ETE	205.18	ZAC	44.88	ETC	251.35

V1	30.227	V2	24.903	CLP	93.24														

PLANETOCENTRIC CONIC

C3	33.861	VHL	5.819	DLA	72.57	RAL	178.80	RAD	6568.3	VEL	12.459	PTH	2.25	VHP	4.088	DPA	-34.24	RAP	154.65

ECC	1.5573	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		13.71	9 51 38	4375.66	-47.52	241.10	122.51	18.00	11 4 34	3775.7	-55.06	237.21							
		13.71	3 35 10	4748.57	-23.01	247.82	36.41	13.10	4 54 19	4148.6	-30.79	246.13							
		19.89	6 55 59	4550.31	-34.35	238.32	76.42	21.27	8 11 49	3950.3	-41.75	234.85							
		160.11	17 36 12	2782.27	-34.34	85.19	76.39	21.27	18 22 34	2182.3	-41.74	81.72							
		19.89	6 55 59	4550.31	-34.35	238.32	76.42	21.27	8 11 49	3950.3	-41.75	234.85							
		160.11	17 36 12	2782.27	-34.34	85.19	76.39	21.27	18 22 34	2182.3	-41.74	81.72							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.4590	TRA	.2123	TC3	-1.5833	BAU	1.6171	SGT	3934.7	SGR	6358.5	SG3	1326.0	ST	3412.7	SR	4396.4	SS	3683.6
RDE	4.3802	RRA	.8573	RC3	-3.2021	FAU	.31255	RRT	.9402	RRF	.9997	RTF	.9378	CRT	.9912	CRS	-1.0000	CST	-.9913
FDE	10.3917	FRA	2.0258	FC3	-7.9911	BSP	25096	SGB	7477.5	R23	.0995	R13	.9947	LSA	6662.9	MSA	387.2	SSA	4.0
BDE	5.5813	BRA	.8832	BC3	3.5722	FSP	4643	SG1	7387.9	SG2	1153.6	THA	58.97	EL1	5554.1	EL2	356.8	ALF	52.24

LAUNCH DATE DEC 6 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 624.530 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.947 GAL 2.46 AZL 82.24 HCA 187.24 SMA 185.53 ECC .20981 INC 7.7616 V1 30.227
RP 220.37 LAP -.97 LOP 261.09 VP 22.116 GAP -5.46 AZP 97.70 TAL 14.29 TAP 201.53 RCA 146.60 APO 224.45 V2 24.945
RC 270.721 GL 56.84 GP -38.45 ZAL 71.86 ZAP 91.10 ETS 179.61 ZAE 117.38 ETE 201.67 ZAC 48.71 ETC 252.60 CLP 91.41

PLANETOCENTRIC CONIC

C3 28.203 VHL 5.311 DLA 69.49 RAL 170.84 RAD 6568.1 VEL 12.230 PTH 2.20 VHP 3.780 DPA -30.33 RAP 156.49 ECC 1.4641

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
23.45	6 31 45	4495.39	-36.46	233.00	64.80	25.82	7 46 40	3895.4	-43.57	228.62
156.55	16 56 56	2745.37	-36.45	83.57	64.79	25.82	17 42 41	2145.4	-43.56	79.19
23.45	6 31 45	4495.39	-36.46	233.00	64.80	25.82	7 46 40	3895.4	-43.57	228.62
156.55	16 56 56	2745.37	-36.45	83.57	64.79	25.82	17 42 41	2145.4	-43.56	79.19
23.45	6 31 45	4495.39	-36.46	233.00	64.80	25.82	7 46 40	3895.4	-43.57	228.62
156.55	16 56 56	2745.37	-36.45	83.57	64.79	25.82	17 42 41	2145.4	-43.56	79.19

DIFFERENTIAL CORRECTIONS
TDE 3.3171 TRA .0877 TC3-2.0041 BAU 1.5032
RDE 3.8197 RRA .6214 RC3-3.4464 FAU .36355
FDE11.7386 FRA 1.8870 FC-11.1598 BSP 23806
BDE 5.0590 BRA .6276 BC3 3.9868 FSP 5495

MID-COURSE EXECUTION ACCURACY
SGT 4172.7 SGR 5834.8 SG3 1580.6
RRT .9470 RRF .9996 RTF .9448
SGB 7173.3 R23 .1143 R13 .9931
SG1 7088.0 SG2 1103.3 THA 54.92

ORBIT DETERMINATION ACCURACY
ST 3580.2 SR 4162.3 SS 4176.6
CRT .9933 CRS-1.0000 CST -.9934
LSA 6889.3 MSA 352.6 SSA 4.6
EL1 5481.2 EL2 314.9 ALF 49.33

LAUNCH DATE DEC 6 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 628.604 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.946 GAL 2.43 AZL 83.06 HCA 188.35 SMA 185.52 ECC .20967 INC 6.9398 V1 30.227
RP 220.00 LAP -1.01 LOP 262.20 VP 22.162 GAP -5.67 AZP 96.87 TAL 14.10 TAP 202.45 RCA 146.62 APO 224.42 V2 24.986
RC 272.134 GL 53.49 GP -34.85 ZAL 70.72 ZAP 89.62 ETS 178.55 ZAE 117.09 ETE 198.47 ZAC 52.01 ETC 253.52 CLP 89.54

PLANETOCENTRIC CONIC

C3 24.487 VHL 4.948 DLA 66.66 RAL 165.81 RAD 6568.0 VEL 12.077 PTH 2.16 VHP 3.574 DPA -26.87 RAP 157.80 ECC 1.4030

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
26.75	6 18 56	4450.42	-37.70	227.94	56.34	30.05	7 33 7	3850.4	-44.50	222.75
153.25	16 29 37	2720.37	-37.69	82.06	56.32	30.05	17 14 58	2120.4	-44.49	76.87
26.75	6 18 56	4450.42	-37.70	227.94	56.34	30.05	7 33 7	3850.4	-44.50	222.75
153.25	16 29 37	2720.37	-37.69	82.06	56.32	30.05	17 14 58	2120.4	-44.49	76.87
26.75	6 18 56	4450.42	-37.70	227.94	56.34	30.05	7 33 7	3850.4	-44.50	222.75
153.25	16 29 37	2720.37	-37.69	82.06	56.32	30.05	17 14 58	2120.4	-44.49	76.87

DIFFERENTIAL CORRECTIONS
TDE 3.1943 TRA .0032 TC3-2.4405 BAU 1.4134
RDE 3.2818 RRA .4731 RC3-3.5613 FAU .40244
FDE12.3948 FRA 1.7491 FC-14.2281 BSP 23188
BDE 4.5797 BRA .4731 BC3 4.3173 FSP 6278

MID-COURSE EXECUTION ACCURACY
SGT 4417.3 SGR 5364.1 SG3 1792.4
RRT .9529 RRF .9996 RTF .9509
SGB 6948.8 R23 .1286 R13 .9913
SG1 6869.7 SG2 1045.6 THA 50.79

ORBIT DETERMINATION ACCURACY
ST 3699.2 SR 3823.9 SS 4458.7
CRT .9941 CRS-1.0000 CST -.9944
LSA 6933.6 MSA 334.7 SSA 5.2
EL1 5312.6 EL2 287.6 ALF 45.96

LAUNCH DATE DEC 6 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 632.690 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.946 GAL 2.39 AZL 83.69 HCA 189.47 SMA 185.52 ECC .20954 INC 6.3079 V1 30.227
RP 219.62 LAP -1.04 LOP 263.33 VP 22.208 GAP -5.87 AZP 96.22 TAL 13.89 TAP 203.36 RCA 146.65 APO 224.39 V2 25.027
RC 273.529 GL 50.62 GP -31.75 ZAL 69.84 ZAP 88.01 ETS 177.64 ZAE 116.36 ETE 195.63 ZAC 54.85 ETC 254.22 CLP 87.66

PLANETOCENTRIC CONIC

C3 21.892 VHL 4.679 DLA 64.11 RAL 162.44 RAD 6567.9 VEL 11.970 PTH 2.13 VHP 3.432 DPA -23.82 RAP 158.73 ECC 1.3603

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
29.73	6 12 20	4412.64	-38.37	223.27	49.86	33.84	7 25 53	3812.6	-44.85	217.41
150.27	16 9 22	2703.54	-38.36	80.73	49.85	33.83	16 54 26	2103.5	-44.85	74.88
29.73	6 12 20	4412.64	-38.37	223.27	49.86	33.84	7 25 53	3812.6	-44.85	217.41
150.27	16 9 22	2703.54	-38.36	80.73	49.85	33.83	16 54 26	2103.5	-44.85	74.88
29.73	6 12 20	4412.64	-38.37	223.27	49.86	33.84	7 25 53	3812.6	-44.85	217.41
150.27	16 9 22	2703.54	-38.36	80.73	49.85	33.83	16 54 26	2103.5	-44.85	74.88

DIFFERENTIAL CORRECTIONS
TDE 3.0941 TRA -.0667 TC3-2.9024 BAU 1.3562
RDE 2.8125 RRA .3625 RC3-3.6123 FAU .43462
FDE12.5751 FRA 1.5668 FC-17.1871 BSP 22552
BDE 4.1813 BRA .3685 BC3 4.6338 FSP 6834

MID-COURSE EXECUTION ACCURACY
SGT 4665.5 SGR 4931.7 SG3 1960.9
RRT .9579 RRF .9995 RTF .9558
SGB 6788.8 R23 .1423 R13 .9893
SG1 6717.2 SG2 983.6 THA 46.66

ORBIT DETERMINATION ACCURACY
ST 3790.1 SR 3459.0 SS 4585.5
CRT .9947 CRS-1.0000 CST -.9949
LSA 6874.1 MSA 321.4 SSA 5.9
EL1 5124.5 EL2 264.0 ALF 42.37

LAUNCH DATE DEC 6 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 636.786 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.947 GAL 2.35 AZL 84.19 HCA 190.59 SMA 185.53 ECC .20943 INC 5.8071 V1 30.227
RP 219.25 LAP -1.07 LOP 264.45 VP 22.254 GAP -6.07 AZP 95.71 TAL 13.66 TAP 204.25 RCA 146.67 APO 224.38 V2 25.067
RC 274.906 GL 48.16 GP -29.07 ZAL 69.17 ZAP 86.32 ETS 176.88 ZAE 115.30 ETE 193.14 ZAC 57.28 ETC 254.76 CLP 85.79

PLANETOCENTRIC CONIC

C3 19.991 VHL 4.471 DLA 61.84 RAL 160.11 RAD 6567.8 VEL 11.890 PTH 2.11 VHP 3.333 DPA -21.13 RAP 159.38 ECC 1.3290

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
32.42	6 9 27	4380.08	-38.65	219.04	44.77	37.18	7 22 27	3780.1	-44.84	212.65
147.58	15 53 38	2692.50	-38.64	79.63	44.75	37.17	16 38 30	2092.5	-44.83	73.24
32.42	6 9 27	4380.08	-38.65	219.04	44.77	37.18	7 22 27	3780.1	-44.84	212.65
147.58	15 53 38	2692.50	-38.64	79.63	44.75	37.17	16 38 30	2092.5	-44.83	73.24
32.42	6 9 27	4380.08	-38.65	219.04	44.77	37.18	7 22 27	3780.1	-44.84	212.65
147.58	15 53 38	2692.50	-38.64	79.63	44.75	37.17	16 38 30	2092.5	-44.83	73.24

DIFFERENTIAL CORRECTIONS
TDE 3.0235 TRA -.1202 TC3-3.3748 BAU 1.3176
RDE 2.4293 RRA .2875 RC3-3.5941 FAU .45837
FDE12.5082 FRA 1.4098 FC-19.8506 BSP 22271
BDE 3.8785 BRA .3116 BC3 4.9301 FSP 7293

MID-COURSE EXECUTION ACCURACY
SGT 4921.9 SGR 4542.0 SG3 2092.7
RRT .9620 RRF .9993 RTF .9598
SGB 6697.4 R23 .1545 R13 .9873
SG1 6633.9 SG2 920.3 THA 42.61

ORBIT DETERMINATION ACCURACY
ST 3876.8 SR 3123.4 SS 4630.6
CRT .9949 CRS-1.0000 CST -.9953
LSA 6791.8 MSA 313.0 SSA 6.7
EL1 4972.4 EL2 244.6 ALF 38.83

LAUNCH DATE DEC 6 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 640.892 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.947 GAL 2.31 AZL 84.60 HCA 191.72 SMA 185.54 ECC .20933 INC 5.4001 V1 30.227
RP 218.89 LAP -1.10 LOP 265.58 VP 22.301 GAP -6.26 AZP 95.29 TAL 13.42 TAP 205.14 RCA 146.70 APO 224.37 V2 25.108
RC 276.266 GL 46.01 GP -26.73 ZAL 68.68 ZAP 84.58 ETS 176.23 ZAE 114.01 ETE 190.99 ZAC 59.40 ETC 255.20 CLP 83.93

PLANETOCENTRIC CONIC

C3 18.543 VHL 4.306 DLA 59.81 RAL 158.45 RAD 6567.8 VEL 11.829 PTH 2.09 VHP 3.264 DPA -18.75 RAP 159.84 ECC 1.3052

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.84	6 8 52	4351.48	-38.69	215.23	40.69	40.12	7 21 23	3751.5	-44.59	208.41
145.16	15 41 0	2685.56	-38.68	78.75	40.67	40.11	16 25 45	2085.6	-44.58	71.93
34.84	6 8 52	4351.48	-38.69	215.23	40.69	40.12	7 21 23	3751.5	-44.59	208.41
145.16	15 41 0	2685.56	-38.68	78.75	40.67	40.11	16 25 45	2085.6	-44.58	71.93
34.84	6 8 52	4351.48	-38.69	215.23	40.69	40.12	7 21 23	3751.5	-44.59	208.41
145.16	15 41 0	2685.56	-38.68	78.75	40.67	40.11	16 25 45	2085.6	-44.58	71.93

DIFFERENTIAL CORRECTIONS
TDE 2.9721 TRA -.1641 TC3-3.8580 BAU 1.2982
RDE 2.1108 RRA .2315 RC3-3.5414 FAU .47694
FDE12.2518 FRA 1.2546 FC-22.2673 BSP 22137
BDE 3.6454 BRA .2837 BC3 5.2369 FSP 7600

MID-COURSE EXECUTION ACCURACY
SGT 5183.3 SGR 4191.1 SG3 2193.5
RRT .9655 RRF .9991 RTF .9632
SGB 6665.7 R23 .1647 R13 .9854
SG1 6610.6 SG2 855.6 THA 38.75

ORBIT DETERMINATION ACCURACY
ST 3957.9 SR 2816.0 SS 4608.3
CRT .9952 CRS-1.0000 CST -.9955
LSA 6688.7 MSA 304.9 SSA 7.5
EL1 4852.2 EL2 225.8 ALF 35.39

LAUNCH DATE DEC 6 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 645.006 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.948 GAL 2.27 AZL 84.94 HCA 192.85 SMA 185.55 ECC .20926 INC 5.0626 V1 30.227
RP 218.52 LAP -1.12 LOP 266.72 VP 22.348 GAP -6.45 AZP 94.94 TAL 13.16 TAP 206.01 RCA 146.72 APO 224.38 V2 25.148
RC 277.609 GL 44.14 GP -24.69 ZAL 68.33 ZAP 82.83 ETS 175.69 ZAE 112.55 ETE 189.13 ZAC 61.24 ETC 255.55 CLP 82.10

PLANETOCENTRIC CONIC

C3 17.405 VHL 4.172 DLA 57.98 RAL 157.27 RAD 6567.7 VEL 11.781 PTH 2.08 VHP 3.216 DPA -16.63 RAP 160.16 ECC 1.2864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.03	6 9 49	4325.95	-38.56	211.79	37.38	42.69	7 21 55	3725.9	-44.21	204.64
142.97	15 30 38	2681.57	-38.55	78.06	37.37	42.69	16 15 19	2081.6	-44.20	70.91
37.03	6 9 49	4325.95	-38.56	211.79	37.38	42.69	7 21 55	3725.9	-44.21	204.64
142.97	15 30 38	2681.57	-38.55	78.06	37.37	42.69	16 15 19	2081.6	-44.20	70.91
37.03	6 9 49	4325.95	-38.56	211.79	37.38	42.69	7 21 55	3725.9	-44.21	204.64
142.97	15 30 38	2681.57	-38.55	78.06	37.37	42.69	16 15 19	2081.6	-44.20	70.91

DIFFERENTIAL CORRECTIONS
TDE 2.9424 TRA -.1945 TC3-4.3395 BAU 1.2886
RDE 1.8574 RRA .1995 RC3-3.4406 FAU .48785
FDE11.9521 FRA 1.1781 FC-24.2656 BSP 22416
BDE 3.4796 BRA .2786 BC3 5.5380 FSP 7925

MID-COURSE EXECUTION ACCURACY
SGT 5449.2 SGR 3875.0 SG3 2267.4
RRT .9681 RRF .9988 RTF .9657
SGB 6686.5 R23 .1729 R13 .9838
SG1 6638.9 SG2 796.7 THA 35.13

ORBIT DETERMINATION ACCURACY
ST 4045.3 SR 2557.0 SS 4570.7
CRT .9952 CRS-1.0000 CST -.9956
LSA 6610.8 MSA 303.2 SSA 8.3
EL1 4780.9 EL2 212.3 ALF 32.24

LAUNCH DATE DEC 6 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 649.132 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.949 GAL 2.22 AZL 85.22 HCA 193.98 SMA 185.57 ECC .20919 INC 4.7780 V1 30.227
RP 218.16 LAP -1.15 LOP 267.85 VP 22.395 GAP -6.63 AZP 94.64 TAL 12.89 TAP 206.88 RCA 146.75 APO 224.39 V2 25.188
RC 278.933 GL 42.49 GP -22.88 ZAL 68.12 ZAP 81.06 ETS 175.24 ZAE 110.96 ETE 187.53 ZAC 62.85 ETC 255.85 CLP 80.29

PLANETOCENTRIC CONIC

C3 16.488 VHL 4.060 DLA 56.33 RAL 156.44 RAD 6567.7 VEL 11.742 PTH 2.07 VHP 3.184 DPA -14.73 RAP 160.36 ECC 1.2713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.03	6 11 51	4302.79	-38.33	208.67	34.67	44.97	7 23 33	3702.8	-43.74	201.26
140.97	15 21 57	2679.80	-38.32	77.53	34.66	44.96	16 6 37	2079.8	-43.73	70.13
39.03	6 11 51	4302.79	-38.33	208.67	34.67	44.97	7 23 33	3702.8	-43.74	201.26
140.97	15 21 57	2679.80	-38.32	77.53	34.66	44.96	16 6 37	2079.8	-43.73	70.13
39.03	6 11 51	4302.79	-38.33	208.67	34.67	44.97	7 23 33	3702.8	-43.74	201.26
140.97	15 21 57	2679.80	-38.32	77.53	34.66	44.96	16 6 37	2079.8	-43.73	70.13

DIFFERENTIAL CORRECTIONS
TDE 2.9166 TRA -.2238 TC3-4.8365 BAU 1.2955
RDE 1.6390 RRA .1696 RC3-3.3394 FAU .49703
FDE11.5303 FRA 1.0676 FC-26.0985 BSP 22610
BDE 3.3456 BRA .2808 BC3 5.8774 FSP 8057

MID-COURSE EXECUTION ACCURACY
SGT 5717.4 SGR 3590.2 SG3 2320.5
RRT .9706 RRF .9985 RTF .9681
SGB 6751.2 R23 .1783 R13 .9825
SG1 6710.9 SG2 735.8 THA 31.79

ORBIT DETERMINATION ACCURACY
ST 4120.7 SR 2317.7 SS 4484.4
CRT .9952 CRS-1.0000 CST -.9958
LSA 6509.5 MSA 297.7 SSA 9.2
EL1 4723.7 EL2 197.0 ALF 29.30

LAUNCH DATE DEC 6 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 653.265 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.951 GAL 2.17 AZL 85.47 HCA 195.12 SMA 185.60 ECC .20915 INC 4.5344 V1 30.227
RP 217.80 LAP -1.18 LOP 268.99 VP 22.442 GAP -6.81 AZP 94.38 TAL 12.60 TAP 207.73 RCA 146.78 APO 224.41 V2 25.228
RC 280.240 GL 41.02 GP -21.29 ZAL 68.01 ZAP 79.31 ETS 174.85 ZAE 109.30 ETE 186.15 ZAC 64.27 ETC 256.11 CLP 78.51

PLANETOCENTRIC CONIC

C3 15.731 VHL 3.966 DLA 54.84 RAL 155.87 RAD 6567.6 VEL 11.710 PTH 2.06 VHP 3.164 DPA -13.03 RAP 160.49 ECC 1.2589

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.86	6 14 39	4281.53	-38.03	205.83	32.45	46.98	7 26 0	3681.5	-43.22	198.22
139.14	15 14 36	2679.67	-38.02	77.15	32.44	46.97	15 59 16	2079.7	-43.22	69.54
40.86	6 14 39	4281.53	-38.03	205.83	32.45	46.98	7 26 0	3681.5	-43.22	198.22
139.14	15 14 36	2679.67	-38.02	77.15	32.44	46.97	15 59 16	2079.7	-43.22	69.54
40.86	6 14 39	4281.53	-38.03	205.83	32.45	46.98	7 26 0	3681.5	-43.22	198.22
139.14	15 14 36	2679.67	-38.02	77.15	32.44	46.97	15 59 16	2079.7	-43.22	69.54

DIFFERENTIAL CORRECTIONS
TDE 2.8981 TRA -.2476 TC3-5.3392 BAU 1.3117
RDE 1.4568 RRA .1489 RC3-3.2242 FAU .50246
FDE11.0764 FRA .9873 FC-27.6529 BSP 22917
BDE 3.2437 BRA .2889 BC3 6.2371 FSP 8124

MID-COURSE EXECUTION ACCURACY
SGT 5987.6 SGR 3333.1 SG3 2355.6
RRT .9726 RRF .9981 RTF .9700
SGB 6852.8 R23 .1816 R13 .9814
SG1 6818.9 SG2 680.2 THA 28.75

ORBIT DETERMINATION ACCURACY
ST 4192.7 SR 2108.9 SS 4382.9
CRT .9952 CRS-1.0000 CST -.9958
LSA 6414.8 MSA 294.3 SSA 10.2
EL1 4689.6 EL2 184.1 ALF 26.64

LAUNCH DATE DEC 6 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 657.407 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.953 GAL 2.12 AZL 85.68 HCA 196.27 SMA 185.63 ECC .20912 INC 4.3239 V1 30.227
RP 217.44 LAP -1.21 LOP 270.14 VP 22.489 GAP -6.98 AZP 94.15 TAL 12.30 TAP 208.57 RCA 146.81 APO 224.44 V2 25.268
RC 281.529 GL 39.72 GP -19.86 ZAL 68.00 ZAP 77.57 ETS 174.53 ZAE 107.59 ETE 184.95 ZAC 65.54 ETC 256.33 CLP 76.77

PLANETOCENTRIC CONIC

C3 15.094 VHL 3.885 DLA 53.47 RAL 155.51 RAD 6567.6 VEL 11.682 PTH 2.05 VHP 3.155 DPA -11.50 RAP 160.57 ECC 1.2484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.54	6 18 4	4261.76	-37.69	203.22	30.61	48.78	7 29 5	3661.8	-42.69	195.45
137.46	15 8 19	2680.83	-37.68	76.89	30.60	48.77	15 53 0	2080.8	-42.68	69.12
42.54	6 18 4	4261.76	-37.69	203.22	30.61	48.78	7 29 5	3661.8	-42.69	195.45
137.46	15 8 19	2680.83	-37.68	76.89	30.60	48.77	15 53 0	2080.8	-42.68	69.12
42.54	6 18 4	4261.76	-37.69	203.22	30.61	48.78	7 29 5	3661.8	-42.69	195.45
137.46	15 8 19	2680.83	-37.68	76.89	30.60	48.77	15 53 0	2080.8	-42.68	69.12

DIFFERENTIAL CORRECTIONS
TDE 2.8907 TRA -.2610 TC3-5.8334 BAU 1.3325
RDE 1.3061 RRA .1374 RC3-3.0939 FAU .50376
FDE10.6279 FRA .9555 FC-28.8936 BSP 23467
BDE 3.1720 BRA .2949 BC3 6.6031 FSP 8190

MID-COURSE EXECUTION ACCURACY
SGT 6255.9 SGR 3099.3 SG3 2374.5
RRT .9742 RRF .9976 RTF .9716
SGB 6981.5 R23 .1830 R13 .9806
SG1 6953.1 SG2 629.8 THA 25.99

ORBIT DETERMINATION ACCURACY
ST 4269.6 SR 1930.2 SS 4280.2
CRT .9951 CRS-1.0000 CST -.9958
LSA 6339.5 MSA 292.5 SSA 11.1
EL1 4682.4 EL2 173.2 ALF 24.26

LAUNCH DATE DEC 6 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 661.558 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.955 GAL 2.06 AZL 85.86 HCA 197.41 SMA 185.66 ECC .20910 INC 4.1395 V1 30.227
RP 217.09 LAP -1.24 LOP 271.29 VP 22.536 GAP -7.15 AZP 93.95 TAL 11.99 TAP 209.40 RCA 146.84 APO 224.48 V2 25.307
RC 282.801 GL 38.55 GP -18.58 ZAL 68.07 ZAP 75.85 ETS 174.26 ZAE 105.85 ETE 183.92 ZAC 66.66 ETC 256.52 CLP 75.06

PLANETOCENTRIC CONIC

C3 14.550 VHL 3.814 DLA 52.21 RAL 155.31 RAD 6567.6 VEL 11.659 PTH 2.05 VHP 3.153 DPA -10.12 RAP 160.61 ECC 1.2395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.11	6 21 58	4243.19	-37.32	200.80	29.10	50.39	7 32 42	3643.2	-42.14	192.91
135.89	15 2 53	2683.00	-37.31	76.73	29.09	50.38	15 47 36	2083.0	-42.13	68.83
44.11	6 21 58	4243.19	-37.32	200.80	29.10	50.39	7 32 42	3643.2	-42.14	192.91
135.89	15 2 53	2683.00	-37.31	76.73	29.09	50.38	15 47 36	2083.0	-42.13	68.83
44.11	6 21 58	4243.19	-37.32	200.80	29.10	50.39	7 32 42	3643.2	-42.14	192.91
135.89	15 2 53	2683.00	-37.31	76.73	29.09	50.38	15 47 36	2083.0	-42.13	68.83

DIFFERENTIAL CORRECTIONS
TDE 2.8834 TRA -.2720 TC3-6.3354 BAU 1.3604
RDE 1.1763 RRA .1285 RC3-2.9622 FAU .50286
FDE10.1554 FRA .9285 FC-29.9212 BSP 24015
BDE 3.1141 BRA .3009 BC3 6.9937 FSP 8183

MID-COURSE EXECUTION ACCURACY
SGT 6524.0 SGR 2885.8 SG3 2380.2
RRT .9754 RRF .9969 RTF .9730
SGB 7133.8 R23 .1822 R13 .9801
SG1 7109.9 SG2 583.3 THA 23.51

ORBIT DETERMINATION ACCURACY
ST 4338.2 SR 1770.8 SS 4163.9
CRT .9950 CRS -.9999 CST -.9958
LSA 6261.7 MSA 290.6 SSA 12.1
EL1 4682.8 EL2 163.2 ALF 22.13

LAUNCH DATE DEC 6 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 665.717 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.957 GAL 2.01 AZL 86.02 HCA 198.57 SMA 185.70 ECC .20911 INC 3.9770 V1 30.227
RP 216.74 LAP -1.27 LOP 272.44 VP 22.583 GAP -7.32 AZP 93.77 TAL 11.66 TAP 210.22 RCA 146.87 APO 224.53 V2 25.346
RC 284.057 GL 37.51 GP -17.43 ZAL 68.22 ZAP 74.17 ETS 174.03 ZAE 104.09 ETE 183.03 ZAC 67.68 ETC 256.69 CLP 73.38

PLANETOCENTRIC CONIC

C3 14.077 VHL 3.752 DLA 51.05 RAL 155.26 RAD 6567.6 VEL 11.639 PTH 2.04 VHP 3.158 DPA -8.87 RAP 160.62 ECC 1.2317

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.57	6 26 14	4225.59	-36.93	198.56	27.86	51.85	7 36 40	3625.6	-41.59	190.57
134.43	14 58 9	2686.02	-36.92	76.65	27.84	51.84	15 42 55	2086.0	-41.58	68.66
45.57	6 26 14	4225.59	-36.93	198.56	27.86	51.85	7 36 40	3625.6	-41.59	190.57
134.43	14 58 9	2686.02	-36.92	76.65	27.84	51.84	15 42 55	2086.0	-41.58	68.66
45.57	6 26 14	4225.59	-36.93	198.56	27.86	51.85	7 36 40	3625.6	-41.59	190.57
134.43	14 58 9	2686.02	-36.92	76.65	27.84	51.84	15 42 55	2086.0	-41.58	68.66

DIFFERENTIAL CORRECTIONS
TDE 2.8825 TRA -.2751 TC3-6.8321 BAU 1.3917
RDE 1.0668 RRA .1242 RC3-2.8291 FAU .49978
FDE 9.6979 FRA .9332 FC-30.7359 BSP 24692
BDE 3.0736 BRA .3018 BC3 7.3947 FSP 8164

MID-COURSE EXECUTION ACCURACY
SGT 6790.2 SGR 2692.9 SG3 2376.3
RRT .9764 RRF .9961 RTF .9741
SGB 7304.7 R23 .1798 R13 .9798
SG1 7284.5 SG2 542.5 THA 21.29

ORBIT DETERMINATION ACCURACY
ST 4409.1 SR 1632.9 SS 4049.6
CRT .9949 CRS -.9999 CST -.9958
LSA 6198.5 MSA 289.6 SSA 13.1
EL1 4699.2 EL2 154.5 ALF 20.25

LAUNCH DATE DEC 6 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 669.882 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.959 GAL 1.95 AZL 86.17 HCA 199.72 SMA 185.74 ECC .20912 INC 3.8321 V1 30.227
RP 216.39 LAP -1.29 LOP 273.59 VP 22.629 GAP -7.48 AZP 93.61 TAL 11.31 TAP 211.03 RCA 146.90 APO 224.58 V2 25.385
RC 285.296 GL 36.56 GP -16.39 ZAL 68.44 ZAP 72.51 ETS 173.84 ZAE 102.34 ETE 182.26 ZAC 68.60 ETC 256.84 CLP 71.75

PLANETOCENTRIC CONIC

C3 13.662 VHL 3.696 DLA 49.97 RAL 155.32 RAD 6567.5 VEL 11.621 PTH 2.04 VHP 3.169 DPA -7.73 RAP 160.62 ECC 1.2248

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.94	6 30 52	4208.78	-36.54	196.46	26.84	53.19	7 41 1	3608.8	-41.04	188.38
133.06	14 54 3	2689.70	-36.53	76.65	26.83	53.17	15 38 52	2089.7	-41.03	68.58
46.94	6 30 52	4208.78	-36.54	196.46	26.84	53.19	7 41 1	3608.8	-41.04	188.38
133.06	14 54 3	2689.70	-36.53	76.65	26.83	53.17	15 38 52	2089.7	-41.03	68.58
46.94	6 30 52	4208.78	-36.54	196.46	26.84	53.19	7 41 1	3608.8	-41.04	188.38
133.06	14 54 3	2689.70	-36.53	76.65	26.83	53.17	15 38 52	2089.7	-41.03	68.58

DIFFERENTIAL CORRECTIONS
TDE 2.8883 TRA -.2682 TC3-7.3135 BAU 1.4227
RDE .9763 RRA .1263 RC3-2.6810 FAU .49223
FDE 9.2856 FRA .9983 FC-31.1913 BSP 25570
BDE 3.0488 BRA .2964 BC3 7.7894 FSP 8202

MID-COURSE EXECUTION ACCURACY
SGT 7049.3 SGR 2512.1 SG3 2357.7
RRT .9766 RRF .9951 RTF .9750
SGB 7483.5 R23 .1761 R13 .9795
SG1 7466.1 SG2 510.3 THA 19.28

ORBIT DETERMINATION ACCURACY
ST 4484.3 SR 1517.2 SS 3950.4
CRT .9946 CRS -.9999 CST -.9956
LSA 6158.8 MSA 293.2 SSA 13.9
EL1 4731.6 EL2 148.6 ALF 18.62

LAUNCH DATE DEC 6 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 674.059 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.962 GAL 1.89 AZL 86.30 HCA 200.88 SMA 185.79 ECC .20915 INC 3.7026 V1 30.227
RP 216.05 LAP -1.32 LOP 274.75 VP 22.676 GAP -7.64 AZP 93.46 TAL 10.95 TAP 211.83 RCA 146.93 APO 224.65 V2 25.423
RC 286.520 GL 35.70 GP -15.44 ZAL 68.72 ZAP 70.89 ETS 173.68 ZAE 100.58 ETE 181.58 ZAC 69.43 ETC 256.97 CLP 70.15

PLANETOCENTRIC CONIC

C3 13.294 VHL 3.646 DLA 48.95 RAL 155.49 RAD 6567.5 VEL 11.605 PTH 2.03 VHP 3.185 DPA -6.69 RAP 160.61 ECC 1.2188

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.24	6 35 46	4192.65	-36.14	194.47	26.02	54.41	7 45 39	3592.7	-40.50	186.33
131.76	14 50 27	2693.92	-36.13	76.72	26.01	54.39	15 35 21	2093.9	-40.49	68.58
48.24	6 35 46	4192.65	-36.14	194.47	26.02	54.41	7 45 39	3592.7	-40.50	186.33
131.76	14 50 27	2693.92	-36.13	76.72	26.01	54.39	15 35 21	2093.9	-40.49	68.58
48.24	6 35 46	4192.65	-36.14	194.47	26.02	54.41	7 45 39	3592.7	-40.50	186.33
131.76	14 50 27	2693.92	-36.13	76.72	26.01	54.39	15 35 21	2093.9	-40.49	68.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.8853 TRA -.2647 TC3-7.8148 BAU 1.4613 SGT 7309.9 SGR 2350.7 SG3 2337.6 ST 4541.4 SR 1405.0 SS 3819.0
RDE .8916 RRA .1234 RC3-2.5566 FAU .48688 RRT .9771 RRF .9939 RTF .9759 CRT .9945 CRS -.9999 CST -.9955
FDE 8.8092 FRA 1.0053 FC-31.7074 BSP 26222 SGB 7678.6 R23 .1704 R13 .9794 LSA 6090.8 MSA 290.7 SSA 15.0
BDE 3.0200 BRA .2921 BC3 8.2224 FSP 8066 SG1 7663.7 SG2 477.3 THA 17.51 EL1 4751.7 EL2 140.7 ALF 17.12

LAUNCH DATE DEC 6 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 678.243 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.965 GAL 1.82 AZL 86.41 HCA 202.04 SMA 185.84 ECC .20920 INC 3.5856 V1 30.227
RP 215.71 LAP -1.34 LOP 275.92 VP 22.723 GAP -7.80 AZP 93.32 TAL 10.58 TAP 212.62 RCA 146.96 APO 224.72 V2 25.461
RC 287.729 GL 34.91 GP -14.58 ZAL 69.06 ZAP 69.31 ETS 173.55 ZAE 98.84 ETE 181.00 ZAC 70.20 ETC 257.09 CLP 68.58

PLANETOCENTRIC CONIC

C3 12.963 VHL 3.600 DLA 47.99 RAL 155.74 RAD 6567.5 VEL 11.591 PTH 2.03 VHP 3.205 DPA -5.75 RAP 160.60 ECC 1.2133

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.48	6 40 57	4177.01	-35.74	192.58	25.36	55.53	7 50 34	3577.0	-39.96	184.39
130.52	14 47 16	2698.68	-35.73	76.84	25.35	55.52	15 32 15	2098.7	-39.95	68.65
49.48	6 40 57	4177.01	-35.74	192.58	25.36	55.53	7 50 34	3577.0	-39.96	184.39
130.52	14 47 16	2698.68	-35.73	76.84	25.35	55.52	15 32 15	2098.7	-39.95	68.65
49.48	6 40 57	4177.01	-35.74	192.58	25.36	55.53	7 50 34	3577.0	-39.96	184.39
130.52	14 47 16	2698.68	-35.73	76.84	25.35	55.52	15 32 15	2098.7	-39.95	68.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.8835 TRA -.2562 TC3-8.3142 BAU 1.5013 SGT 7567.7 SGR 2202.3 SG3 2310.7 ST 4595.8 SR 1306.7 SS 3691.5
RDE .8186 RRA .1226 RC3-2.4325 FAU .47987 RRT .9772 RRF .9924 RTF .9767 CRT .9943 CRS -.9999 CST -.9954
FDE 8.3538 FRA 1.0296 FC-32.0478 BSP 26931 SGB 7881.7 R23 .1632 R13 .9794 LSA 6031.0 MSA 289.1 SSA 16.0
BDE 2.9974 BRA .2841 BC3 8.6627 FSP 7933 SG1 7868.8 SG2 449.6 THA 15.93 EL1 4776.1 EL2 134.0 ALF 15.80

LAUNCH DATE DEC 6 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 682.435 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.968 GAL 1.76 AZL 86.52 HCA 203.21 SMA 185.89 ECC .20927 INC 3.4794 V1 30.227
RP 215.38 LAP -1.37 LOP 277.09 VP 22.770 GAP -7.95 AZP 93.20 TAL 10.19 TAP 213.40 RCA 146.99 APO 224.79 V2 25.498
RC 288.924 GL 34.19 GP -13.79 ZAL 69.45 ZAP 67.76 ETS 173.44 ZAE 97.12 ETE 180.48 ZAC 70.90 ETC 257.19 CLP 67.06

PLANETOCENTRIC CONIC

C3 12.664 VHL 3.559 DLA 47.08 RAL 156.07 RAD 6567.5 VEL 11.578 PTH 2.02 VHP 3.229 DPA -4.89 RAP 160.60 ECC 1.2084

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.67	6 46 26	4161.68	-35.33	190.77	24.85	56.58	7 55 47	3561.7	-39.44	182.53
129.33	14 44 27	2704.00	-35.32	77.02	24.84	56.57	15 29 31	2104.0	-39.43	68.79
50.67	6 46 26	4161.68	-35.33	190.77	24.85	56.58	7 55 47	3561.7	-39.44	182.53
129.33	14 44 27	2704.00	-35.32	77.02	24.84	56.57	15 29 31	2104.0	-39.43	68.79
50.67	6 46 26	4161.68	-35.33	190.77	24.85	56.58	7 55 47	3561.7	-39.44	182.53
129.33	14 44 27	2704.00	-35.32	77.02	24.84	56.57	15 29 31	2104.0	-39.43	68.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.8798 TRA -.2434 TC3-8.8151 BAU 1.5429 SGT 7822.5 SGR 2066.3 SG3 2279.1 ST 4643.6 SR 1219.3 SS 3563.9
RDE .7547 RRA .1234 RC3-2.3121 FAU .47192 RRT .9769 RRF .9907 RTF .9773 CRT .9941 CRS -.9998 CST -.9952
FDE 7.9100 FRA 1.0689 FC-32.2616 BSP 27618 SGB 8090.8 R23 .1550 R13 .9795 LSA 5972.2 MSA 288.6 SSA 17.1
BDE 2.9770 BRA .2729 BC3 9.1132 FSP 7775 SG1 8079.5 SG2 427.5 THA 14.51 EL1 4799.3 EL2 128.4 ALF 14.64

LAUNCH DATE DEC 6 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 686.635 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 32.971 GAL 1.69 AZL 86.62 HCA 204.38 SMA 185.95 ECC .20935 INC 3.3827 V1 30.227
RP 215.05 LAP -1.40 LOP 278.26 VP 22.816 GAP -8.09 AZP 93.08 TAL 9.79 TAP 214.17 RCA 147.02 APO 224.88 V2 25.535
RC 290.105 GL 33.53 GP -13.07 ZAL 69.90 ZAP 66.25 ETS 173.36 ZAE 95.43 ETE 180.04 ZAC 71.55 ETC 257.28 CLP 65.58

PLANETOCENTRIC CONIC

C3 12.391 VHL 3.520 DLA 46.21 RAL 156.47 RAD 6567.5 VEL 11.566 PTH 2.02 VHP 3.256 DPA -4.10 RAP 160.61 ECC 1.2039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.82	6 52 8	4146.69	-34.93	189.02	24.47	57.56	8 1 14	3546.7	-38.91	180.76
128.18	14 41 57	2709.70	-34.92	77.24	24.46	57.55	15 27 7	2109.7	-38.90	68.97
51.82	6 52 8	4146.69	-34.93	189.02	24.47	57.56	8 1 14	3546.7	-38.91	180.76
128.18	14 41 57	2709.70	-34.92	77.24	24.46	57.55	15 27 7	2109.7	-38.90	68.97
51.82	6 52 8	4146.69	-34.93	189.02	24.47	57.56	8 1 14	3546.7	-38.91	180.76
128.18	14 41 57	2709.70	-34.92	77.24	24.46	57.55	15 27 7	2109.7	-38.90	68.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.8778 TRA -.2235 TC3-9.3045 BAU 1.5836 SGT 8070.1 SGR 1939.8 SG3 2241.0 ST 4690.7 SR 1142.5 SS 3441.3
RDE .6993 RRA .1256 RC3-2.1913 FAU .46236 RRT .9762 RRF .9886 RTF .9778 CRT .9938 CRS -.9998 CST -.9951
FDE 7.4886 FRA 1.1244 FC-32.3026 BSP 28389 SGB 8300.0 R23 .1456 R13 .9796 LSA 5921.8 MSA 288.6 SSA 18.1
BDE 2.9615 BRA .2564 BC3 9.5590 FSP 7629 SG1 8289.9 SG2 409.5 THA 13.24 EL1 4826.3 EL2 123.3 ALF 13.62

LAUNCH DATE DEC 6 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 18 1965

DISTANCE 690.842

HELIOCENTRIC CONIC

```
RL  147.39 LAL    .00 LOL  73.91 VL  32.975 GAL   1.62 AZL  86.71 HCA 205.55 SMA 186.01 ECC .20944 INC 3.2940 V1  30.227
RP  214.72 LAP  -1.42 LOP 279.43 VP  22.862 GAP  -8.24 AZP  92.97 TAL   9.38 TAP 214.93 RCA 147.05 APO 224.97 V2  25.572
RC 291.272 GL   32.93 GP  -12.40 ZAL  70.39 ZAP  64.78 ETS 173.28 ZAE  93.76 ETE 179.64 ZAC  72.14 ETC 257.36 CLP  64.13
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EARTH TO MARS

PLANETOCENTRIC CONIC

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C3  12.142 VHL  3.484 DLA  45.38 RAL 156.94 RAD 6567.5 VEL 11.555 PTH   2.02 VHP  3.286 DPA  -3.38 RAP 160.63 ECC 1.1998
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.93	6 58 6	4131.84	-34.52	187.32	24.21	58.49	8 6 58	3531.8	-38.40	179.03
127.07	14 39 43	2715.92	-34.51	77.51	24.20	58.48	15 24 59	2115.9	-38.39	69.22
52.93	6 58 6	4131.84	-34.52	187.32	24.21	58.49	8 6 58	3531.8	-38.40	179.03
127.07	14 39 43	2715.92	-34.51	77.51	24.20	58.48	15 24 59	2115.9	-38.39	69.22
52.93	6 58 6	4131.84	-34.52	187.32	24.21	58.49	8 6 58	3531.8	-38.40	179.03
127.07	14 39 43	2715.92	-34.51	77.51	24.20	58.48	15 24 59	2115.9	-38.39	69.22

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DIFFERENTIAL CORRECTIONS                MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
TDE 2.8737 TRA -.1999 TC3-9.7955 BAU 1.6254   SGT 8315.5 SGR 1824.0 SG3 2200.7   ST  4731.8 SR  1073.6 SS  3318.3
RDE  .6501 RRA  .1280 RC3-2.0767 FAU .45253   RRT  .9751 RRF  .9861 RTF  .9783   CRT  .9936 CRS -.9998 CST -.9948
FDE 7.0784 FRA 1.1821 FC-32.2664 BSP  29138   SGB 8513.2 R23  .1353 R13  .9797   LSA 5871.2 MSA  288.6 SSA   19.1
BDE 2.9463 BRA  .2374 BC310.0132 FSP   7464   SG1 8504.0 SG2  395.3 THA  12.10   EL1 4850.6 EL2  118.7 ALF  12.71
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LAUNCH DATE DEC 6 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 20 1965

DISTANCE 695.056

HELIOCENTRIC CONIC

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RL  147.39 LAL    .00 LOL  73.91 VL  32.979 GAL   1.55 AZL  86.79 HCA 206.73 SMA 186.08 ECC .20955 INC 3.2123 V1  30.227
RP  214.40 LAP  -1.44 LOP 280.61 VP  22.908 GAP  -8.38 AZP  92.87 TAL   8.95 TAP 215.68 RCA 147.08 APO 225.07 V2  25.608
RC 292.426 GL   32.36 GP  -11.78 ZAL  70.94 ZAP  63.35 ETS 173.23 ZAE  92.11 ETE 179.30 ZAC  72.70 ETC 257.43 CLP  62.73
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EARTH TO MARS

PLANETOCENTRIC CONIC

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C3  11.912 VHL  3.451 DLA  44.57 RAL 157.47 RAD 6567.5 VEL 11.546 PTH   2.02 VHP  3.319 DPA  -2.73 RAP 160.67 ECC 1.1960
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.02	7 4 20	4117.03	-34.11	185.66	24.05	59.36	8 12 57	3517.0	-37.88	177.35
125.98	14 37 41	2722.65	-34.10	77.83	24.04	59.35	15 23 4	2122.7	-37.87	69.52
54.02	7 4 20	4117.03	-34.11	185.66	24.05	59.36	8 12 57	3517.0	-37.88	177.35
125.98	14 37 41	2722.65	-34.10	77.83	24.04	59.35	15 23 4	2122.7	-37.87	69.52
54.02	7 4 20	4117.03	-34.11	185.66	24.05	59.36	8 12 57	3517.0	-37.88	177.35
125.98	14 37 41	2722.65	-34.10	77.83	24.04	59.35	15 23 4	2122.7	-37.87	69.52

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DIFFERENTIAL CORRECTIONS                MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
TDE 2.8688 TRA -.1695 TC-10.2776 BAU 1.6663   SGT 8553.7 SGR 1716.2 SG3 2155.7   ST  4768.7 SR  1012.1 SS  3197.1
RDE  .6067 RRA  .1317 RC3-1.9634 FAU .44162   RRT  .9735 RRF  .9832 RTF  .9786   CRT  .9933 CRS -.9997 CST -.9945
FDE 6.6831 FRA 1.2566 FC-32.0972 BSP  29925   SGB 8724.2 R23  .1249 R13  .9797   LSA 5822.5 MSA  289.9 SSA   20.1
BDE 2.9322 BRA  .2146 BC310.4635 FSP   7305   SG1 8715.6 SG2  385.5 THA  11.07   EL1 4873.6 EL2  114.6 ALF  11.91
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LAUNCH DATE DEC 6 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 22 1965

DISTANCE 699.278

HELIOCENTRIC CONIC

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RL  147.39 LAL    .00 LOL  73.91 VL  32.983 GAL   1.47 AZL  86.86 HCA 207.91 SMA 186.14 ECC .20968 INC 3.1368 V1  30.227
RP  214.08 LAP  -1.47 LOP 281.79 VP  22.954 GAP  -8.52 AZP  92.77 TAL   8.50 TAP 216.41 RCA 147.11 APO 225.17 V2  25.644
RC 293.566 GL   31.84 GP  -11.21 ZAL  71.53 ZAP  61.96 ETS 173.18 ZAE  90.50 ETE 179.00 ZAC  73.22 ETC 257.49 CLP  61.36
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EARTH TO MARS

PLANETOCENTRIC CONIC

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C3  11.699 VHL  3.420 DLA  43.79 RAL 158.05 RAD 6567.4 VEL 11.536 PTH   2.01 VHP  3.354 DPA  -2.13 RAP 160.72 ECC 1.1925
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.09	7 10 49	4102.25	-33.70	184.03	23.98	60.19	8 19 12	3502.2	-37.37	175.71
124.91	14 35 51	2729.88	-33.69	78.20	23.98	60.18	15 21 21	2129.9	-37.36	69.88
55.09	7 10 49	4102.25	-33.70	184.03	23.98	60.19	8 19 12	3502.2	-37.37	175.71
124.91	14 35 51	2729.88	-33.69	78.20	23.98	60.18	15 21 21	2129.9	-37.36	69.88
55.09	7 10 49	4102.25	-33.70	184.03	23.98	60.19	8 19 12	3502.2	-37.37	175.71
124.91	14 35 51	2729.88	-33.69	78.20	23.98	60.18	15 21 21	2129.9	-37.36	69.88

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DIFFERENTIAL CORRECTIONS                MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
TDE 2.8620 TRA -.1354 TC-10.7586 BAU 1.7075   SGT 8789.1 SGR 1617.0 SG3 2109.0   ST  4800.4 SR   957.5 SS  3079.6
RDE  .5684 RRA  .1352 RC3-1.8548 FAU .43038   RRT  .9713 RRF  .9797 RTF  .9790   CRT  .9930 CRS -.9997 CST -.9942
FDE 6.3069 FRA 1.3290 FC-31.8497 BSP  30684   SGB 8936.6 R23  .1138 R13  .9799   LSA 5775.7 MSA  290.9 SSA   21.0
BDE 2.9179 BRA  .1913 BC310.9173 FSP   7133   SG1 8928.6 SG2  378.7 THA  10.15   EL1 4893.7 EL2  110.8 ALF  11.21
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LAUNCH DATE DEC 6 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 24 1965

DISTANCE 703.507

HELIOCENTRIC CONIC

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RL  147.39 LAL    .00 LOL  73.91 VL  32.987 GAL   1.39 AZL  86.93 HCA 209.09 SMA 186.21 ECC .20983 INC 3.0669 V1  30.227
RP  213.77 LAP  -1.49 LOP 282.97 VP  22.999 GAP  -8.65 AZP  92.68 TAL   8.05 TAP 217.14 RCA 147.14 APO 225.29 V2  25.679
RC 294.693 GL   31.35 GP  -10.68 ZAL  72.16 ZAP  60.60 ETS 173.14 ZAE  88.91 ETE 178.73 ZAC  73.71 ETC 257.54 CLP  60.03
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EARTH TO MARS

PLANETOCENTRIC CONIC

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C3  11.501 VHL  3.391 DLA  43.02 RAL 158.68 RAD 6567.4 VEL 11.528 PTH   2.01 VHP  3.392 DPA  -1.59 RAP 160.80 ECC 1.1893
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.14	7 17 34	4087.39	-33.28	182.42	24.00	60.99	8 25 42	3487.4	-36.86	174.09
123.86	14 34 9	2737.62	-33.27	78.61	24.00	60.97	15 19 47	2137.6	-36.85	70.28
56.14	7 17 34	4087.39	-33.28	182.42	24.00	60.99	8 25 42	3487.4	-36.86	174.09
123.86	14 34 9	2737.62	-33.27	78.61	24.00	60.97	15 19 47	2137.6	-36.85	70.28
56.14	7 17 34	4087.39	-33.28	182.42	24.00	60.99	8 25 42	3487.4	-36.86	174.09
123.86	14 34 9	2737.62	-33.27	78.61	24.00	60.97	15 19 47	2137.6	-36.85	70.28

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DIFFERENTIAL CORRECTIONS                MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
TDE 2.8532 TRA -.0957 TC-11.2321 BAU 1.7479   SGT 9018.0 SGR 1525.4 SG3 2060.5   ST  4826.3 SR   907.8 SS  2960.7
RDE  .5339 RRA  .1389 RC3-1.7508 FAU .41896   RRT  .9686 RRF  .9757 RTF  .9793   CRT  .9928 CRS -.9997 CST -.9938
FDE 5.9391 FRA 1.4047 FC-31.5372 BSP  31460   SGB 9146.1 R23  .1027 R13  .9800   LSA 5726.9 MSA  291.9 SSA   22.0
BDE 2.9027 BRA  .1687 BC311.3677 FSP   6956   SG1 9138.4 SG2  374.3 THA   9.32   EL1 4909.7 EL2  107.1 ALF  10.58
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LAUNCH DATE  DEC  6 1964                          FLIGHT TIME 324.00                                ARRIVAL DATE  OCT 26 1965

 HELIOCENTRIC CONIC                                DISTANCE 707.744                                   EARTH  TO  MARS
  RL  147.39 LAL     .00 LOL  73.91 VL  32.991 GAL   1.31 AZL  87.00 HCA 210.28 SMA 186.29 ECC .20999 INC 3.0016 V1  30.227
  RP  213.46 LAP   -1.51 LOP 284.16 VP  23.044 GAP  -8.78 AZP  92.59 TAL   7.58 TAP 217.86 RCA 147.17 APO 225.41 V2  25.714
  RC 295.805 GL    30.89 GP  -10.19 ZAL  72.83 ZAP  59.28 ETS 173.12 ZAE  87.35 ETE 178.50 ZAC  74.17 ETC 257.59 CLP  58.74
 PLANETOCENTRIC CONIC
  C3  11.317 VHL  3.364 DLA  42.27 RAL 159.37 RAD 6567.4 VEL 11.520 PTH   2.01 VHP  3.432 DPA  -1.10 RAP 160.89 ECC 1.1863
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     57.20     7 24 38   4072.28     -32.86     180.81      24.10      61.75    8 32 31     3472.3     -36.35     172.47
    122.80    14 32 32   2746.05     -32.85      79.08      24.09      61.74   15 18 18     2146.0     -36.34      70.74
     57.20     7 24 38   4072.28     -32.86     180.81      24.10      61.75    8 32 31     3472.3     -36.35     172.47
    122.80    14 32 32   2746.05     -32.85      79.08      24.09      61.74   15 18 18     2146.0     -36.34      70.74
     57.20     7 24 38   4072.28     -32.86     180.81      24.10      61.75    8 32 31     3472.3     -36.35     172.47
    122.80    14 32 32   2746.05     -32.85      79.08      24.09      61.74   15 18 18     2146.0     -36.34      70.74
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                      ORBIT DETERMINATION ACCURACY
  TDE 2.8399 TRA -.0526 TC-11.7093 BAU 1.7892       SGT 9245.3 SGR 1441.0 SG3 2011.5                   ST  4842.7 SR   862.6 SS  2840.7
  RDE  .5028 RRA  .1426 RC3-1.6520 FAU .40758       RRT  .9652 RRF  .9710 RTF  .9795                   CRT  .9925 CRS -.9996 CST -.9933
  FDE 5.5799 FRA 1.4816 FC-31.1784 BSP  32171       SGB 9356.9 R23  .0920 R13  .9800                   LSA 5672.6 MSA  293.6 SSA   22.9
  BDE 2.8841 BRA  .1520 BC311.8252 FSP   6762       SG1 9349.5 SG2  372.7 THA   8.57                   EL1 4917.8 EL2  103.7 ALF  10.03

LAUNCH DATE  DEC  6 1964                          FLIGHT TIME 326.00                                ARRIVAL DATE  OCT 28 1965

 HELIOCENTRIC CONIC                                DISTANCE 711.987                                   EARTH  TO  MARS
  RL  147.39 LAL     .00 LOL  73.91 VL  32.996 GAL   1.23 AZL  87.06 HCA 211.47 SMA 186.37 ECC .21017 INC 2.9408 V1  30.227
  RP  213.16 LAP   -1.53 LOP 285.35 VP  23.088 GAP  -8.91 AZP  92.51 TAL   7.09 TAP 218.56 RCA 147.20 APO 225.53 V2  25.748
  RC 296.904 GL    30.46 GP   -9.74 ZAL  73.55 ZAP  58.00 ETS 173.10 ZAE  85.83 ETE 178.29 ZAC  74.60 ETC 257.62 CLP  57.48
 PLANETOCENTRIC CONIC
  C3  11.146 VHL  3.339 DLA  41.53 RAL 160.10 RAD 6567.4 VEL 11.512 PTH   2.01 VHP  3.474 DPA   -.65 RAP 161.01 ECC 1.1834
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     58.25     7 31 59   4056.95     -32.43     179.20      24.27      62.49    8 39 36     3457.0     -35.83     170.86
    121.75    14 31  0   2755.08     -32.42      79.60      24.27      62.47   15 16 55     2155.1     -35.82      71.26
     58.25     7 31 59   4056.95     -32.43     179.20      24.27      62.49    8 39 36     3457.0     -35.83     170.86
    121.75    14 31  0   2755.08     -32.42      79.60      24.27      62.47   15 16 55     2155.1     -35.82      71.26
     58.25     7 31 59   4056.95     -32.43     179.20      24.27      62.49    8 39 36     3457.0     -35.83     170.86
    121.75    14 31  0   2755.08     -32.42      79.60      24.27      62.47   15 16 55     2155.1     -35.82      71.26
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                      ORBIT DETERMINATION ACCURACY
  TDE 2.8256 TRA -.0035 TC-12.1744 BAU 1.8289       SGT 9465.5 SGR 1362.7 SG3 1960.6                   ST  4855.3 SR   822.3 SS  2724.8
  RDE  .4752 RRA  .1464 RC3-1.5557 FAU .39575       RRT  .9611 RRF  .9655 RTF  .9797                   CRT  .9923 CRS -.9995 CST -.9928
  FDE 5.2397 FRA 1.5598 FC-30.7389 BSP  32917       SGB 9563.1 R23  .0814 R13  .9801                   LSA 5620.2 MSA  295.2 SSA   23.8
  BDE 2.8652 BRA  .1465 BC312.2734 FSP   6580       SG1 9555.8 SG2  373.0 THA   7.89                   EL1 4923.4 EL2  100.2 ALF   9.54

LAUNCH DATE  DEC  6 1964                          FLIGHT TIME 328.00                                ARRIVAL DATE  OCT 30 1965

 HELIOCENTRIC CONIC                                DISTANCE 716.237                                   EARTH  TO  MARS
  RL  147.39 LAL     .00 LOL  73.91 VL  33.000 GAL   1.14 AZL  87.12 HCA 212.67 SMA 186.45 ECC .21036 INC 2.8838 V1  30.227
  RP  212.87 LAP   -1.56 LOP 286.55 VP  23.133 GAP  -9.04 AZP  92.43 TAL   6.59 TAP 219.26 RCA 147.22 APO 225.67 V2  25.782
  RC 297.989 GL    30.05 GP   -9.31 ZAL  74.31 ZAP  56.76 ETS 173.09 ZAE  84.34 ETE 178.11 ZAC  75.02 ETC 257.65 CLP  56.25
 PLANETOCENTRIC CONIC
  C3  10.986 VHL  3.315 DLA  40.80 RAL 160.87 RAD 6567.4 VEL 11.505 PTH   2.00 VHP  3.518 DPA   -.25 RAP 161.15 ECC 1.1808
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     59.30     7 39 41   4041.20     -32.00     177.58      24.51      63.20    8 47  2     3441.2     -35.31     169.24
    120.70    14 29 28   2764.89     -31.99      80.18      24.51      63.19   15 15 33     2164.9     -35.30      71.85
     59.30     7 39 41   4041.20     -32.00     177.58      24.51      63.20    8 47  2     3441.2     -35.31     169.24
    120.70    14 29 28   2764.89     -31.99      80.18      24.51      63.19   15 15 33     2164.9     -35.30      71.85
     59.30     7 39 41   4041.20     -32.00     177.58      24.51      63.20    8 47  2     3441.2     -35.31     169.24
    120.70    14 29 28   2764.89     -31.99      80.18      24.51      63.19   15 15 33     2164.9     -35.30      71.85
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                      ORBIT DETERMINATION ACCURACY
  TDE 2.8100 TRA  .0512 TC-12.6292 BAU 1.8673       SGT 9679.8 SGR 1289.9 SG3 1908.2                   ST  4863.9 SR   786.3 SS  2612.0
  RDE  .4507 RRA  .1502 RC3-1.4620 FAU .38361       RRT  .9561 RRF  .9591 RTF  .9799                   CRT  .9922 CRS -.9995 CST -.9922
  FDE 4.9160 FRA 1.6377 FC-30.2287 BSP  33668       SGB 9765.3 R23  .0712 R13  .9802                   LSA 5568.7 MSA  296.6 SSA   24.7
  BDE 2.8459 BRA  .1587 BC312.7135 FSP   6394       SG1 9758.1 SG2  374.9 THA   7.27                   EL1 4926.1 EL2   96.7 ALF   9.12

LAUNCH DATE  DEC  6 1964                          FLIGHT TIME 330.00                                ARRIVAL DATE  NOV  1 1965

 HELIOCENTRIC CONIC                                DISTANCE 720.493                                   EARTH  TO  MARS
  RL  147.39 LAL     .00 LOL  73.91 VL  33.005 GAL   1.06 AZL  87.17 HCA 213.87 SMA 186.53 ECC .21058 INC 2.8302 V1  30.227
  RP  212.57 LAP   -1.58 LOP 287.75 VP  23.176 GAP  -9.16 AZP  92.35 TAL   6.08 TAP 219.94 RCA 147.25 APO 225.81 V2  25.815
  RC 299.061 GL    29.67 GP   -8.91 ZAL  75.12 ZAP  55.55 ETS 173.08 ZAE  82.87 ETE 177.95 ZAC  75.41 ETC 257.67 CLP  55.07
 PLANETOCENTRIC CONIC
  C3  10.838 VHL  3.292 DLA  40.07 RAL 161.68 RAD 6567.4 VEL 11.499 PTH   2.00 VHP  3.564 DPA    .11 RAP 161.32 ECC 1.1784
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     60.37     7 47 45   4024.89     -31.56     175.93      24.82      63.89    8 54 50     3424.9     -34.78     167.60
    119.63    14 27 53   2775.62     -31.54      80.83      24.81      63.88   15 14  9     2175.6     -34.77      72.50
     60.37     7 47 45   4024.89     -31.56     175.93      24.82      63.89    8 54 50     3424.9     -34.78     167.60
    119.63    14 27 53   2775.62     -31.54      80.83      24.81      63.88   15 14  9     2175.6     -34.77      72.50
     60.37     7 47 45   4024.89     -31.56     175.93      24.82      63.89    8 54 50     3424.9     -34.78     167.60
    119.63    14 27 53   2775.62     -31.54      80.83      24.81      63.88   15 14  9     2175.6     -34.77      72.50
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                      ORBIT DETERMINATION ACCURACY
  TDE 2.7888 TRA  .1099 TC-13.0861 BAU 1.9064       SGT 9892.3 SGR 1223.4 SG3 1857.0                   ST  4861.2 SR   753.3 SS  2498.2
  RDE  .4283 RRA  .1542 RC3-1.3737 FAU .37187       RRT  .9501 RRF  .9519 RTF  .9800                   CRT  .9921 CRS -.9993 CST -.9914
  FDE 4.6002 FRA 1.7188 FC-29.7062 BSP  34391       SGB 9967.6 R23  .0623 R13  .9803                   LSA 5509.1 MSA  299.3 SSA   25.6
  BDE 2.8215 BRA  .1893 BC313.1580 FSP   6217       SG1 9960.4 SG2  378.9 THA   6.71                   EL1 4918.3 EL2   93.4 ALF   8.74
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LAUNCH DATE DEC 6 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 724.756 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.010	GAL	.97	AZL	87.22	HCA	215.07	SMA	186.61	ECC	.21081	INC	2.7797
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.220	GAP	-9.28	AZP	92.28	TAL	5.55	TAP	220.62	RCA	147.27	APO	225.95
RC	300.120	GL	29.30	GP	-8.54	ZAL	75.96	ZAP	54.37	ETS	173.08	ZAE	81.44	ETE	177.81	ZAC	75.78	ETC	257.68

V1	30.227	V2	25.847	CLP	53.91														

PLANETOCENTRIC CONIC

C3	10.699	VHL	3.271	DLA	39.35	RAL	162.53	RAD	6567.4	VEL	11.493	PTH	2.00	VHP	3.611	DPA	.44	RAP	161.51
ECC	1.1761																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.45	7 56 10	4008.07	-31.10	174.26	25.18	64.57	9 2 58	3408.1	-34.24	165.93
118.55	14 26 16	2787.20	-31.09	81.55	25.17	64.56	15 12 44	2187.2	-34.23	73.23
61.45	7 56 10	4008.07	-31.10	174.26	25.18	64.57	9 2 58	3408.1	-34.24	165.93
118.55	14 26 16	2787.20	-31.09	81.55	25.17	64.56	15 12 44	2187.2	-34.23	73.23
61.45	7 56 10	4008.07	-31.10	174.26	25.18	64.57	9 2 58	3408.1	-34.24	165.93
118.55	14 26 16	2787.20	-31.09	81.55	25.17	64.56	15 12 44	2187.2	-34.23	73.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.7650	TRA	.1743	TC-13.5322	BAU	1.9444	SGT10098.7	SGR	1161.5	SG3	1804.8	ST	4852.1	SR	723.2	SS	2384.9
RDE	.4081	RRA	.1579	RC3-1.2882	FAU	.36002	RRT	.9432	RRF	.9436	RTF	.9801	CRT	.9921	CRS	-.9991	CST -.9906
FDE	4.2952	FRA	1.7963	FC-29.1316	BSP	35088	SGB10165.2	R23	.0535	R13	.9803	LSA	5446.3	MSA	301.6	SSA	26.4
BDE	2.7950	BRA	.2352	BC313.5933	FSP	6025	SG110158.0	SG2	383.5	THA	6.20	EL1	4904.9	EL2	89.9	ALF	8.41

LAUNCH DATE DEC 6 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 729.025 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.015	GAL	.87	AZL	87.27	HCA	216.27	SMA	186.70	ECC	.21106	INC	2.7320
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.262	GAP	-9.40	AZP	92.20	TAL	5.01	TAP	221.28	RCA	147.30	APO	226.11
RC	301.167	GL	28.95	GP	-8.19	ZAL	76.84	ZAP	53.23	ETS	173.08	ZAE	80.04	ETE	177.69	ZAC	76.14	ETC	257.69

V1	30.227	V2	25.879	CLP	52.79														

PLANETOCENTRIC CONIC

C3	10.571	VHL	3.251	DLA	38.62	RAL	163.42	RAD	6567.4	VEL	11.487	PTH	2.00	VHP	3.660	DPA	.72	RAP	161.72
ECC	1.1740																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.56	8 5 0	3990.46	-30.63	172.53	25.60	65.23	9 11 31	3390.5	-33.69	164.21
117.44	14 24 32	2799.90	-30.62	82.36	25.59	65.22	15 11 12	2199.9	-33.69	74.04
62.56	8 5 0	3990.46	-30.63	172.53	25.60	65.23	9 11 31	3390.5	-33.69	164.21
117.44	14 24 32	2799.90	-30.62	82.36	25.59	65.22	15 11 12	2199.9	-33.69	74.04
62.56	8 5 0	3990.46	-30.63	172.53	25.60	65.23	9 11 31	3390.5	-33.69	164.21
117.44	14 24 32	2799.90	-30.62	82.36	25.59	65.22	15 11 12	2199.9	-33.69	74.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.7370	TRA	.2428	TC-13.9732	BAU	1.9820	SGT10301.5	SGR	1104.1	SG3	1752.5	ST	4833.8	SR	695.7	SS	2271.2
RDE	.3896	RRA	.1614	RC3-1.2059	FAU	.34826	RRT	.9352	RRF	.9341	RTF	.9802	CRT	.9921	CRS	-.9988	CST -.9895
FDE	3.9991	FRA	1.8703	FC-28.5222	BSP	35780	SGB10360.5	R23	.0455	R13	.9804	LSA	5377.2	MSA	304.1	SSA	27.3
BDE	2.7646	BRA	.2916	BC314.0251	FSP	5845	SG110353.2	SG2	389.1	THA	5.73	EL1	4882.8	EL2	86.3	ALF	8.13

LAUNCH DATE DEC 6 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 733.297 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.020	GAL	.78	AZL	87.31	HCA	217.48	SMA	186.79	ECC	.21133	INC	2.6869
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.304	GAP	-9.51	AZP	92.13	TAL	4.46	TAP	221.94	RCA	147.32	APO	226.27
RC	302.203	GL	28.61	GP	-7.87	ZAL	77.77	ZAP	52.12	ETS	173.08	ZAE	78.66	ETE	177.58	ZAC	76.48	ETC	257.69

V1	30.227	V2	25.911	CLP	51.70														

PLANETOCENTRIC CONIC

C3	10.452	VHL	3.233	DLA	37.89	RAL	164.35	RAD	6567.4	VEL	11.482	PTH	2.00	VHP	3.711	DPA	.98	RAP	161.95
ECC	1.1720																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.70	8 14 20	3971.90	-30.16	170.75	26.08	65.88	9 20 32	3371.9	-33.14	162.44
116.30	14 22 37	2813.87	-30.14	83.26	26.07	65.87	15 9 31	2213.9	-33.13	74.95
63.70	8 14 20	3971.90	-30.16	170.75	26.08	65.88	9 20 32	3371.9	-33.14	162.44
116.30	14 22 37	2813.87	-30.14	83.26	26.07	65.87	15 9 31	2213.9	-33.13	74.95
63.70	8 14 20	3971.90	-30.16	170.75	26.08	65.88	9 20 32	3371.9	-33.14	162.44
116.30	14 22 37	2813.87	-30.14	83.26	26.07	65.87	15 9 31	2213.9	-33.13	74.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.7236	TRA	.3330	TC-14.3460	BAU	2.0106	SGT10483.3	SGR	1052.1	SG3	1696.4	ST	4840.2	SR	675.5	SS	2189.3
RDE	.3756	RRA	.1671	RC3-1.1182	FAU	.33455	RRT	.9249	RRF	.9234	RTF	.9802	CRT	.9924	CRS	-.9985	CST -.9884
FDE	3.7663	FRA	1.9872	FC-27.7117	BSP	36835	SGB10536.0	R23	.0407	R13	.9803	LSA	5346.1	MSA	309.8	SSA	27.7
BDE	2.7494	BRA	.3726	BC314.3895	FSP	5745	SG110528.5	SG2	398.3	THA	5.31	EL1	4886.5	EL2	82.5	ALF	7.89

LAUNCH DATE DEC 6 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 737.580 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.025	GAL	.68	AZL	87.36	HCA	218.69	SMA	186.88	ECC	.21163	INC	2.6441
RP	211.47	LAP	-1.65	LOP	292.57	VP	23.346	GAP	-9.63	AZP	92.06	TAL	3.89	TAP	222.58	RCA	147.33	APO	226.43
RC	303.228	GL	28.28	GP	-7.56	ZAL	78.73	ZAP	51.05	ETS	173.08	ZAE	77.32	ETE	177.49	ZAC	76.81	ETC	257.69

V1	30.227	V2	25.941	CLP	50.64														

PLANETOCENTRIC CONIC

C3	10.342	VHL	3.216	DLA	37.16	RAL	165.31	RAD	6567.4	VEL	11.477	PTH	2.00	VHP	3.762	DPA	1.20	RAP	162.21
ECC	1.1702																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.87	8 24 8	3952.34	-29.66	168.90	26.60	66.52	9 30 0	3352.3	-32.57	160.61
115.13	14 20 28	2829.19	-29.65	84.26	26.60	66.50	15 7 37	2229.2	-32.56	75.97
64.87	8 24 8	3952.34	-29.66	168.90	26.60	66.52	9 30 0	3352.3	-32.57	160.61
115.13	14 20 28	2829.19	-29.65	84.26	26.60	66.50	15 7 37	2229.2	-32.56	75.97
64.87	8 24 8	3952.34	-29.66	168.90	26.60	66.52	9 30 0	3352.3	-32.57	160.61
115.13	14 20 28	2829.19	-29.65	84.26	26.60	66.50	15 7 37	2229.2	-32.56	75.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.6844	TRA	.4061	TC-14.7844	BAU	2.0493	SGT10682.7	SGR	1003.4	SG3	1646.6	ST	4798.8	SR	651.7	SS	2072.4
RDE	.3600	RRA	.1695	RC3-1.0452	FAU	.32381	RRT	.9146	RRF	.9113	RTF	.9804	CRT	.9926	CRS	-.9978	CST -.9870
FDE	3.4827	FRA	2.0387	FC-27.1052	BSP	37363	SGB10729.7	R23	.0330	R13	.9805	LSA	5258.3	MSA	311.2	SSA	28.6
BDE	2.7084	BRA	.4401	BC314.8213	FSP	5530	SG110722.1	SG2	404.2	THA	4.92	EL1	4842.2	EL2	78.5	ALF	7.68

LAUNCH DATE DEC 6 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 741.867 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.031	GAL	.58	AZL	87.40	HCA	219.90	SMA	186.98	ECC	.21194	INC	2.6034	V1	30.227
RP	211.20	LAP	-1.67	LOP	293.79	VP	23.387	GAP	-9.74	AZP	92.00	TAL	3.31	TAP	223.21	RCA	147.35	APO	226.61	V2	25.971
RC	304.242	GL	27.96	GP	-7.28	ZAL	79.73	ZAP	50.00	ETS	173.09	ZAE	76.00	ETE	177.40	ZAC	77.13	ETC	257.68	CLP	49.61

PLANETOCENTRIC CONIC

C3	10.242	VHL	3.200	DLA	36.41	RAL	166.30	RAD	6567.4	VEL	11.473	PTH	1.99	VHP	3.816	DPA	1.39	RAP	162.49	ECC	1.1686

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.09	8 34 30	3931.47	-29.15	166.96	27.18	67.15	9 40 2	3331.5	-31.98	158.69
113.91	14 18 1	2846.15	-29.15	85.38	27.18	67.14	15 5 27	2246.2	-31.97	77.11
66.09	8 34 30	3931.47	-29.15	166.96	27.18	67.15	9 40 2	3331.5	-31.98	158.69
113.91	14 18 1	2846.15	-29.15	85.38	27.18	67.14	15 5 27	2246.2	-31.97	77.11
66.09	8 34 30	3931.47	-29.15	166.96	27.18	67.15	9 40 2	3331.5	-31.98	158.69
113.91	14 18 1	2846.15	-29.15	85.38	27.18	67.14	15 5 27	2246.2	-31.97	77.11

DIFFERENTIAL CORRECTIONS

TDE	2.6412	TRA	.4877	TC-15.2092	BAU	2.0869	
RDE	.3457	RRA	.1724	RC3 -.9747	FAU	.31321	
FDE	3.2082	FRA	2.1012	FC-26.4742	BSP	37927	
BDE	2.6638	BRA	.5173	BC315.2404	FSP	5332	

MID-COURSE EXECUTION ACCURACY

SGT10876.9	SGR	958.9	SG3	1597.8			
RRT	.9028	RRF	.8978	RTF	.9804		
SGB10919.1	R23	.0265	R13	.9804			
SG110911.4	SG2	411.0	THA	4.56			

ORBIT DETERMINATION ACCURACY

ST	4748.8	SR	629.9	SS	1956.3		
CRT	.9929	CRS	-.9969	CST	-.9852		
LSA	5164.8	MSA	314.6	SSA	29.5		
EL1	4789.8	EL2	74.3	ALF	7.50		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 746.160 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.037	GAL	.47	AZL	87.44	HCA	221.12	SMA	187.08	ECC	.21227	INC	2.5647	V1	30.227
RP	210.95	LAP	-1.69	LOP	295.01	VP	23.428	GAP	-9.85	AZP	91.93	TAL	2.71	TAP	223.83	RCA	147.36	APO	226.79	V2	26.001
RC	305.247	GL	27.64	GP	-7.01	ZAL	80.77	ZAP	48.98	ETS	173.10	ZAE	74.71	ETE	177.33	ZAC	77.43	ETC	257.66	CLP	48.61

PLANETOCENTRIC CONIC

C3	10.152	VHL	3.186	DLA	35.66	RAL	167.33	RAD	6567.4	VEL	11.469	PTH	1.99	VHP	3.870	DPA	1.56	RAP	162.80	ECC	1.1671

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.36	8 45 33	3908.94	-28.63	164.91	27.81	67.77	9 50 42	3308.9	-31.38	156.65
112.64	14 15 8	2865.12	-28.62	86.65	27.80	67.76	15 2 53	2265.1	-31.37	78.39
67.36	8 45 33	3908.94	-28.63	164.91	27.81	67.77	9 50 42	3308.9	-31.38	156.65
112.64	14 15 8	2865.12	-28.62	86.65	27.80	67.76	15 2 53	2265.1	-31.37	78.39
67.36	8 45 33	3908.94	-28.63	164.91	27.81	67.77	9 50 42	3308.9	-31.38	156.65
112.64	14 15 8	2865.12	-28.62	86.65	27.80	67.76	15 2 53	2265.1	-31.37	78.39

DIFFERENTIAL CORRECTIONS

TDE	2.5978	TRA	.5744	TC-15.6172	BAU	2.1231	
RDE	.3334	RRA	.1750	RC3 -.9059	FAU	.30257	
FDE	2.9556	FRA	2.1557	FC-25.8028	BSP	38482	
BDE	2.6191	BRA	.6005	BC315.6435	FSP	5129	

MID-COURSE EXECUTION ACCURACY

SGT11067.0	SGR	918.0	SG3	1548.9			
RRT	.8896	RRF	.8827	RTF	.9805		
SGB11105.0	R23	.0201	R13	.9806			
SG111097.1	SG2	418.1	THA	4.23			

ORBIT DETERMINATION ACCURACY

ST	4696.5	SR	610.9	SS	1847.9		
CRT	.9933	CRS	-.9956	CST	-.9833		
LSA	5073.8	MSA	317.1	SSA	30.4		
EL1	4735.6	EL2	69.8	ALF	7.36		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 750.457 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.042	GAL	.37	AZL	87.47	HCA	222.34	SMA	187.18	ECC	.21263	INC	2.5276	V1	30.227
RP	210.70	LAP	-1.70	LOP	296.23	VP	23.467	GAP	-9.96	AZP	91.87	TAL	2.10	TAP	224.44	RCA	147.38	APO	226.97	V2	26.029
RC	306.243	GL	27.33	GP	-6.75	ZAL	81.85	ZAP	48.00	ETS	173.11	ZAE	73.45	ETE	177.26	ZAC	77.73	ETC	257.65	CLP	47.63

PLANETOCENTRIC CONIC

C3	10.071	VHL	3.173	DLA	34.90	RAL	168.38	RAD	6567.4	VEL	11.466	PTH	1.99	VHP	3.926	DPA	1.69	RAP	163.12	ECC	1.1657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.69	8 57 21	3884.52	-28.09	162.73	28.48	68.39	10 2 5	3284.5	-30.76	154.49
111.31	14 11 45	2886.33	-28.08	88.08	28.48	68.37	14 59 51	2286.3	-30.76	79.84
68.69	8 57 21	3884.52	-28.09	162.73	28.48	68.39	10 2 5	3284.5	-30.76	154.49
111.31	14 11 45	2886.33	-28.08	88.08	28.48	68.37	14 59 51	2286.3	-30.76	79.84
68.69	8 57 21	3884.52	-28.09	162.73	28.48	68.39	10 2 5	3284.5	-30.76	154.49
111.31	14 11 45	2886.33	-28.08	88.08	28.48	68.37	14 59 51	2286.3	-30.76	79.84

DIFFERENTIAL CORRECTIONS

TDE	2.5492	TRA	.6861	TC-16.0107	BAU	2.1586	
RDE	.3222	RRA	.1775	RC3 -.8387	FAU	.29193	
FDE	2.7132	FRA	2.2087	FC-25.0961	BSP	39060	
BDE	2.5695	BRA	.6893	BC316.0327	FSP	4954	

MID-COURSE EXECUTION ACCURACY

SGT11251.4	SGR	880.1	SG3	1499.8			
RRT	.8746	RRF	.8659	RTF	.9806		
SGB11285.8	R23	.0146	R13	.9807			
SG111277.8	SG2	425.6	THA	3.92			

ORBIT DETERMINATION ACCURACY

ST	4633.5	SR	593.6	SS	1741.3		
CRT	.9939	CRS	-.9937	CST	-.9810		
LSA	4975.0	MSA	320.1	SSA	31.2		
EL1	4671.0	EL2	65.0	ALF	7.26		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 754.760 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.048	GAL	.26	AZL	87.51	HCA	223.56	SMA	187.28	ECC	.21301	INC	2.4922	V1	30.227
RP	210.46	LAP	-1.72	LOP	297.45	VP	23.507	GAP	-10.06	AZP	91.81	TAL	1.48	TAP	225.04	RCA	147.38	APO	227.17	V2	26.057
RC	307.229	GL	27.03	GP	-6.51	ZAL	82.97	ZAP	47.04	ETS	173.12	ZAE	72.21	ETE	177.21	ZAC	78.02	ETC	257.62	CLP	46.69

PLANETOCENTRIC CONIC

C3	9.999	VHL	3.162	DLA	34.12	RAL	169.46	RAD	6567.4	VEL	11.462	PTH	1.99	VHP	3.983	DPA	1.81	RAP	163.47	ECC	1.1646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.11	9 10 1	3857.77	-27.53	160.39	29.20	68.99	10 14 19	3257.8	-30.13	152.17
109.89	14 7 43	2910.23	-27.52	89.71	29.19	68.98	14 56 13	2310.2	-30.12	81.49
70.11	9 10 1	3857.77	-27.53	160.39	29.20	68.99	10 14 19	3257.8	-30.13	152.17
109.89	14 7 43	2910.23	-27.52	89.71	29.19	68.98	14 56 13	2310.2	-30.12	81.49
110.00	14 23 47	2861.27	-28.67	86.37	29.68	70.54	15 11 29	2261.3	-31.05	77.98
110.00	13 53 7	2954.74	-26.39	92.68	28.69	67.44	14 42 22	2354.7	-29.21	84.63

DIFFERENTIAL CORRECTIONS

TDE	2.4996	TRA	.7661	TC-16.3775	BAU	2.1917	
RDE	.3122	RRA	.1802	RC3 -.7722	FAU	.28105	
FDE	2.4828	FRA	2.2656	FC-24.3338	BSP	39705	
BDE	2.5190	BRA	.7870	BC316.3957	FSP	4796	

MID-COURSE EXECUTION ACCURACY

SGT11428.2	SGR	845.0	SG3	1449.9			
RRT	.8576	RRF	.8472	RTF	.9807		
SGB11459.4	R23	.0097	R13	.9807			
SG111451.1	SG2	433.7	THA	3.63			

ORBIT DETERMINATION ACCURACY

ST	4567.6	SR	578.1	SS	1638.1		
CRT	.9945	CRS	-.9911	CST	-.9781		
LSA	4875.9	MSA	324.0	SSA	31.9		
EL1	4603.6	EL2	59.9	ALF	7.18		

1810A

LAUNCH DATE DEC 6 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 759.067 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.054	GAL	.15	AZL	87.54	HCA	224.79	SMA	187.38	ECC	.21341	INC	2.4582	V1	30.227
RP	210.22	LAP	-1.73	LOP	298.68	VP	23.545	GAP	-10.17	AZP	91.75	TAL	.84	TAP	225.63	RCA	147.39	APO	227.37	V2	26.085
RC	308.206	GL	26.73	GP	-6.28	ZAL	84.13	ZAP	46.10	ETS	173.13	ZAE	70.99	ETE	177.15	ZAC	78.30	ETC	257.59	CLP	45.77

PLANETOCENTRIC CONIC

C3	9.937	VHL	3.152	DLA	33.34	RAL	170.57	RAD	6567.4	VEL	11.460	PTH	1.99	VHP	4.041	DPA	1.89	RAP	163.84	ECC	1.1635

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.63	9 23 46	3827.97	-26.95	157.83	29.96	69.60	10 27 34	3228.0	-29.48	149.63
108.37	14 2 49	2937.57	-26.94	91.59	29.96	69.59	14 51 47	2337.6	-29.47	83.39
71.63	9 23 46	3827.97	-26.95	157.83	29.96	69.60	10 27 34	3228.0	-29.48	149.63
108.37	14 2 49	2937.57	-26.94	91.59	29.96	69.59	14 51 47	2337.6	-29.47	83.39
110.00	15 10 26	2730.30	-31.29	77.07	31.52	75.47	15 55 56	2130.3	-32.96	68.25
110.00	13 15 20	3083.24	-22.77	100.90	27.98	63.79	14 6 43	2483.2	-26.10	93.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.4454	TRA	.8730	TC-16.7497	BAU	2.2273	SGT11613.8	SGR	815.8	SG3	1408.8	ST	4492.3	SR	564.3	SS	1539.0
RDE	.3033	RRA	.1832	RC3 -.7143	FAU	.27206	RRT .8404	RRF	.8281	RTF	.9806	CRT	.9952	CRS	-.9872	CST	-.9742
FDE	2.2630	FRA	2.3280	FC-23.7019	BSP	40187	SGB11642.4	R23	.0050	R13	.9807	LSA	4770.4	MSA	330.8	SSA	32.6
BDE	2.4642	BRA	.8920	BC316.7650	FSP	4578	SG111634.1	SG2	441.4	THA	3.38	EL1	4527.2	EL2	54.7	ALF	7.13

LAUNCH DATE DEC 6 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 763.379 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.060	GAL	.03	AZL	87.57	HCA	226.01	SMA	187.49	ECC	.21384	INC	2.4256	V1	30.227
RP	209.99	LAP	-1.75	LOP	299.90	VP	23.583	GAP	-10.27	AZP	91.69	TAL	.19	TAP	226.21	RCA	147.39	APO	227.58	V2	26.111
RC	309.174	GL	26.42	GP	-6.07	ZAL	85.32	ZAP	45.20	ETS	173.14	ZAE	69.80	ETE	177.11	ZAC	78.58	ETC	257.56	CLP	44.87

PLANETOCENTRIC CONIC

C3	9.886	VHL	3.144	DLA	32.53	RAL	171.71	RAD	6567.4	VEL	11.458	PTH	1.99	VHP	4.100	DPA	1.96	RAP	164.23	ECC	1.1627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.27	9 38 49	3794.39	-26.36	155.00	30.77	70.20	10 42 3	3194.4	-28.81	146.82
106.73	13 56 49	2969.08	-26.34	93.77	30.76	70.19	14 46 18	2369.1	-28.80	85.59
73.27	9 38 49	3794.39	-26.36	155.00	30.77	70.20	10 42 3	3194.4	-28.81	146.82
106.73	13 56 49	2969.08	-26.34	93.77	30.76	70.19	14 46 18	2369.1	-28.80	85.59
110.00	15 37 31	2658.53	-32.39	71.77	32.71	78.43	16 21 50	2058.5	-33.65	62.76
110.00	12 57 17	3152.93	-20.61	105.16	28.00	62.11	13 49 50	2552.9	-24.18	97.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.3787	TRA	.9621	TC-17.1091	BAU	2.2628	SGT11784.1	SGR	780.0	SG3	1356.7	ST	4391.3	SR	547.7	SS	1405.6
RDE	.2935	RRA	.1803	RC3 -.6564	FAU	.26278	RRT .8236	RRF	.8027	RTF	.9820	CRT	.9961	CRS	-.9828	CST	-.9717
FDE	2.0101	FRA	2.2539	FC-23.0126	BSP	40917	SGB11809.9	R23	-.0126	R13	.9819	LSA	4632.2	MSA	317.7	SSA	33.5
BDE	2.3968	BRA	.9789	BC317.1217	FSP	4465	SG111801.6	SG2	441.7	THA	3.12	EL1	4425.1	EL2	48.0	ALF	7.08

LAUNCH DATE DEC 6 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 767.695 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.066	GAL	-.08	AZL	87.61	HCA	227.25	SMA	187.59	ECC	.21430	INC	2.3943	V1	30.227
RP	209.77	LAP	-1.76	LOP	301.14	VP	23.620	GAP	-10.37	AZP	91.63	TAL	359.53	TAP	226.77	RCA	147.39	APO	227.79	V2	26.137
RC	310.132	GL	26.12	GP	-5.87	ZAL	86.55	ZAP	44.31	ETS	173.15	ZAE	68.64	ETE	177.07	ZAC	78.85	ETC	257.53	CLP	44.00

PLANETOCENTRIC CONIC

C3	9.845	VHL	3.138	DLA	31.71	RAL	172.87	RAD	6567.4	VEL	11.456	PTH	1.99	VHP	4.161	DPA	2.00	RAP	164.64	ECC	1.1620

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.08	9 55 34	3755.73	-25.74	151.81	31.61	70.80	10 58 10	3155.7	-28.12	143.66
104.92	13 49 18	3006.09	-25.73	96.34	31.61	70.78	14 39 24	2406.1	-28.11	88.19
75.08	9 55 34	3755.73	-25.74	151.81	31.61	70.80	10 58 10	3155.7	-28.12	143.66
104.92	13 49 18	3006.09	-25.73	96.34	31.61	70.78	14 39 24	2406.1	-28.11	88.19
110.00	15 59 48	2601.36	-33.09	67.45	33.74	80.89	16 43 9	2001.4	-33.99	58.33
110.00	12 44 15	3208.45	-18.81	108.46	28.26	60.92	13 37 44	2608.5	-22.54	101.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.3251	TRA	1.1101	TC-17.3452	BAU	2.2841	SGT11923.9	SGR	758.7	SG3	1301.7	ST	4318.1	SR	541.1	SS	1354.8
RDE	.2886	RRA	.1892	RC3 -.5806	FAU	.24821	RRT .7928	RRF	.7807	RTF	.9801	CRT	.9966	CRS	-.9744	CST	-.9637
FDE	1.8592	FRA	2.4583	FC-21.8273	BSP	41595	SGB11948.0	R23	.0042	R13	.9801	LSA	4544.5	MSA	346.7	SSA	33.8
BDE	2.3430	BRA	1.1261	BC317.3550	FSP	4345	SG111939.0	SG2	461.8	THA	2.89	EL1	4351.6	EL2	44.0	ALF	7.12

LAUNCH DATE DEC 6 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 772.013 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.072	GAL	-.20	AZL	87.64	HCA	228.48	SMA	187.70	ECC	.21478	INC	2.3641	V1	30.227
RP	209.55	LAP	-1.77	LOP	302.37	VP	23.656	GAP	-10.47	AZP	91.57	TAL	358.85	TAP	227.33	RCA	147.39	APO	228.02	V2	26.162
RC	311.080	GL	25.82	GP	-5.68	ZAL	87.81	ZAP	43.46	ETS	173.16	ZAE	67.50	ETE	177.04	ZAC	79.12	ETC	257.49	CLP	43.16

PLANETOCENTRIC CONIC

C3	9.814	VHL	3.133	DLA	30.88	RAL	174.05	RAD	6567.4	VEL	11.454	PTH	1.99	VHP	4.222	DPA	2.02	RAP	165.07	ECC	1.1615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.13	10 14 40	3709.84	-25.10	148.10	32.50	71.39	11 16 30	3109.8	-27.41	139.98
102.87	13 39 38	3050.75	-25.09	99.47	32.50	71.38	14 30 29	2450.7	-27.40	91.35
77.13	10 14 40	3709.84	-25.10	148.10	32.50	71.39	11 16 30	3109.8	-27.41	139.98
102.87	13 39 38	3050.75	-25.09	99.47	32.50	71.38	14 30 29	2450.7	-27.40	91.35
110.00	16 19 36	2551.70	-33.56	63.66	34.70	83.09	17 2 8	1951.7	-34.15	54.46
110.00	12 33 52	3256.88	-17.18	111.27	28.67	59.98	13 28 9	2656.9	-21.04	104.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.2790	TRA	1.2390	TC-17.6067	BAU	2.3111	SGT12084.6	SGR	737.4	SG3	1257.7	ST	4255.7	SR	534.0	SS	1289.3
RDE	.2842	RRA	.1911	RC3 -.5241	FAU	.23851	RRT .7702	RRF	.7566	RTF	.9807	CRT	.9973	CRS	-.9669	CST	-.9597
FDE	1.7104	FRA	2.4972	FC-21.0398	BSP	42458	SGB12107.1	R23	.0002	R13	.9807	LSA	4465.0	MSA	347.9	SSA	34.2
BDE	2.2967	BRA	1.2536	BC317.6145	FSP	4234	SG112098.0	SG2	469.8	THA	2.70	EL1	4288.9	EL2	38.8	ALF	7.13

LAUNCH DATE DEC 6 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 776.338 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.079	GAL	-.33	AZL	87.66	HCA	229.71	SMA	187.81	ECC	.21529	INC	2.3350
RP	209.34	LAP	-1.78	LOP	303.61	VP	23.692	GAP	-10.57	AZP	91.51	TAL	358.16	TAP	227.87	RCA	147.38	APO	228.25
RC	312.019	GL	25.51	GP	-5.50	ZAL	89.11	ZAP	42.62	ETS	173.16	ZAE	66.37	ETE	177.01	ZAC	79.38	ETC	257.45

V1	30.227	V2	26.186	CLP	42.33														

PLANETOCENTRIC CONIC

C3	9.795	VHL	3.130	DLA	30.03	RAL	175.25	RAD	6567.4	VEL	11.454	PTH	1.99	VHP	4.285	DPA	2.02	RAP	165.51

ECC	1.1612	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		79.56	10 37 18	3652.79	-24.44	143.60	33.43	71.98	11 38 11	3052.8	-26.67	135.50							
		100.44	13 26 34	3107.02	-24.43	103.44	33.43	71.97	14 18 21	2507.0	-26.67	95.34							
		79.56	10 37 18	3652.79	-24.44	143.60	33.43	71.98	11 38 11	3052.8	-26.67	135.50							
		100.44	13 26 34	3107.02	-24.43	103.44	33.43	71.97	14 18 21	2507.0	-26.67	95.34							
		110.00	16 37 50	2506.85	-33.88	60.19	35.62	85.12	17 19 37	1906.8	-34.18	50.96							
		110.00	12 25 13	3300.96	-15.66	113.78	29.20	59.22	13 20 14	2701.0	-19.63	106.91							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1944	TRA	1.3582	TC-17.9277	BAU	2.3484	SGT12260.2	SGR	715.8	SG3	1217.1	ST	4122.5	SR	523.0	SS	1187.1		
RDE	.2777	RRA	.1927	RC3 -.4736	FAU	.23026	RRT	.7451	RRF	.7292	RTF	.9806	CRT	.9976	CRS	-.9527	CST	-.9501	
FDE	1.5021	FRA	2.5282	FC-20.3518	BSP	42673	SGB12281.1	R23	-.0039	R13	.9806	LSA	4306.8	MSA	357.2	SSA	35.0		
BDE	2.2119	BRA	1.3718	BC317.9340	FSP	4031	SG112271.8	SG2	476.9	THA	2.49	EL1	4155.3	EL2	35.9	ALF	7.21		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 780.666 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.085	GAL	-.45	AZL	87.69	HCA	230.95	SMA	187.93	ECC	.21582	INC	2.3069
RP	209.14	LAP	-1.79	LOP	304.84	VP	23.727	GAP	-10.67	AZP	91.45	TAL	357.45	TAP	228.40	RCA	147.37	APO	228.48
RC	312.950	GL	25.19	GP	-5.33	ZAL	90.44	ZAP	41.81	ETS	173.17	ZAE	65.27	ETE	176.98	ZAC	79.63	ETC	257.41

V1	30.227	V2	26.209	CLP	41.53														

PLANETOCENTRIC CONIC

C3	9.787	VHL	3.128	DLA	29.16	RAL	176.47	RAD	6567.4	VEL	11.453	PTH	1.99	VHP	4.349	DPA	2.01	RAP	165.98

ECC	1.1611	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		82.72	11 6 44	3573.97	-23.76	137.52	34.40	72.58	12 6 18	2974.0	-25.92	129.45							
		97.28	13 6 52	3185.54	-23.75	109.02	34.40	72.56	13 59 58	2585.5	-25.91	100.95							
		100.00	14 23 32	2939.68	-27.49	91.93	35.50	77.77	15 12 32	2339.7	-28.90	83.41							
		100.00	12 32 45	3295.07	-20.13	115.69	32.98	67.42	13 27 40	2695.1	-23.01	108.09							
		110.00	16 55 0	2465.30	-34.07	56.96	36.52	87.02	17 36 5	1865.3	-34.11	47.72							
		110.00	12 17 46	3342.21	-14.21	116.10	29.82	58.58	13 13 29	2742.2	-18.27	109.33							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1207	TRA	1.4920	TC-18.1822	BAU	2.3798	SGT12421.9	SGR	697.4	SG3	1174.6	ST	4010.3	SR	515.3	SS	1108.2		
RDE	.2733	RRA	.1944	RC3 -.4216	FAU	.22124	RRT	.7181	RRF	.7009	RTF	.9807	CRT	.9976	CRS	-.9358	CST	-.9403	
FDE	1.3330	FRA	2.5647	FC-19.5698	BSP	43193	SGB12441.5	R23	-.0064	R13	.9807	LSA	4176.3	MSA	365.2	SSA	35.5		
BDE	2.1383	BRA	1.5047	BC318.1871	FSP	3876	SG112432.0	SG2	484.9	THA	2.31	EL1	4043.1	EL2	35.7	ALF	7.30		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 784.996 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.092	GAL	-.58	AZL	87.72	HCA	232.19	SMA	188.04	ECC	.21639	INC	2.2797
RP	208.94	LAP	-1.80	LOP	306.09	VP	23.761	GAP	-10.77	AZP	91.40	TAL	356.73	TAP	228.92	RCA	147.35	APO	228.73
RC	313.871	GL	24.87	GP	-5.16	ZAL	91.81	ZAP	41.02	ETS	173.18	ZAE	64.19	ETE	176.96	ZAC	79.88	ETC	257.36

V1	30.227	V2	26.232	CLP	40.75														

PLANETOCENTRIC CONIC

C3	9.792	VHL	3.129	DLA	28.28	RAL	177.70	RAD	6567.4	VEL	11.453	PTH	1.99	VHP	4.414	DPA	1.97	RAP	166.47

ECC	1.1612	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	12 24 31	3338.41	-23.88	120.27	35.67	74.31	13 20 9	2738.4	-25.80	112.13							
		90.00	11 58 57	3421.29	-22.24	125.80	35.13	72.01	12 55 58	2821.3	-24.49	117.85							
		100.00	14 55 22	2851.94	-28.60	85.64	36.83	80.90	15 42 54	2251.9	-29.56	76.97							
		100.00	12 10 47	3383.00	-17.73	121.13	33.27	65.54	13 7 10	2783.0	-20.89	113.75							
		110.00	17 11 22	2426.24	-34.17	53.91	37.41	88.82	17 51 49	1826.2	-33.95	44.68							
		110.00	12 11 16	3381.46	-12.81	118.27	30.53	58.03	13 7 38	2781.5	-16.94	111.60							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.0416	TRA	1.6318	TC-18.4000	BAU	2.4093	SGT12573.6	SGR	680.3	SG3	1131.7	ST	3889.6	SR	508.1	SS	1029.9		
RDE	.2693	RRA	.1959	RC3 -.3709	FAU	.21226	RRT	.6895	RRF	.6704	RTF	.9807	CRT	.9969	CRS	-.9126	CST	-.9276	
FDE	1.1653	FRA	2.5942	FC-18.7657	BSP	43724	SGB12592.0	R23	-.0094	R13	.9807	LSA	4038.1	MSA	374.7	SSA	36.0		
BDE	2.0593	BRA	1.6435	BC318.4037	FSP	3728	SG112582.3	SG2	492.4	THA	2.14	EL1	3922.5	EL2	39.6	ALF	7.42		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 789.329 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.098	GAL	-.71	AZL	87.75	HCA	233.44	SMA	188.16	ECC	.21698	INC	2.2533
RP	208.76	LAP	-1.81	LOP	307.33	VP	23.794	GAP	-10.86	AZP	91.34	TAL	356.00	TAP	229.43	RCA	147.33	APO	228.98
RC	314.784	GL	24.55	GP	-5.01	ZAL	93.21	ZAP	40.25	ETS	173.19	ZAE	63.13	ETE	176.94	ZAC	80.13	ETC	257.31

V1	30.227	V2	26.254	CLP	39.99														

PLANETOCENTRIC CONIC

C3	9.810	VHL	3.132	DLA	27.38	RAL	178.96	RAD	6567.4	VEL	11.454	PTH	1.99	VHP	4.479	DPA	1.92	RAP	166.97

ECC	1.1614	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	13 20 41	3171.70	-26.46	108.75	37.53	79.52	14 13 32	2571.7	-27.64	100.28							
		90.00	11 12 47	3588.71	-18.33	136.52	34.98	68.03	12 12 36	2988.7	-21.15	128.98							
		100.00	15 20 41	2784.81	-29.22	80.75	38.00	83.41	16 7 6	2184.8	-29.83	72.00							
		100.00	11 55 27	3450.83	-15.77	125.21	33.80	64.28	12 52 58	2850.8	-19.11	118.01							
		110.00	17 27 8	2389.14	-34.18	51.02	38.31	90.54	18 6 57	1789.1	-33.73	41.80							
		110.00	12 5 30	3419.27	-11.44	120.34	31.31	57.56	13 2 29	2819.3	-15.63	113.76							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.9589	TRA	1.7772	TC-18.5935	BAU	2.4389	SGT12724.1	SGR	665.2	SG3	1089.0	ST	3764.3	SR	501.8	SS	958.3		
RDE	.2661	RRA	.1972	RC3 -.3214	FAU	.20329	RRT	.6589	RRF	.6385	RTF	.9806	CRT	.9954	CRS	-.8820	CST	-.9116	
FDE	1.0067	FRA	2.6217	FC-17.9408	BSP	44249	SGB12741.5	R23	-.0115	R13	.9806	LSA	3897.4	MSA	385.9	SSA	36.4		
BDE	1.9769	BRA	1.7882	BC318.5962	FSP	3590	SG112731.7	SG2	500.1	THA	1.98	EL1	3797.3	EL2	47.8	ALF	7.56		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 793.665 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.105	GAL	-.85	AZL	87.77	HCA	234.68	SMA	188.27	ECC	.21761	INC	2.2278	V1	30.227
RP	208.58	LAP	-1.82	LOP	308.58	VP	23.826	GAP	-10.96	AZP	91.29	TAL	355.25	TAP	229.93	RCA	147.30	APO	229.24	V2	26.274
RC	315.690	GL	24.22	GP	-4.86	ZAL	94.63	ZAP	39.51	ETS	173.19	ZAE	62.09	ETE	176.92	ZAC	80.38	ETC	257.26	CLP	39.25

PLANETOCENTRIC CONIC

C3	9.841	VHL	3.137	DLA	26.46	RAL	180.22	RAD	6567.4	VEL	11.456	PTH	1.99	VHP	4.546	DPA	1.85	RAP	167.49	ECC	1.1620

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 51 38	3086.22	-27.37	102.66	38.85	82.44	14 43 4	2486.2	-28.13	94.08
90.00	10 51 56	3675.44	-16.04	141.85	35.45	66.35	11 53 11	3075.4	-19.10	134.51
100.00	15 42 53	2727.57	-29.60	76.54	39.11	85.59	16 28 21	2127.6	-29.89	67.75
100.00	11 43 22	3509.33	-14.02	128.67	34.46	63.32	12 41 51	2909.3	-17.48	121.59
110.00	17 42 24	2353.61	-34.12	48.24	39.22	92.18	18 21 37	1753.6	-33.44	39.07
110.00	12 0 20	3456.05	-10.09	122.34	32.17	57.16	12 57 56	2856.0	-14.34	115.82

DIFFERENTIAL CORRECTIONS

TDE	1.8741	TRA	1.9314	TC-18.7577	BAU	2.4681	
RDE	.2639	RRA	.1985	RC3 -.2753	FAU	.19496	
FDE	.8646	FRA	2.6499	FC-17.1511	BSP	44771	
BDE	1.8926	BRA	1.9415	BC318.7597	FSP	3451	

MID-COURSE EXECUTION ACCURACY

SGT12874.1	SGR	652.8	SG3	1049.4			
RRT	.6280	RRF	.6065	RTF	.9807		
SGB12890.6	R23	-.0133	R13	.9807			
SG112880.6	SG2	507.7	THA	1.83			

ORBIT DETERMINATION ACCURACY

ST	3638.5	SR	497.1	SS	898.2		
CRT	.9926	CRS	-.8444	CST	-.8938		
LSA	3759.4	MSA	397.5	SSA	36.7		
EL1	3671.9	EL2	59.9	ALF	7.72		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 798.003 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.112	GAL	-.99	AZL	87.80	HCA	235.93	SMA	188.39	ECC	.21828	INC	2.2030	V1	30.227
RP	208.40	LAP	-1.82	LOP	309.82	VP	23.857	GAP	-11.06	AZP	91.23	TAL	354.49	TAP	230.41	RCA	147.27	APO	229.51	V2	26.294
RC	316.588	GL	23.88	GP	-4.73	ZAL	96.09	ZAP	38.78	ETS	173.19	ZAE	61.07	ETE	176.91	ZAC	80.62	ETC	257.21	CLP	38.53

PLANETOCENTRIC CONIC

C3	9.886	VHL	3.144	DLA	25.53	RAL	181.50	RAD	6567.4	VEL	11.458	PTH	1.99	VHP	4.614	DPA	1.77	RAP	168.03	ECC	1.1627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 16 57	3018.82	-27.88	97.80	40.05	84.83	15 7 16	2418.8	-28.30	89.16
90.00	10 36 49	3744.65	-14.11	146.01	36.11	65.19	11 39 13	3144.7	-17.34	138.82
100.00	16 3 10	2676.40	-29.80	72.75	40.19	87.58	16 47 46	2076.4	-29.82	63.94
100.00	11 33 17	3562.30	-12.38	131.74	35.24	62.57	12 32 39	2962.3	-15.95	124.78
110.00	17 57 15	2319.42	-34.00	45.58	40.13	93.75	18 35 55	1719.4	-33.11	36.45
110.00	11 55 40	3492.05	-8.75	124.27	33.08	56.82	12 53 53	2892.1	-13.06	117.82

DIFFERENTIAL CORRECTIONS

TDE	1.7838	TRA	2.0896	TC-18.8895	BAU	2.4967	
RDE	.2621	RRA	.1994	RC3 -.2301	FAU	.18653	
FDE	.7222	FRA	2.6713	FC-16.3353	BSP	45299	
BDE	1.8029	BRA	2.0991	BC318.8909	FSP	3325	

MID-COURSE EXECUTION ACCURACY

SGT13018.0	SGR	641.3	SG3	1008.9			
RRT	.5954	RRF	.5725	RTF	.9806		
SGB13033.8	R23	-.0152	R13	.9806			
SG113023.6	SG2	515.0	THA	1.68			

ORBIT DETERMINATION ACCURACY

ST	3506.5	SR	492.6	SS	840.6		
CRT	.9881	CRS	-.7946	CST	-.8705		
LSA	3615.8	MSA	412.1	SSA	36.9		
EL1	3540.2	EL2	75.1	ALF	7.91		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 802.342 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.118	GAL	-1.13	AZL	87.82	HCA	237.18	SMA	188.51	ECC	.21897	INC	2.1788	V1	30.227
RP	208.24	LAP	-1.83	LOP	311.07	VP	23.888	GAP	-11.15	AZP	91.18	TAL	353.71	TAP	230.89	RCA	147.23	APO	229.79	V2	26.314
RC	317.480	GL	23.53	GP	-4.59	ZAL	97.57	ZAP	38.07	ETS	173.20	ZAE	60.07	ETE	176.89	ZAC	80.87	ETC	257.16	CLP	37.83

PLANETOCENTRIC CONIC

C3	9.946	VHL	3.154	DLA	24.58	RAL	182.79	RAD	6567.4	VEL	11.460	PTH	1.99	VHP	4.683	DPA	1.67	RAP	168.58	ECC	1.1637

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 39 22	2960.75	-28.16	93.57	41.20	86.93	15 28 42	2360.7	-28.29	84.91
90.00	10 24 41	3805.12	-12.35	149.58	36.89	64.32	11 28 6	3205.1	-15.71	142.52
100.00	16 22 7	2629.45	-29.89	69.26	41.26	89.41	17 5 56	2029.5	-29.65	60.46
100.00	11 24 37	3611.65	-10.81	134.57	36.10	61.96	12 24 48	3011.7	-14.48	127.70
110.00	18 11 46	2286.38	-33.82	43.02	41.07	95.26	18 49 53	1686.4	-32.73	33.95
110.00	11 51 26	3527.49	-7.42	126.16	34.06	56.54	12 50 14	2927.5	-11.77	119.76

DIFFERENTIAL CORRECTIONS

TDE	1.6900	TRA	2.2555	TC-18.9879	BAU	2.5248	
RDE	.2611	RRA	.2003	RC3 -.1871	FAU	.17840	
FDE	.5916	FRA	2.6909	FC-15.5289	BSP	45816	
BDE	1.7100	BRA	2.2644	BC318.9888	FSP	3200	

MID-COURSE EXECUTION ACCURACY

SGT13159.2	SGR	631.7	SG3	969.8			
RRT	.5621	RRF	.5383	RTF	.9805		
SGB13174.3	R23	-.0166	R13	.9805			
SG113164.0	SG2	522.2	THA	1.55			

ORBIT DETERMINATION ACCURACY

ST	3374.0	SR	489.3	SS	793.2		
CRT	.9812	CRS	-.7345	CST	-.8446		
LSA	3473.9	MSA	427.7	SSA	37.0		
EL1	3408.0	EL2	93.4	ALF	8.10		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 806.683 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.125	GAL	-1.27	AZL	87.84	HCA	238.43	SMA	188.64	ECC	.21971	INC	2.1553	V1	30.227
RP	208.08	LAP	-1.84	LOP	312.32	VP	23.917	GAP	-11.25	AZP	91.13	TAL	352.92	TAP	231.35	RCA	147.19	APO	230.08	V2	26.332
RC	318.367	GL	23.17	GP	-4.47	ZAL	99.07	ZAP	37.38	ETS	173.20	ZAE	59.08	ETE	176.88	ZAC	81.11	ETC	257.10	CLP	37.15

PLANETOCENTRIC CONIC

C3	10.021	VHL	3.166	DLA	23.61	RAL	184.09	RAD	6567.4	VEL	11.463	PTH	1.99	VHP	4.753	DPA	1.55	RAP	169.15	ECC	1.1649

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 59 56	2908.61	-28.29	89.76	42.33	88.83	15 48 24	2308.6	-28.16	81.10
90.00	10 14 28	3860.27	-10.70	152.80	37.77	63.63	11 18 48	3260.3	-14.16	145.83
100.00	16 40 5	2585.66	-29.87	66.01	42.33	91.12	17 23 11	1985.7	-29.40	57.23
100.00	11 16 59	3658.45	-9.30	137.23	37.03	61.46	12 17 58	3058.5	-13.04	130.43
110.00	18 25 59	2254.35	-33.60	40.54	42.03	96.71	19 3 34	1654.4	-32.31	31.55
110.00	11 47 35	3562.52	-6.11	128.01	35.09	56.30	12 46 57	2962.5	-10.49	121.67

DIFFERENTIAL CORRECTIONS

TDE	1.5931	TRA	2.4279	TC-19.0508	BAU	2.5523	
RDE	.2607	RRA	.2009	RC3 -.1458	FAU	.17038	
FDE	.4670	FRA	2.7070	FC-14.7200	BSP	46326	
BDE	1.6143	BRA	2.4362	BC319.0513	FSP	3077	

MID-COURSE EXECUTION ACCURACY

SGT13296.3	SGR	623.4	SG3	931.2			
RRT	.5281	RRF	.5032	RTF	.9803		
SGB13310.9	R23	-.0180	R13	.9803			
SG113300.4	SG2	529.2	THA	1.42			

ORBIT DETERMINATION ACCURACY

ST	3242.7	SR	486.6	SS	753.5		
CRT	.9714	CRS	-.6615	CST	-.8146		
LSA	3334.7	MSA	445.7	SSA	37.1		
EL1	3277.1	EL2	114.4	ALF	8.30		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 811.025 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.132 GAL -1.42 AZL 87.87 HCA 239.68 SMA 188.76 ECC .22048 INC 2.1324 V1 30.227
RP 207.93 LAP -1.84 LOP 313.58 VP 23.946 GAP -11.34 AZP 91.08 TAL 352.12 TAP 231.80 RCA 147.14 APO 230.38 V2 26.349
RC 319.247 GL 22.80 GP -4.35 ZAL 100.60 ZAP 36.70 ETS 173.20 ZAE 58.11 ETE 176.87 ZAC 81.35 ETC 257.05 CLP 36.48

PLANETOCENTRIC CONIC

C3 10.113 VHL 3.180 DLA 22.63 RAL 185.39 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 4.824 DPA 1.42 RAP 169.73 ECC 1.1664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 12	2860.68	-28.31	86.26	43.45	90.59	16 6 52	2260.7	-27.93	77.61
90.00	10 5 36	3911.84	-9.13	155.77	38.74	63.08	11 10 48	3311.8	-12.67	148.88
100.00	16 57 18	2544.36	-29.78	62.94	43.40	92.74	17 39 42	1944.4	-29.08	54.20
100.00	11 10 11	3703.39	-7.83	139.75	38.04	61.06	12 11 55	3103.4	-11.63	133.03
110.00	18 39 56	2223.25	-33.32	38.16	43.01	98.09	19 16 59	1623.3	-31.85	29.24
110.00	11 44 2	3597.26	-4.79	129.84	36.17	56.11	12 44 0	2997.3	-9.21	123.54

DIFFERENTIAL CORRECTIONS

TDE 1.4919 TRA 2.6057 TC-19.0865 BAU 2.5805
RDE .2609 RRA .2012 RC3 -.1071 FAU .16276
FDE .3501 FRA 2.7170 FC-13.9339 BSP 46822
BDE 1.5146 BRA 2.6135 BC319.0868 FSP 2954

MID-COURSE EXECUTION ACCURACY

SGT13433.4 SGR 616.4 SG3 894.0
RRT .4938 RRF .4678 RTF .9802
SGB13447.6 R23 -.0196 R13 .9802
SG113436.9 SG2 535.9 THA 1.30

ORBIT DETERMINATION ACCURACY

ST 3112.4 SR 484.7 SS 722.0
CRT .9574 CRS -.5772 CST -.7828
LSA 3197.7 MSA 465.1 SSA 37.0
EL1 3146.8 EL2 138.4 ALF 8.50

LAUNCH DATE DEC 6 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 815.368 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.139 GAL -1.57 AZL 87.89 HCA 240.94 SMA 188.88 ECC .22129 INC 2.1100 V1 30.227
RP 207.79 LAP -1.84 LOP 314.83 VP 23.974 GAP -11.44 AZP 91.03 TAL 351.30 TAP 232.24 RCA 147.09 APO 230.68 V2 26.366
RC 320.122 GL 22.43 GP -4.23 ZAL 102.15 ZAP 36.05 ETS 173.20 ZAE 57.16 ETE 176.86 ZAC 81.58 ETC 256.99 CLP 35.83

PLANETOCENTRIC CONIC

C3 10.222 VHL 3.197 DLA 21.64 RAL 186.70 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 4.896 DPA 1.28 RAP 170.33 ECC 1.1682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 37 29	2815.96	-28.24	82.99	44.58	92.23	16 24 25	2216.0	-27.63	74.38
90.00	9 57 46	3960.85	-7.60	158.56	39.77	62.64	11 3 47	3360.9	-11.21	151.74
100.00	17 13 53	2505.12	-29.62	60.03	44.49	94.26	17 55 38	1905.1	-28.71	51.35
100.00	11 4 3	3746.92	-6.39	142.18	39.11	60.74	12 6 30	3146.9	-10.24	135.51
110.00	18 53 38	2193.02	-33.01	35.85	44.01	99.42	19 30 11	1593.0	-31.36	27.02
110.00	11 40 47	3631.79	-3.48	131.65	37.31	55.97	12 41 19	3031.8	-7.92	125.38

DIFFERENTIAL CORRECTIONS

TDE 1.3886 TRA 2.7917 TC-19.0823 BAU 2.6077
RDE .2619 RRA .2014 RC3 -.0702 FAU .15527
FDE .2406 FRA 2.7250 FC-13.1505 BSP 47326
BDE 1.4131 BRA 2.7989 BC319.0824 FSP 2840

MID-COURSE EXECUTION ACCURACY

SGT13566.3 SGR 610.7 SG3 857.5
RRT .4593 RRF .4322 RTF .9800
SGB13580.0 R23 -.0210 R13 .9800
SG113569.2 SG2 542.4 THA 1.19

ORBIT DETERMINATION ACCURACY

ST 2989.0 SR 483.5 SS 699.5
CRT .9385 CRS -.4832 CST -.7508
LSA 3069.1 MSA 486.7 SSA 36.8
EL1 3023.4 EL2 165.0 ALF 8.66

LAUNCH DATE DEC 6 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 819.711 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.146 GAL -1.73 AZL 87.91 HCA 242.19 SMA 189.01 ECC .22214 INC 2.0882 V1 30.227
RP 207.66 LAP -1.85 LOP 316.09 VP 24.001 GAP -11.54 AZP 90.97 TAL 350.47 TAP 232.66 RCA 147.02 APO 230.99 V2 26.381
RC 320.992 GL 22.04 GP -4.13 ZAL 103.71 ZAP 35.41 ETS 173.20 ZAE 56.22 ETE 176.85 ZAC 81.82 ETC 256.93 CLP 35.20

PLANETOCENTRIC CONIC

C3 10.349 VHL 3.217 DLA 20.64 RAL 188.01 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 4.970 DPA 1.13 RAP 170.94 ECC 1.1703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 54 59	2773.81	-28.09	79.92	45.72	93.76	16 41 13	2173.8	-27.27	71.34
90.00	9 50 44	4007.97	-6.12	161.23	40.88	62.30	10 57 32	3408.0	-9.78	154.47
100.00	17 29 56	2467.63	-29.39	57.27	45.59	95.70	18 11 4	1867.6	-28.29	48.64
100.00	10 58 28	3789.38	-4.97	144.53	40.25	60.49	12 1 38	3189.4	-8.86	137.91
110.00	19 7 7	2163.59	-32.66	33.63	45.04	100.70	19 43 11	1563.6	-30.84	24.88
110.00	11 37 47	3666.19	-2.16	133.45	38.50	55.88	12 38 53	3066.2	-6.63	127.21

DIFFERENTIAL CORRECTIONS

TDE 1.2807 TRA 2.9830 TC-19.0454 BAU 2.6350
RDE .2634 RRA .2013 RC3 -.0353 FAU .14795
FDE .1388 FRA 2.7292 FC-12.3766 BSP 47805
BDE 1.3075 BRA 2.9898 BC319.0454 FSP 2728

MID-COURSE EXECUTION ACCURACY

SGT13696.2 SGR 606.2 SG3 821.7
RRT .4244 RRF .3967 RTF .9798
SGB13709.6 R23 -.0219 R13 .9798
SG113698.6 SG2 548.8 THA 1.08

ORBIT DETERMINATION ACCURACY

ST 2870.3 SR 483.1 SS 685.2
CRT .9132 CRS -.3830 CST -.7217
LSA 2946.3 MSA 509.6 SSA 36.6
EL1 2904.2 EL2 194.6 ALF 8.78

LAUNCH DATE DEC 6 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 824.054 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.153 GAL -1.89 AZL 87.93 HCA 243.45 SMA 189.14 ECC .22303 INC 2.0668 V1 30.227
RP 207.54 LAP -1.85 LOP 317.35 VP 24.026 GAP -11.63 AZP 90.92 TAL 349.62 TAP 233.07 RCA 146.95 APO 231.32 V2 26.396
RC 321.856 GL 21.65 GP -4.02 ZAL 105.29 ZAP 34.79 ETS 173.19 ZAE 55.30 ETE 176.84 ZAC 82.05 ETC 256.87 CLP 34.58

PLANETOCENTRIC CONIC

C3 10.495 VHL 3.240 DLA 19.62 RAL 189.33 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 5.044 DPA .96 RAP 171.57 ECC 1.1727

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 11 51	2733.81	-27.87	77.01	46.87	95.21	16 57 25	2133.8	-26.86	68.49
90.00	9 44 22	4053.64	-4.67	163.80	42.04	62.04	10 51 56	3453.6	-8.38	157.08
100.00	17 45 33	2431.68	-29.12	54.63	46.72	97.06	18 26 5	1831.7	-27.84	46.06
100.00	10 53 22	3831.00	-3.57	146.83	41.44	60.30	11 57 13	3231.0	-7.50	140.24
110.00	19 20 23	2134.95	-32.28	31.48	46.11	101.91	19 55 58	1534.9	-30.30	22.82
110.00	11 35 1	3700.49	-.85	135.24	39.74	55.83	12 36 41	3100.5	-5.33	129.02

DIFFERENTIAL CORRECTIONS

TDE 1.1700 TRA 3.1821 TC-18.9731 BAU 2.6621
RDE .2656 RRA .2009 RC3 -.0027 FAU .14088
FDE .0423 FRA 2.7293 FC-11.6215 BSP 48288
BDE 1.1998 BRA 3.1884 BC318.9731 FSP 2617

MID-COURSE EXECUTION ACCURACY

SGT13823.9 SGR 602.5 SG3 787.0
RRT .3900 RRF .3611 RTF .9795
SGB13837.0 R23 -.0233 R13 .9795
SG113825.9 SG2 554.7 THA .98

ORBIT DETERMINATION ACCURACY

ST 2762.4 SR 483.2 SS 678.0
CRT .8803 CRS -.2782 CST -.6966
LSA 2835.0 MSA 534.3 SSA 36.2
EL1 2795.2 EL2 226.6 ALF 8.81

LAUNCH DATE DEC 6 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 828.396 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.160 GAL -2.05 AZL 87.95 HCA 244.71 SMA 189.26 ECC .22396 INC 2.0458 V1 30.227
RP 207.42 LAP -1.85 LOP 318.61 VP 24.051 GAP -11.73 AZP 90.87 TAL 348.77 TAP 233.47 RCA 146.88 APO 231.65 V2 26.409
RC 322.714 GL 21.24 GP -3.92 ZAL 106.89 ZAP 34.18 ETS 173.19 ZAE 54.39 ETE 176.83 ZAC 82.29 ETC 256.82 CLP 33.98

PLANETOCENTRIC CONIC

C3 10.661 VHL 3.265 DLA 18.60 RAL 190.65 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 5.119 DPA .78 RAP 172.21 ECC 1.1755

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 28 10	2695.66	-27.61	74.25	48.04	96.56	17 13 6	2095.7	-26.41	65.79
90.00	9 38 33	4098.17	-3.24	166.30	43.27	61.85	10 46 51	3498.2	-6.98	159.61
100.00	18 0 45	2397.11	-28.81	52.11	47.87	98.35	18 40 43	1797.1	-27.35	43.61
100.00	10 48 39	3871.95	-2.19	149.08	42.68	60.18	11 53 11	3272.0	-6.14	142.52
110.00	19 33 28	2107.07	-31.87	29.41	47.19	103.07	20 8 35	1507.1	-29.74	20.85
110.00	11 32 26	3734.75	.46	137.03	41.03	55.82	12 34 41	3134.8	-4.03	130.82

DIFFERENTIAL CORRECTIONS
TDE 1.0573 TRA 3.3883 TC-18.8613 BAU 2.6884
RDE .2684 RRA .2003 RC3 .0279 FAU .13393
FDE -.0462 FRA 2.7254 FC-10.8757 BSP 48790
BDE 1.0908 BRA 3.3942 BC318.8613 FSP 2513

MID-COURSE EXECUTION ACCURACY
SGT13946.6 SGR 599.8 SG3 752.8
RRT .3557 RRF .3260 RTF .9792
SGB13959.5 R23 -.0245 R13 .9792
SG113948.3 SG2 560.5 THA .88

ORBIT DETERMINATION ACCURACY
ST 2668.4 SR 484.0 SS 677.1
CRT .8386 CRS -.1756 CST -.6798
LSA 2738.5 MSA 559.2 SSA 35.7
EL1 2699.4 EL2 260.6 ALF 8.73

LAUNCH DATE DEC 6 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 832.738 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.168 GAL -2.21 AZL 87.97 HCA 245.97 SMA 189.39 ECC .22494 INC 2.0253 V1 30.227
RP 207.31 LAP -1.85 LOP 319.87 VP 24.075 GAP -11.83 AZP 90.83 TAL 347.89 TAP 233.86 RCA 146.79 APO 232.00 V2 26.422
RC 323.566 GL 20.83 GP -3.83 ZAL 108.49 ZAP 33.59 ETS 173.18 ZAE 53.50 ETE 176.82 ZAC 82.52 ETC 256.76 CLP 33.40

PLANETOCENTRIC CONIC

C3 10.849 VHL 3.294 DLA 17.57 RAL 191.96 RAD 6567.4 VEL 11.499 PTH 2.00 VHP 5.196 DPA .59 RAP 172.86 ECC 1.1785

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 1	2659.15	-27.30	71.62	49.24	97.85	17 28 20	2059.2	-25.93	63.22
90.00	9 33 12	4141.79	-1.84	168.73	44.54	61.74	10 42 14	3541.8	-5.60	162.08
100.00	18 15 36	2363.81	-28.45	49.70	49.04	99.57	18 55 0	1763.8	-26.84	41.27
100.00	10 44 18	3912.36	-.82	151.30	43.97	60.12	11 49 30	3312.4	-4.79	144.76
110.00	19 46 20	2079.95	-31.43	27.42	48.31	104.18	20 21 0	1479.9	-29.17	18.94
110.00	11 30 4	3768.99	1.77	138.81	42.36	55.86	12 32 53	3169.0	-2.73	132.61

DIFFERENTIAL CORRECTIONS
TDE .9418 TRA 3.6023 TC-18.7188 BAU 2.7150
RDE .2719 RRA .1995 RC3 .0564 FAU .12723
FDE -.1276 FRA 2.7190 FC-10.1527 BSP 49286
BDE .9803 BRA 3.6079 BC318.7189 FSP 2411

MID-COURSE EXECUTION ACCURACY
SGT14069.4 SGR 598.0 SG3 719.7
RRT .3220 RRF .2915 RTF .9788
SGB14082.1 R23 -.0255 R13 .9788
SG114070.7 SG2 566.1 THA .79

ORBIT DETERMINATION ACCURACY
ST 2590.3 SR 485.5 SS 681.5
CRT .7872 CRS -.0777 CST -.6728
LSA 2658.5 MSA 583.6 SSA 35.1
EL1 2618.7 EL2 296.2 ALF 8.50

LAUNCH DATE DEC 6 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 837.077 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.175 GAL -2.38 AZL 87.99 HCA 247.23 SMA 189.52 ECC .22597 INC 2.0051 V1 30.227
RP 207.21 LAP -1.85 LOP 321.13 VP 24.098 GAP -11.93 AZP 90.78 TAL 347.01 TAP 234.24 RCA 146.70 APO 232.35 V2 26.434
RC 324.413 GL 20.41 GP -3.74 ZAL 110.10 ZAP 33.01 ETS 173.18 ZAE 52.62 ETE 176.82 ZAC 82.76 ETC 256.70 CLP 32.82

PLANETOCENTRIC CONIC

C3 11.059 VHL 3.326 DLA 16.54 RAL 193.27 RAD 6567.4 VEL 11.509 PTH 2.00 VHP 5.274 DPA .39 RAP 173.53 ECC 1.1820

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 59 27	2624.13	-26.94	69.12	50.46	99.05	17 43 11	2024.1	-25.42	60.78
90.00	9 28 15	4184.68	-.46	171.13	45.87	61.69	10 37 59	3584.7	-4.24	164.49
100.00	18 30 8	2331.70	-28.07	47.39	50.23	100.73	19 8 59	1731.7	-26.30	39.03
100.00	10 40 15	3952.34	.54	153.49	45.32	60.11	11 46 7	3352.3	-3.44	146.97
110.00	19 59 1	2053.58	-30.98	25.50	49.46	105.23	20 33 15	1453.6	-28.58	17.12
110.00	11 27 51	3803.22	3.07	140.60	43.74	55.94	12 31 14	3203.2	-1.42	134.40

DIFFERENTIAL CORRECTIONS
TDE .8236 TRA 3.8222 TC-18.5403 BAU 2.7412
RDE .2760 RRA .1983 RC3 .0828 FAU .12062
FDE -.2036 FRA 2.7070 FC3-9.4426 BSP 49751
BDE .8686 BRA 3.8274 BC318.5405 FSP 2310

MID-COURSE EXECUTION ACCURACY
SGT14186.7 SGR 596.8 SG3 687.1
RRT .2886 RRF .2572 RTF .9783
SGB14199.3 R23 -.0267 R13 .9783
SG114187.8 SG2 571.4 THA .70

ORBIT DETERMINATION ACCURACY
ST 2529.3 SR 487.4 SS 689.4
CRT .7255 CRS .0151 CST -.6742
LSA 2596.3 MSA 606.9 SSA 34.5
EL1 2554.4 EL2 332.2 ALF 8.10

LAUNCH DATE DEC 6 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 841.415 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.182 GAL -2.56 AZL 88.01 HCA 248.50 SMA 189.66 ECC .22705 INC 1.9854 V1 30.227
RP 207.12 LAP -1.85 LOP 322.40 VP 24.120 GAP -12.03 AZP 90.73 TAL 346.11 TAP 234.60 RCA 146.60 APO 232.72 V2 26.444
RC 325.253 GL 19.98 GP -3.65 ZAL 111.72 ZAP 32.45 ETS 173.17 ZAE 51.75 ETE 176.81 ZAC 82.99 ETC 256.65 CLP 32.27

PLANETOCENTRIC CONIC

C3 11.293 VHL 3.360 DLA 15.50 RAL 194.58 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 5.353 DPA .17 RAP 174.20 ECC 1.1859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 14 30	2590.48	-26.56	66.73	51.70	100.19	17 57 40	1990.5	-24.88	58.46
90.00	9 23 38	4226.95	.91	173.48	47.25	61.70	10 34 5	3627.0	-2.88	166.85
100.00	18 44 21	2300.73	-27.66	45.18	51.46	101.82	19 22 41	1700.7	-25.75	36.90
100.00	10 36 29	3991.94	1.88	155.67	46.71	60.16	11 43 1	3391.9	-2.10	149.14
110.00	20 11 31	2027.97	-30.50	23.65	50.64	106.23	20 45 19	1428.0	-27.98	15.37
110.00	11 25 48	3837.46	4.38	142.39	45.16	56.06	12 29 45	3237.5	-.11	136.18

DIFFERENTIAL CORRECTIONS
TDE .7034 TRA 4.0503 TC-18.3310 BAU 2.7676
RDE .2808 RRA .1968 RC3 .1069 FAU .11432
FDE -.2731 FRA 2.6928 FC3-8.7641 BSP 50231
BDE .7574 BRA 4.0551 BC318.3313 FSP 2213

MID-COURSE EXECUTION ACCURACY
SGT14303.2 SGR 596.3 SG3 655.8
RRT .2562 RRF .2239 RTF .9778
SGB14315.7 R23 -.0279 R13 .9778
SG114304.1 SG2 576.4 THA .61

ORBIT DETERMINATION ACCURACY
ST 2489.4 SR 490.0 SS 700.0
CRT .6542 CRS .0997 CST -.6847
LSA 2555.8 MSA 627.6 SSA 33.7
EL1 2510.4 EL2 367.5 ALF 7.50

LAUNCH DATE DEC 6 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 845.750 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.190 GAL -2.74 AZL 88.03 HCA 249.76 SMA 189.79 ECC .22818 INC 1.9658 V1 30.227
RP 207.04 LAP -1.84 LOP 323.66 VP 24.141 GAP -12.13 AZP 90.68 TAL 345.19 TAP 234.95 RCA 146.48 APO 233.09 V2 26.454
RC 326.088 GL 19.55 GP -3.57 ZAL 113.34 ZAP 31.90 ETS 173.16 ZAE 50.90 ETE 176.80 ZAC 83.22 ETC 256.59 CLP 31.72

PLANETOCENTRIC CONIC

C3 11.552 VHL 3.399 DLA 14.46 RAL 195.89 RAD 6567.4 VEL 11.530 PTH 2.01 VHP 5.433 DPA -.05 RAP 174.89 ECC 1.1901

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 11	2558.13	-26.15	64.45	52.97	101.26	18 11 50	1958.1	-24.33	56.25
90.00	9 19 21	4268.72	2.26	175.81	48.68	61.77	10 30 30	3668.7	-1.54	169.19
100.00	18 58 16	2270.84	-27.22	43.06	52.71	102.86	19 36 7	1670.8	-25.18	34.86
100.00	10 32 57	4031.23	3.21	157.82	48.15	60.26	11 40 8	3431.2	-.77	151.30
110.00	20 23 50	2003.13	-30.02	21.88	51.86	107.18	20 57 13	1403.1	-27.38	13.69
110.00	11 23 53	3871.71	5.68	144.20	46.62	56.23	12 28 25	3271.7	1.20	137.97

DIFFERENTIAL CORRECTIONS
TDE .5803 TRA 4.2860 TC-18.0909 BAU 2.7939
RDE .2861 RRA .1951 RC3 .1290 FAU .10813
FDE -.3365 FRA 2.6742 FC3-8.1037 BSP 50705
BDE .6470 BRA 4.2904 BC318.0914 FSP 2120

MID-COURSE EXECUTION ACCURACY
SGT14417.3 SGR 596.4 SG3 625.1
RRT .2242 RRF .1911 RTF .9772
SGB14429.6 R23 -.0291 R13 .9772
SG114417.9 SG2 581.2 THA .53

ORBIT DETERMINATION ACCURACY
ST 2470.6 SR 493.0 SS 711.8
CRT .5739 CRS .1762 CST -.7026
LSA 2537.2 MSA 644.3 SSA 33.0
EL1 2487.2 EL2 401.0 ALF 6.71

LAUNCH DATE DEC 6 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 850.081 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.197 GAL -2.92 AZL 88.05 HCA 251.02 SMA 189.92 ECC .22936 INC 1.9467 V1 30.227
RP 206.96 LAP -1.84 LOP 324.93 VP 24.161 GAP -12.24 AZP 90.63 TAL 344.27 TAP 235.29 RCA 146.36 APO 233.48 V2 26.463
RC 326.917 GL 19.11 GP -3.49 ZAL 114.96 ZAP 31.37 ETS 173.15 ZAE 50.06 ETE 176.79 ZAC 83.46 ETC 256.53 CLP 31.19

PLANETOCENTRIC CONIC

C3 11.837 VHL 3.440 DLA 13.43 RAL 197.18 RAD 6567.5 VEL 11.542 PTH 2.01 VHP 5.514 DPA -.28 RAP 175.59 ECC 1.1948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 43 34	2527.00	-25.72	62.27	54.26	102.27	18 25 41	1927.0	-23.77	54.15
90.00	9 15 20	4310.03	3.58	178.12	50.16	61.89	10 27 10	3710.0	-.20	171.49
100.00	19 11 56	2242.01	-26.77	41.04	53.99	103.83	19 49 18	1642.0	-24.60	32.91
100.00	10 29 39	4070.26	4.53	159.98	49.64	60.42	11 37 29	3470.3	.55	153.44
110.00	20 35 58	1979.07	-29.52	20.18	53.10	108.07	21 8 57	1379.1	-26.77	12.08
110.00	11 22 6	3905.96	6.97	146.00	48.13	56.45	12 27 12	3306.0	2.51	139.76

DIFFERENTIAL CORRECTIONS
TDE .4560 TRA 4.5284 TC-17.8212 BAU 2.8202
RDE .2921 RRA .1930 RC3 .1491 FAU .10207
FDE -.3936 FRA 2.6519 FC3-7.4652 BSP 51184
BDE .5415 BRA 4.5326 BC317.8218 FSP 2027

MID-COURSE EXECUTION ACCURACY
SGT14528.0 SGR 597.0 SG3 595.0
RRT .1930 RRF .1593 RTF .9764
SGB14540.2 R23 -.0301 R13 .9764
SG114528.4 SG2 585.7 THA .46

ORBIT DETERMINATION ACCURACY
ST 2474.3 SR 496.4 SS 723.9
CRT .4875 CRS .2443 CST -.7254
LSA 2541.8 MSA 656.5 SSA 32.2
EL1 2486.5 EL2 431.3 ALF 5.76

LAUNCH DATE DEC 6 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 854.410 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.205 GAL -3.10 AZL 88.07 HCA 252.29 SMA 190.06 ECC .23060 INC 1.9278 V1 30.227
RP 206.89 LAP -1.84 LOP 326.20 VP 24.179 GAP -12.34 AZP 90.59 TAL 343.33 TAP 235.62 RCA 146.23 APO 233.88 V2 26.471
RC 327.742 GL 18.66 GP -3.42 ZAL 116.58 ZAP 30.84 ETS 173.14 ZAE 49.24 ETE 176.79 ZAC 83.69 ETC 256.48 CLP 30.67

PLANETOCENTRIC CONIC

C3 12.149 VHL 3.486 DLA 12.39 RAL 198.47 RAD 6567.5 VEL 11.556 PTH 2.02 VHP 5.596 DPA -.52 RAP 176.30 ECC 1.1999

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 37	2497.06	-25.27	60.20	55.58	103.22	18 39 14	1897.1	-23.20	52.14
90.00	9 11 33	4350.97	4.89	180.42	51.68	62.07	10 24 4	3751.0	1.12	173.77
100.00	19 25 19	2214.23	-26.30	39.11	55.30	104.74	20 2 13	1614.2	-24.02	31.05
100.00	10 26 33	4109.04	5.83	162.12	51.17	60.63	11 35 2	3509.0	1.87	155.57
110.00	20 47 54	1955.80	-29.02	18.56	54.37	108.91	21 20 30	1355.8	-26.16	10.54
110.00	11 20 27	3940.22	8.25	147.83	49.68	56.71	12 26 7	3340.2	3.82	141.55

DIFFERENTIAL CORRECTIONS
TDE .3292 TRA 4.7787 TC-17.5259 BAU 2.8468
RDE .2986 RRA .1907 RC3 .1671 FAU .09621
FDE -.4465 FRA 2.6253 FC3-6.8553 BSP 51639
BDE .4445 BRA 4.7825 BC317.5267 FSP 1938

MID-COURSE EXECUTION ACCURACY
SGT14637.1 SGR 597.9 SG3 565.9
RRT .1626 RRF .1279 RTF .9756
SGB14649.3 R23 -.0314 R13 .9755
SG114637.5 SG2 590.0 THA .38

ORBIT DETERMINATION ACCURACY
ST 2499.7 SR 500.3 SS 735.9
CRT .3972 CRS .3063 CST -.7501
LSA 2568.6 MSA 664.5 SSA 31.4
EL1 2507.9 EL2 457.6 ALF 4.70

LAUNCH DATE DEC 6 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 858.733 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.212 GAL -3.29 AZL 88.09 HCA 253.56 SMA 190.19 ECC .23189 INC 1.9091 V1 30.227
RP 206.84 LAP -1.83 LOP 327.46 VP 24.197 GAP -12.45 AZP 90.54 TAL 342.37 TAP 235.93 RCA 146.09 APO 234.30 V2 26.477
RC 328.562 GL 18.21 GP -3.34 ZAL 118.20 ZAP 30.34 ETS 173.12 ZAE 48.42 ETE 176.78 ZAC 83.93 ETC 256.43 CLP 30.17

PLANETOCENTRIC CONIC

C3 12.492 VHL 3.534 DLA 11.36 RAL 199.76 RAD 6567.5 VEL 11.571 PTH 2.02 VHP 5.680 DPA -.77 RAP 177.02 ECC 1.2056

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 24	2468.27	-24.81	58.21	56.93	104.11	18 52 32	1868.3	-22.62	50.22
90.00	9 8 0	4391.55	6.18	182.71	53.24	62.31	10 21 12	3791.6	2.43	176.04
100.00	19 38 28	2187.46	-25.82	37.26	56.64	105.60	20 14 55	1587.5	-23.43	29.28
100.00	10 23 37	4147.59	7.11	164.27	52.74	60.89	11 32 45	3547.6	3.17	157.69
110.00	20 59 40	1933.34	-28.51	17.00	55.67	109.70	21 31 54	1333.3	-25.56	9.07
110.00	11 18 54	3974.48	9.53	149.66	51.27	57.02	12 25 9	3374.5	5.12	143.35

DIFFERENTIAL CORRECTIONS
TDE .2002 TRA 5.0360 TC-17.2065 BAU 2.8737
RDE .3058 RRA .1880 RC3 .1830 FAU .09054
FDE -.4933 FRA 2.5950 FC3-6.2748 BSP 52074
BDE .3655 BRA 5.0395 BC317.2075 FSP 1849

MID-COURSE EXECUTION ACCURACY
SGT14743.7 SGR 599.3 SG3 537.7
RRT .1330 RRF .0974 RTF .9746
SGB14755.9 R23 -.0327 R13 .9746
SG114743.9 SG2 594.0 THA .31

ORBIT DETERMINATION ACCURACY
ST 2545.4 SR 504.5 SS 746.6
CRT .3056 CRS .3609 CST -.7760
LSA 2616.2 MSA 667.4 SSA 30.5
EL1 2550.2 EL2 479.5 ALF 3.59

LAUNCH DATE DEC 6 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 863.052 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.220	GAL	-3.49	AZL	88.11	HCA	254.83	SMA	190.33	ECC	.23324	INC	1.8907
RP	206.79	LAP	-1.82	LOP	328.73	VP	24.214	GAP	-12.56	AZP	90.50	TAL	341.40	TAP	236.23	RCA	145.94	APO	234.72
RC	329.378	GL	17.76	GP	-3.27	ZAL	119.80	ZAP	29.84	ETS	173.11	ZAE	47.62	ETE	176.77	ZAC	84.16	ETC	256.37

V1	30.227	V2	26.483	CLP	29.68														

PLANETOCENTRIC CONIC

C3	12.865	VHL	3.587	DLA	10.33	RAL	201.03	RAD	6567.5	VEL	11.587	PTH	2.03	VHP	5.765	DPA	-1.03	RAP	177.76
ECC	1.2117																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 53	2440.60	-24.33	56.32	58.31	104.95	19 5 34	1840.6	-22.05	48.40
90.00	9 4 40	4431.82	7.45	184.99	54.85	62.60	10 18 31	3831.8	3.72	178.29
100.00	19 51 21	2161.71	-25.34	35.50	58.00	106.41	20 27 23	1561.7	-22.85	27.59
100.00	10 20 52	4185.94	8.37	166.41	54.35	61.20	11 30 38	3585.9	4.47	159.80
110.00	21 11 15	1911.70	-28.01	15.52	57.01	110.45	21 43 7	1311.7	-24.97	7.67
110.00	11 17 28	4008.71	10.79	151.51	52.90	57.37	12 24 17	3408.7	6.41	145.15

DIFFERENTIAL CORRECTIONS

TDE	.0704	TRA	5.3028	TC-16.8627	BAU	2.9004	
RDE	.3136	RRA	.1849	RC3 .1971	FAU	.08498	
FDE	-.5348	FRA	2.5607	FC3-5.7188	BSP	52526	
BDE	.3214	BRA	5.3060	BC316.8638	FSP	1764	

MID-COURSE EXECUTION ACCURACY

SGT14848.5	SGR	600.9	SG3	510.0			
RRT	.1044	RRF	.0677	RTF	.9735		
SGB14860.7	R23	-.0342	R13	.9735			
SG114848.6	SG2	597.7	THA	.24			

ORBIT DETERMINATION ACCURACY

ST	2611.0	SR	509.0	SS	755.6		
CRT	.2163	CRS	.4095	CST	-.8006		
LSA	2683.7	MSA	666.3	SSA	29.7		
EL1	2613.4	EL2	496.5	ALF	2.51		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 867.366 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.227	GAL	-3.68	AZL	88.13	HCA	256.09	SMA	190.47	ECC	.23466	INC	1.8725
RP	206.75	LAP	-1.82	LOP	330.00	VP	24.229	GAP	-12.67	AZP	90.45	TAL	340.42	TAP	236.52	RCA	145.77	APO	235.16
RC	330.190	GL	17.30	GP	-3.21	ZAL	121.40	ZAP	29.36	ETS	173.09	ZAE	46.83	ETE	176.76	ZAC	84.39	ETC	256.32

V1	30.227	V2	26.488	CLP	29.20														

PLANETOCENTRIC CONIC

C3	13.271	VHL	3.643	DLA	9.32	RAL	202.29	RAD	6567.5	VEL	11.604	PTH	2.03	VHP	5.852	DPA	-1.30	RAP	178.50
ECC	1.2184																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 6	2414.04	-23.86	54.53	59.72	105.73	19 18 20	1814.0	-21.47	46.67
90.00	9 1 30	4471.79	8.70	187.26	56.50	62.95	10 16 2	3871.8	5.00	180.53
100.00	20 4 1	2136.97	-24.85	33.82	59.39	107.17	20 39 38	1537.0	-22.27	25.98
100.00	10 18 16	4224.09	9.62	168.56	56.01	61.56	11 28 41	3624.1	5.74	161.91
110.00	21 22 39	1890.90	-27.51	14.11	58.37	111.14	21 54 10	1290.9	-24.38	6.34
110.00	11 16 8	4042.92	12.04	153.37	54.57	57.76	12 23 31	3442.9	7.70	146.96

DIFFERENTIAL CORRECTIONS

TDE	-.0619	TRA	5.5755	TC-16.5022	BAU	2.9280	
RDE	.3220	RRA	.1815	RC3 .2092	FAU	.07963	
FDE	-.5722	FRA	2.5224	FC3-5.1951	BSP	52934	
BDE	.3279	BRA	5.5785	BC316.5035	FSP	1678	

MID-COURSE EXECUTION ACCURACY

SGT14951.1	SGR	602.8	SG3	483.4			
RRT	.0764	RRF	.0387	RTF	.9722		
SGB14963.2	R23	-.0359	R13	.9722			
SG114951.2	SG2	601.1	THA	.18			

ORBIT DETERMINATION ACCURACY

ST	2692.0	SR	513.8	SS	763.0		
CRT	.1304	CRS	.4534	CST	-.8231		
LSA	2766.5	MSA	662.2	SSA	28.9		
EL1	2692.9	EL2	509.3	ALF	1.48		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 871.673 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.235	GAL	-3.89	AZL	88.15	HCA	257.36	SMA	190.61	ECC	.23614	INC	1.8545
RP	206.71	LAP	-1.81	LOP	331.27	VP	24.244	GAP	-12.79	AZP	90.41	TAL	339.43	TAP	236.79	RCA	145.60	APO	235.62
RC	331.000	GL	16.85	GP	-3.14	ZAL	122.99	ZAP	28.88	ETS	173.08	ZAE	46.05	ETE	176.75	ZAC	84.63	ETC	256.27

V1	30.227	V2	26.492	CLP	28.73														

PLANETOCENTRIC CONIC

C3	13.711	VHL	3.703	DLA	8.31	RAL	203.54	RAD	6567.5	VEL	11.623	PTH	2.04	VHP	5.939	DPA	-1.57	RAP	179.25
ECC	1.2257																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 4	2388.56	-23.37	52.81	61.15	106.45	19 30 53	1788.6	-20.90	45.02
90.00	8 58 30	4511.49	9.92	189.54	58.20	63.34	10 13 42	3911.5	6.26	182.77
100.00	20 16 26	2113.23	-24.37	32.23	60.81	107.87	20 51 39	1513.2	-21.70	24.45
100.00	10 15 49	4262.06	10.84	170.71	57.71	61.97	11 26 51	3662.1	7.01	164.02
110.00	21 33 51	1870.95	-27.01	12.78	59.75	111.80	22 5 2	1270.9	-23.81	5.07
110.00	11 14 53	4077.10	13.27	155.25	56.28	58.21	12 22 51	3477.1	8.97	148.79

DIFFERENTIAL CORRECTIONS

TDE	-.1947	TRA	5.8566	TC-16.1237	BAU	2.9558	
RDE	.3310	RRA	.1778	RC3 .2197	FAU	.07440	
FDE	-.6039	FRA	2.4798	FC3-4.6974	BSP	53347	
BDE	.3840	BRA	5.8593	BC316.1252	FSP	1596	

MID-COURSE EXECUTION ACCURACY

SGT15051.5	SGR	605.0	SG3	457.3			
RRT	.0493	RRF	.0104	RTF	.9708		
SGB15063.7	R23	-.0376	R13	.9708			
SG115051.5	SG2	604.3	THA	.11			

ORBIT DETERMINATION ACCURACY

ST	2787.1	SR	518.9	SS	767.6		
CRT	.0505	CRS	.4923	CST	-.8432		
LSA	2862.8	MSA	655.6	SSA	28.1		
EL1	2787.2	EL2	518.2	ALF	.56		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 875.973 EARTH TO MARS

RL	147.39	LAL	.00	LOL	73.91	VL	33.243	GAL	-4.09	AZL	88.16	HCA	258.63	SMA	190.75	ECC	.23769	INC	1.8367
RP	206.69	LAP	-1.80	LOP	332.54	VP	24.258	GAP	-12.90	AZP	90.36	TAL	338.42	TAP	237.05	RCA	145.41	APO	236.09
RC	331.806	GL	16.39	GP	-3.08	ZAL	124.56	ZAP	28.42	ETS	173.06	ZAE	45.29	ETE	176.74	ZAC	84.87	ETC	256.23

V1	30.227	V2	26.494	CLP	28.27														

PLANETOCENTRIC CONIC

C3	14.188	VHL	3.767	DLA	7.31	RAL	204.77	RAD	6567.6	VEL	11.644	PTH	2.04	VHP	6.029	DPA	-1.86	RAP	180.01
ECC	1.2335																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 47	2364.15	-22.89	51.19	62.60	107.13	19 43 11	1764.2	-20.33	43.45
90.00	8 55 40	4550.91	11.11	191.82	59.93	63.79	10 11 31	3950.9	7.50	185.00
100.00	20 28 38	2090.49	-23.88	30.71	62.26	108.53	21 3 28	1490.5	-21.13	23.00
100.00	10 13 30	4299.81	12.04	172.88	59.45	62.43	11 25 10	3699.8	8.25	166.13
110.00	21 44 53	1851.85	-26.52	11.51	61.17	112.40	22 15 45	1251.9	-23.25	3.87
110.00	11 13 44	4111.21	14.49	157.14	58.03	58.70	12 22 15	3511.2	10.24	150.62

DIFFERENTIAL CORRECTIONS

TDE	-.3278	TRA	6.1472	TC-15.7260	BAU	2.9832	
RDE	.3405	RRA	.1737	RC3 .2284	FAU	.06928	
FDE	-.6312	FRA	2.4343	FC3-4.2276	BSP	53771	
BDE	.4726	BRA	6.1497	BC315.7276	FSP	1516	

MID-COURSE EXECUTION ACCURACY

SGT15148.4	SGR	607.3	SG3	432.0			
RRT	.0233	RRF	-.0168	RTF	.9691		
SGB15160.6	R23	-.0394	R13	.9691			
SG115148.4	SG2	607.2	THA	.05			

ORBIT DETERMINATION ACCURACY

ST	2893.7	SR	524.1	SS	770.0		
CRT	-.0225	CRS	.5271	CST	-.8603		
LSA	2970.0	MSA	647.7	SSA	27.3		
EL1	2893.7	EL2	524.0	ALF	179.76		

LAUNCH DATE DEC 6 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 880.266 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.250 GAL -4.31 AZL 88.18 HCA 259.90 SMA 190.89 ECC .23931 INC 1.8189 V1 30.227
RP 206.68 LAP -1.79 LOP 333.81 VP 24.270 GAP -13.02 AZP 90.32 TAL 337.40 TAP 237.30 RCA 145.21 APO 236.57 V2 26.496
RC 332.609 GL 15.93 GP -3.03 ZAL 126.12 ZAP 27.98 ETS 173.04 ZAE 44.53 ETE 176.73 ZAC 85.10 ETC 256.18 CLP 27.83

PLANETOCENTRIC CONIC

C3 14.704 VHL 3.835 DLA 6.33 RAL 206.00 RAD 6567.6 VEL 11.666 PTH 2.05 VHP 6.119 DPA -2.15 RAP 180.79 ECC 1.2420

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 15	2340.81	-22.42	49.64	64.08	107.77	19 55 15	1740.8	-19.78	41.96
90.00	8 52 58	4590.07	12.28	194.10	61.70	64.28	10 9 28	3990.1	8.72	187.23
100.00	20 40 36	2068.74	-23.41	29.27	63.73	109.14	21 15 4	1468.7	-20.58	21.62
100.00	10 11 18	4337.37	13.21	175.05	61.23	62.94	11 23 36	3737.4	9.48	168.25
110.00	21 55 43	1833.63	-26.04	10.31	62.61	112.97	22 26 17	1233.6	-22.70	2.74
110.00	11 12 40	4145.25	15.68	159.06	59.82	59.23	12 21 45	3545.3	11.49	152.47

DIFFERENTIAL CORRECTIONS
TDE -.4630 TRA 6.4442 TC-15.3226 BAU 3.0124
RDE .3507 RRA .1692 RC3 .2355 FAU .06436
FDE -.6545 FRA 2.3835 FC3-3.7893 BSP 54150
BDE .5808 BRA 6.4464 BC315.3244 FSP 1437

MID-COURSE EXECUTION ACCURACY
SGT15245.4 SGR 609.8 SG3 407.5
RRT -.0022 RRF -.0438 RTF .9672
SGB15257.6 R23 .0416 R13 -.9672
SG115245.4 SG2 609.8 THA 179.99

ORBIT DETERMINATION ACCURACY
ST 3008.3 SR 529.5 SS 769.8
CRT -.0896 CRS .5589 CST -.8749
LSA 3084.5 MSA 638.8 SSA 26.5
EL1 3008.7 EL2 527.3 ALF 179.07

LAUNCH DATE DEC 6 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 884.550 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.258 GAL -4.52 AZL 88.20 HCA 261.17 SMA 191.03 ECC .24100 INC 1.8014 V1 30.227
RP 206.67 LAP -1.78 LOP 335.08 VP 24.281 GAP -13.15 AZP 90.28 TAL 336.37 TAP 237.54 RCA 144.99 APO 237.07 V2 26.497
RC 333.409 GL 15.47 GP -2.97 ZAL 127.66 ZAP 27.54 ETS 173.03 ZAE 43.79 ETE 176.71 ZAC 85.34 ETC 256.14 CLP 27.39

PLANETOCENTRIC CONIC

C3 15.260 VHL 3.906 DLA 5.36 RAL 207.21 RAD 6567.6 VEL 11.689 PTH 2.06 VHP 6.212 DPA -2.44 RAP 181.57 ECC 1.2511

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 28	2318.52	-21.95	48.17	65.59	108.36	20 7 7	1718.5	-19.24	40.55
90.00	8 50 25	4628.98	13.42	196.39	63.51	64.83	10 7 34	4029.0	9.92	189.46
100.00	20 52 20	2047.99	-22.94	27.91	65.22	109.71	21 26 28	1448.0	-20.04	20.31
100.00	10 9 13	4374.73	14.36	177.23	63.04	63.50	11 22 8	3774.7	10.68	170.37
110.00	22 6 23	1816.28	-25.58	9.17	64.08	113.49	22 36 39	1216.3	-22.18	1.67
110.00	11 11 41	4179.21	16.86	160.99	61.64	59.81	12 21 20	3579.2	12.72	154.33

DIFFERENTIAL CORRECTIONS
TDE -.5999 TRA 6.7497 TC-14.9090 BAU 3.0420
RDE .3614 RRA .1643 RC3 .2410 FAU .05957
FDE -.6739 FRA 2.3296 FC3-3.3793 BSP 54522
BDE .7004 BRA 6.7517 BC314.9109 FSP 1358

MID-COURSE EXECUTION ACCURACY
SGT15340.2 SGR 612.3 SG3 383.7
RRT -.0270 RRF -.0701 RTF .9650
SGB15352.4 R23 .0440 R13 -.9650
SG115340.2 SG2 612.1 THA 179.94

ORBIT DETERMINATION ACCURACY
ST 3129.7 SR 535.0 SS 767.2
CRT -.1504 CRS .5879 CST -.8871
LSA 3205.1 MSA 629.5 SSA 25.8
EL1 3130.7 EL2 528.7 ALF 178.48

LAUNCH DATE DEC 6 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 888.826 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.266 GAL -4.75 AZL 88.22 HCA 262.44 SMA 191.17 ECC .24276 INC 1.7840 V1 30.227
RP 206.67 LAP -1.77 LOP 336.35 VP 24.292 GAP -13.27 AZP 90.23 TAL 335.32 TAP 237.76 RCA 144.76 APO 237.58 V2 26.497
RC 334.204 GL 15.02 GP -2.92 ZAL 129.18 ZAP 27.11 ETS 173.01 ZAE 43.05 ETE 176.70 ZAC 85.57 ETC 256.10 CLP 26.97

PLANETOCENTRIC CONIC

C3 15.859 VHL 3.982 DLA 4.40 RAL 208.41 RAD 6567.6 VEL 11.715 PTH 2.06 VHP 6.306 DPA -2.75 RAP 182.36 ECC 1.2610

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 27	2297.26	-21.49	46.79	67.12	108.90	20 18 45	1697.3	-18.71	39.21
90.00	8 47 59	4667.62	14.52	198.69	65.36	65.42	10 5 46	4067.6	11.09	191.70
100.00	21 3 52	2028.23	-22.48	26.62	66.74	110.24	21 37 40	1428.2	-19.52	19.08
100.00	10 7 15	4411.88	15.47	179.42	64.90	64.10	11 20 47	3811.9	11.87	172.49
110.00	22 16 51	1799.81	-25.12	8.11	65.57	113.98	22 46 51	1199.8	-21.67	.66
110.00	11 10 45	4213.07	18.00	162.94	63.51	60.44	12 20 59	3613.1	13.93	156.20

DIFFERENTIAL CORRECTIONS
TDE -.7365 TRA 7.0638 TC-14.4859 BAU 3.0718
RDE .3726 RRA .1590 RC3 .2453 FAU .05486
FDE -.6885 FRA 2.2707 FC3-2.9947 BSP 54873
BDE .8254 BRA 7.0656 BC314.4880 FSP 1283

MID-COURSE EXECUTION ACCURACY
SGT15431.8 SGR 615.0 SG3 360.5
RRT -.0510 RRF -.0956 RTF .9625
SGB15444.0 R23 .0465 R13 -.9625
SG115431.8 SG2 614.2 THA 179.88

ORBIT DETERMINATION ACCURACY
ST 3254.8 SR 540.5 SS 761.3
CRT -.2044 CRS .6141 CST -.8971
LSA 3328.7 MSA 620.2 SSA 25.1
EL1 3256.7 EL2 528.8 ALF 178.00

LAUNCH DATE DEC 6 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 893.091 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.274 GAL -4.97 AZL 88.23 HCA 263.71 SMA 191.32 ECC .24461 INC 1.7666 V1 30.227
RP 206.68 LAP -1.76 LOP 337.62 VP 24.301 GAP -13.40 AZP 90.19 TAL 334.26 TAP 237.97 RCA 144.52 APO 238.11 V2 26.495
RC 334.996 GL 14.57 GP -2.86 ZAL 130.69 ZAP 26.70 ETS 172.99 ZAE 42.33 ETE 176.68 ZAC 85.81 ETC 256.06 CLP 26.56

PLANETOCENTRIC CONIC

C3 16.504 VHL 4.062 DLA 3.47 RAL 209.59 RAD 6567.7 VEL 11.743 PTH 2.07 VHP 6.401 DPA -3.06 RAP 183.16 ECC 1.2716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 13	2277.04	-21.03	45.48	68.67	109.41	20 30 10	1677.0	-18.20	37.95
90.00	8 45 40	4706.00	15.60	201.00	67.25	66.06	10 4 6	4106.0	12.23	193.94
100.00	21 15 11	2009.45	-22.03	25.41	68.28	110.73	21 48 40	1409.4	-19.01	17.91
100.00	10 5 23	4448.83	16.56	181.63	66.79	64.75	11 19 32	3848.8	13.02	174.62
110.00	22 27 8	1784.22	-24.69	7.10	67.08	114.43	22 56 52	1184.2	-21.18	359.71
110.00	11 9 55	4246.81	19.13	164.92	65.41	61.11	12 20 42	3646.8	15.13	158.08

DIFFERENTIAL CORRECTIONS
TDE -.8749 TRA 7.3853 TC-14.0640 BAU 3.1036
RDE .3844 RRA .1533 RC3 .2482 FAU .05031
FDE -.6998 FRA 2.2083 FC3-2.6393 BSP 55181
BDE .9556 BRA 7.3869 BC314.0662 FSP 1207

MID-COURSE EXECUTION ACCURACY
SGT15523.7 SGR 617.7 SG3 338.0
RRT -.0743 RRF -.1207 RTF .9595
SGB15536.0 R23 .0494 R13 -.9596
SG115523.8 SG2 616.0 THA 179.83

ORBIT DETERMINATION ACCURACY
ST 3382.3 SR 546.1 SS 753.2
CRT -.2532 CRS .6383 CST -.9054
LSA 3454.2 MSA 611.1 SSA 24.5
EL1 3385.2 EL2 527.9 ALF 177.60

LAUNCH DATE DEC 6 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 897.345 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.282 GAL -5.21 AZL 88.25 HCA 264.98 SMA 191.46 ECC .24653 INC 1.7494 V1 30.227
RP 206.70 LAP -1.74 LOP 338.89 VP 24.309 GAP -13.54 AZP 90.15 TAL 333.19 TAP 238.16 RCA 144.26 APO 238.66 V2 26.493
RC 335.784 GL 14.12 GP -2.81 ZAL 132.17 ZAP 26.29 ETS 172.97 ZAE 41.61 ETE 176.67 ZAC 86.05 ETC 256.02 CLP 26.15

PLANETOCENTRIC CONIC

C3 17.197 VHL 4.147 DLA 2.54 RAL 210.76 RAD 6567.7 VEL 11.772 PTH 2.08 VHP 6.498 DPA -3.38 RAP 183.97 ECC 1.2830

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 45	2257.83	-20.59	44.24	70.25	109.88	20 41 23	1657.8	-17.70	36.76
90.00	8 43 27	4744.12	16.64	203.31	69.17	66.75	10 2 31	4144.1	13.35	196.18
100.00	21 26 17	1991.63	-21.59	24.26	69.85	111.19	21 59 28	1391.6	-18.52	16.81
100.00	10 3 37	4485.55	17.61	183.85	68.72	65.45	11 18 22	3885.5	14.15	176.76
110.00	22 37 15	1769.52	-24.27	6.17	68.61	114.84	23 6 44	1169.5	-20.72	358.82
110.00	11 9 8	4280.43	20.22	166.91	67.35	61.83	12 20 28	3680.4	16.30	159.99

DIFFERENTIAL CORRECTIONS
TDE-1.0131 TRA 7.7171 TC-13.6334 BAU 3.1349
RDE .3968 RRA .1473 RC3 .2499 FAU .04589
FDE -.7070 FRA 2.1423 FC3-2.3101 BSP 55514
BDE 1.0881 BRA 7.7185 BC313.6357 FSP 1134

MID-COURSE EXECUTION ACCURACY
SGT15611.7 SGR 620.5 SG3 316.3
RRT -.0968 RRF -.1450 RTF .9562
SGB15624.0 R23 .0525 R13 -.9562
SG115611.8 SG2 617.6 THA 179.78

ORBIT DETERMINATION ACCURACY
ST 3510.9 SR 551.7 SS 742.2
CRT -.2963 CRS .6604 CST -.9120
LSA 3580.3 MSA 602.4 SSA 23.8
EL1 3514.8 EL2 526.3 ALF 177.27

LAUNCH DATE DEC 6 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 901.587 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.289 GAL -5.45 AZL 88.27 HCA 266.24 SMA 191.60 ECC .24854 INC 1.7322 V1 30.227
RP 206.73 LAP -1.73 LOP 340.16 VP 24.316 GAP -13.67 AZP 90.11 TAL 332.10 TAP 238.35 RCA 143.98 APO 239.23 V2 26.490
RC 336.567 GL 13.68 GP -2.77 ZAL 133.63 ZAP 25.90 ETS 172.94 ZAE 40.91 ETE 176.65 ZAC 86.29 ETC 255.99 CLP 25.76

PLANETOCENTRIC CONIC

C3 17.940 VHL 4.236 DLA 1.64 RAL 211.92 RAD 6567.7 VEL 11.804 PTH 2.09 VHP 6.597 DPA -3.70 RAP 184.79 ECC 1.2953

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 15 4	2239.62	-20.17	43.07	71.84	110.31	20 52 24	1639.6	-17.22	35.64
90.00	8 41 21	4781.97	17.64	205.64	71.13	67.48	10 1 3	4182.0	14.43	198.43
100.00	21 37 10	1974.78	-21.18	23.18	71.43	111.60	22 10 5	1374.8	-18.06	15.78
100.00	10 1 56	4522.04	18.63	186.08	70.68	66.19	11 17 18	3922.0	15.26	178.91
110.00	22 47 10	1755.70	-23.87	5.29	70.16	115.22	23 16 26	1155.7	-20.28	357.99
110.00	11 8 25	4313.90	21.28	168.93	69.33	62.60	12 20 19	3713.9	17.44	161.91

DIFFERENTIAL CORRECTIONS
TDE-1.1528 TRA 8.0557 TC-13.2068 BAU 3.1682
RDE .4097 RRA .1408 RC3 .2506 FAU .04157
FDE -.7112 FRA 2.0718 FC3-2.0058 BSP 55780
BDE 1.2234 BRA 8.0569 BC313.2092 FSP 1063

MID-COURSE EXECUTION ACCURACY
SGT15698.4 SGR 623.2 SG3 295.2
RRT -.1188 RRF -.1689 RTF .9522
SGB15710.8 R23 .0560 R13 -.9523
SG115698.6 SG2 618.8 THA 179.73

ORBIT DETERMINATION ACCURACY
ST 3638.7 SR 557.1 SS 729.0
CRT -.3351 CRS .6812 CST -.9172
LSA 3705.2 MSA 594.2 SSA 23.2
EL1 3643.6 EL2 524.2 ALF 177.00

LAUNCH DATE DEC 6 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 905.817 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.297 GAL -5.69 AZL 88.28 HCA 267.51 SMA 191.75 ECC .25064 INC 1.7151 V1 30.227
RP 206.77 LAP -1.71 LOP 341.43 VP 24.322 GAP -13.82 AZP 90.07 TAL 331.01 TAP 238.52 RCA 143.69 APO 239.81 V2 26.485
RC 337.346 GL 13.24 GP -2.72 ZAL 135.07 ZAP 25.52 ETS 172.92 ZAE 40.22 ETE 176.63 ZAC 86.53 ETC 255.96 CLP 25.38

PLANETOCENTRIC CONIC

C3 18.738 VHL 4.329 DLA .76 RAL 213.06 RAD 6567.8 VEL 11.837 PTH 2.10 VHP 6.698 DPA -4.03 RAP 185.61 ECC 1.3084

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 26 10	2222.40	-19.76	41.98	73.46	110.71	21 3 12	1622.4	-16.76	34.58
90.00	8 39 20	4819.56	18.60	207.98	73.12	68.26	9 59 40	4219.6	15.49	200.69
100.00	21 47 52	1958.88	-20.77	22.17	73.03	111.99	22 20 31	1358.9	-17.61	14.81
100.00	10 0 20	4558.31	19.61	188.33	72.68	66.98	11 16 18	3958.3	16.33	181.07
110.00	22 56 55	1742.75	-23.50	4.47	71.74	115.57	23 25 58	1142.7	-19.86	357.22
110.00	11 7 46	4347.21	22.31	170.97	71.34	63.40	12 20 13	3747.2	18.56	163.84

DIFFERENTIAL CORRECTIONS
TDE-1.2919 TRA 8.4044 TC-12.7800 BAU 3.2021
RDE .4231 RRA .1338 RC3 .2502 FAU .03735
FDE -.7117 FRA 1.9971 FC3-1.7256 BSP 56055
BDE 1.3594 BRA 8.4055 BC312.7825 FSP 991

MID-COURSE EXECUTION ACCURACY
SGT15783.3 SGR 626.0 SG3 274.7
RRT -.1400 RRF -.1923 RTF .9476
SGB15795.7 R23 .0600 R13 -.9476
SG115783.5 SG2 619.8 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 3764.8 SR 562.5 SS 713.1
CRT -.3694 CRS .7006 CST -.9210
LSA 3828.0 MSA 586.5 SSA 22.6
EL1 3770.6 EL2 521.9 ALF 176.78

LAUNCH DATE DEC 6 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 910.032 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.305 GAL -5.94 AZL 88.30 HCA 268.78 SMA 191.90 ECC .25282 INC 1.6981 V1 30.227
RP 206.81 LAP -1.70 LOP 342.69 VP 24.328 GAP -13.96 AZP 90.04 TAL 329.90 TAP 238.68 RCA 143.38 APO 240.41 V2 26.480
RC 338.120 GL 12.81 GP -2.68 ZAL 136.48 ZAP 25.14 ETS 172.90 ZAE 39.53 ETE 176.61 ZAC 86.77 ETC 255.93 CLP 25.01

PLANETOCENTRIC CONIC

C3 19.592 VHL 4.426 DLA -.11 RAL 214.18 RAD 6567.8 VEL 11.873 PTH 2.11 VHP 6.800 DPA -4.36 RAP 186.45 ECC 1.3224

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 37 4	2206.14	-19.36	40.95	75.09	111.07	21 13 50	1606.1	-16.33	33.59
90.00	8 37 25	4856.87	19.53	210.33	75.14	69.08	9 58 22	4256.9	16.51	202.95
100.00	21 58 21	1943.92	-20.39	21.23	74.65	112.34	22 30 45	1343.9	-17.18	13.90
100.00	9 58 49	4594.33	20.55	190.59	74.71	67.81	11 15 23	3994.3	17.37	183.24
110.00	23 6 29	1730.66	-23.14	3.72	73.33	115.89	23 35 19	1130.7	-19.47	356.50
110.00	11 7 10	4380.35	23.31	173.02	73.39	64.26	12 20 11	3780.3	19.65	165.79

DIFFERENTIAL CORRECTIONS
TDE-1.4323 TRA 8.7612 TC-12.3563 BAU 3.2372
RDE .4370 RRA .1265 RC3 .2490 FAU .03323
FDE -.7090 FRA 1.9185 FC3-1.4685 BSP 56278
BDE 1.4975 BRA 8.7621 BC312.3588 FSP 922

MID-COURSE EXECUTION ACCURACY
SGT15865.2 SGR 628.8 SG3 254.8
RRT -.1607 RRF -.2152 RTF .9421
SGB15877.6 R23 .0644 R13 -.9421
SG115865.5 SG2 620.6 THA 179.63

ORBIT DETERMINATION ACCURACY
ST 3888.5 SR 567.8 SS 694.9
CRT -.4003 CRS .7189 CST -.9239
LSA 3948.4 MSA 579.2 SSA 22.1
EL1 3895.2 EL2 519.4 ALF 176.59

LAUNCH DATE DEC 6 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 914.233 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.313 GAL -6.20 AZL 88.32 HCA 270.05 SMA 192.04 ECC .25511 INC 1.6810 V1 30.227
RP 206.87 LAP -1.68 LOP 343.96 VP 24.332 GAP -14.12 AZP 90.00 TAL 328.77 TAP 238.82 RCA 143.05 APO 241.04 V2 26.474
RC 338.890 GL 12.39 GP -2.63 ZAL 137.88 ZAP 24.78 ETS 172.88 ZAE 38.86 ETE 176.59 ZAC 87.01 ETC 255.91 CLP 24.65

PLANETOCENTRIC CONIC

C3 20.507 VHL 4.528 DLA -.95 RAL 215.29 RAD 6567.8 VEL 11.912 PTH 2.12 VHP 6.905 DPA -4.70 RAP 187.29 ECC 1.3375

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 47 45	2190.83	-18.99	39.98	76.74	111.41	21 24 15	1590.8	-15.91	32.66
90.00	8 35 35	4893.91	20.41	212.68	77.19	69.93	9 57 9	4293.9	17.49	205.22
100.00	22 8 39	1929.87	-20.02	20.35	76.29	112.67	22 40 48	1329.9	-16.78	13.06
100.00	9 57 22	4630.10	21.46	192.86	76.77	68.67	11 14 33	4030.1	18.37	185.43
110.00	23 15 52	1719.43	-22.80	3.02	74.94	116.18	23 44 32	1119.4	-19.10	355.84
110.00	11 6 38	4413.31	24.27	175.10	75.47	65.15	12 20 11	3813.3	20.71	167.76

DIFFERENTIAL CORRECTIONS
TDE-1.5731 TRA 9.1272 TC-11.9379 BAU 3.2736
RDE .4514 RRA .1187 RC3 .2470 FAU .02923
FDE -.7035 FRA 1.8350 FC3-1.2341 BSP 56490
BDE 1.6366 BRA 9.1280 BC311.9404 FSP 854

MID-COURSE EXECUTION ACCURACY
SGT15945.4 SGR 631.5 SG3 235.6
RRT -.1808 RRF -.2377 RTF .9356
SGB15957.9 R23 .0695 R13 -.9356
SG115945.8 SG2 621.1 THA 179.59

ORBIT DETERMINATION ACCURACY
ST 4009.0 SR 572.9 SS 674.7
CRT -.4279 CRS .7364 CST -.9257
LSA 4065.4 MSA 572.5 SSA 21.6
EL1 4016.7 EL2 516.8 ALF 176.44

LAUNCH DATE DEC 6 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 918.417 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.321 GAL -6.46 AZL 88.34 HCA 271.31 SMA 192.19 ECC .25749 INC 1.6640 V1 30.227
RP 206.93 LAP -1.66 LOP 345.23 VP 24.334 GAP -14.27 AZP 89.96 TAL 327.64 TAP 238.95 RCA 142.71 APO 241.68 V2 26.466
RC 339.657 GL 11.97 GP -2.59 ZAL 139.24 ZAP 24.43 ETS 172.86 ZAE 38.19 ETE 176.57 ZAC 87.25 ETC 255.88 CLP 24.30

PLANETOCENTRIC CONIC

C3 21.485 VHL 4.635 DLA -1.78 RAL 216.38 RAD 6567.9 VEL 11.953 PTH 2.13 VHP 7.011 DPA -5.05 RAP 188.14 ECC 1.3536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 58 14	2176.46	-18.63	39.08	78.41	111.72	21 34 30	1576.5	-15.51	31.79
90.00	8 33 50	4930.67	21.25	215.05	79.28	70.83	9 56 1	4330.7	18.44	207.50
100.00	22 18 45	1916.73	-19.68	19.53	77.95	112.97	22 50 41	1316.7	-16.40	12.27
100.00	9 56 1	4665.62	22.32	195.15	78.86	69.58	11 13 46	4065.6	19.34	187.62
110.00	23 25 5	1709.04	-22.49	2.37	76.56	116.45	23 53 34	1109.0	-18.75	355.23
110.00	11 6 9	4446.08	25.19	177.20	77.59	66.09	12 20 15	3846.1	21.74	169.75

DIFFERENTIAL CORRECTIONS
TDE-1.7126 TRA 9.5039 TC-11.5241 BAU 3.3109
RDE .4663 RRA .1105 RC3 .2444 FAU .02529
FDE -.6946 FRA 1.7490 FC3-1.0190 BSP 56682
BDE 1.7749 BRA 9.5045 BC311.5267 FSP 788

MID-COURSE EXECUTION ACCURACY
SGT16023.6 SGR 634.2 SG3 217.0
RRT -.2002 RRF -.2595 RTF .9276
SGB16036.2 R23 .0750 R13 -.9276
SG116024.1 SG2 621.3 THA 179.55

ORBIT DETERMINATION ACCURACY
ST 4125.2 SR 577.8 SS 652.2
CRT -.4521 CRS .7530 CST -.9265
LSA 4177.9 MSA 566.4 SSA 21.1
EL1 4133.5 EL2 514.4 ALF 176.32

LAUNCH DATE DEC 6 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 922.585 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.329 GAL -6.73 AZL 88.35 HCA 272.58 SMA 192.34 ECC .25997 INC 1.6469 V1 30.227
RP 207.00 LAP -1.65 LOP 346.50 VP 24.336 GAP -14.43 AZP 89.93 TAL 326.49 TAP 239.07 RCA 142.34 APO 242.34 V2 26.458
RC 340.420 GL 11.56 GP -2.55 ZAL 140.59 ZAP 24.09 ETS 172.83 ZAE 37.54 ETE 176.54 ZAC 87.49 ETC 255.87 CLP 23.96

PLANETOCENTRIC CONIC

C3 22.531 VHL 4.747 DLA -2.58 RAL 217.46 RAD 6567.9 VEL 11.996 PTH 2.14 VHP 7.120 DPA -5.40 RAP 189.00 ECC 1.3708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 8 31	2162.98	-18.28	38.24	80.09	112.01	21 44 34	1563.0	-15.14	30.98
90.00	8 32 10	4967.14	22.05	217.43	81.39	71.77	9 54 57	4367.1	19.35	209.79
100.00	22 28 39	1904.47	-19.35	18.76	79.62	113.24	23 0 24	1304.5	-16.04	11.53
100.00	9 54 43	4700.88	23.14	197.44	80.98	70.53	11 13 4	4100.9	20.27	189.82
110.00	23 34 8	1699.48	-22.20	1.78	78.20	116.69	24 2 28	1099.5	-18.44	354.67
110.00	11 5 43	4478.64	26.07	179.32	79.73	67.06	12 20 22	3878.6	22.73	171.75

DIFFERENTIAL CORRECTIONS
TDE-1.8526 TRA 9.8894 TC-11.1176 BAU 3.3496
RDE .4816 RRA .1018 RC3 .2411 FAU .02143
FDE -.6829 FRA 1.6581 FC3 -.8236 BSP 56857
BDE 1.9142 BRA 9.8899 BC311.1202 FSP 723

MID-COURSE EXECUTION ACCURACY
SGT16099.1 SGR 636.8 SG3 199.0
RRT -.2190 RRF -.2807 RTF .9179
SGB16111.7 R23 .0813 R13 -.9179
SG116099.7 SG2 621.3 THA 179.50

ORBIT DETERMINATION ACCURACY
ST 4236.9 SR 582.6 SS 627.7
CRT -.4740 CRS .7691 CST -.9264
LSA 4286.0 MSA 560.6 SSA 20.6
EL1 4246.0 EL2 511.9 ALF 176.22

LAUNCH DATE DEC 6 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 926.733 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.337 GAL -7.00 AZL 88.37 HCA 273.84 SMA 192.49 ECC .26256 INC 1.6299 V1 30.227
RP 207.08 LAP -1.63 LOP 347.76 VP 24.337 GAP -14.60 AZP 89.89 TAL 325.33 TAP 239.18 RCA 141.95 APO 243.03 V2 26.449
RC 341.179 GL 11.16 GP -2.52 ZAL 141.91 ZAP 23.75 ETS 172.81 ZAE 36.90 ETE 176.52 ZAC 87.73 ETC 255.85 CLP 23.63

PLANETOCENTRIC CONIC

C3 23.649 VHL 4.863 DLA -3.37 RAL 218.53 RAD 6568.0 VEL 12.043 PTH 2.15 VHP 7.231 DPA -5.75 RAP 189.87 ECC 1.3892

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 18 37	2150.39	-17.96	37.46	81.78	112.27	21 54 27	1550.4	-14.79	30.22
90.00	8 30 35	5003.32	22.80	219.82	83.53	72.73	9 53 58	4403.3	20.22	212.09
100.00	22 38 23	1893.07	-19.04	18.05	81.30	113.49	23 9 56	1293.1	-15.70	10.85
100.00	9 53 29	4735.87	23.91	199.76	83.13	71.51	11 12 25	4135.9	21.17	192.04
110.00	23 43 1	1690.72	-21.93	1.25	79.85	116.90	24 11 12	1090.7	-18.14	354.16
110.00	11 5 21	4510.98	26.91	181.46	81.91	68.08	12 20 32	3911.0	23.69	173.78

DIFFERENTIAL CORRECTIONS
TDE-1.9942 TRA10.2831 TC-10.7223 BAU 3.3908
RDE .4974 RRA .0927 RC3 .2372 FAU .01770
FDE -.6690 FRA 1.5627 FC3 -.6478 BSP 56966
BDE 2.0553 BRA10.2835 BC310.7249 FSP 659

MID-COURSE EXECUTION ACCURACY
SGT16173.0 SGR 639.3 SG3 181.6
RRT -.2375 RRF -.3017 RTF .9060
SGB16185.6 R23 .0888 R13 -.9061
SG116173.7 SG2 621.0 THA 179.46

ORBIT DETERMINATION ACCURACY
ST 4344.5 SR 587.0 SS 601.7
CRT -.4939 CRS .7851 CST -.9254
LSA 4390.1 MSA 555.1 SSA 20.2
EL1 4354.3 EL2 509.3 ALF 176.13

LAUNCH DATE DEC 6 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 7 1966

HELIOCENTRIC CONIC DISTANCE 930.862 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.345 GAL -7.28 AZL 88.39 HCA 275.11 SMA 192.64 ECC .26526 INC 1.6127 V1 30.227
RP 207.17 LAP -1.61 LOP 349.02 VP 24.337 GAP -14.78 AZP 89.86 TAL 324.16 TAP 239.27 RCA 141.54 APO 243.74 V2 26.438
RC 341.936 GL 10.76 GP -2.48 ZAL 143.20 ZAP 23.43 ETS 172.79 ZAE 36.26 ETE 176.49 ZAC 87.97 ETC 255.84 CLP 23.31

PLANETOCENTRIC CONIC

C3 24.842 VHL 4.984 DLA -4.13 RAL 219.58 RAD 6568.0 VEL 12.092 PTH 2.16 VHP 7.344 DPA -6.11 RAP 190.75 ECC 1.4088

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 28 31	2138.66	-17.66	36.73	83.49	112.50	22 4 10	1538.7	-14.45	29.52
90.00	8 29 3	5039.20	23.50	222.21	85.69	73.73	9 53 2	4439.2	21.05	214.40
100.00	22 47 56	1882.50	-18.75	17.40	83.00	113.71	23 19 18	1282.5	-15.39	10.23
100.00	9 52 20	4770.59	24.64	202.08	85.31	72.52	11 11 50	4170.6	22.02	194.26
110.00	23 51 44	1682.75	-21.68	.76	81.52	117.10	24 19 47	1082.8	-17.88	353.70
110.00	11 5 1	4543.10	27.71	183.62	84.12	69.13	12 20 44	3943.1	24.61	175.81

DIFFERENTIAL CORRECTIONS
TDE-2.1360 TRA10.6874 TC-10.3355 BAU 3.4334
RDE .5137 RRA .0831 RC3 .2330 FAU .01401
FDE -.6524 FRA 1.4634 FC3 -.4884 BSP 57049
BDE 2.1969 BRA10.6878 BC310.3381 FSP 596

MID-COURSE EXECUTION ACCURACY
SGT16245.1 SGR 641.8 SG3 164.9
RRT -.2554 RRF -.3219 RTF .8911
SGB16257.8 R23 .0972 R13 -.8911
SG116246.0 SG2 620.4 THA 179.42

ORBIT DETERMINATION ACCURACY
ST 4447.5 SR 591.3 SS 574.1
CRT -.5118 CRS .8008 CST -.9234
LSA 4489.6 MSA 550.0 SSA 19.7
EL1 4457.9 EL2 506.8 ALF 176.06

LAUNCH DATE DEC 6 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 9 1966

HELIOCENTRIC CONIC DISTANCE 934.969 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.353 GAL -7.57 AZL 88.40 HCA 276.37 SMA 192.79 ECC .26807 INC 1.5956 V1 30.227
RP 207.27 LAP -1.59 LOP 350.29 VP 24.336 GAP -14.96 AZP 89.82 TAL 322.98 TAP 239.35 RCA 141.11 APO 244.48 V2 26.427
RC 342.690 GL 10.38 GP -2.44 ZAL 144.47 ZAP 23.12 ETS 172.76 ZAE 35.64 ETE 176.46 ZAC 88.22 ETC 255.83 CLP 22.99

PLANETOCENTRIC CONIC

C3 26.115 VHL 5.110 DLA -4.87 RAL 220.62 RAD 6568.1 VEL 12.145 PTH 2.18 VHP 7.459 DPA -6.47 RAP 191.63 ECC 1.4298

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 15	2127.76	-17.37	36.06	85.21	112.72	22 13 43	1527.8	-14.14	28.87
90.00	8 27 36	5074.79	24.16	224.61	87.87	74.76	9 52 11	4474.8	21.83	216.71
100.00	22 57 18	1872.75	-18.49	16.80	84.71	113.92	23 28 31	1272.7	-15.10	9.65
100.00	9 51 14	4805.02	25.33	204.41	87.51	73.57	11 11 19	4205.0	22.83	196.50
110.00	0 4 13	1675.55	-21.46	.32	83.19	117.27	0 32 9	1075.5	-17.63	353.28
110.00	11 4 44	4574.99	28.46	185.79	86.36	70.21	12 20 59	3975.0	25.50	177.87

DIFFERENTIAL CORRECTIONS
TDE-2.2753 TRA11.1037 TC3-9.9561 BAU 3.4770
RDE .5304 RRA .0731 RC3 .2284 FAU .01038
FDE -.6328 FRA 1.3599 FC3 -.3441 BSP 57133
BDE 2.3363 BRA11.1039 BC3 9.9587 FSP 535

MID-COURSE EXECUTION ACCURACY
SGT16314.5 SGR 644.1 SG3 148.9
RRT -.2726 RRF -.3407 RTF .8719
SGB16327.2 R23 .1067 R13 -.8719
SG116315.4 SG2 619.7 THA 179.38

ORBIT DETERMINATION ACCURACY
ST 4544.3 SR 595.2 SS 544.6
CRT -.5275 CRS .8163 CST -.9202
LSA 4583.0 MSA 545.3 SSA 19.3
EL1 4555.3 EL2 504.5 ALF 176.00

LAUNCH DATE DEC 6 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 11 1966

HELIOCENTRIC CONIC DISTANCE 939.054 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.362 GAL -7.87 AZL 88.42 HCA 277.63 SMA 192.95 ECC .27100 INC 1.5784 V1 30.227
RP 207.37 LAP -1.56 LOP 351.55 VP 24.334 GAP -15.14 AZP 89.79 TAL 321.78 TAP 239.41 RCA 140.66 APO 245.23 V2 26.415
RC 343.441 GL 10.00 GP -2.41 ZAL 145.72 ZAP 22.81 ETS 172.74 ZAE 35.02 ETE 176.43 ZAC 88.46 ETC 255.83 CLP 22.69

PLANETOCENTRIC CONIC

C3 27.474 VHL 5.242 DLA -5.59 RAL 221.64 RAD 6568.1 VEL 12.200 PTH 2.19 VHP 7.577 DPA -6.83 RAP 192.52 ECC 1.4522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 48	2117.65	-17.10	35.44	86.94	112.92	22 23 6	1517.7	-13.85	28.27
90.00	8 26 13	5110.07	24.77	227.01	90.08	75.82	9 51 23	4510.1	22.58	219.03
100.00	23 6 30	1863.78	-18.24	16.25	86.43	114.10	23 37 34	1263.8	-14.83	9.12
100.00	9 50 12	4839.17	25.96	206.74	89.73	74.64	11 10 51	4239.2	23.60	198.74
110.00	0 12 37	1669.08	-21.26	359.93	84.88	117.42	0 40 26	1069.1	-17.41	352.91
110.00	11 4 30	4606.63	29.17	187.98	88.62	71.33	12 21 17	4006.6	26.34	179.94

DIFFERENTIAL CORRECTIONS
TDE-2.4156 TRA11.5291 TC3-9.5883 BAU 3.5228
RDE .5475 RRA .0825 RC3 .2234 FAU .00682
FDE -.6112 FRA 1.2522 FC3 -.2150 BSP 57192
BDE 2.4769 BRA11.5293 BC3 9.5909 FSP 476

MID-COURSE EXECUTION ACCURACY
SGT16381.5 SGR 646.3 SG3 133.5
RRT -.2894 RRF -.3585 RTF .8470
SGB16394.2 R23 .1181 R13 -.8471
SG116382.6 SG2 618.6 THA 179.34

ORBIT DETERMINATION ACCURACY
ST 4636.2 SR 598.9 SS 514.0
CRT -.5417 CRS .8323 CST -.9156
LSA 4671.7 MSA 540.9 SSA 18.9
EL1 4647.7 EL2 502.1 ALF 175.95

LAUNCH DATE DEC 6 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 13 1966

HELIOCENTRIC CONIC DISTANCE 943.114 EARTH TO MARS

RL 147.39 LAL .00 LOL 73.91 VL 33.370 GAL -8.17 AZL 88.44 HCA 278.89 SMA 193.10 ECC .27406 INC 1.5611 V1 30.227
RP 207.48 LAP -1.54 LOP 352.81 VP 24.331 GAP -15.34 AZP 89.76 TAL 320.57 TAP 239.47 RCA 140.18 APO 246.02 V2 26.402
RC 344.188 GL 9.63 GP -2.38 ZAL 146.94 ZAP 22.52 ETS 172.72 ZAE 34.42 ETE 176.40 ZAC 88.70 ETC 255.83 CLP 22.40

PLANETOCENTRIC CONIC

C3 28.923 VHL 5.378 DLA -6.30 RAL 222.65 RAD 6568.2 VEL 12.260 PTH 2.21 VHP 7.697 DPA -7.20 RAP 193.43 ECC 1.4760

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 11	2108.33	-16.86	34.86	88.68	113.09	22 32 19	1508.3	-13.59	27.71
90.00	8 24 53	5145.04	25.33	229.42	92.30	76.90	9 50 38	4545.0	23.28	221.35
100.00	23 15 32	1855.57	-18.01	15.75	88.15	114.27	23 46 27	1255.6	-14.58	8.63
100.00	9 49 13	4873.03	26.55	209.09	91.97	75.74	11 10 26	4273.0	24.33	200.99
110.00	0 20 52	1663.34	-21.08	359.58	86.57	117.56	0 48 35	1063.3	-17.22	352.58
110.00	11 4 19	4638.02	29.83	190.19	90.91	72.48	12 21 37	4038.0	27.15	182.03

DIFFERENTIAL CORRECTIONS
TDE-2.5560 TRA11.9660 TC3-9.2310 BAU 3.5704
RDE .5650 RRA .0515 RC3 .2182 FAU .00331
FDE -.5873 FRA 1.1400 FC3 -.0992 BSP 57191
BDE 2.6177 BRA11.9661 BC3 9.2336 FSP 418

MID-COURSE EXECUTION ACCURACY
SGT16446.7 SGR 648.4 SG3 119.0
RRT -.3058 RRF -.3743 RTF .8140
SGB16459.5 R23 .1313 R13 -.8141
SG116447.9 SG2 617.3 THA 179.31

ORBIT DETERMINATION ACCURACY
ST 4723.2 SR 602.2 SS 482.3
CRT -.5546 CRS .8486 CST -.9095
LSA 4755.6 MSA 536.7 SSA 18.6
EL1 4735.2 EL2 499.9 ALF 175.91

LAUNCH DATE DEC 7 1964 FLIGHT TIME 140.00 ARRIVAL DATE APR 26 1965

HELIOCENTRIC CONIC DISTANCE 374.391 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 35.844 GAL -1.66 AZL 88.70 HCA 114.91 SMA 257.07 ECC .42752 INC 1.2961 V1 30.232
RP 244.80 LAP 1.18 LOP 189.85 VP 23.833 GAP 25.17 AZP 90.55 TAL 354.46 TAP 109.37 RCA 147.17 APO 366.97 V2 22.407
RC 127.239 GL 8.17 GP 1.66 ZAL 98.14 ZAP 175.65 ETS 156.23 ZAE 153.10 ETE .79 ZAC 90.59 ETC 256.02 CLP 175.98

PLANETOCENTRIC CONIC

C3 32.552 VHL 5.705 DLA 10.21 RAL 176.99 RAD 6568.3 VEL 12.407 PTH 2.24 VHP 11.449 DPA .37 RAP 186.54 ECC 1.5357

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 46 3	2656.70	-27.27	71.45	50.55	97.93	17 30 20	2056.7	-25.89	63.05
90.00	7 23 50	4656.02	14.19	198.00	44.51	65.24	8 41 26	4056.0	10.74	191.03
100.00	18 12 27	2378.03	-28.61	50.72	50.32	99.05	18 52 5	1778.0	-27.06	42.26
100.00	8 40 6	4409.92	15.42	179.31	43.91	64.07	9 53 36	3809.9	11.80	172.38
110.00	19 32 12	2128.51	-32.19	31.00	49.54	102.18	20 7 40	1528.5	-30.18	22.36
110.00	9 36 52	4232.20	18.64	164.06	42.15	60.82	10 47 24	3632.2	14.61	157.26

DIFFERENTIAL CORRECTIONS

TDE .5529 TRA-1.5005 TC3 .8435 BAU .3673
RDE -.5621 RRA -.2520 RC3 -.0280 FAU .05554
FDE -.1032 FRA .6886 FC3-1.4772 BSP 5961
BDE .7885 BRA 1.5216 BC3 .8440 FSP 421

MID-COURSE EXECUTION ACCURACY

SGT 1891.9 SGR 621.1 SG3 158.0
RRT .0422 RRF -.0601 RTF -.7964
SGB 1991.2 R23 -.0225 R13 -.7965
SG1 1892.1 SG2 620.5 THA .89

ORBIT DETERMINATION ACCURACY

ST 721.2 SR 569.7 SS 237.7
CRT -.6766 CRS -.3090 CST .8993
LSA 865.9 MSA 387.7 SSA 34.4
EL1 846.8 EL2 357.3 ALF 144.69

LAUNCH DATE DEC 7 1964 FLIGHT TIME 142.00 ARRIVAL DATE APR 28 1965

HELIOCENTRIC CONIC DISTANCE 376.011 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 35.705 GAL -1.49 AZL 88.72 HCA 115.82 SMA 252.21 ECC .41634 INC 1.2806 V1 30.232
RP 244.57 LAP 1.15 LOP 190.75 VP 23.645 GAP 24.55 AZP 90.56 TAL 354.94 TAP 110.75 RCA 147.20 APO 357.21 V2 22.429
RC 129.306 GL 8.26 GP 1.71 ZAL 97.21 ZAP 175.14 ETS 158.06 ZAE 152.88 ETE 1.03 ZAC 90.72 ETC 256.00 CLP 175.45

PLANETOCENTRIC CONIC

C3 30.867 VHL 5.556 DLA 10.66 RAL 176.16 RAD 6568.2 VEL 12.339 PTH 2.22 VHP 11.171 DPA .25 RAP 186.91 ECC 1.5080

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 39 4	2658.23	-27.29	71.56	48.91	97.88	17 23 23	2058.2	-25.91	63.16
90.00	7 24 13	4627.73	13.38	196.32	42.81	64.81	8 41 21	4027.7	9.88	189.39
100.00	18 5 44	2378.73	-28.62	50.78	48.69	99.03	18 45 23	1778.7	-27.07	42.31
100.00	8 40 15	4382.46	14.59	177.68	42.21	63.62	9 53 17	3782.5	10.93	170.81
110.00	19 26 3	2127.43	-32.17	30.92	47.92	102.23	20 1 30	1527.4	-30.15	22.29
110.00	9 36 25	4206.53	17.78	162.57	40.44	60.32	10 46 32	3606.5	13.70	155.83

DIFFERENTIAL CORRECTIONS

TDE .5300 TRA-1.4741 TC3 .9153 BAU .3779
RDE -.5450 RRA -.2440 RC3 -.0267 FAU .05731
FDE -.0940 FRA .6860 FC3-1.6075 BSP 6204
BDE .7603 BRA 1.4942 BC3 .9157 FSP 445

MID-COURSE EXECUTION ACCURACY

SGT 1930.3 SGR 618.4 SG3 166.6
RRT .0491 RRF -.0644 RTF -.8015
SGB 2027.0 R23 -.0205 R13 -.8016
SG1 1930.6 SG2 617.6 THA 1.00

ORBIT DETERMINATION ACCURACY

ST 717.7 SR 567.3 SS 234.3
CRT -.6671 CRS -.2756 CST .8890
LSA 858.5 MSA 391.8 SSA 35.5
EL1 840.7 EL2 360.8 ALF 144.79

LAUNCH DATE DEC 7 1964 FLIGHT TIME 144.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 377.809 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 35.573 GAL -1.32 AZL 88.74 HCA 116.72 SMA 247.75 ECC .40571 INC 1.2648 V1 30.232
RP 244.34 LAP 1.13 LOP 191.66 VP 23.465 GAP 23.92 AZP 90.57 TAL 355.42 TAP 112.15 RCA 147.24 APO 348.27 V2 22.451
RC 131.411 GL 8.34 GP 1.76 ZAL 96.26 ZAP 174.62 ETS 159.55 ZAE 152.71 ETE 1.27 ZAC 90.85 ETC 255.99 CLP 174.92

PLANETOCENTRIC CONIC

C3 29.308 VHL 5.414 DLA 11.12 RAL 175.31 RAD 6568.2 VEL 12.275 PTH 2.21 VHP 10.901 DPA .14 RAP 187.27 ECC 1.4823

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 31 54	2660.40	-27.31	71.71	47.28	97.80	17 16 15	2060.4	-25.94	63.31
90.00	7 24 34	4599.57	12.56	194.66	41.12	64.41	8 41 14	3999.6	9.01	187.78
100.00	17 58 50	2380.04	-28.63	50.87	47.06	98.98	18 38 30	1780.0	-27.09	42.41
100.00	8 40 20	4355.16	13.76	176.08	40.52	63.20	9 52 55	3755.2	10.05	169.25
110.00	19 19 44	2126.90	-32.16	30.88	46.29	102.25	19 55 11	1526.9	-30.14	22.25
110.00	9 35 55	4181.07	16.92	161.10	38.74	59.85	10 45 36	3581.1	12.79	154.43

DIFFERENTIAL CORRECTIONS

TDE .5082 TRA-1.4463 TC3 .9932 BAU .3893
RDE -.5287 RRA -.2363 RC3 -.0251 FAU .05916
FDE -.0832 FRA .6823 FC3-1.7476 BSP 6411
BDE .7333 BRA 1.4654 BC3 .9936 FSP 472

MID-COURSE EXECUTION ACCURACY

SGT 1969.6 SGR 615.4 SG3 175.6
RRT .0555 RRF -.0694 RTF -.8071
SGB 2063.5 R23 -.0198 R13 -.8072
SG1 1969.9 SG2 614.4 THA 1.10

ORBIT DETERMINATION ACCURACY

ST 713.7 SR 564.7 SS 230.2
CRT -.6580 CRS -.2349 CST .8744
LSA 850.5 MSA 395.7 SSA 36.5
EL1 834.2 EL2 363.8 ALF 144.87

LAUNCH DATE DEC 7 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 379.764 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 35.446 GAL -1.16 AZL 88.75 HCA 117.63 SMA 243.65 ECC .39559 INC 1.2488 V1 30.232
RP 244.11 LAP 1.11 LOP 192.57 VP 23.295 GAP 23.30 AZP 90.58 TAL 355.92 TAP 113.55 RCA 147.27 APO 340.04 V2 22.475
RC 133.550 GL 8.41 GP 1.82 ZAL 95.28 ZAP 174.10 ETS 160.77 ZAE 152.59 ETE 1.51 ZAC 90.98 ETC 255.97 CLP 174.38

PLANETOCENTRIC CONIC

C3 27.866 VHL 5.279 DLA 11.58 RAL 174.42 RAD 6568.1 VEL 12.216 PTH 2.20 VHP 10.637 DPA .04 RAP 187.63 ECC 1.4586

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 34	2663.17	-27.33	71.91	45.65	97.71	17 8 57	2063.2	-25.98	63.50
90.00	7 24 52	4571.60	11.73	193.02	39.45	64.04	8 41 4	3971.6	8.15	186.18
100.00	17 51 46	2381.94	-28.65	51.01	45.43	98.91	18 31 28	1781.9	-27.12	42.54
100.00	8 40 21	4328.08	12.92	174.51	38.83	62.81	9 52 29	3728.1	9.18	167.72
110.00	19 13 16	2126.91	-32.16	30.88	44.67	102.25	19 48 43	1526.9	-30.14	22.25
110.00	9 35 21	4155.87	16.05	159.66	37.05	59.41	10 44 37	3555.9	11.87	153.05

DIFFERENTIAL CORRECTIONS

TDE .4865 TRA-1.4156 TC3 1.0771 BAU .4014
RDE -.5130 RRA -.2287 RC3 -.0230 FAU .06110
FDE -.0707 FRA .6770 FC3-1.8982 BSP 6577
BDE .7070 BRA 1.4340 BC3 1.0774 FSP 500

MID-COURSE EXECUTION ACCURACY

SGT 2008.0 SGR 612.3 SG3 185.0
RRT .0617 RRF -.0752 RTF -.8131
SGB 2099.2 R23 -.0200 R13 -.8133
SG1 2008.4 SG2 611.0 THA 1.19

ORBIT DETERMINATION ACCURACY

ST 708.0 SR 562.0 SS 225.4
CRT -.6490 CRS -.1861 CST .8549
LSA 840.9 MSA 399.3 SSA 37.6
EL1 826.4 EL2 366.3 ALF 144.88

LAUNCH DATE DEC 7 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 381.863 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 35.324 GAL -1.00 AZL 88.77 HCA 118.54 SMA 239.87 ECC .38595 INC 1.2325 V1 30.232
RP 243.87 LAP 1.08 LOP 193.48 VP 23.133 GAP 22.68 AZP 90.59 TAL 356.43 TAP 114.97 RCA 147.29 APO 332.45 V2 22.498
RC 135.719 GL 8.48 GP 1.87 ZAL 94.28 ZAP 173.56 ETS 161.78 ZAE 152.52 ETE 1.76 ZAC 91.12 ETC 255.96 CLP 173.84

PLANETOCENTRIC CONIC

C3 26.534 VHL 5.151 DLA 12.04 RAL 173.51 RAD 6568.1 VEL 12.162 PTH 2.18 VHP 10.381 DPA -.06 RAP 187.99 ECC 1.4367

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 3	2666.54	-27.36	72.15	44.02	97.59	17 1 30	2066.5	-26.03	63.74
90.00	7 25 7	4543.88	10.90	191.41	37.78	63.70	8 40 51	3943.9	7.28	184.60
100.00	17 44 32	2384.39	-28.68	51.19	43.81	98.82	18 24 17	1784.4	-27.16	42.71
100.00	8 40 19	4301.26	12.08	172.96	37.17	62.45	9 52 1	3701.3	8.30	166.21
110.00	19 6 39	2127.44	-32.17	30.92	43.06	102.23	19 42 7	1527.4	-30.15	22.29
110.00	9 34 42	4130.97	15.18	158.25	35.38	59.00	10 43 33	3531.0	10.96	151.69

DIFFERENTIAL CORRECTIONS
TDE .4659 TRA-1.3859 TC3 1.1642 BAU .4130
RDE -.4980 RRA -.2215 RC3 -.0205 FAU .06308
FDE -.0574 FRA .6723 FC3-2.0582 BSP 6734
BDE .6820 BRA 1.4034 BC3 1.1644 FSP 530

MID-COURSE EXECUTION ACCURACY
SGT 2047.3 SGR 608.9 SG3 194.8
RRT .0679 RRF -.0819 RTF -.8191
SGB 2135.9 R23 -.0210 R13 -.8193
SG1 2047.8 SG2 607.3 THA 1.27

ORBIT DETERMINATION ACCURACY
ST 702.5 SR 559.1 SS 221.1
CRT -.6401 CRS -.1313 CST .8309
LSA 831.2 MSA 403.1 SSA 38.7
EL1 818.7 EL2 368.6 ALF 144.90

LAUNCH DATE DEC 7 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 384.090 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 35.208 GAL -.84 AZL 88.78 HCA 119.45 SMA 236.38 ECC .37679 INC 1.2158 V1 30.232
RP 243.63 LAP 1.06 LOP 194.39 VP 22.979 GAP 22.07 AZP 90.60 TAL 356.94 TAP 116.39 RCA 147.32 APO 325.45 V2 22.522
RC 137.915 GL 8.54 GP 1.93 ZAL 93.25 ZAP 173.01 ETS 162.64 ZAE 152.49 ETE 2.02 ZAC 91.26 ETC 255.95 CLP 173.28

PLANETOCENTRIC CONIC

C3 25.302 VHL 5.030 DLA 12.51 RAL 172.58 RAD 6568.0 VEL 12.111 PTH 2.17 VHP 10.132 DPA -.16 RAP 188.34 ECC 1.4164

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 24	2670.46	-27.40	72.43	42.40	97.45	16 53 54	2070.5	-26.08	64.01
90.00	7 25 19	4516.45	10.07	189.83	36.13	63.39	8 40 35	3916.4	6.42	183.05
100.00	17 37 10	2387.39	-28.71	51.40	42.19	98.71	18 16 57	1787.4	-27.21	42.92
100.00	8 40 13	4274.75	11.24	171.44	35.51	62.12	9 51 28	3674.8	7.43	164.73
110.00	18 59 55	2128.47	-32.19	31.00	41.45	102.19	19 35 23	1528.5	-30.17	22.36
110.00	9 33 58	4106.44	14.32	156.88	33.72	58.62	10 42 24	3506.4	10.06	150.36

DIFFERENTIAL CORRECTIONS
TDE .4444 TRA-1.3546 TC3 1.2570 BAU .4252
RDE -.4836 RRA -.2144 RC3 -.0173 FAU .06523
FDE -.0423 FRA .6648 FC3-2.2319 BSP 6899
BDE .6568 BRA 1.3715 BC3 1.2571 FSP 564

MID-COURSE EXECUTION ACCURACY
SGT 2086.5 SGR 605.3 SG3 205.3
RRT .0748 RRF -.0893 RTF -.8249
SGB 2172.5 R23 -.0220 R13 -.8251
SG1 2087.0 SG2 603.4 THA 1.36

ORBIT DETERMINATION ACCURACY
ST 694.7 SR 556.0 SS 216.2
CRT -.6300 CRS -.0663 CST .8001
LSA 819.3 MSA 406.9 SSA 39.9
EL1 808.8 EL2 370.8 ALF 144.81

LAUNCH DATE DEC 7 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 386.435 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 35.098 GAL -.68 AZL 88.80 HCA 120.37 SMA 233.15 ECC .36807 INC 1.1988 V1 30.232
RP 243.38 LAP 1.03 LOP 195.30 VP 22.834 GAP 21.46 AZP 90.61 TAL 357.46 TAP 117.83 RCA 147.33 APO 318.96 V2 22.547
RC 140.134 GL 8.59 GP 1.99 ZAL 92.21 ZAP 172.45 ETS 163.37 ZAE 152.50 ETE 2.28 ZAC 91.39 ETC 255.94 CLP 172.72

PLANETOCENTRIC CONIC

C3 24.165 VHL 4.916 DLA 12.97 RAL 171.62 RAD 6568.0 VEL 12.064 PTH 2.16 VHP 9.889 DPA -.25 RAP 188.68 ECC 1.3977

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 1 36	2674.91	-27.44	72.75	40.79	97.30	16 46 11	2074.9	-26.14	64.33
90.00	7 25 26	4489.37	9.24	188.27	34.49	63.11	8 40 16	3889.4	5.56	181.52
100.00	17 29 40	2390.89	-28.74	51.66	40.58	98.58	18 9 31	1790.9	-27.26	43.17
100.00	8 40 3	4248.62	10.41	169.95	33.87	61.82	9 50 52	3648.6	6.56	163.27
110.00	18 53 3	2129.96	-32.21	31.11	39.84	102.12	19 28 33	1530.0	-30.20	22.47
110.00	9 33 9	4082.31	13.46	155.54	32.07	58.28	10 41 12	3482.3	9.17	149.07

DIFFERENTIAL CORRECTIONS
TDE .4229 TRA-1.3224 TC3 1.3510 BAU .4365
RDE -.4699 RRA -.2075 RC3 -.0135 FAU .06739
FDE -.0268 FRA .6561 FC3-2.4143 BSP 7067
BDE .6322 BRA 1.3386 BC3 1.3511 FSP 599

MID-COURSE EXECUTION ACCURACY
SGT 2123.4 SGR 601.5 SG3 216.0
RRT .0822 RRF -.0972 RTF -.8306
SGB 2206.9 R23 -.0231 R13 -.8307
SG1 2124.0 SG2 599.2 THA 1.45

ORBIT DETERMINATION ACCURACY
ST 685.3 SR 552.7 SS 211.8
CRT -.6194 CRS .0029 CST .7647
LSA 806.1 MSA 410.5 SSA 41.1
EL1 797.6 EL2 372.9 ALF 144.64

LAUNCH DATE DEC 7 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 388.886 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 34.992 GAL -.53 AZL 88.82 HCA 121.28 SMA 230.15 ECC .35976 INC 1.1814 V1 30.232
RP 243.12 LAP 1.01 LOP 196.22 VP 22.696 GAP 20.85 AZP 90.61 TAL 357.99 TAP 119.27 RCA 147.35 APO 312.95 V2 22.572
RC 142.373 GL 8.63 GP 2.06 ZAL 91.15 ZAP 171.89 ETS 163.99 ZAE 152.56 ETE 2.56 ZAC 91.53 ETC 255.92 CLP 172.15

PLANETOCENTRIC CONIC

C3 23.114 VHL 4.808 DLA 13.43 RAL 170.63 RAD 6567.9 VEL 12.021 PTH 2.15 VHP 9.652 DPA -.34 RAP 189.03 ECC 1.3804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 53 41	2679.85	-27.48	73.11	39.18	97.12	16 38 21	2079.8	-26.21	64.67
90.00	7 25 30	4462.70	8.41	186.74	32.87	62.86	8 39 52	3862.7	4.71	180.02
100.00	17 22 3	2394.85	-28.78	51.94	38.97	98.43	18 1 58	1794.9	-27.32	43.45
100.00	8 39 49	4222.92	9.58	168.49	32.24	61.55	9 50 12	3622.9	5.70	161.85
110.00	18 46 5	2131.90	-32.24	31.25	38.25	102.04	19 21 37	1531.9	-30.24	22.61
110.00	9 32 16	4058.64	12.61	154.23	30.44	57.96	10 39 54	3458.6	8.29	147.80

DIFFERENTIAL CORRECTIONS
TDE .4016 TRA-1.2913 TC3 1.4491 BAU .4478
RDE -.4568 RRA -.2008 RC3 -.0090 FAU .06970
FDE -.0096 FRA .6468 FC3-2.6107 BSP 7214
BDE .6082 BRA 1.3068 BC3 1.4491 FSP 635

MID-COURSE EXECUTION ACCURACY
SGT 2161.9 SGR 597.5 SG3 227.4
RRT .0903 RRF -.1062 RTF -.8359
SGB 2242.9 R23 -.0246 R13 -.8361
SG1 2162.6 SG2 594.8 THA 1.55

ORBIT DETERMINATION ACCURACY
ST 675.4 SR 549.4 SS 208.2
CRT -.6078 CRS .0826 CST .7204
LSA 792.2 MSA 414.6 SSA 42.4
EL1 785.7 EL2 375.0 ALF 144.44

LAUNCH DATE DEC 7 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 391.434 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 34.891 GAL -.39 AZL 88.84 HCA 122.20 SMA 227.36 ECC .35186 INC 1.1637 V1 30.232
RP 242.87 LAP .98 LOP 197.14 VP 22.565 GAP 20.24 AZP 90.62 TAL 358.52 TAP 120.72 RCA 147.36 APO 307.36 V2 22.598
RC 144.629 GL 8.66 GP 2.13 ZAL 90.07 ZAP 171.31 ETS 164.53 ZAE 152.66 ETE 2.84 ZAC 91.67 ETC 255.91 CLP 171.58

PLANETOCENTRIC CONIC

C3 22.144 VHL 4.706 DLA 13.88 RAL 169.62 RAD 6567.9 VEL 11.980 PTH 2.14 VHP 9.421 DPA -.42 RAP 189.36 ECC 1.3644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 45 40	2685.22	-27.52	73.50	37.58	96.93	16 30 25	2085.2	-26.28	65.05
90.00	7 25 29	4436.49	7.60	185.25	31.26	62.64	8 39 25	3836.5	3.87	178.55
100.00	17 14 21	2399.24	-28.83	52.26	37.38	98.27	17 54 20	1799.2	-27.38	43.76
100.00	8 39 29	4197.70	8.76	167.07	30.63	61.31	9 49 27	3597.7	4.86	160.45
110.00	18 39 2	2134.22	-32.27	31.43	36.67	101.94	19 14 37	1534.2	-30.29	22.77
110.00	9 31 17	4035.48	11.77	152.96	28.83	57.67	10 38 32	3435.5	7.42	146.57

DIFFERENTIAL CORRECTIONS
TDE .3788 TRA-1.2602 TC3 1.5520 BAU .4595
RDE -.4443 RRA -.1943 RC3 -.0038 FAU .07214
FDE .0101 FRA .6350 FC3-2.8205 BSP 7394
BDE .5838 BRA 1.2751 BC3 1.5520 FSP 678

MID-COURSE EXECUTION ACCURACY
SGT 2201.0 SGR 593.3 SG3 239.4
RRT .0999 RRF -.1163 RTF -.8411
SGB 2279.6 R23 -.0259 R13 -.8413
SG1 2201.9 SG2 590.1 THA 1.66

ORBIT DETERMINATION ACCURACY
ST 662.9 SR 545.9 SS 205.2
CRT -.5936 CRS .1753 CST .6646
LSA 775.8 MSA 419.3 SSA 43.8
EL1 771.3 EL2 377.6 ALF 144.11

LAUNCH DATE DEC 7 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 394.071 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 34.794 GAL -.24 AZL 88.85 HCA 123.12 SMA 224.76 ECC .34435 INC 1.1456 V1 30.232
RP 242.60 LAP .96 LOP 198.06 VP 22.442 GAP 19.64 AZP 90.63 TAL 359.06 TAP 122.18 RCA 147.37 APO 302.16 V2 22.624
RC 146.900 GL 8.68 GP 2.20 ZAL 88.98 ZAP 170.73 ETS 165.00 ZAE 152.80 ETE 3.14 ZAC 91.82 ETC 255.90 CLP 170.99

PLANETOCENTRIC CONIC

C3 21.249 VHL 4.610 DLA 14.33 RAL 168.60 RAD 6567.9 VEL 11.943 PTH 2.13 VHP 9.196 DPA -.49 RAP 189.70 ECC 1.3497

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 37 34	2690.99	-27.57	73.91	35.99	96.73	16 22 25	2091.0	-26.35	65.46
90.00	7 25 23	4410.80	6.79	183.79	29.67	62.44	8 38 53	3810.8	3.05	177.11
100.00	17 6 34	2404.00	-28.87	52.61	35.79	98.09	17 46 38	1804.0	-27.45	44.10
100.00	8 39 4	4173.02	7.95	165.69	29.04	61.09	9 48 37	3573.0	4.03	159.09
110.00	18 31 55	2136.91	-32.31	31.63	35.09	101.83	19 7 32	1536.9	-30.34	22.96
110.00	9 30 12	4012.88	10.94	151.73	27.24	57.41	10 37 5	3412.9	6.57	145.37

DIFFERENTIAL CORRECTIONS
TDE .3561 TRA-1.2283 TC3 1.6608 BAU .4718
RDE -.4324 RRA -.1880 RC3 .0023 FAU .07475
FDE .0305 FRA .6219 FC3-3.0456 BSP 7456
BDE .5601 BRA 1.2426 BC3 1.6608 FSP 712

MID-COURSE EXECUTION ACCURACY
SGT 2241.3 SGR 589.1 SG3 252.2
RRT .1101 RRF -.1272 RTF -.8467
SGB 2317.4 R23 -.0273 R13 -.8469
SG1 2242.3 SG2 585.2 THA 1.78

ORBIT DETERMINATION ACCURACY
ST 649.2 SR 542.3 SS 203.9
CRT -.5785 CRS .2711 CST .6017
LSA 758.5 MSA 424.0 SSA 45.2
EL1 755.8 EL2 380.0 ALF 143.68

LAUNCH DATE DEC 7 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 396.790 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 34.702 GAL -.10 AZL 88.87 HCA 124.05 SMA 222.35 ECC .33720 INC 1.1270 V1 30.232
RP 242.34 LAP .93 LOP 198.98 VP 22.325 GAP 19.04 AZP 90.63 TAL 359.60 TAP 123.64 RCA 147.37 APO 297.32 V2 22.651
RC 149.184 GL 8.69 GP 2.27 ZAL 87.87 ZAP 170.13 ETS 165.40 ZAE 152.97 ETE 3.44 ZAC 91.96 ETC 255.89 CLP 170.39

PLANETOCENTRIC CONIC

C3 20.423 VHL 4.519 DLA 14.77 RAL 167.55 RAD 6567.8 VEL 11.908 PTH 2.12 VHP 8.977 DPA -.56 RAP 190.02 ECC 1.3361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 25	2697.09	-27.62	74.35	34.41	96.51	16 14 22	2097.1	-26.43	65.89
90.00	7 25 11	4385.68	6.00	182.37	28.10	62.27	8 38 17	3785.7	2.24	175.71
100.00	16 58 43	2409.08	-28.92	52.98	34.22	97.91	17 38 52	1809.1	-27.53	44.46
100.00	8 38 34	4148.92	7.15	164.34	27.47	60.90	9 47 43	3548.9	3.22	157.76
110.00	18 24 45	2139.90	-32.35	31.85	33.53	101.71	19 0 25	1539.9	-30.40	23.18
110.00	9 29 1	3990.88	10.13	150.54	25.66	57.18	10 35 32	3390.9	5.74	144.21

DIFFERENTIAL CORRECTIONS
TDE .3324 TRA-1.2024 TC3 1.7664 BAU .4823
RDE -.4209 RRA -.1819 RC3 .0093 FAU .07745
FDE .0497 FRA .6116 FC3-3.2830 BSP 7772
BDE .5364 BRA 1.2161 BC3 1.7664 FSP 761

MID-COURSE EXECUTION ACCURACY
SGT 2283.0 SGR 584.6 SG3 265.6
RRT .1232 RRF -.1390 RTF -.8513
SGB 2356.7 R23 -.0271 R13 -.8516
SG1 2284.2 SG2 579.9 THA 1.93

ORBIT DETERMINATION ACCURACY
ST 635.3 SR 538.5 SS 204.9
CRT -.5586 CRS .3576 CST .5452
LSA 740.6 MSA 430.1 SSA 46.7
EL1 739.0 EL2 384.0 ALF 143.28

LAUNCH DATE DEC 7 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 399.584 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 34.613 GAL .04 AZL 88.89 HCA 124.97 SMA 220.09 ECC .33039 INC 1.1080 V1 30.232
RP 242.06 LAP .91 LOP 199.90 VP 22.215 GAP 18.45 AZP 90.64 TAL .14 TAP 125.11 RCA 147.37 APO 292.80 V2 22.678
RC 151.478 GL 8.68 GP 2.35 ZAL 86.76 ZAP 169.52 ETS 165.76 ZAE 153.19 ETE 3.77 ZAC 92.11 ETC 255.88 CLP 169.79

PLANETOCENTRIC CONIC

C3 19.661 VHL 4.434 DLA 15.21 RAL 166.49 RAD 6567.8 VEL 11.876 PTH 2.11 VHP 8.763 DPA -.62 RAP 190.35 ECC 1.3236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 12	2703.50	-27.67	74.81	32.84	96.29	16 6 16	2103.5	-26.51	66.34
90.00	7 24 54	4361.17	5.22	180.99	26.54	62.13	8 37 35	3761.2	1.45	174.34
100.00	16 50 50	2414.46	-28.97	53.37	32.66	97.70	17 31 4	1814.5	-27.60	44.84
100.00	8 37 58	4125.43	6.37	163.03	25.91	60.73	9 46 43	3525.4	2.42	156.47
110.00	18 17 32	2143.17	-32.39	32.09	31.98	101.57	18 53 15	1543.2	-30.46	23.41
110.00	9 27 45	3969.49	9.34	149.39	24.10	56.97	10 33 54	3369.5	4.93	143.08

DIFFERENTIAL CORRECTIONS
TDE .3421 TRA-1.0725 TC3 1.9566 BAU .5143
RDE -.4098 RRA -.1745 RC3 .0182 FAU .08141
FDE .0532 FRA .5314 FC3-3.5847 BSP 7234
BDE .5338 BRA 1.0866 BC3 1.9566 FSP 786

MID-COURSE EXECUTION ACCURACY
SGT 2295.3 SGR 579.0 SG3 281.5
RRT .0975 RRF -.1346 RTF -.8701
SGB 2367.2 R23 -.0443 R13 -.8704
SG1 2296.0 SG2 576.1 THA 1.50

ORBIT DETERMINATION ACCURACY
ST 619.5 SR 534.1 SS 184.5
CRT -.6161 CRS .3948 CST .4409
LSA 738.1 MSA 394.9 SSA 49.4
EL1 737.7 EL2 353.3 ALF 141.79

LAUNCH DATE DEC 7 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 402.447 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 34.529 GAL .17 AZL 88.91 HCA 125.90 SMA 217.98 ECC .32392 INC 1.0884 V1 30.232
RP 241.79 LAP .88 LOP 200.83 VP 22.112 GAP 17.87 AZP 90.64 TAL .69 TAP 126.59 RCA 147.37 APO 288.58 V2 22.706
RC 153.781 GL 8.66 GP 2.43 ZAL 85.64 ZAP 168.90 ETS 166.06 ZAE 153.44 ETE 4.11 ZAC 92.25 ETC 255.88 CLP 169.17

PLANETOCENTRIC CONIC

C3 18.959 VHL 4.354 DLA 15.63 RAL 165.41 RAD 6567.8 VEL 11.847 PTH 2.10 VHP 8.554 DPA -.67 RAP 190.66 ECC 1.3120

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 13 1	2710.07	-27.71	75.29	31.29	96.05	15 58 11	2110.1	-26.59	66.80
90.00	7 24 31	4337.41	4.46	179.66	25.01	62.01	8 36 48	3737.4	.68	173.02
100.00	16 42 58	2420.00	-29.02	53.78	31.11	97.50	17 23 18	1820.0	-27.68	45.23
100.00	8 37 15	4102.71	5.61	161.77	24.38	60.59	9 45 38	3502.7	1.65	155.22
110.00	18 10 20	2146.61	-32.44	32.35	30.45	101.42	18 46 7	1546.6	-30.53	23.66
110.00	9 26 22	3948.86	8.57	148.29	22.56	56.78	10 32 11	3348.9	4.14	142.00

DIFFERENTIAL CORRECTIONS
TDE .3099 TRA-1.1102 TC3 2.0166 BAU .5112
RDE -.3996 RRA -.1696 RC3 .0263 FAU .08351
FDE .0846 FRA .5599 FC3-3.8134 BSP 7726
BDE .5057 BRA 1.1231 BC3 2.0168 FSP 846

MID-COURSE EXECUTION ACCURACY
SGT 2356.2 SGR 575.1 SG3 294.6
RRT .1309 RRF -.1591 RTF -.8647
SGB 2425.3 R23 -.0392 R13 -.8651
SG1 2357.4 SG2 569.9 THA 1.94

ORBIT DETERMINATION ACCURACY
ST 613.4 SR 530.5 SS 202.4
CRT -.5618 CRS .5132 CST .3830
LSA 719.5 MSA 422.3 SSA 50.1
EL1 719.5 EL2 374.1 ALF 142.27

LAUNCH DATE DEC 7 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 405.373 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 34.448 GAL .30 AZL 88.93 HCA 126.82 SMA 216.00 ECC .31776 INC 1.0685 V1 30.232
RP 241.51 LAP .86 LOP 201.76 VP 22.015 GAP 17.28 AZP 90.64 TAL 1.24 TAP 128.07 RCA 147.36 APO 284.64 V2 22.734
RC 156.092 GL 8.63 GP 2.52 ZAL 84.51 ZAP 168.27 ETS 166.33 ZAE 153.73 ETE 4.48 ZAC 92.40 ETC 255.87 CLP 168.54

PLANETOCENTRIC CONIC

C3 18.312 VHL 4.279 DLA 16.04 RAL 164.32 RAD 6567.7 VEL 11.819 PTH 2.09 VHP 8.351 DPA -.72 RAP 190.97 ECC 1.3014

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 4 50	2716.78	-27.76	75.77	29.75	95.81	15 50 7	2116.8	-26.67	67.28
90.00	7 24 0	4314.39	3.72	178.37	23.50	61.91	8 35 55	3714.4	-.06	171.73
100.00	16 35 6	2425.68	-29.07	54.19	29.58	97.28	17 15 32	1825.7	-27.76	45.63
100.00	8 36 26	4080.72	4.88	160.55	22.86	60.47	9 44 26	3480.7	.91	154.02
110.00	18 3 9	2150.20	-32.49	32.62	28.93	101.27	18 38 59	1550.2	-30.59	23.92
110.00	9 24 52	3928.97	7.83	147.23	21.04	56.62	10 30 21	3329.0	3.39	140.96

DIFFERENTIAL CORRECTIONS
TDE .2814 TRA-1.0886 TC3 2.1123 BAU .5172
RDE -.3899 RRA -.1639 RC3 .0365 FAU .08659
FDE .1116 FRA .5444 FC3-4.0939 BSP 7909
BDE .4808 BRA 1.1009 BC3 2.1126 FSP 895

MID-COURSE EXECUTION ACCURACY
SGT 2389.5 SGR 570.6 SG3 310.0
RRT .1512 RRF -.1761 RTF -.8664
SGB 2456.7 R23 -.0379 R13 -.8667
SG1 2391.2 SG2 563.7 THA 2.19

ORBIT DETERMINATION ACCURACY
ST 593.2 SR 526.5 SS 210.5
CRT -.5298 CRS .6097 CST .3058
LSA 696.1 MSA 431.5 SSA 52.0
EL1 695.8 EL2 380.7 ALF 141.36

LAUNCH DATE DEC 7 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 408.358 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 34.371 GAL .43 AZL 88.95 HCA 127.75 SMA 214.15 ECC .31191 INC 1.0480 V1 30.232
RP 241.22 LAP .83 LOP 202.69 VP 21.923 GAP 16.71 AZP 90.64 TAL 1.79 TAP 129.55 RCA 147.36 APO 280.95 V2 22.762
RC 158.408 GL 8.59 GP 2.61 ZAL 83.39 ZAP 167.63 ETS 166.57 ZAE 154.06 ETE 4.86 ZAC 92.56 ETC 255.86 CLP 167.90

PLANETOCENTRIC CONIC

C3 17.716 VHL 4.209 DLA 16.43 RAL 163.22 RAD 6567.7 VEL 11.794 PTH 2.09 VHP 8.153 DPA -.76 RAP 191.27 ECC 1.2916

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 41	2723.57	-27.81	76.27	28.23	95.57	15 42 5	2123.6	-26.74	67.76
90.00	7 23 23	4292.18	3.01	177.12	22.01	61.83	8 34 55	3692.2	-.78	170.49
100.00	16 27 16	2431.43	-29.12	54.61	28.06	97.07	17 7 48	1831.4	-27.84	46.04
100.00	8 35 29	4059.54	4.17	159.38	21.37	60.37	9 43 8	3459.5	.19	152.85
110.00	17 55 59	2153.89	-32.54	32.90	27.43	101.11	18 31 53	1553.9	-30.66	24.18
110.00	9 23 16	3909.85	7.11	146.21	19.55	56.48	10 28 26	3309.9	2.66	139.96

DIFFERENTIAL CORRECTIONS
TDE .2600 TRA-1.0535 TC3 2.2182 BAU .5255
RDE -.3805 RRA -.1581 RC3 .0477 FAU .08980
FDE .1353 FRA .5162 FC3-4.3883 BSP 8083
BDE .4608 BRA 1.0652 BC3 2.2187 FSP 949

MID-COURSE EXECUTION ACCURACY
SGT 2418.1 SGR 565.8 SG3 325.8
RRT .1659 RRF -.1913 RTF -.8695
SGB 2483.4 R23 -.0394 R13 -.8699
SG1 2420.0 SG2 557.5 THA 2.35

ORBIT DETERMINATION ACCURACY
ST 574.1 SR 522.3 SS 216.5
CRT -.5105 CRS .6871 CST .2243
LSA 677.4 MSA 432.9 SSA 54.1
EL1 675.9 EL2 381.4 ALF 140.26

LAUNCH DATE DEC 7 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 411.398 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 34.297 GAL .55 AZL 88.97 HCA 128.69 SMA 212.41 ECC .30634 INC 1.0268 V1 30.232
RP 240.93 LAP .80 LOP 203.62 VP 21.838 GAP 16.13 AZP 90.64 TAL 2.34 TAP 131.03 RCA 147.34 APO 277.49 V2 22.791
RC 160.729 GL 8.53 GP 2.70 ZAL 82.26 ZAP 166.97 ETS 166.77 ZAE 154.42 ETE 5.28 ZAC 92.71 ETC 255.85 CLP 167.25

PLANETOCENTRIC CONIC

C3 17.168 VHL 4.143 DLA 16.81 RAL 162.11 RAD 6567.7 VEL 11.771 PTH 2.08 VHP 7.960 DPA -.79 RAP 191.57 ECC 1.2825

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 48 36	2730.34	-27.85	76.76	26.72	95.33	15 34 7	2130.3	-26.82	68.24
90.00	7 22 38	4270.83	2.32	175.93	20.53	61.77	8 33 48	3670.8	-1.47	169.30
100.00	16 19 31	2437.18	-29.17	55.03	26.56	96.85	17 0 8	1837.2	-27.91	46.45
100.00	8 34 24	4039.22	3.48	158.26	19.89	60.29	9 41 43	3439.2	-.50	151.74
110.00	17 48 52	2157.61	-32.58	33.18	25.94	100.95	18 24 50	1557.6	-30.73	24.45
110.00	9 21 32	3891.57	6.43	145.24	18.07	56.35	10 26 24	3291.6	1.96	139.00

DIFFERENTIAL CORRECTIONS
TDE .2393 TRA-1.0210 TC3 2.3325 BAU .5355
RDE -.3716 RRA -.1524 RC3 .0604 FAU .09335
FDE .1607 FRA .4899 FC3-4.7075 BSP 8245
BDE .4419 BRA 1.0323 BC3 2.3333 FSP 1005

MID-COURSE EXECUTION ACCURACY
SGT 2453.8 SGR 561.2 SG3 343.1
RRT .1827 RRF -.2088 RTF -.8734
SGB 2517.1 R23 -.0414 R13 -.8739
SG1 2456.0 SG2 551.3 THA 2.52

ORBIT DETERMINATION ACCURACY
ST 555.5 SR 518.0 SS 226.1
CRT -.4889 CRS .7535 CST .1490
LSA 660.2 MSA 434.8 SSA 56.1
EL1 656.2 EL2 382.6 ALF 139.07

LAUNCH DATE DEC 7 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 414.489 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	34.227	GAL	.67	AZL	88.99	HCA	129.62	SMA	210.79	ECC	.30105	INC	1.0051
RP	240.64	LAP	.77	LOP	204.56	VP	21.758	GAP	15.57	AZP	90.64	TAL	2.89	TAP	132.51	RCA	147.33	APO	274.24
RC	163.052	GL	8.46	GP	2.80	ZAL	81.14	ZAP	166.30	ETS	166.95	ZAE	154.81	ETE	5.72	ZAC	92.87	ETC	255.85

V1	30.232	V2	22.821	CLP	166.59														

PLANETOCENTRIC CONIC

C3	16.663	VHL	4.082	DLA	17.17	RAL	161.00	RAD	6567.7	VEL	11.749	PTH	2.07	VHP	7.771	DPA	-.81	RAP	191.86
ECC	1.2742																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 37	2737.03	-27.89	77.24	25.23	95.09	15 26 14	2137.0	-26.90	68.72
90.00	7 21 44	4250.41	1.67	174.79	19.08	61.73	8 32 34	3650.4	-2.13	168.16
100.00	16 11 50	2442.86	-29.21	55.45	25.08	96.64	16 52 33	1842.9	-27.99	46.86
100.00	8 33 11	4019.82	2.83	157.20	18.44	60.23	9 40 11	3419.8	-1.16	150.67
110.00	17 41 50	2161.30	-32.63	33.45	24.47	100.80	18 17 51	1561.3	-30.80	24.71
110.00	9 19 41	3874.15	5.77	144.32	16.61	56.25	10 24 15	3274.1	1.29	138.09

DIFFERENTIAL CORRECTIONS

TDE	.2204	TRA	-.9870	TC3	2.4418	BAU	.5442
RDE	-.3631	RRA	-.1468	RC3	.0743	FAU	.09695
FDE	.1858	FRA	.4585	FC3	-5.0372	BSP	8404
BDE	.4247	BRA	.9978	BC3	2.4429	FSP	1067

MID-COURSE EXECUTION ACCURACY

SGT	2484.4	SGR	556.7	SG3	360.8		
RRT	.1995	RRF	-.2270	RTF	-.8767		
SGB	2546.0	R23	-.0441	R13	-.8772		
SG1	2487.0	SG2	544.9	THA	2.69		

ORBIT DETERMINATION ACCURACY

ST	537.1	SR	513.7	SS	236.5		
CRT	-.4690	CRS	.8080	CST	.0771		
LSA	645.3	MSA	434.1	SSA	58.4		
EL1	637.3	EL2	382.3	ALF	137.72		

LAUNCH DATE DEC 7 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 417.628 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	34.159	GAL	.79	AZL	89.02	HCA	130.56	SMA	209.25	ECC	.29602	INC	.9827
RP	240.34	LAP	.75	LOP	205.49	VP	21.683	GAP	15.01	AZP	90.64	TAL	3.44	TAP	134.00	RCA	147.31	APO	271.20
RC	165.375	GL	8.37	GP	2.91	ZAL	80.02	ZAP	165.62	ETS	167.10	ZAE	155.24	ETE	6.20	ZAC	93.03	ETC	255.84

V1	30.232	V2	22.851	CLP	165.91														

PLANETOCENTRIC CONIC

C3	16.200	VHL	4.025	DLA	17.51	RAL	159.88	RAD	6567.6	VEL	11.730	PTH	2.07	VHP	7.587	DPA	-.82	RAP	192.14
ECC	1.2666																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 32 46	2743.55	-27.93	77.72	23.76	94.86	15 18 29	2143.6	-26.97	69.18
90.00	7 20 41	4230.99	1.04	173.71	17.65	61.70	8 31 11	3631.0	-2.75	167.08
100.00	16 4 17	2448.39	-29.26	55.85	23.61	96.43	16 45 6	1848.4	-28.06	47.26
100.00	8 31 50	4001.38	2.20	156.18	17.01	60.18	9 38 31	3401.4	-1.78	149.66
110.00	17 34 54	2164.89	-32.68	33.73	23.02	100.64	18 10 59	1564.9	-30.87	24.97
110.00	9 17 43	3857.64	5.14	143.45	15.18	56.16	10 22 0	3257.6	.66	137.23

DIFFERENTIAL CORRECTIONS

TDE	.2024	TRA	-.9538	TC3	2.5540	BAU	.5535
RDE	-.3550	RRA	-.1413	RC3	.0897	FAU	.10082
FDE	.2119	FRA	.4265	FC3	-5.3879	BSP	8545
BDE	.4086	BRA	.9642	BC3	2.5556	FSP	1131

MID-COURSE EXECUTION ACCURACY

SGT	2517.4	SGR	552.3	SG3	379.6		
RRT	.2181	RRF	-.2472	RTF	-.8802		
SGB	2577.2	R23	-.0472	R13	-.8808		
SG1	2520.4	SG2	538.4	THA	2.87		

ORBIT DETERMINATION ACCURACY

ST	518.9	SR	509.3	SS	249.1		
CRT	-.4481	CRS	.8516	CST	.0137		
LSA	632.5	MSA	432.3	SSA	60.6		
EL1	618.7	EL2	381.8	ALF	136.20		

LAUNCH DATE DEC 7 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 420.811 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	34.095	GAL	.90	AZL	89.04	HCA	131.50	SMA	207.81	ECC	.29123	INC	.9596
RP	240.04	LAP	.72	LOP	206.43	VP	21.614	GAP	14.45	AZP	90.64	TAL	3.99	TAP	135.49	RCA	147.29	APO	268.34
RC	167.697	GL	8.27	GP	3.02	ZAL	78.90	ZAP	164.92	ETS	167.24	ZAE	155.70	ETE	6.72	ZAC	93.19	ETC	255.83

V1	30.232	V2	22.881	CLP	165.22														

PLANETOCENTRIC CONIC

C3	15.773	VHL	3.972	DLA	17.83	RAL	158.76	RAD	6567.6	VEL	11.711	PTH	2.06	VHP	7.407	DPA	-.82	RAP	192.41
ECC	1.2596																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 25 2	2749.87	-27.97	78.17	22.31	94.63	15 10 52	2149.9	-27.03	69.63
90.00	7 19 28	4212.55	.44	172.68	16.24	61.69	8 29 40	3612.5	-3.34	166.05
100.00	15 56 51	2453.75	-29.30	56.25	22.17	96.22	16 37 45	1853.7	-28.13	47.64
100.00	8 30 19	3983.90	1.61	155.22	15.60	60.15	9 36 43	3383.9	-2.37	148.70
110.00	17 28 4	2168.38	-32.72	33.99	21.58	100.49	18 4 12	1568.4	-30.93	25.23
110.00	9 15 36	3842.04	4.55	142.63	13.76	56.08	10 19 38	3242.0	.07	136.42

DIFFERENTIAL CORRECTIONS

TDE	.1993	TRA	-.9035	TC3	2.6991	BAU	.5696
RDE	-.3474	RRA	-.1358	RC3	.1062	FAU	.10477
FDE	.2402	FRA	.3893	FC3	-5.7502	BSP	8239
BDE	.4005	BRA	.9137	BC3	2.7012	FSP	1193

MID-COURSE EXECUTION ACCURACY

SGT	2560.1	SGR	548.4	SG3	399.0		
RRT	.2270	RRF	-.2687	RTF	-.8881		
SGB	2618.2	R23	-.0595	R13	-.8888		
SG1	2563.2	SG2	533.4	THA	2.91		

ORBIT DETERMINATION ACCURACY

ST	505.5	SR	505.0	SS	264.0		
CRT	-.4646	CRS	.8878	CST	-.0870		
LSA	633.3	MSA	418.7	SSA	62.3		
EL1	611.5	EL2	369.7	ALF	135.06		

LAUNCH DATE DEC 7 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 424.034 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	34.033	GAL	1.01	AZL	89.06	HCA	132.44	SMA	206.46	ECC	.28669	INC	.9359
RP	239.73	LAP	.69	LOP	207.38	VP	21.550	GAP	13.90	AZP	90.63	TAL	4.53	TAP	136.97	RCA	147.27	APO	265.65
RC	170.016	GL	8.15	GP	3.14	ZAL	77.81	ZAP	164.21	ETS	167.35	ZAE	156.19	ETE	7.28	ZAC	93.36	ETC	255.83

V1	30.232	V2	22.912	CLP	164.52														

PLANETOCENTRIC CONIC

C3	15.382	VHL	3.922	DLA	18.13	RAL	157.65	RAD	6567.6	VEL	11.695	PTH	2.06	VHP	7.232	DPA	-.81	RAP	192.67
ECC	1.2531																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 17 32	2755.75	-28.00	78.60	20.88	94.42	15 3 28	2155.7	-27.09	70.05
90.00	7 18 4	4195.32	-.11	171.72	14.86	61.68	8 28 0	3595.3	-3.90	165.08
100.00	15 49 39	2458.71	-29.33	56.61	20.74	96.04	16 30 37	1858.7	-28.19	48.00
100.00	8 28 39	3967.59	1.06	154.33	14.21	60.12	9 34 46	3367.6	-2.93	147.81
110.00	17 21 25	2171.56	-32.76	34.23	20.17	100.35	17 57 37	1571.6	-30.99	25.46
110.00	9 13 22	3827.50	4.00	141.87	12.38	56.02	10 17 9	3227.5	-.49	135.66

DIFFERENTIAL CORRECTIONS

TDE	.1694	TRA	-.8851	TC3	2.7719	BAU	.5706
RDE	-.3400	RRA	-.1303	RC3	.1251	FAU	.10904
FDE	.2669	FRA	.3516	FC3	-6.1371	BSP	8733
BDE	.3798	BRA	.8946	BC3	2.7747	FSP	1266

MID-COURSE EXECUTION ACCURACY

SGT	2576.8	SGR	544.4	SG3	419.9		
RRT	.2587	RRF	-.2927	RTF	-.8868		
SGB	2633.7	R23	-.0551	R13	-.8875		
SG1	2580.8	SG2	525.1	THA	3.26		

ORBIT DETERMINATION ACCURACY

ST	481.8	SR	500.3	SS	278.9		
CRT	-.4074	CRS	.9129	CST	-.0972		
LSA	615.0	MSA	421.5	SSA	65.4		
EL1	582.9	EL2	377.6	ALF	132.36		

LAUNCH DATE DEC 7 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 427.296 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.975 GAL 1.11 AZL 89.09 HCA 133.39 SMA 205.19 ECC .28238 INC .9113 V1 30.232
RP 239.42 LAP .66 LOP 208.32 VP 21.490 GAP 13.36 AZP 90.63 TAL 5.07 TAP 138.45 RCA 147.25 APO 263.13 V2 22.943
RC 172.331 GL 8.01 GP 3.26 ZAL 76.72 ZAP 163.48 ETS 167.44 ZAE 156.72 ETE 7.89 ZAC 93.53 ETC 255.82 CLP 163.80

PLANETOCENTRIC CONIC

C3 15.022 VHL 3.876 DLA 18.41 RAL 156.54 RAD 6567.6 VEL 11.679 PTH 2.05 VHP 7.061 DPA -.79 RAP 192.93 ECC 1.2472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 10 14	2761.24	-28.03	79.00	19.48	94.22	14 56 15	2161.2	-27.15	70.44
90.00	7 16 30	4179.21	-.63	170.82	13.50	61.69	8 26 9	3579.2	-4.41	164.18
100.00	15 42 37	2463.33	-29.36	56.95	19.34	95.86	16 23 40	1863.3	-28.24	48.33
100.00	8 26 48	3952.35	.54	153.49	12.85	60.11	9 32 40	3352.4	-3.44	146.97
110.00	17 14 56	2174.51	-32.80	34.45	18.78	100.23	17 51 10	1574.5	-31.04	25.67
110.00	9 10 59	3813.94	3.48	141.16	11.02	55.97	10 14 33	3213.9	-1.01	134.96

DIFFERENTIAL CORRECTIONS
TDE .1505 TRA -.8532 TC3 2.8713 BAU .5774
RDE -.3330 RRA -.1247 RC3 .1455 FAU .11350
FDE .2965 FRA .3088 FC3-6.5411 BSP 8874
BDE .3654 BRA .8623 BC3 2.8749 FSP 1337

MID-COURSE EXECUTION ACCURACY
SGT 2602.0 SGR 541.1 SG3 441.7
RRT .2840 RRF -.3185 RTF -.8892
SGB 2657.6 R23 -.0580 R13 -.8900
SG1 2606.7 SG2 517.9 THA 3.52

ORBIT DETERMINATION ACCURACY
ST 461.5 SR 495.7 SS 296.5
CRT -.3761 CRS .9329 CST -.1329
LSA 608.3 MSA 414.6 SSA 68.0
EL1 563.0 EL2 376.5 ALF 129.61

LAUNCH DATE DEC 7 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 430.595 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.919 GAL 1.22 AZL 89.11 HCA 134.33 SMA 203.98 ECC .27828 INC .8858 V1 30.232
RP 239.11 LAP .63 LOP 209.27 VP 21.435 GAP 12.82 AZP 90.62 TAL 5.60 TAP 139.93 RCA 147.22 APO 260.75 V2 22.975
RC 174.639 GL 7.86 GP 3.39 ZAL 75.65 ZAP 162.73 ETS 167.52 ZAE 157.27 ETE 8.56 ZAC 93.70 ETC 255.82 CLP 163.06

PLANETOCENTRIC CONIC

C3 14.692 VHL 3.833 DLA 18.66 RAL 155.43 RAD 6567.6 VEL 11.665 PTH 2.05 VHP 6.895 DPA -.76 RAP 193.18 ECC 1.2418

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 3 10	2766.24	-28.05	79.36	18.09	94.04	14 49 16	2166.2	-27.20	70.80
90.00	7 14 44	4164.30	-1.11	169.99	12.17	61.70	8 24 8	3564.3	-4.89	163.34
100.00	15 35 49	2467.50	-29.39	57.26	17.96	95.70	16 16 56	1867.5	-28.29	48.63
100.00	8 24 47	3938.27	.06	152.72	11.51	60.11	9 30 25	3338.3	-3.92	146.19
110.00	17 8 38	2177.11	-32.83	34.65	17.40	100.11	17 44 55	1577.1	-31.08	25.86
110.00	9 8 27	3801.42	3.00	140.51	9.68	55.93	10 11 49	3201.4	-1.49	134.30

DIFFERENTIAL CORRECTIONS
TDE .1347 TRA -.8209 TC3 2.9707 BAU .5844
RDE -.3263 RRA -.1192 RC3 .1676 FAU .11816
FDE .3251 FRA .2636 FC3-6.9626 BSP 8982
BDE .3530 BRA .8295 BC3 2.9755 FSP 1414

MID-COURSE EXECUTION ACCURACY
SGT 2627.6 SGR 538.3 SG3 464.5
RRT .3096 RRF -.3459 RTF -.8918
SGB 2682.2 R23 -.0620 R13 -.8926
SG1 2633.1 SG2 510.8 THA 3.77

ORBIT DETERMINATION ACCURACY
ST 442.9 SR 491.0 SS 313.8
CRT -.3497 CRS .9462 CST -.1650
LSA 605.6 MSA 405.0 SSA 70.6
EL1 545.8 EL2 373.3 ALF 126.78

LAUNCH DATE DEC 7 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 433.928 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.865 GAL 1.32 AZL 89.14 HCA 135.28 SMA 202.85 ECC .27439 INC .8594 V1 30.232
RP 238.79 LAP .60 LOP 210.22 VP 21.385 GAP 12.29 AZP 90.61 TAL 6.12 TAP 141.41 RCA 147.19 APO 258.51 V2 23.007
RC 176.939 GL 7.69 GP 3.53 ZAL 74.59 ZAP 161.97 ETS 167.58 ZAE 157.86 ETE 9.29 ZAC 93.88 ETC 255.81 CLP 162.31

PLANETOCENTRIC CONIC

C3 14.390 VHL 3.793 DLA 18.88 RAL 154.33 RAD 6567.6 VEL 11.652 PTH 2.05 VHP 6.732 DPA -.71 RAP 193.41 ECC 1.2368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 56 22	2770.66	-28.07	79.69	16.73	93.88	14 42 33	2170.7	-27.24	71.12
90.00	7 12 45	4150.64	-1.55	169.23	10.85	61.72	8 21 56	3550.6	-5.32	162.57
100.00	15 29 15	2471.16	-29.42	57.53	16.60	95.56	16 10 26	1871.2	-28.34	48.89
100.00	8 22 34	3925.37	-.37	152.01	10.20	60.11	9 27 59	3325.4	-4.35	145.48
110.00	17 2 32	2179.33	-32.85	34.82	16.05	100.02	17 38 51	1579.3	-31.12	26.02
110.00	9 5 47	3789.96	2.57	139.91	8.36	55.90	10 8 57	3190.0	-1.93	133.70

DIFFERENTIAL CORRECTIONS
TDE .1230 TRA -.7839 TC3 3.0758 BAU .5928
RDE -.3199 RRA -.1136 RC3 .1916 FAU .12306
FDE .3542 FRA .2130 FC3-7.4036 BSP 8997
BDE .3428 BRA .7921 BC3 3.0817 FSP 1494

MID-COURSE EXECUTION ACCURACY
SGT 2654.4 SGR 536.2 SG3 488.4
RRT .3347 RRF -.3750 RTF -.8953
SGB 2708.0 R23 -.0681 R13 -.8963
SG1 2660.7 SG2 504.1 THA 4.01

ORBIT DETERMINATION ACCURACY
ST 424.7 SR 486.3 SS 331.6
CRT -.3344 CRS .9551 CST -.2037
LSA 607.0 MSA 391.2 SSA 73.3
EL1 532.0 EL2 365.9 ALF 123.95

LAUNCH DATE DEC 7 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 437.292 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.814 GAL 1.41 AZL 89.17 HCA 136.23 SMA 201.78 ECC .27069 INC .8322 V1 30.232
RP 238.47 LAP .58 LOP 211.17 VP 21.339 GAP 11.77 AZP 90.60 TAL 6.64 TAP 142.88 RCA 147.16 APO 256.40 V2 23.040
RC 179.231 GL 7.51 GP 3.68 ZAL 73.55 ZAP 161.19 ETS 167.63 ZAE 158.47 ETE 10.10 ZAC 94.07 ETC 255.81 CLP 161.54

PLANETOCENTRIC CONIC

C3 14.112 VHL 3.757 DLA 19.08 RAL 153.24 RAD 6567.6 VEL 11.640 PTH 2.04 VHP 6.574 DPA -.65 RAP 193.64 ECC 1.2323

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 49 53	2774.38	-28.09	79.96	15.39	93.74	14 36 8	2174.4	-27.27	71.39
90.00	7 10 34	4138.32	-1.95	168.54	9.56	61.74	8 19 32	3538.3	-5.71	161.88
100.00	15 22 59	2474.19	-29.44	57.75	15.26	95.45	16 4 13	1874.2	-28.37	49.11
100.00	8 20 9	3913.74	-.77	151.37	8.91	60.12	9 25 23	3313.7	-4.74	144.84
110.00	16 56 40	2181.08	-32.87	34.95	14.72	99.94	17 33 1	1581.1	-31.15	26.15
110.00	9 2 57	3779.62	2.17	139.37	7.07	55.88	10 5 57	3179.6	-2.32	133.16

DIFFERENTIAL CORRECTIONS
TDE .1071 TRA -.7557 TC3 3.1587 BAU .5974
RDE -.3138 RRA -.1079 RC3 .2178 FAU .12818
FDE .3832 FRA .1608 FC3-7.8636 BSP 9181
BDE .3316 BRA .7634 BC3 3.1662 FSP 1581

MID-COURSE EXECUTION ACCURACY
SGT 2673.3 SGR 535.0 SG3 513.4
RRT .3654 RRF -.4064 RTF -.8965
SGB 2726.3 R23 -.0720 R13 -.8976
SG1 2680.6 SG2 496.6 THA 4.33

ORBIT DETERMINATION ACCURACY
ST 407.0 SR 481.5 SS 349.7
CRT -.2997 CRS .9603 CST -.2170
LSA 607.5 MSA 380.7 SSA 76.0
EL1 515.9 EL2 362.4 ALF 120.30

LAUNCH DATE DEC 7 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 440.688 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.765	GAL	1.51	AZL	89.20	HCA	137.19	SMA	200.78	ECC	.26719	INC	.8037	V1	30.232
RP	238.14	LAP	.55	LOP	212.12	VP	21.297	GAP	11.25	AZP	90.59	TAL	7.16	TAP	144.34	RCA	147.13	APO	254.42	V2	23.073
RC	181.513	GL	7.31	GP	3.83	ZAL	72.53	ZAP	160.39	ETS	167.66	ZAE	159.11	ETE	11.00	ZAC	94.25	ETC	255.80	CLP	160.75

PLANETOCENTRIC CONIC

C3	13.858	VHL	3.723	DLA	19.26	RAL	152.17	RAD	6567.5	VEL	11.629	PTH	2.04	VHP	6.419	DPA	-.58	RAP	193.86	ECC	1.2281

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 43 43	2777.36	-28.10	80.17	14.07	93.63	14 30 1	2177.4	-27.30	71.60
90.00	7 8 8	4127.34	-2.31	167.93	8.30	61.77	8 16 56	3527.3	-6.06	161.26
100.00	15 17 0	2476.57	-29.45	57.93	13.95	95.35	15 58 17	1876.6	-28.40	49.28
100.00	8 17 33	3903.37	-1.12	150.81	7.64	60.13	9 22 36	3303.4	-5.09	144.27
110.00	16 51 3	2182.32	-32.89	35.04	13.41	99.89	17 27 25	1582.3	-31.18	26.24
110.00	8 59 59	3770.38	1.82	138.89	5.80	55.86	10 2 49	3170.4	-2.67	132.68

DIFFERENTIAL CORRECTIONS

TDE	.0939	TRA	-.7229	TC3	3.2472	BAU	.6033
RDE	-.3079	RRA	-.1021	RC3	.2463	FAU	.13361
FDE	.4128	FRA	.1025	FC3	-8.3472	BSP	9258
BDE	.3220	BRA	.7301	BC3	3.2565	FSP	1670

MID-COURSE EXECUTION ACCURACY

SGT	2693.5	SGR	534.8	SG3	539.9		
RRT	.3964	RRF	-.4394	RTF	-.8988		
SGB	2746.1	R23	-.0773	R13	-.9001		
SG1	2702.1	SG2	489.4	THA	4.65		

ORBIT DETERMINATION ACCURACY

ST	388.8	SR	476.6	SS	368.3
CRT	-.2724	CRS	.9626	CST	-.2348
LSA	610.7	MSA	367.1	SSA	78.9
EL1	502.4	EL2	355.0	ALF	116.52

LAUNCH DATE DEC 7 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 444.112 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.718	GAL	1.60	AZL	89.23	HCA	138.15	SMA	199.82	ECC	.26386	INC	.7742	V1	30.232
RP	237.81	LAP	.52	LOP	213.08	VP	21.260	GAP	10.74	AZP	90.58	TAL	7.66	TAP	145.81	RCA	147.10	APO	252.55	V2	23.106
RC	183.786	GL	7.09	GP	4.00	ZAL	71.54	ZAP	159.56	ETS	167.69	ZAE	159.77	ETE	12.00	ZAC	94.45	ETC	255.80	CLP	159.94

PLANETOCENTRIC CONIC

C3	13.625	VHL	3.691	DLA	19.40	RAL	151.10	RAD	6567.5	VEL	11.619	PTH	2.04	VHP	6.268	DPA	-.49	RAP	194.06	ECC	1.2242

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 37 55	2779.52	-28.11	80.33	12.78	93.56	14 24 14	2179.5	-27.32	71.75
90.00	7 5 28	4117.77	-2.61	167.39	7.05	61.79	8 14 6	3517.8	-6.37	160.72
100.00	15 11 21	2478.21	-29.46	58.05	12.66	95.29	15 52 39	1878.2	-28.42	49.40
100.00	8 14 43	3894.32	-1.43	150.31	6.40	60.14	9 19 37	3294.3	-5.39	143.76
110.00	16 45 42	2183.00	-32.90	35.09	12.13	99.86	17 22 5	1583.0	-31.19	26.29
110.00	8 56 51	3762.29	1.51	138.46	4.56	55.85	9 59 33	3162.3	-2.98	132.26

DIFFERENTIAL CORRECTIONS

TDE	.0837	TRA	-.6907	TC3	3.3314	BAU	.6089
RDE	-.3023	RRA	-.0961	RC3	.2772	FAU	.13931
FDE	.4404	FRA	.0402	FC3	-8.8518	BSP	9324
BDE	.3136	BRA	.6973	BC3	3.3429	FSP	1763

MID-COURSE EXECUTION ACCURACY

SGT	2712.4	SGR	535.7	SG3	567.7		
RRT	.4281	RRF	-.4739	RTF	-.9010		
SGB	2764.8	R23	-.0837	R13	-.9024		
SG1	2722.4	SG2	482.4	THA	4.99		

ORBIT DETERMINATION ACCURACY

ST	372.3	SR	471.6	SS	385.3
CRT	-.2526	CRS	.9623	CST	-.2553
LSA	614.8	MSA	353.3	SSA	81.9
EL1	491.4	EL2	345.7	ALF	113.31

LAUNCH DATE DEC 7 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 447.563 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.674	GAL	1.68	AZL	89.26	HCA	139.11	SMA	198.92	ECC	.26070	INC	.7434	V1	30.232
RP	237.48	LAP	.49	LOP	214.04	VP	21.226	GAP	10.24	AZP	90.56	TAL	8.16	TAP	147.26	RCA	147.06	APO	250.79	V2	23.140
RC	186.049	GL	6.85	GP	4.17	ZAL	70.56	ZAP	158.72	ETS	167.70	ZAE	160.46	ETE	13.12	ZAC	94.65	ETC	255.79	CLP	159.12

PLANETOCENTRIC CONIC

C3	13.412	VHL	3.662	DLA	19.51	RAL	150.06	RAD	6567.5	VEL	11.610	PTH	2.03	VHP	6.121	DPA	-.39	RAP	194.25	ECC	1.2207

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 32 28	2780.77	-28.12	80.42	11.51	93.51	14 18 49	2180.8	-27.33	71.84
90.00	7 2 33	4109.65	-2.87	166.94	5.84	61.82	8 11 3	3509.6	-6.62	160.26
100.00	15 6 2	2479.05	-29.47	58.11	11.39	95.26	15 47 21	1879.0	-28.43	49.46
100.00	8 11 40	3886.61	-1.69	149.89	5.18	60.15	9 16 27	3286.6	-5.65	143.34
110.00	16 40 39	2183.07	-32.90	35.10	10.86	99.86	17 17 2	1583.1	-31.19	26.29
110.00	8 53 33	3755.35	1.24	138.10	3.34	55.84	9 56 9	3155.3	-3.25	131.90

DIFFERENTIAL CORRECTIONS

TDE	.0748	TRA	-.6589	TC3	3.4073	BAU	.6135
RDE	-.2968	RRA	-.0900	RC3	.3103	FAU	.14519
FDE	.4679	FRA	-.0263	FC3	-9.3721	BSP	9360
BDE	.3061	BRA	.6650	BC3	3.4214	FSP	1861

MID-COURSE EXECUTION ACCURACY

SGT	2727.3	SGR	538.1	SG3	596.5		
RRT	.4608	RRF	-.5098	RTF	-.9028		
SGB	2779.9	R23	-.0909	R13	-.9044		
SG1	2738.9	SG2	475.5	THA	5.36		

ORBIT DETERMINATION ACCURACY

ST	356.3	SR	466.5	SS	402.2
CRT	-.2354	CRS	.9602	CST	-.2751
LSA	619.7	MSA	339.4	SSA	84.8
EL1	481.9	EL2	335.3	ALF	110.40

LAUNCH DATE DEC 7 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 451.041 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.631	GAL	1.77	AZL	89.29	HCA	140.07	SMA	198.08	ECC	.25771	INC	.7114	V1	30.232
RP	237.15	LAP	.46	LOP	215.00	VP	21.196	GAP	9.74	AZP	90.55	TAL	8.64	TAP	148.71	RCA	147.03	APO	249.12	V2	23.174
RC	188.300	GL	6.59	GP	4.36	ZAL	69.61	ZAP	157.86	ETS	167.70	ZAE	161.17	ETE	14.38	ZAC	94.86	ETC	255.78	CLP	158.27

PLANETOCENTRIC CONIC

C3	13.217	VHL	3.635	DLA	19.60	RAL	149.02	RAD	6567.5	VEL	11.602	PTH	2.03	VHP	5.978	DPA	-.27	RAP	194.44	ECC	1.2175

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 27 25	2781.07	-28.12	80.44	10.27	93.50	14 13 46	2181.1	-27.34	71.87
90.00	6 59 23	4102.99	-3.09	166.57	4.64	61.84	8 7 46	3503.0	-6.83	159.89
100.00	15 1 5	2479.03	-29.47	58.11	10.15	95.26	15 42 24	1879.0	-28.43	49.46
100.00	8 8 24	3880.26	-1.90	149.54	3.98	60.16	9 13 4	3280.3	-5.86	142.99
110.00	16 35 52	2182.48	-32.89	35.05	9.62	99.88	17 12 15	1582.5	-31.18	26.25
110.00	8 50 6	3749.58	1.02	137.80	2.15	55.83	9 52 35	3149.6	-3.47	131.59

DIFFERENTIAL CORRECTIONS

TDE	.0715	TRA	-.6223	TC3	3.4957	BAU	.6207
RDE	-.2914	RRA	-.0836	RC3	.3467	FAU	.15154
FDE	.4928	FRA	-.1005	FC3	-9.9265	BSP	9309
BDE	.3001	BRA	.6278	BC3	3.5128	FSP	1962

MID-COURSE EXECUTION ACCURACY

SGT	2748.9	SGR	542.2	SG3	627.4		
RRT	.4927	RRF	-.5467	RTF	-.9059		
SGB	2801.9	R23	-.0999	R13	-.9077		
SG1	2762.3	SG2	469.6	THA	5.72		

ORBIT DETERMINATION ACCURACY

ST	340.6	SR	461.2	SS	417.2
CRT	-.2423	CRS	.9560	CST	-.3152
LSA	625.1	MSA	322.9	SSA	88.4
EL1	475.3	EL2	320.7	ALF	109.10

LAUNCH DATE DEC 7 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 454.541 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.591 GAL 1.85 AZL 89.32 HCA 141.03 SMA 197.27 ECC .25487 INC .6781 V1 30.232
RP 236.81 LAP .43 LOP 215.97 VP 21.169 GAP 9.25 AZP 90.53 TAL 9.12 TAP 150.15 RCA 146.99 APO 247.55 V2 23.209
RC 190.540 GL 6.32 GP 4.56 ZAL 68.69 ZAP 156.97 ETS 167.68 ZAE 161.90 ETE 15.81 ZAC 95.07 ETC 255.78 CLP 157.40

PLANETOCENTRIC CONIC

C3 13.038 VHL 3.611 DLA 19.65 RAL 148.02 RAD 6567.5 VEL 11.594 PTH 2.03 VHP 5.838 DPA -.13 RAP 194.61 ECC 1.2146

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 22 49	2780.29	-28.11	80.39	9.05	93.53	14 9 9	2180.3	-27.33	71.81
90.00	6 55 56	4097.88	-3.25	166.28	3.47	61.86	8 4 14	3497.9	-6.99	159.60
100.00	14 56 32	2478.05	-29.46	58.04	8.93	95.30	15 37 50	1878.1	-28.42	49.39
100.00	8 4 53	3875.35	-2.07	149.27	2.81	60.17	9 9 29	3275.4	-6.02	142.71
110.00	16 31 26	2181.14	-32.88	34.95	8.40	99.94	17 7 47	1581.1	-31.15	26.15
110.00	8 46 29	3745.03	.85	137.56	.99	55.83	9 48 54	3145.0	-3.64	131.36

DIFFERENTIAL CORRECTIONS
TDE .0560 TRA -.5995 TC3 3.5372 BAU .6202
RDE -.2864 RRA -.0771 RC3 .3854 FAU .15791
FDE .5232 FRA -.1736 FC-10.4853 BSP 9532
BDE .2918 BRA .6044 BC3 3.5581 FSP 2078

MID-COURSE EXECUTION ACCURACY
SGT 2748.3 SGR 548.5 SG3 658.6
RRT .5318 RRF -.5852 RTF -.9056
SGB 2802.5 R23 -.1057 R13 -.9077
SG1 2764.2 SG2 461.8 THA 6.23

ORBIT DETERMINATION ACCURACY
ST 325.0 SR 456.2 SS 436.4
CRT -.1886 CRS .9521 CST -.2952
LSA 630.4 MSA 314.1 SSA 90.6
EL1 463.9 EL2 313.8 ALF 104.30

LAUNCH DATE DEC 7 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 458.066 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.552 GAL 1.92 AZL 89.36 HCA 142.00 SMA 196.52 ECC .25218 INC .6429 V1 30.232
RP 236.46 LAP .40 LOP 216.93 VP 21.146 GAP 8.77 AZP 90.51 TAL 9.58 TAP 151.58 RCA 146.96 APO 246.07 V2 23.244
RC 192.768 GL 6.02 GP 4.77 ZAL 67.79 ZAP 156.06 ETS 167.66 ZAE 162.65 ETE 17.42 ZAC 95.29 ETC 255.77 CLP 156.51

PLANETOCENTRIC CONIC

C3 12.874 VHL 3.588 DLA 19.67 RAL 147.02 RAD 6567.5 VEL 11.587 PTH 2.03 VHP 5.702 DPA .03 RAP 194.77 ECC 1.2119

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 18 37	2778.42	-28.11	80.25	7.86	93.60	14 4 56	2178.4	-27.31	71.68
90.00	6 52 12	4094.31	-3.37	166.08	2.32	61.87	8 0 27	3494.3	-7.10	159.39
100.00	14 52 22	2476.11	-29.45	57.89	7.74	95.37	15 33 39	1876.1	-28.39	49.25
100.00	8 1 8	3871.85	-2.19	149.08	1.67	60.18	9 5 40	3271.9	-6.14	142.52
110.00	16 27 19	2179.06	-32.85	34.79	7.20	100.03	17 3 38	1579.1	-31.12	26.00
110.00	8 42 41	3741.67	.72	137.39	359.85	55.82	9 45 3	3141.7	-3.77	131.18

DIFFERENTIAL CORRECTIONS
TDE .0510 TRA -.5706 TC3 3.5934 BAU .6229
RDE -.2813 RRA -.0702 RC3 .4276 FAU .16473
FDE .5459 FRA -.2548 FC-11.0775 BSP 9570
BDE .2859 BRA .5749 BC3 3.6188 FSP 2191

MID-COURSE EXECUTION ACCURACY
SGT 2755.5 SGR 556.8 SG3 691.9
RRT .5669 RRF -.6232 RTF -.9067
SGB 2811.2 R23 -.1150 R13 -.9091
SG1 2774.0 SG2 455.6 THA 6.72

ORBIT DETERMINATION ACCURACY
ST 311.3 SR 450.7 SS 449.8
CRT -.1816 CRS .9457 CST -.3171
LSA 634.4 MSA 301.8 SSA 93.8
EL1 457.0 EL2 301.8 ALF 102.81

LAUNCH DATE DEC 7 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 461.613 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.515 GAL 2.00 AZL 89.39 HCA 142.97 SMA 195.80 ECC .24963 INC .6065 V1 30.232
RP 236.12 LAP .37 LOP 217.90 VP 21.127 GAP 8.29 AZP 90.48 TAL 10.03 TAP 153.00 RCA 146.92 APO 244.68 V2 23.279
RC 194.983 GL 5.71 GP 4.99 ZAL 66.92 ZAP 155.13 ETS 167.63 ZAE 163.41 ETE 19.27 ZAC 95.52 ETC 255.77 CLP 155.60

PLANETOCENTRIC CONIC

C3 12.724 VHL 3.567 DLA 19.66 RAL 146.05 RAD 6567.5 VEL 11.581 PTH 2.03 VHP 5.570 DPA .21 RAP 194.91 ECC 1.2094

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 14 53	2775.40	-28.09	80.03	6.69	93.71	14 1 9	2175.4	-27.28	71.46
90.00	6 48 12	4092.31	-3.43	165.97	1.19	61.87	7 56 24	3492.3	-7.17	159.28
100.00	14 48 37	2473.14	-29.43	57.67	6.57	95.49	15 29 51	1873.1	-28.36	49.03
100.00	7 57 9	3869.81	-2.26	148.96	.54	60.19	9 1 38	3269.8	-6.21	142.40
110.00	16 23 33	2176.17	-32.82	34.58	6.03	100.16	16 59 49	1576.2	-31.07	25.79
110.00	8 38 43	3739.54	.64	137.28	358.73	55.82	9 41 2	3139.5	-3.85	131.07

DIFFERENTIAL CORRECTIONS
TDE .0464 TRA -.5426 TC3 3.6430 BAU .6249
RDE -.2763 RRA -.0630 RC3 .4731 FAU .17184
FDE .5687 FRA -.3406 FC-11.6914 BSP 9601
BDE .2802 BRA .5463 BC3 3.6736 FSP 2312

MID-COURSE EXECUTION ACCURACY
SGT 2759.9 SGR 567.8 SG3 726.7
RRT .6021 RRF -.6613 RTF -.9078
SGB 2817.7 R23 -.1250 R13 -.9105
SG1 2781.5 SG2 449.9 THA 7.25

ORBIT DETERMINATION ACCURACY
ST 297.9 SR 445.1 SS 463.5
CRT -.1761 CRS .9386 CST -.3381
LSA 638.8 MSA 290.2 SSA 96.9
EL1 450.4 EL2 289.7 ALF 101.56

LAUNCH DATE DEC 7 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 465.181 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.480 GAL 2.07 AZL 89.43 HCA 143.95 SMA 195.12 ECC .24721 INC .5681 V1 30.232
RP 235.77 LAP .33 LOP 218.88 VP 21.110 GAP 7.82 AZP 90.46 TAL 10.47 TAP 154.42 RCA 146.89 APO 243.36 V2 23.315
RC 197.185 GL 5.37 GP 5.23 ZAL 66.08 ZAP 154.17 ETS 167.58 ZAE 164.18 ETE 21.39 ZAC 95.77 ETC 255.76 CLP 154.67

PLANETOCENTRIC CONIC

C3 12.587 VHL 3.548 DLA 19.61 RAL 145.10 RAD 6567.5 VEL 11.575 PTH 2.02 VHP 5.441 DPA .42 RAP 195.04 ECC 1.2072

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 11 37	2771.17	-28.07	79.72	5.54	93.86	13 57 48	2171.2	-27.24	71.16
90.00	6 43 53	4091.91	-3.44	165.95	.09	61.88	7 52 5	3491.9	-7.18	159.26
100.00	14 45 18	2469.08	-29.40	57.37	5.42	95.64	15 26 27	1869.1	-28.31	48.74
100.00	7 52 53	3869.24	-2.28	148.93	359.44	60.19	8 57 23	3269.2	-6.23	142.37
110.00	16 20 7	2172.43	-32.77	34.29	4.87	100.32	16 56 19	1572.4	-31.00	25.52
110.00	8 34 34	3738.65	.61	137.23	357.64	55.82	9 36 52	3138.7	-3.88	131.02

DIFFERENTIAL CORRECTIONS
TDE .0451 TRA -.5137 TC3 3.6923 BAU .6275
RDE -.2713 RRA -.0553 RC3 .5226 FAU .17937
FDE .5877 FRA -.4335 FC-12.3366 BSP 9568
BDE .2751 BRA .5166 BC3 3.7291 FSP 2435

MID-COURSE EXECUTION ACCURACY
SGT 2765.0 SGR 581.8 SG3 763.5
RRT .6360 RRF -.6986 RTF -.9091
SGB 2825.5 R23 -.1361 R13 -.9123
SG1 2790.3 SG2 444.9 THA 7.82

ORBIT DETERMINATION ACCURACY
ST 285.1 SR 439.3 SS 474.6
CRT -.1878 CRS .9300 CST -.3730
LSA 642.0 MSA 277.8 SSA 100.5
EL1 444.6 EL2 276.6 ALF 101.42

LAUNCH DATE DEC 7 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 468.770 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.447 GAL 2.14 AZL 89.47 HCA 144.92 SMA 194.48 ECC .24492 INC .5279 V1 30.232
RP 235.42 LAP .30 LOP 219.85 VP 21.097 GAP 7.36 AZP 90.43 TAL 10.90 TAP 155.82 RCA 146.85 APO 242.12 V2 23.351
RC 199.372 GL 5.01 GP 5.49 ZAL 65.26 ZAP 153.18 ETS 167.53 ZAE 164.95 ETE 23.83 ZAC 96.02 ETC 255.75 CLP 153.70

PLANETOCENTRIC CONIC

C3 12.462 VHL 3.530 DLA 19.53 RAL 144.18 RAD 6567.5 VEL 11.569 PTH 2.02 VHP 5.316 DPA .64 RAP 195.16 ECC 1.2051

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 8 50	2765.65	-28.05	79.32	4.42	94.06	13 54 55	2165.7	-27.19	70.76
90.00	6 39 17	4093.16	-3.40	166.02	359.01	61.87	7 47 30	3493.2	-7.14	159.33
100.00	14 42 25	2463.86	-29.37	56.99	4.29	95.84	15 23 29	1863.9	-28.25	48.37
100.00	7 48 23	3870.18	-2.25	148.98	358.37	60.18	8 52 53	3270.2	-6.20	142.43
110.00	16 17 3	2167.77	-32.71	33.94	3.73	100.52	16 53 11	1567.8	-30.92	25.18
110.00	8 30 14	3739.04	.62	137.25	356.58	55.82	9 32 33	3139.0	-3.87	131.04

DIFFERENTIAL CORRECTIONS
TDE .0409 TRA -.4887 TC3 3.7203 BAU .6272
RDE -.2665 RRA -.0472 RC3 .5758 FAU .18710
FDE .6070 FRA -.5316 FC-12.9979 BSP 9625
BDE .2696 BRA .4910 BC3 3.7646 FSP 2569

MID-COURSE EXECUTION ACCURACY
SGT 2759.0 SGR 599.2 SG3 801.4
RRT .6700 RRF -.7346 RTF -.9093
SGB 2823.3 R23 -.1475 R13 -.9130
SG1 2788.8 SG2 440.0 THA 8.49

ORBIT DETERMINATION ACCURACY
ST 272.7 SR 433.4 SS 486.4
CRT -.1828 CRS .9210 CST -.3915
LSA 645.2 MSA 268.1 SSA 103.4
EL1 438.0 EL2 265.3 ALF 100.43

LAUNCH DATE DEC 7 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 472.378 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.415 GAL 2.20 AZL 89.51 HCA 145.90 SMA 193.88 ECC .24276 INC .4853 V1 30.232
RP 235.06 LAP .27 LOP 220.83 VP 21.087 GAP 6.91 AZP 90.40 TAL 11.32 TAP 157.22 RCA 146.81 APO 240.94 V2 23.387
RC 201.544 GL 4.62 GP 5.76 ZAL 64.48 ZAP 152.16 ETS 167.47 ZAE 165.72 ETE 26.67 ZAC 96.28 ETC 255.75 CLP 152.72

PLANETOCENTRIC CONIC

C3 12.347 VHL 3.514 DLA 19.41 RAL 143.27 RAD 6567.5 VEL 11.564 PTH 2.02 VHP 5.194 DPA .90 RAP 195.27 ECC 1.2032

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 6 32	2758.82	-28.01	78.82	3.32	94.31	13 52 30	2158.8	-27.12	70.27
90.00	6 34 22	4096.06	-3.31	166.18	357.95	61.86	7 42 38	3496.1	-7.05	159.49
100.00	14 39 59	2457.46	-29.32	56.52	3.18	96.08	15 20 56	1857.5	-28.17	47.91
100.00	7 43 36	3872.64	-2.16	149.12	357.31	60.18	8 48 8	3272.6	-6.11	142.56
110.00	16 14 22	2162.17	-32.64	33.52	2.61	100.76	16 50 24	1562.2	-30.82	24.78
110.00	8 25 42	3740.70	.68	137.34	355.54	55.82	9 28 3	3140.7	-3.80	131.13

DIFFERENTIAL CORRECTIONS
TDE .0415 TRA -.4630 TC3 3.7459 BAU .6271
RDE -.2615 RRA -.0386 RC3 .6334 FAU .19518
FDE .6193 FRA -.6363 FC-13.6853 BSP 9628
BDE .2647 BRA .4646 BC3 3.7990 FSP 2708

MID-COURSE EXECUTION ACCURACY
SGT 2752.3 SGR 620.0 SG3 840.9
RRT .7011 RRF -.7687 RTF -.9097
SGB 2821.3 R23 -.1604 R13 -.9141
SG1 2787.3 SG2 436.5 THA 9.20

ORBIT DETERMINATION ACCURACY
ST 261.7 SR 427.0 SS 494.0
CRT -.2058 CRS .9100 CST -.4332
LSA 645.9 MSA 257.4 SSA 107.2
EL1 432.2 EL2 253.0 ALF 101.00

LAUNCH DATE DEC 7 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 476.004 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.385 GAL 2.27 AZL 89.56 HCA 146.88 SMA 193.31 ECC .24070 INC .4400 V1 30.232
RP 234.71 LAP .24 LOP 221.81 VP 21.080 GAP 6.46 AZP 90.37 TAL 11.72 TAP 158.60 RCA 146.78 APO 239.84 V2 23.424
RC 203.699 GL 4.21 GP 6.06 ZAL 63.73 ZAP 151.12 ETS 167.40 ZAE 166.47 ETE 29.97 ZAC 96.56 ETC 255.74 CLP 151.70

PLANETOCENTRIC CONIC

C3 12.242 VHL 3.499 DLA 19.26 RAL 142.39 RAD 6567.5 VEL 11.560 PTH 2.02 VHP 5.076 DPA 1.18 RAP 195.36 ECC 1.2015

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 4 44	2750.61	-27.97	78.23	2.24	94.60	13 50 34	2150.6	-27.04	69.69
90.00	6 29 8	4100.64	-3.16	166.44	356.91	61.85	7 37 28	3500.6	-6.91	159.75
100.00	14 38 0	2449.82	-29.27	55.96	2.10	96.37	15 18 50	1849.8	-28.08	47.36
100.00	7 38 32	3876.66	-2.03	149.34	356.28	60.17	8 43 9	3276.7	-5.98	142.79
110.00	16 12 3	2155.57	-32.56	33.02	1.51	101.04	16 47 59	1555.6	-30.69	24.30
110.00	8 20 59	3743.67	.80	137.49	354.52	55.83	9 23 22	3143.7	-3.69	131.28

DIFFERENTIAL CORRECTIONS
TDE .0426 TRA -.4393 TC3 3.7634 BAU .6264
RDE -.2564 RRA -.0294 RC3 .6961 FAU .20367
FDE .6284 FRA -.7470 FC-14.4027 BSP 9601
BDE .2599 BRA .4403 BC3 3.8273 FSP 2849

MID-COURSE EXECUTION ACCURACY
SGT 2742.5 SGR 645.1 SG3 882.5
RRT .7305 RRF -.8007 RTF -.9098
SGB 2817.3 R23 -.1742 R13 -.9149
SG1 2783.7 SG2 434.0 THA 9.99

ORBIT DETERMINATION ACCURACY
ST 251.8 SR 420.4 SS 500.3
CRT -.2331 CRS .8977 CST -.4764
LSA 645.6 MSA 247.6 SSA 110.9
EL1 426.5 EL2 241.3 ALF 101.76

LAUNCH DATE DEC 7 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 479.649 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.356 GAL 2.32 AZL 89.61 HCA 147.87 SMA 192.77 ECC .23876 INC .3930 V1 30.232
RP 234.35 LAP .21 LOP 222.80 VP 21.075 GAP 6.02 AZP 90.33 TAL 12.10 TAP 159.97 RCA 146.74 APO 238.79 V2 23.461
RC 205.837 GL 3.76 GP 6.37 ZAL 63.00 ZAP 150.04 ETS 167.32 ZAE 167.20 ETE 33.82 ZAC 96.86 ETC 255.73 CLP 150.66

PLANETOCENTRIC CONIC

C3 12.146 VHL 3.485 DLA 19.06 RAL 141.53 RAD 6567.5 VEL 11.556 PTH 2.02 VHP 4.961 DPA 1.49 RAP 195.44 ECC 1.1999

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 3 26	2740.98	-27.92	77.53	1.17	94.95	13 49 7	2141.0	-26.94	69.00
90.00	6 23 34	4106.94	-2.96	166.79	355.90	61.83	7 32 1	3506.9	-6.71	160.11
100.00	14 36 30	2440.88	-29.20	55.30	1.03	96.71	15 17 11	1840.9	-27.96	46.72
100.00	7 33 11	3882.27	-1.84	149.65	355.27	60.16	8 37 54	3282.3	-5.79	143.10
110.00	16 10 8	2147.92	-32.46	32.45	.42	101.37	16 45 56	1547.9	-30.55	23.75
110.00	8 16 3	3747.99	.96	137.72	353.53	55.83	9 18 31	3148.0	-3.53	131.51

DIFFERENTIAL CORRECTIONS
TDE .0457 TRA -.4169 TC3 3.7708 BAU .6247
RDE -.2512 RRA -.0195 RC3 .7636 FAU .21240
FDE .6332 FRA -.8633 FC-15.1387 BSP 9581
BDE .2553 BRA .4174 BC3 3.8473 FSP 3001

MID-COURSE EXECUTION ACCURACY
SGT 2727.6 SGR 674.5 SG3 925.3
RRT .7569 RRF -.8300 RTF -.9095
SGB 2809.7 R23 -.1893 R13 -.9156
SG1 2776.2 SG2 433.1 THA 10.87

ORBIT DETERMINATION ACCURACY
ST 243.3 SR 413.4 SS 504.8
CRT -.2740 CRS .8840 CST -.5280
LSA 644.2 MSA 238.1 SSA 114.9
EL1 421.1 EL2 229.7 ALF 103.13

LAUNCH DATE DEC 7 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 483.311 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.328 GAL 2.38 AZL 89.66 HCA 148.86 SMA 192.26 ECC .23692 INC .3431 V1 30.232
RP 233.98 LAP .18 LOP 223.79 VP 21.073 GAP 5.58 AZP 90.29 TAL 12.48 TAP 161.33 RCA 146.71 APO 237.81 V2 23.498
RC 207.958 GL 3.29 GP 6.71 ZAL 62.31 ZAP 148.93 ETS 167.23 ZAE 167.87 ETE 38.30 ZAC 97.17 ETC 255.72 CLP 149.59

PLANETOCENTRIC CONIC

C3 12.058 VHL 3.473 DLA 18.82 RAL 140.70 RAD 6567.5 VEL 11.552 PTH 2.02 VHP 4.850 DPA 1.83 RAP 195.50 ECC 1.1984

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 2 40	2729.86	-27.85	76.72	.13	95.35	13 48 10	2129.9	-26.82	68.21
90.00	6 17 40	4114.98	-2.70	167.24	354.91	61.80	7 26 15	3515.0	-6.45	160.57
100.00	14 35 28	2430.58	-29.11	54.55	359.97	97.10	15 15 59	1830.6	-27.82	45.98
100.00	7 27 33	3889.50	-1.59	150.04	354.29	60.15	8 32 23	3289.5	-5.55	143.50
110.00	16 8 37	2139.16	-32.34	31.80	359.35	101.74	16 44 16	1539.2	-30.38	23.12
110.00	8 10 54	3753.68	1.18	138.01	352.56	55.83	9 13 28	3153.7	-3.31	131.81

DIFFERENTIAL CORRECTIONS
TDE .0491 TRA -.3955 TC3 3.7655 BAU .6218
RDE -.2459 RRA -.0088 RC3 .8365 FAU .22140
FDE .6342 FRA -.9874 FC-15.8955 BSP 9563
BDE .2507 BRA .3956 BC3 3.8573 FSP 3160

MID-COURSE EXECUTION ACCURACY
SGT 2705.7 SGR 708.8 SG3 969.6
RRT .7806 RRF -.8564 RTF -.9089
SGB 2797.0 R23 -.2050 R13 -.9162
SG1 2763.2 SG2 433.8 THA 11.85

ORBIT DETERMINATION ACCURACY
ST 235.6 SR 406.1 SS 508.3
CRT -.3195 CRS .8687 CST -.5797
LSA 642.0 MSA 229.2 SSA 118.7
EL1 415.8 EL2 218.1 ALF 104.60

LAUNCH DATE DEC 7 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 486.989 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.302 GAL 2.43 AZL 89.71 HCA 149.85 SMA 191.77 ECC .23518 INC .2892 V1 30.232
RP 233.62 LAP .15 LOP 224.78 VP 21.074 GAP 5.16 AZP 90.25 TAL 12.84 TAP 162.69 RCA 146.67 APO 236.88 V2 23.536
RC 210.060 GL 2.79 GP 7.07 ZAL 61.65 ZAP 147.79 ETS 167.14 ZAE 168.47 ETE 43.49 ZAC 97.50 ETC 255.71 CLP 148.49

PLANETOCENTRIC CONIC

C3 11.978 VHL 3.461 DLA 18.54 RAL 139.88 RAD 6567.5 VEL 11.548 PTH 2.02 VHP 4.742 DPA 2.20 RAP 195.55 ECC 1.1971

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 2 25	2717.21	-27.77	75.81	359.10	95.80	13 47 42	2117.2	-26.67	67.31
90.00	6 11 26	4124.82	-2.39	167.79	353.93	61.78	7 20 11	3524.8	-6.14	161.12
100.00	14 34 56	2418.87	-29.01	53.69	358.93	97.54	15 15 15	1818.9	-27.66	45.15
100.00	7 21 36	3898.39	-1.29	150.53	353.32	60.13	8 26 35	3298.4	-5.25	143.99
110.00	16 7 31	2129.24	-32.20	31.05	358.29	102.15	16 43 0	1529.2	-30.19	22.42
110.00	8 5 31	3760.79	1.45	138.38	351.61	55.84	9 8 12	3160.8	-3.04	132.18

DIFFERENTIAL CORRECTIONS
TDE .0549 TRA -.3756 TC3 3.7553 BAU .6190
RDE -.2401 RRA .0028 RC3 .9164 FAU .23089
FDE .6259 FRA-1.1194 FC-16.6882 BSP 9512
BDE .2463 BRA .3756 BC3 3.8655 FSP 3321

MID-COURSE EXECUTION ACCURACY
SGT 2682.4 SGR 748.6 SG3 1016.2
RRT .8015 RRF -.8801 RTF -.9081
SGB 2784.9 R23 -.2212 R13 -.9168
SG1 2750.5 SG2 436.5 THA 12.94

ORBIT DETERMINATION ACCURACY
ST 230.4 SR 398.0 SS 508.0
CRT -.3812 CRS .8498 CST -.6392
LSA 636.9 MSA 220.6 SSA 123.2
EL1 411.0 EL2 206.2 ALF 106.79

LAUNCH DATE DEC 7 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 490.684 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.278 GAL 2.48 AZL 89.77 HCA 150.84 SMA 191.32 ECC .23354 INC .2330 V1 30.232
RP 233.25 LAP .11 LOP 225.77 VP 21.078 GAP 4.74 AZP 90.20 TAL 13.18 TAP 164.02 RCA 146.64 APO 236.00 V2 23.574
RC 212.144 GL 2.25 GP 7.46 ZAL 61.02 ZAP 146.61 ETS 167.03 ZAE 168.97 ETE 49.46 ZAC 97.85 ETC 255.70 CLP 147.36

PLANETOCENTRIC CONIC

C3 11.905 VHL 3.450 DLA 18.21 RAL 139.09 RAD 6567.5 VEL 11.545 PTH 2.02 VHP 4.638 DPA 2.61 RAP 195.59 ECC 1.1959

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 2 42	2702.96	-27.66	74.78	358.08	96.31	13 47 45	2103.0	-26.50	66.30
90.00	6 4 51	4136.49	-2.01	168.44	352.98	61.75	7 13 47	3536.5	-5.77	161.78
100.00	14 34 53	2405.68	-28.89	52.73	357.90	98.03	15 14 59	1805.7	-27.48	44.21
100.00	7 15 20	3909.01	-.93	151.12	352.38	60.12	8 20 29	3309.0	-4.90	144.58
110.00	16 6 49	2118.07	-32.03	30.22	357.24	102.62	16 42 7	1518.1	-29.97	21.62
110.00	7 59 54	3769.38	1.78	138.83	350.68	55.86	9 2 44	3169.4	-2.71	132.63

DIFFERENTIAL CORRECTIONS
TDE .0619 TRA -.3572 TC3 3.7313 BAU .6149
RDE -.2341 RRA .0153 RC3 1.0024 FAU .24054
FDE .6120 FRA-1.2577 FC-17.4924 BSP 9459
BDE .2421 BRA .3575 BC3 3.8636 FSP 3493

MID-COURSE EXECUTION ACCURACY
SGT 2651.5 SGR 793.9 SG3 1063.7
RRT .8192 RRF -.9007 RTF -.9069
SGB 2767.8 R23 -.2380 R13 -.9173
SG1 2732.3 SG2 441.9 THA 14.16

ORBIT DETERMINATION ACCURACY
ST 227.2 SR 389.3 SS 506.7
CRT -.4506 CRS .8284 CST -.6963
LSA 631.1 MSA 213.1 SSA 127.2
EL1 406.8 EL2 194.1 ALF 109.29

LAUNCH DATE DEC 7 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 494.394 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.254 GAL 2.53 AZL 89.83 HCA 151.84 SMA 190.89 ECC .23198 INC .1716 V1 30.232
RP 232.88 LAP .08 LOP 226.77 VP 21.083 GAP 4.33 AZP 90.15 TAL 13.51 TAP 165.35 RCA 146.61 APO 235.17 V2 23.612
RC 214.210 GL 1.66 GP 7.88 ZAL 60.43 ZAP 145.40 ETS 166.92 ZAE 169.34 ETE 56.18 ZAC 98.22 ETC 255.69 CLP 146.20

PLANETOCENTRIC CONIC

C3 11.839 VHL 3.441 DLA 17.83 RAL 138.32 RAD 6567.5 VEL 11.542 PTH 2.01 VHP 4.537 DPA 3.07 RAP 195.62 ECC 1.1948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 3 32	2687.04	-27.54	73.63	357.07	96.87	13 48 19	2087.0	-26.30	65.18
90.00	5 57 52	4150.07	-1.57	169.20	352.05	61.72	7 7 3	3550.1	-5.34	162.54
100.00	14 35 21	2390.94	-28.74	51.66	356.89	98.58	15 15 12	1790.9	-27.26	43.17
100.00	7 8 44	3921.41	-.51	151.80	351.46	60.11	8 14 6	3321.4	-4.48	145.26
110.00	16 6 33	2105.59	-31.85	29.30	356.20	103.14	16 41 39	1505.6	-29.71	20.74
110.00	7 54 1	3779.52	2.17	139.36	349.78	55.88	8 57 1	3179.5	-2.32	133.16

DIFFERENTIAL CORRECTIONS
TDE .0702 TRA -.3410 TC3 3.7003 BAU .6108
RDE -.2275 RRA .0290 RC3 1.0966 FAU .25065
FDE .5883 FRA-1.4034 FC-18.3299 BSP 9378
BDE .2380 BRA .3422 BC3 3.8594 FSP 3663

MID-COURSE EXECUTION ACCURACY
SGT 2617.9 SGR 845.9 SG3 1113.5
RRT .8341 RRF -.9186 RTF -.9052
SGB 2751.2 R23 -.2547 R13 -.9179
SG1 2714.1 SG2 450.1 THA 15.52

ORBIT DETERMINATION ACCURACY
ST 227.0 SR 379.8 SS 502.8
CRT -.5252 CRS .8024 CST -.7467
LSA 623.2 MSA 207.9 SSA 130.5
EL1 403.3 EL2 181.9 ALF 112.16

LAUNCH DATE DEC 7 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 498.119 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.232	GAL	2.58	AZL	89.89	HCA	152.84	SMA	190.48	ECC	.23051	INC	.1058	V1	30.232
RP	232.51	LAP	.05	LOP	227.77	VP	21.091	GAP	3.92	AZP	90.10	TAL	13.82	TAP	166.66	RCA	146.57	APO	234.39	V2	23.650
RC	216.258	GL	1.04	GP	8.34	ZAL	59.86	ZAP	144.14	ETS	166.79	ZAE	169.54	ETE	63.57	ZAC	98.63	ETC	255.67	CLP	145.00

PLANETOCENTRIC CONIC

C3	11.779	VHL	3.432	DLA	17.40	RAL	137.57	RAD	6567.4	VEL	11.540	PTH	2.01	VHP	4.440	DPA	3.56	RAP	195.63	ECC	1.1938

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 4 55	2669.36	-27.39	72.36	356.07	97.49	13 49 24	2069.4	-26.07	63.94
90.00	5 50 31	4165.62	-1.07	170.06	351.13	61.70	6 59 56	3565.6	-4.85	163.42
100.00	14 36 20	2374.55	-28.57	50.47	355.88	99.18	15 15 55	1774.5	-27.01	42.02
100.00	7 1 47	3935.67	-.03	152.58	350.55	60.11	8 7 22	3335.7	-4.00	146.05
110.00	16 6 44	2091.70	-31.63	28.28	355.16	103.70	16 41 36	1491.7	-29.42	19.77
110.00	7 47 52	3791.28	2.62	139.98	348.90	55.91	8 51 3	3191.3	-1.88	133.77

DIFFERENTIAL CORRECTIONS

TDE	.0802	TRA	-.3264	TC3	3.6534	BAU	.6055
RDE	-.2202	RRA	.0441	RC3	1.1983	FAU	.26087
FDE	.5537	FRA	-1.5571	FC	-19.1737	BSP	9316
BDE	.2343	BRA	.3293	BC3	3.8449	FSP	3847

MID-COURSE EXECUTION ACCURACY

SGT	2575.4	SGR	904.2	SG3	1163.9
RRT	.8457	RRF	-.9338	RTF	-.9029
SGB	2729.5	R23	-.2711	R13	-.9184
SG1	2690.2	SG2	461.9	THA	17.06

ORBIT DETERMINATION ACCURACY

ST	230.1	SR	369.1	SS	497.0
CRT	-.6044	CRS	.7704	CST	-.7853
LSA	613.4	MSA	206.2	SSA	131.7
EL1	400.8	EL2	168.8	ALF	115.47

LAUNCH DATE DEC 7 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 501.859 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.211	GAL	2.62	AZL	89.96	HCA	153.85	SMA	190.10	ECC	.22912	INC	.0335	V1	30.232
RP	232.14	LAP	.02	LOP	228.78	VP	21.102	GAP	3.52	AZP	90.03	TAL	14.12	TAP	167.97	RCA	146.54	APO	233.65	V2	23.689
RC	218.287	GL	.37	GP	8.83	ZAL	59.33	ZAP	142.85	ETS	166.66	ZAE	169.55	ETE	71.40	ZAC	99.06	ETC	255.66	CLP	143.77

PLANETOCENTRIC CONIC

C3	11.725	VHL	3.424	DLA	16.90	RAL	136.84	RAD	6567.4	VEL	11.537	PTH	2.01	VHP	4.347	DPA	4.10	RAP	195.63	ECC	1.1930

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 6 52	2649.83	-27.21	70.95	355.08	98.17	13 51 2	2049.8	-25.80	62.57
90.00	5 42 44	4183.24	-.50	171.05	350.24	61.69	6 52 27	3583.2	-4.28	164.41
100.00	14 37 51	2356.41	-28.37	49.16	354.87	99.84	15 17 8	1756.4	-26.72	40.75
100.00	6 54 26	3951.90	.52	153.47	349.67	60.11	8 0 18	3351.9	-3.46	146.94
110.00	16 7 23	2076.32	-31.37	27.15	354.13	104.33	16 41 59	1476.3	-29.09	18.69
110.00	7 41 24	3804.76	3.13	140.68	348.04	55.94	8 44 49	3204.8	-1.36	134.48

DIFFERENTIAL CORRECTIONS

TDE	.0912	TRA	-.3137	TC3	3.5982	BAU	.6002
RDE	-.2121	RRA	.0605	RC3	1.3096	FAU	.27143
FDE	.5086	FRA	-1.7184	FC	-20.0412	BSP	9236
BDE	.2309	BRA	.3195	BC3	3.8291	FSP	4034

MID-COURSE EXECUTION ACCURACY

SGT	2529.1	SGR	970.3	SG3	1216.2
RRT	.8548	RRF	-.9467	RTF	-.9001
SGB	2708.9	R23	-.2862	R13	-.9192
SG1	2666.5	SG2	477.6	THA	18.78

ORBIT DETERMINATION ACCURACY

ST	236.3	SR	357.3	SS	490.6
CRT	-.6798	CRS	.7321	CST	-.8027
LSA	602.7	MSA	210.2	SSA	129.3
EL1	399.3	EL2	155.1	ALF	118.98

LAUNCH DATE DEC 7 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 505.613 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.191	GAL	2.66	AZL	90.04	HCA	154.85	SMA	189.74	ECC	.22781	INC	.0343	V1	30.232
RP	231.76	LAP	-.02	LOP	229.78	VP	21.114	GAP	3.13	AZP	89.97	TAL	14.40	TAP	169.25	RCA	146.51	APO	232.96	V2	23.728
RC	220.299	GL	-.36	GP	9.37	ZAL	58.84	ZAP	141.52	ETS	166.52	ZAE	169.33	ETE	79.35	ZAC	99.52	ETC	255.64	CLP	142.50

PLANETOCENTRIC CONIC

C3	11.678	VHL	3.417	DLA	16.35	RAL	136.13	RAD	6567.4	VEL	11.535	PTH	2.01	VHP	4.257	DPA	4.70	RAP	195.62	ECC	1.1922

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 9 24	2628.34	-26.99	69.42	354.09	98.91	13 53 13	2028.3	-25.48	61.08
90.00	5 34 31	4203.06	.14	172.15	349.37	61.68	6 44 34	3603.1	-3.65	165.52
100.00	14 39 55	2336.42	-28.13	47.73	353.87	100.56	15 18 52	1736.4	-26.38	39.36
100.00	6 46 41	3970.20	1.15	154.47	348.81	60.13	7 52 51	3370.2	-2.84	147.95
110.00	16 8 29	2059.32	-31.08	25.91	353.10	105.01	16 42 49	1459.3	-28.71	17.51
110.00	7 34 36	3820.08	3.71	141.48	347.20	55.99	8 38 16	3220.1	-.77	135.28

DIFFERENTIAL CORRECTIONS

TDE	.1044	TRA	-.3023	TC3	3.5318	BAU	.5950
RDE	-.2028	RRA	.0789	RC3	1.4310	FAU	.28223
FDE	.4478	FRA	-1.8898	FC	-20.9226	BSP	9145
BDE	.2281	BRA	.3124	BC3	3.8107	FSP	4224

MID-COURSE EXECUTION ACCURACY

SGT	2477.2	SGR	1044.6	SG3	1269.7
RRT	.8613	RRF	-.9574	RTF	-.8967
SGB	2688.4	R23	-.2995	R13	-.9203
SG1	2641.9	SG2	497.7	THA	20.73

ORBIT DETERMINATION ACCURACY

ST	246.9	SR	343.8	SS	483.7
CRT	-.7531	CRS	.6832	CST	-.7924
LSA	590.6	MSA	221.9	SSA	122.8
EL1	399.5	EL2	139.8	ALF	122.95

LAUNCH DATE DEC 7 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 509.381 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.172	GAL	2.69	AZL	90.12	HCA	155.86	SMA	189.40	ECC	.22657	INC	.1147	V1	30.232
RP	231.38	LAP	-.05	LOP	230.79	VP	21.129	GAP	2.75	AZP	89.89	TAL	14.67	TAP	170.53	RCA	146.49	APO	232.31	V2	23.768
RC	222.292	GL	-1.15	GP	9.95	ZAL	58.38	ZAP	140.14	ETS	166.37	ZAE	168.87	ETE	87.09	ZAC	100.03	ETC	255.62	CLP	141.20

PLANETOCENTRIC CONIC

C3	11.638	VHL	3.411	DLA	15.72	RAL	135.43	RAD	6567.4	VEL	11.534	PTH	2.01	VHP	4.172	DPA	5.34	RAP	195.60	ECC	1.1915

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 12 33	2604.74	-26.73	67.74	353.10	99.71	13 55 57	2004.7	-25.11	59.44
90.00	5 25 49	4225.21	.85	173.39	348.51	61.69	6 36 14	3625.2	-2.94	166.76
100.00	14 42 34	2314.43	-27.84	46.15	352.87	101.34	15 21 8	1714.4	-26.00	37.84
100.00	6 38 29	3990.75	1.84	155.60	347.96	60.16	7 45 0	3390.7	-2.14	149.08
110.00	16 10 6	2040.56	-30.74	24.56	352.07	105.74	16 44 6	1440.6	-28.28	16.22
110.00	7 27 26	3837.38	4.37	142.39	346.39	56.06	8 31 24	3237.4	-.11	136.18

DIFFERENTIAL CORRECTIONS

TDE	.1186	TRA	-.2933	TC3	3.4520	BAU	.5896
RDE	-.1920	RRA	.0992	RC3	1.5638	FAU	.29325
FDE	.3697	FRA	-2.0702	FC	-21.8144	BSP	9035
BDE	.2257	BRA	.3096	BC3	3.7897	FSP	4410

MID-COURSE EXECUTION ACCURACY

SGT	2418.4	SGR	1128.0	SG3	1324.4
RRT	.8651	RRF	-.9662	RTF	-.8924
SGB	2668.5	R23	-.3105	R13	-.9219
SG1	2616.8	SG2	522.8	THA	22.94

ORBIT DETERMINATION ACCURACY

ST	261.2	SR	328.2	SS	478.1
CRT	-.8159	CRS	.6221	CST	-.7460
LSA	577.4	MSA	241.6	SSA	113.1
EL1	400.9	EL2	123.7	ALF	127.12

LAUNCH DATE DEC 7 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 513.162 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.154 GAL 2.73 AZL 90.21 HCA 156.88 SMA 189.08 ECC .22540 INC .2052 V1 30.232
RP 231.01 LAP -.08 LOP 231.81 VP 21.145 GAP 2.37 AZP 89.81 TAL 14.92 TAP 171.79 RCA 146.46 APO 231.69 V2 23.807
RC 224.266 GL -2.01 GP 10.59 ZAL 57.96 ZAP 138.72 ETS 166.21 ZAE 168.17 ETE 94.29 ZAC 100.58 ETC 255.60 CLP 139.86

PLANETOCENTRIC CONIC

C3 11.605 VHL 3.407 DLA 15.02 RAL 134.75 RAD 6567.4 VEL 11.532 PTH 2.01 VHP 4.091 DPA 6.05 RAP 195.57 ECC 1.1910

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 16 19	2578.88	-26.42	65.91	352.11	100.58	13 59 18	1978.9	-24.69	57.67
90.00	5 16 35	4249.87	1.65	174.76	347.68	61.73	6 27 25	3649.9	-2.14	168.14
100.00	14 45 48	2290.29	-27.51	44.44	351.86	102.19	15 23 58	1690.3	-25.55	36.18
100.00	6 29 47	4013.70	2.62	156.86	347.14	60.21	7 36 41	3413.7	-1.36	150.34
110.00	16 12 13	2019.90	-30.35	23.07	351.03	106.54	16 45 53	1419.9	-27.79	14.82
110.00	7 19 52	3856.85	5.11	143.41	345.59	56.16	8 24 9	3256.9	.63	137.19

DIFFERENTIAL CORRECTIONS
TDE .1346 TRA -.2867 TC3 3.3585 BAU .5846
RDE -.1795 RRA .1217 RC3 1.7081 FAU .30425
FDE .2733 FRA-2.2565 FC-22.6975 BSP 8950
BDE .2244 BRA .3115 BC3 3.7679 FSP 4607

MID-COURSE EXECUTION ACCURACY
SGT 2353.0 SGR 1220.8 SG3 1379.1
RRT .8664 RRF -.9734 RTF -.8871
SGB 2650.8 R23 -.3184 R13 -.9240
SG1 2592.4 SG2 553.4 THA 25.45

ORBIT DETERMINATION ACCURACY
ST 280.0 SR 310.5 SS 476.3
CRT -.8682 CRS .5495 CST -.6593
LSA 564.6 MSA 269.6 SSA 101.3
EL1 404.3 EL2 106.7 ALF 131.60

LAUNCH DATE DEC 7 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 516.956 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.137 GAL 2.76 AZL 90.30 HCA 157.89 SMA 188.77 ECC .22429 INC .3021 V1 30.232
RP 230.62 LAP -.11 LOP 232.83 VP 21.163 GAP 2.00 AZP 89.72 TAL 15.15 TAP 173.04 RCA 146.43 APO 231.12 V2 23.847
RC 226.222 GL -2.95 GP 11.28 ZAL 57.58 ZAP 137.25 ETS 166.05 ZAE 167.25 ETE 100.77 ZAC 101.17 ETC 255.58 CLP 138.49

PLANETOCENTRIC CONIC

C3 11.580 VHL 3.403 DLA 14.23 RAL 134.08 RAD 6567.4 VEL 11.531 PTH 2.01 VHP 4.014 DPA 6.83 RAP 195.54 ECC 1.1906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 20 45	2550.55	-26.05	63.92	351.11	101.51	14 3 16	1950.6	-24.20	55.74
90.00	5 6 47	4277.31	2.53	176.29	346.87	61.79	6 18 5	3677.3	-1.26	169.67
100.00	14 49 40	2263.79	-27.11	42.57	350.85	103.10	15 27 24	1663.8	-25.04	34.38
100.00	6 20 33	4039.30	3.48	158.27	346.34	60.29	7 27 53	3439.3	-.50	151.74
110.00	16 14 53	1997.15	-29.90	21.46	349.99	107.40	16 48 10	1397.2	-27.23	13.28
110.00	7 11 50	3878.70	5.94	144.56	344.82	56.27	8 16 29	3278.7	1.47	138.33

DIFFERENTIAL CORRECTIONS
TDE .1513 TRA -.2825 TC3 3.2517 BAU .5804
RDE -.1648 RRA .1469 RC3 1.8657 FAU .31527
FDE .1572 FRA-2.4517 FC-23.5706 BSP 8868
BDE .2238 BRA .3184 BC3 3.7489 FSP 4803

MID-COURSE EXECUTION ACCURACY
SGT 2281.1 SGR 1324.6 SG3 1434.2
RRT .8652 RRF -.9792 RTF -.8806
SGB 2637.7 R23 -.3222 R13 -.9270
SG1 2571.1 SG2 589.2 THA 28.29

ORBIT DETERMINATION ACCURACY
ST 301.7 SR 290.4 SS 482.3
CRT -.9070 CRS .4694 CST -.5328
LSA 553.7 MSA 305.7 SSA 88.9
EL1 408.9 EL2 90.2 ALF 136.20

LAUNCH DATE DEC 7 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 520.763 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.121 GAL 2.79 AZL 90.41 HCA 158.91 SMA 188.49 ECC .22325 INC .4070 V1 30.232
RP 230.24 LAP -.15 LOP 233.85 VP 21.184 GAP 1.64 AZP 89.62 TAL 15.37 TAP 174.28 RCA 146.41 APO 230.57 V2 23.887
RC 228.159 GL -3.98 GP 12.04 ZAL 57.25 ZAP 135.73 ETS 165.87 ZAE 166.12 ETE 106.44 ZAC 101.83 ETC 255.55 CLP 137.07

PLANETOCENTRIC CONIC

C3 11.564 VHL 3.401 DLA 13.35 RAL 133.41 RAD 6567.4 VEL 11.530 PTH 2.01 VHP 3.941 DPA 7.68 RAP 195.51 ECC 1.1903

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 25 54	2519.53	-25.61	61.75	350.10	102.51	14 7 53	1919.5	-23.63	53.64
90.00	4 56 21	4307.76	3.51	178.00	346.08	61.88	6 8 9	3707.8	-.28	171.36
100.00	14 54 13	2234.70	-26.65	40.53	349.83	104.07	15 31 27	1634.7	-24.45	32.42
100.00	6 10 43	4067.82	4.44	159.84	345.57	60.41	7 18 31	3467.8	.47	153.31
110.00	16 18 8	1972.10	-29.37	19.69	348.93	108.32	16 51 0	1372.1	-26.59	11.61
110.00	7 3 17	3903.19	6.86	145.86	344.07	56.43	8 8 20	3303.2	2.40	139.61

DIFFERENTIAL CORRECTIONS
TDE .1681 TRA -.2809 TC3 3.1293 BAU .5773
RDE -.1474 RRA .1753 RC3 2.0381 FAU .32624
FDE .0180 FRA-2.6563 FC-24.4240 BSP 8818
BDE .2236 BRA .3311 BC3 3.7345 FSP 4999

MID-COURSE EXECUTION ACCURACY
SGT 2201.5 SGR 1440.6 SG3 1489.2
RRT .8615 RRF -.9839 RTF -.8725
SGB 2630.9 R23 -.3214 R13 -.9312
SG1 2554.3 SG2 630.4 THA 31.55

ORBIT DETERMINATION ACCURACY
ST 324.9 SR 267.8 SS 499.7
CRT -.9306 CRS .3916 CST -.3737
LSA 547.5 MSA 348.4 SSA 76.8
EL1 414.0 EL2 76.9 ALF 140.90

LAUNCH DATE DEC 7 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 524.583 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.106 GAL 2.81 AZL 90.52 HCA 159.94 SMA 188.22 ECC .22226 INC .5237 V1 30.232
RP 229.86 LAP -.18 LOP 234.87 VP 21.205 GAP 1.28 AZP 89.51 TAL 15.57 TAP 175.51 RCA 146.39 APO 230.06 V2 23.927
RC 230.076 GL -5.11 GP 12.88 ZAL 56.96 ZAP 134.16 ETS 165.69 ZAE 164.79 ETE 111.29 ZAC 102.55 ETC 255.52 CLP 135.62

PLANETOCENTRIC CONIC

C3 11.559 VHL 3.400 DLA 12.36 RAL 132.75 RAD 6567.4 VEL 11.530 PTH 2.01 VHP 3.874 DPA 8.62 RAP 195.47 ECC 1.1902

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 31 47	2485.53	-25.09	59.40	349.09	103.58	14 13 13	1885.5	-22.97	51.37
90.00	4 45 11	4341.60	4.59	179.89	345.32	62.03	5 57 32	3741.6	.82	173.25
100.00	14 59 28	2202.76	-26.10	38.32	348.80	105.11	15 36 11	1602.8	-23.77	30.29
100.00	6 0 11	4099.60	5.51	161.60	344.82	60.57	7 8 31	3499.6	1.55	155.05
110.00	16 22 1	1944.47	-28.77	17.77	347.87	109.31	16 54 25	1344.5	-25.86	9.80
110.00	6 54 8	3930.65	7.89	147.32	343.35	56.63	7 59 39	3330.7	3.45	141.05

DIFFERENTIAL CORRECTIONS
TDE .1858 TRA -.2831 TC3 2.9911 BAU .5761
RDE -.1266 RRA .2068 RC3 2.2254 FAU .33686
FDE -.1472 FRA-2.8631 FC-25.2289 BSP 8806
BDE .2248 BRA .3506 BC3 3.7281 FSP 5198

MID-COURSE EXECUTION ACCURACY
SGT 2115.0 SGR 1569.3 SG3 1542.6
RRT .8547 RRF -.9876 RTF -.8622
SGB 2633.6 R23 -.3153 R13 -.9365
SG1 2545.1 SG2 677.0 THA 35.24

ORBIT DETERMINATION ACCURACY
ST 351.1 SR 242.9 SS 531.5
CRT -.9346 CRS .3344 CST -.1938
LSA 553.2 MSA 393.0 SSA 65.4
EL1 420.8 EL2 72.1 ALF 145.97

LAUNCH DATE DEC 7 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 528.417 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.092 GAL 2.84 AZL 90.65 HCA 160.97 SMA 187.97 ECC .22133 INC .6522 V1 30.232
RP 229.47 LAP -.21 LOP 235.90 VP 21.229 GAP .93 AZP 89.38 TAL 15.75 TAP 176.72 RCA 146.37 APO 229.58 V2 23.968
RC 231.973 GL -6.36 GP 13.80 ZAL 56.71 ZAP 132.54 ETS 165.49 ZAE 163.29 ETE 115.40 ZAC 103.35 ETC 255.48 CLP 134.12

PLANETOCENTRIC CONIC

C3 11.569 VHL 3.401 DLA 11.24 RAL 132.09 RAD 6567.4 VEL 11.531 PTH 2.01 VHP 3.811 DPA 9.65 RAP 195.45 ECC 1.1904

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 38 29	2448.25	-24.47	56.85	348.06	104.72	14 19 17	1848.3	-22.21	48.90
90.00	4 33 11	4379.23	5.79	182.01	344.59	62.23	5 46 10	3779.2	2.03	175.35
100.00	15 5 29	2167.66	-25.45	35.91	347.75	106.23	15 41 37	1567.7	-22.99	27.98
100.00	5 48 52	4135.05	6.69	163.57	344.10	60.80	6 57 47	3535.1	2.75	157.00
110.00	16 26 33	1914.02	-28.06	15.68	346.79	110.37	16 58 27	1314.0	-25.03	7.82
110.00	6 44 18	3961.46	9.04	148.96	342.66	56.89	7 50 20	3361.5	4.62	142.66

DIFFERENTIAL CORRECTIONS

TDE .2167 TRA -.2748 TC3 2.8809 BAU .5840
RDE -.0978 RRA .2461 RC3 2.4411 FAU .34877
FDE -.3805 FRA-3.1165 FC-26.0983 BSP 8555
BDE .2377 BRA .3689 BC3 3.7760 FSP 5313

MID-COURSE EXECUTION ACCURACY

SGT 2048.6 SGR 1721.5 SG3 1603.1
RRT .8492 RRF -.9906 RTF -.8551
SGB 2675.8 R23 -.2976 R13 -.9452
SG1 2576.4 SG2 722.8 THA 39.18

ORBIT DETERMINATION ACCURACY

ST 395.9 SR 213.7 SS 595.8
CRT -.8880 CRS .3223 CST .0529
LSA 600.3 MSA 440.8 SSA 52.0
EL1 441.2 EL2 88.2 ALF 153.23

LAUNCH DATE DEC 7 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 532.259 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.078 GAL 2.86 AZL 90.80 HCA 162.00 SMA 187.74 ECC .22046 INC .7955 V1 30.232
RP 229.09 LAP -.25 LOP 236.93 VP 21.254 GAP .59 AZP 89.24 TAL 15.92 TAP 177.92 RCA 146.35 APO 229.13 V2 24.009
RC 233.848 GL -7.74 GP 14.82 ZAL 56.53 ZAP 130.86 ETS 165.29 ZAE 161.61 ETE 118.81 ZAC 104.23 ETC 255.43 CLP 132.59

PLANETOCENTRIC CONIC

C3 11.596 VHL 3.405 DLA 9.99 RAL 131.42 RAD 6567.4 VEL 11.532 PTH 2.01 VHP 3.755 DPA 10.78 RAP 195.43 ECC 1.1908

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 46 7	2407.19	-23.73	54.06	347.01	105.92	14 26 14	1807.2	-21.32	46.22
90.00	4 20 15	4421.25	7.12	184.39	343.90	62.52	5 33 56	3821.3	3.38	177.70
100.00	15 12 23	2128.93	-24.69	33.28	346.70	107.41	15 47 52	1528.9	-22.08	25.46
100.00	5 36 39	4174.74	8.00	165.78	343.42	61.10	6 46 14	3574.7	4.09	159.18
110.00	16 31 51	1880.28	-27.24	13.40	345.69	111.49	17 3 11	1280.3	-24.08	5.66
110.00	6 33 41	3996.15	10.33	150.83	342.01	57.23	7 40 17	3396.2	5.94	144.49

DIFFERENTIAL CORRECTIONS

TDE .2310 TRA -.2869 TC3 2.6965 BAU .5873
RDE -.0674 RRA .2862 RC3 2.6608 FAU .35799
FDE -.6014 FRA-3.3286 FC-26.7275 BSP 8742
BDE .2406 BRA .4053 BC3 3.7883 FSP 5519

MID-COURSE EXECUTION ACCURACY

SGT 1940.1 SGR 1880.4 SG3 1650.0
RRT .8345 RRF -.9928 RTF -.8376
SGB 2701.8 R23 -.2795 R13 -.9528
SG1 2587.7 SG2 776.9 THA 43.93

ORBIT DETERMINATION ACCURACY

ST 419.1 SR 193.2 SS 667.5
CRT -.7734 CRS .4157 CST .2000
LSA 678.7 MSA 442.6 SSA 44.2
EL1 447.0 EL2 114.8 ALF 158.92

LAUNCH DATE DEC 7 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 536.114 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.066 GAL 2.87 AZL 90.96 HCA 163.03 SMA 187.52 ECC .21963 INC .9551 V1 30.232
RP 228.70 LAP -.28 LOP 237.96 VP 21.281 GAP .25 AZP 89.09 TAL 16.07 TAP 179.10 RCA 146.34 APO 228.71 V2 24.049
RC 235.703 GL -9.29 GP 15.95 ZAL 56.42 ZAP 129.12 ETS 165.08 ZAE 159.77 ETE 121.64 ZAC 105.21 ETC 255.38 CLP 131.01

PLANETOCENTRIC CONIC

C3 11.645 VHL 3.412 DLA 8.56 RAL 130.74 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 3.705 DPA 12.03 RAP 195.44 ECC 1.1916

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 54 44	2361.87	-22.85	51.03	345.96	107.20	14 34 6	1761.9	-20.28	43.30
90.00	4 6 12	4468.33	8.59	187.06	343.25	62.91	5 20 40	3868.3	4.89	180.34
100.00	15 20 15	2086.11	-23.79	30.42	345.63	108.66	15 55 1	1486.1	-21.02	22.72
100.00	5 23 23	4219.33	9.46	168.29	342.78	61.51	6 33 42	3619.3	5.58	161.65
110.00	16 37 58	1842.87	-26.29	10.91	344.59	112.68	17 8 41	1242.9	-22.98	3.31
110.00	6 22 9	4035.32	11.76	152.95	341.41	57.67	7 29 24	3435.3	7.41	146.56

DIFFERENTIAL CORRECTIONS

TDE .2468 TRA -.3003 TC3 2.4997 BAU .5963
RDE -.0286 RRA .3334 RC3 2.9018 FAU .36679
FDE -.8715 FRA-3.5573 FC-27.2687 BSP 8952
BDE .2484 BRA .4487 BC3 3.8300 FSP 5688

MID-COURSE EXECUTION ACCURACY

SGT 1828.2 SGR 2060.3 SG3 1695.3
RRT .8151 RRF -.9946 RTF -.8162
SGB 2754.5 R23 -.2530 R13 -.9619
SG1 2626.2 SG2 831.0 THA 49.18

ORBIT DETERMINATION ACCURACY

ST 444.6 SR 186.2 SS 766.7
CRT -.5174 CRS .6068 CST .3358
LSA 792.4 MSA 437.0 SSA 36.9
EL1 456.4 EL2 155.3 ALF 166.14

LAUNCH DATE DEC 7 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 539.980 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.054 GAL 2.89 AZL 91.14 HCA 164.07 SMA 187.32 ECC .21886 INC 1.1360 V1 30.232
RP 228.31 LAP -.31 LOP 239.00 VP 21.309 GAP -.08 AZP 88.91 TAL 16.21 TAP 180.28 RCA 146.32 APO 228.31 V2 24.090
RC 237.537 GL -11.03 GP 17.22 ZAL 56.38 ZAP 127.31 ETS 164.86 ZAE 157.76 ETE 123.96 ZAC 106.32 ETC 255.31 CLP 129.39

PLANETOCENTRIC CONIC

C3 11.724 VHL 3.424 DLA 6.95 RAL 130.04 RAD 6567.4 VEL 11.537 PTH 2.01 VHP 3.663 DPA 13.41 RAP 195.48 ECC 1.1929

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 31	2311.67	-21.80	47.73	344.89	108.53	14 43 3	1711.7	-19.07	40.12
90.00	3 50 50	4521.35	10.22	190.11	342.66	63.45	5 6 12	3921.3	6.57	183.33
100.00	15 29 11	2038.60	-22.72	27.30	344.54	109.97	16 3 9	1438.6	-19.79	19.72
100.00	5 8 51	4269.66	11.08	171.15	342.21	62.06	6 20 1	3669.7	7.26	164.45
110.00	16 45 1	1801.26	-25.16	8.20	343.47	113.94	17 15 2	1201.3	-21.71	.75
110.00	6 9 30	4079.76	13.37	155.39	340.87	58.24	7 17 30	3479.8	9.07	148.93

DIFFERENTIAL CORRECTIONS

TDE .2625 TRA -.3178 TC3 2.2846 BAU .6111
RDE .0197 RRA .3873 RC3 3.1596 FAU .37420
FDE-1.1836 FRA-3.7846 FC-27.6326 BSP 9278
BDE .2633 BRA .5010 BC3 3.8990 FSP 5852

MID-COURSE EXECUTION ACCURACY

SGT 1711.0 SGR 2260.3 SG3 1733.8
RRT .7886 RRF -.9959 RTF -.7880
SGB 2834.9 R23 -.2198 R13 -.9714
SG1 2693.9 SG2 882.8 THA 54.84

ORBIT DETERMINATION ACCURACY

ST 470.1 SR 209.0 SS 889.9
CRT -.1424 CRS .8116 CST .4456
LSA 933.5 MSA 429.2 SSA 30.5
EL1 471.3 EL2 206.3 ALF 175.52

LAUNCH DATE DEC 7 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 543.858 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.043 GAL 2.90 AZL 91.34 HCA 165.11 SMA 187.13 ECC .21813 INC 1.3425 V1 30.232
RP 227.92 LAP -.35 LOP 240.04 VP 21.339 GAP -.40 AZP 88.70 TAL 16.33 TAP 181.44 RCA 146.31 APO 227.94 V2 24.132
RC 239.350 GL -12.99 GP 18.64 ZAL 56.43 ZAP 125.43 ETS 164.64 ZAE 155.59 ETE 125.84 ZAC 107.57 ETC 255.23 CLP 127.72

PLANETOCENTRIC CONIC

C3 11.843 VHL 3.441 DLA 5.12 RAL 129.31 RAD 6567.5 VEL 11.543 PTH 2.01 VHP 3.629 DPA 14.95 RAP 195.55 ECC 1.1949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 15 37	2255.81	-20.55	44.11	343.82	109.92	14 53 12	1655.8	-17.65	36.64
90.00	3 33 54	4581.44	12.02	193.60	342.16	64.17	4 50 15	3981.4	8.45	186.74
100.00	15 39 22	1985.67	-21.45	23.88	343.46	111.34	16 12 28	1385.7	-18.36	16.45
100.00	4 52 50	4326.82	12.88	174.43	341.72	62.79	6 4 57	3726.8	9.14	167.65
110.00	16 53 8	1754.79	-23.85	5.23	342.34	115.25	17 22 23	1154.8	-20.25	357.94
110.00	5 55 33	4130.46	15.17	158.22	340.41	58.99	7 4 23	3530.5	10.95	151.66

DIFFERENTIAL CORRECTIONS
TDE .2795 TRA -.3365 TC3 2.0628 BAU .6349
RDE .0814 RRA .4511 RC3 3.4388 FAU .38054
FDE-1.5505 FRA-4.0212 FC-27.8185 BSP 9660
BDE .2911 BRA .5628 BC3 4.0101 FSP 5969

MID-COURSE EXECUTION ACCURACY
SGT 1596.5 SGR 2487.7 SG3 1767.4
RRT .7551 RRF -.9970 RTF -.7534
SGB 2955.9 R23 -.1816 R13 -.9803
SG1 2806.6 SG2 927.7 THA 60.63

ORBIT DETERMINATION ACCURACY
ST 496.9 SR 273.1 SS 1042.6
CRT .2055 CRS .9323 CST .5359
LSA 1109.1 MSA 421.6 SSA 24.9
EL1 501.3 EL2 264.9 ALF 8.97

LAUNCH DATE DEC 7 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 547.746 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.033 GAL 2.91 AZL 91.58 HCA 166.15 SMA 186.95 ECC .21744 INC 1.5803 V1 30.232
RP 227.53 LAP -.38 LOP 241.09 VP 21.369 GAP -.72 AZP 88.47 TAL 16.43 TAP 182.58 RCA 146.30 APO 227.60 V2 24.173
RC 241.142 GL -15.22 GP 20.24 ZAL 56.60 ZAP 123.48 ETS 164.41 ZAE 153.25 ETE 127.33 ZAC 108.98 ETC 255.13 CLP 126.02

PLANETOCENTRIC CONIC

C3 12.016 VHL 3.466 DLA 3.02 RAL 128.53 RAD 6567.5 VEL 11.550 PTH 2.02 VHP 3.605 DPA 16.66 RAP 195.69 ECC 1.1978

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 28 16	2193.27	-19.05	40.14	342.76	111.36	15 4 50	1593.3	-15.98	32.81
90.00	3 15 2	4650.09	14.02	197.65	341.77	65.15	4 32 32	4050.1	10.56	190.68
100.00	15 51 1	1926.36	-19.93	20.13	342.38	112.75	16 23 8	1326.4	-16.68	12.85
100.00	4 34 58	4392.24	14.89	178.26	341.34	63.78	5 48 10	3792.2	11.24	171.36
110.00	17 2 30	1702.65	-22.29	1.98	341.22	116.61	17 30 53	1102.7	-18.54	354.86
110.00	5 39 59	4188.72	17.18	161.54	340.06	59.98	6 49 48	3588.7	13.06	154.85

DIFFERENTIAL CORRECTIONS
TDE .2933 TRA -.3610 TC3 1.8182 BAU .6663
RDE .1586 RRA .5250 RC3 3.7282 FAU .38434
FDE-1.9596 FRA-4.2482 FC-27.6912 BSP 10233
BDE .3334 BRA .6372 BC3 4.1480 FSP 6076

MID-COURSE EXECUTION ACCURACY
SGT 1476.8 SGR 2739.5 SG3 1788.5
RRT .7084 RRF -.9978 RTF -.7055
SGB 3112.2 R23 -.1423 R13 -.9876
SG1 2958.8 SG2 965.1 THA 66.44

ORBIT DETERMINATION ACCURACY
ST 518.3 SR 377.7 SS 1217.2
CRT .4253 CRS .9779 CST .5993
LSA 1311.9 MSA 413.9 SSA 20.4
EL1 556.8 EL2 318.2 ALF 26.45

LAUNCH DATE DEC 7 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 551.645 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.023 GAL 2.92 AZL 91.86 HCA 167.20 SMA 186.78 ECC .21679 INC 1.8567 V1 30.232
RP 227.14 LAP -.41 LOP 242.13 VP 21.402 GAP -1.03 AZP 88.19 TAL 16.52 TAP 183.72 RCA 146.29 APO 227.28 V2 24.214
RC 242.914 GL -17.76 GP 22.05 ZAL 56.90 ZAP 121.45 ETS 164.18 ZAE 150.71 ETE 128.49 ZAC 110.58 ETC 255.00 CLP 124.26

PLANETOCENTRIC CONIC

C3 12.267 VHL 3.502 DLA .61 RAL 127.69 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 3.594 DPA 18.57 RAP 195.90 ECC 1.2019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 42 50	2122.79	-17.24	35.75	341.73	112.82	15 18 13	1522.8	-14.00	28.57
90.00	2 53 46	4729.30	16.24	202.41	341.53	66.48	4 12 36	4129.3	12.92	195.31
100.00	16 4 28	1859.50	-18.12	15.99	341.33	114.19	16 35 27	1259.5	-14.70	8.87
100.00	4 14 50	4467.82	17.11	182.77	341.12	65.11	5 29 18	3867.8	13.61	175.73
110.00	17 13 21	1643.87	-20.46	358.41	340.12	118.00	17 40 45	1043.9	-16.55	351.46
110.00	5 22 26	4256.23	19.43	165.47	339.88	61.31	6 33 22	3656.2	15.46	158.61

DIFFERENTIAL CORRECTIONS
TDE .3063 TRA -.3893 TC3 1.5624 BAU .7090
RDE .2596 RRA .6142 RC3 4.0312 FAU .38602
FDE-2.4353 FRA-4.4777 FC-27.2440 BSP 10933
BDE .4015 BRA .7271 BC3 4.3234 FSP 6118

MID-COURSE EXECUTION ACCURACY
SGT 1361.8 SGR 3027.1 SG3 1799.4
RRT .6461 RRF -.9984 RTF -.6423
SGB 3319.3 R23 -.1050 R13 -.9928
SG1 3167.2 SG2 993.5 THA 71.96

ORBIT DETERMINATION ACCURACY
ST 537.3 SR 527.7 SS 1423.9
CRT .5574 CRS .9931 CST .6475
LSA 1558.4 MSA 407.1 SSA 16.5
EL1 664.6 EL2 354.2 ALF 44.07

LAUNCH DATE DEC 7 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 555.555 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.015 GAL 2.93 AZL 92.18 HCA 168.25 SMA 186.63 ECC .21619 INC 2.1822 V1 30.232
RP 226.75 LAP -.44 LOP 243.19 VP 21.435 GAP -1.33 AZP 87.86 TAL 16.59 TAP 184.84 RCA 146.28 APO 226.98 V2 24.256
RC 244.666 GL -20.69 GP 24.11 ZAL 57.38 ZAP 119.34 ETS 163.95 ZAE 147.97 ETE 129.36 ZAC 112.42 ETC 254.83 CLP 122.46

PLANETOCENTRIC CONIC

C3 12.627 VHL 3.553 DLA -2.18 RAL 126.77 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 3.598 DPA 20.72 RAP 196.21 ECC 1.2078

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 59 48	2042.66	-15.06	30.88	340.78	114.27	15 33 50	1442.7	-11.66	23.86
90.00	2 29 27	4821.77	18.66	208.12	341.52	68.31	3 49 49	4221.8	15.55	200.82
100.00	16 20 7	1783.54	-15.94	11.40	340.35	115.63	16 49 51	1183.5	-12.36	4.44
100.00	3 51 48	4556.12	19.55	188.19	341.13	66.93	5 7 44	3956.1	16.26	180.94
110.00	17 26 2	1577.20	-18.28	354.47	339.08	119.40	17 52 19	977.2	-14.22	347.70
110.00	5 2 23	4335.23	21.94	170.23	339.94	63.11	6 14 38	3735.2	18.16	163.14

DIFFERENTIAL CORRECTIONS
TDE .3163 TRA -.4230 TC3 1.2914 BAU .7638
RDE .3926 RRA .7230 RC3 4.3362 FAU .38463
FDE-2.9759 FRA-4.7045 FC-26.3704 BSP 11792
BDE .5041 BRA .8377 BC3 4.5244 FSP 6086

MID-COURSE EXECUTION ACCURACY
SGT 1252.3 SGR 3355.4 SG3 1795.6
RRT .5604 RRF -.9988 RTF -.5559
SGB 3581.5 R23 -.0723 R13 -.9962
SG1 3435.2 SG2 1013.1 THA 77.04

ORBIT DETERMINATION ACCURACY
ST 550.2 SR 729.2 SS 1660.5
CRT .6323 CRS .9979 CST .6793
LSA 1852.2 MSA 401.1 SSA 13.2
EL1 834.0 EL2 372.7 ALF 57.14

LAUNCH DATE DEC 7 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 559.475 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.006 GAL 2.93 AZL 92.57 HCA 169.30 SMA 186.49 ECC .21562 INC 2.5727 V1 30.232
RP 226.36 LAP -.48 LOP 244.24 VP 21.469 GAP -1.63 AZP 87.47 TAL 16.65 TAP 185.95 RCA 146.28 APO 226.70 V2 24.297
RC 246.398 GL -24.08 GP 26.46 ZAL 58.09 ZAP 117.12 ETS 163.74 ZAE 144.99 ETE 129.98 ZAC 114.54 ETC 254.61 CLP 120.61

PLANETOCENTRIC CONIC

C3 13.151 VHL 3.626 DLA -5.41 RAL 125.73 RAD 6567.5 VEL 11.599 PTH 2.03 VHP 3.624 DPA 23.15 RAP 196.66 ECC 1.2164

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 51	1950.57	-12.41	25.41	339.96	115.66	15 52 22	1350.6	-8.86	18.54
90.00	2 1 4	4931.33	21.26	215.09	341.85	70.85	3 23 16	4331.3	18.46	207.55
100.00	16 38 39	1696.40	-13.31	6.27	339.50	117.02	17 6 55	1096.4	-9.58	359.47
100.00	3 24 58	4660.73	22.20	194.83	341.48	69.45	4 42 39	4060.7	19.21	187.31
110.00	17 41 2	1501.06	-15.68	350.09	338.15	120.77	18 6 3	901.1	-11.48	343.50
110.00	4 39 4	4428.84	24.71	176.09	340.35	65.59	5 52 53	3828.8	21.20	168.70

DIFFERENTIAL CORRECTIONS

TDE .3238 TRA -.4610 TC3 1.0174 BAU .8327
RDE .5681 RRA .8571 RC3 4.6255 FAU .37913
FDE-3.5707 FRA-4.9142 FC-24.9587 BSP 12824
BDE .6539 BRA .9732 BC3 4.7361 FSP 5973

MID-COURSE EXECUTION ACCURACY

SGT 1158.2 SGR 3729.7 SG3 1771.4
RRT .4490 RRF -.9991 RTF -.4438
SGB 3905.4 R23 -.0463 R13 -.9981
SG1 3768.7 SG2 1024.1 THA 81.42

ORBIT DETERMINATION ACCURACY

ST 557.1 SR 991.1 SS 1919.6
CRT .6735 CRS .9994 CST .6981
LSA 2195.6 MSA 396.3 SSA 10.5
EL1 1071.2 EL2 381.0 ALF 66.05

LAUNCH DATE DEC 7 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 563.466 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.999 GAL 2.94 AZL 93.05 HCA 170.36 SMA 186.36 ECC .21512 INC 3.0488 V1 30.232
RP 225.97 LAP -.51 LOP 245.30 VP 21.505 GAP -1.93 AZP 86.99 TAL 16.73 TAP 187.09 RCA 146.27 APO 226.44 V2 24.339
RC 248.110 GL -28.00 GP 29.20 ZAL 59.02 ZAP 114.73 ETS 163.58 ZAE 141.68 ETE 130.47 ZAC 116.99 ETC 254.33 CLP 118.63

PLANETOCENTRIC CONIC

C3 13.939 VHL 3.733 DLA -9.14 RAL 124.47 RAD 6567.5 VEL 11.633 PTH 2.04 VHP 3.675 DPA 25.95 RAP 197.25 ECC 1.2294

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 43 45	1844.34	-9.21	19.26	339.35	116.90	16 14 30	1244.3	-5.53	12.51
90.00	1 27 10	5062.92	23.94	223.81	342.61	74.42	2 51 33	4462.9	21.58	215.94
100.00	17 0 38	1596.32	-10.14	.53	338.85	118.27	17 27 14	996.3	-6.29	353.86
100.00	2 52 58	4786.16	24.96	203.13	342.28	72.99	4 12 45	4186.2	22.39	195.27
110.00	17 58 42	1414.47	-12.60	345.27	337.39	122.04	18 22 17	814.5	-8.28	338.84
110.00	4 11 23	4540.78	27.65	183.46	341.25	69.05	5 27 4	3940.8	24.55	175.67

DIFFERENTIAL CORRECTIONS

TDE .5711 TRA -.2593 TC3 1.4626 BAU 1.0749
RDE 1.0527 RRA 1.2782 RC3 5.5801 FAU .42241
FDE-5.3861 FRA-6.2873 FC-26.2364 BSP 8874
BDE 1.1977 BRA 1.3043 BC3 5.7686 FSP 3254

MID-COURSE EXECUTION ACCURACY

SGT 1457.2 SGR 4890.6 SG3 2021.9
RRT .7248 RRF -.9996 RTF -.7243
SGB 5103.1 R23 -.0442 R13 -.9986
SG1 5008.0 SG2 980.4 THA 77.32

ORBIT DETERMINATION ACCURACY

ST 885.4 SR 1726.6 SS 2790.9
CRT .8818 CRS .9999 CST .8878
LSA 3375.6 MSA 399.3 SSA 7.2
EL1 1903.0 EL2 378.8 ALF 64.59

LAUNCH DATE DEC 7 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 567.340 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.992 GAL 2.93 AZL 93.64 HCA 171.42 SMA 186.24 ECC .21459 INC 3.6430 V1 30.232
RP 225.58 LAP -.54 LOP 246.37 VP 21.542 GAP -2.21 AZP 86.40 TAL 16.72 TAP 188.13 RCA 146.27 APO 226.20 V2 24.381
RC 249.803 GL -32.62 GP 32.32 ZAL 60.44 ZAP 112.34 ETS 163.39 ZAE 138.17 ETE 130.62 ZAC 119.84 ETC 253.93 CLP 116.74

PLANETOCENTRIC CONIC

C3 15.086 VHL 3.884 DLA -13.56 RAL 123.10 RAD 6567.6 VEL 11.682 PTH 2.05 VHP 3.769 DPA 29.05 RAP 198.20 ECC 1.2483

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 4	1714.12	-5.12	11.87	339.26	117.89	16 43 38	1114.1	-1.35	5.22
90.00	0 44 55	5228.24	26.49	235.24	344.14	79.60	2 12 4	4628.2	24.78	226.99
100.00	17 29 18	1474.62	-6.15	353.70	338.70	119.31	17 53 52	874.6	-2.19	347.14
100.00	2 13 23	4942.97	27.63	214.00	343.89	78.11	3 35 46	4343.0	25.71	205.73
110.00	18 21 34	1310.92	-8.80	339.66	337.08	123.16	18 43 25	710.9	-4.38	333.37
110.00	3 37 36	4679.43	30.65	193.14	343.04	74.06	4 55 36	4079.4	28.16	184.83

DIFFERENTIAL CORRECTIONS

TDE .3053 TRA -.5771 TC3 .4232 BAU 1.0117
RDE 1.1104 RRA 1.2265 RC3 4.9985 FAU .34852
FDE-4.8082 FRA-5.1673 FC-20.0000 BSP 15748
BDE 1.1516 BRA 1.3555 BC3 5.0164 FSP 5500

MID-COURSE EXECUTION ACCURACY

SGT 1038.1 SGR 4606.9 SG3 1623.7
RRT .0804 RRF -.9995 RTF -.0736
SGB 4722.5 R23 -.0111 R13 -.9995
SG1 4607.7 SG2 1034.6 THA 88.91

ORBIT DETERMINATION ACCURACY

ST 521.4 SR 1734.4 SS 2438.0
CRT .6547 CRS 1.0000 CST .6610
LSA 3012.0 MSA 389.8 SSA 6.6
EL1 1769.4 EL2 386.4 ALF 78.30

LAUNCH DATE DEC 7 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 571.287 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.986 GAL 2.93 AZL 94.41 HCA 172.48 SMA 186.13 ECC .21412 INC 4.4064 V1 30.232
RP 225.19 LAP -.58 LOP 247.43 VP 21.579 GAP -2.49 AZP 85.63 TAL 16.73 TAP 189.21 RCA 146.27 APO 225.98 V2 24.423
RC 251.477 GL -38.00 GP 35.96 ZAL 62.26 ZAP 109.76 ETS 163.31 ZAE 134.24 ETE 130.73 ZAC 123.16 ETC 253.38 CLP 114.69

PLANETOCENTRIC CONIC

C3 16.906 VHL 4.112 DLA -18.67 RAL 121.36 RAD 6567.7 VEL 11.760 PTH 2.08 VHP 3.919 DPA 32.62 RAP 199.43 ECC 1.2782

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 0	1551.43	.11	2.77	340.00	118.32	17 22 52	951.4	3.89	356.14
90.00	23 45 7	5442.66	28.18	250.68	346.47	87.14	25 15 49	4842.7	27.49	242.08
100.00	18 7 2	1325.46	-1.12	345.48	339.32	119.87	18 29 8	725.5	2.86	338.96
100.00	1 21 42	5143.87	29.59	228.60	346.37	85.54	2 47 26	4543.9	28.66	219.92
110.00	18 50 41	1188.71	-4.20	333.19	337.40	123.96	19 10 29	588.7	.29	326.98
110.00	2 54 33	4853.38	33.19	206.05	345.88	81.29	4 15 26	4253.4	31.63	197.17

DIFFERENTIAL CORRECTIONS

TDE .2842 TRA -.6516 TC3 .1572 BAU 1.1311
RDE 1.5434 RRA 1.4997 RC3 5.0020 FAU .32197
FDE-5.3958 FRA-5.1916 FC-16.4876 BSP 17459
BDE 1.5693 BRA 1.6351 BC3 5.0044 FSP 5024

MID-COURSE EXECUTION ACCURACY

SGT 1045.0 SGR 5139.1 SG3 1493.2
RRT -.1360 RRF -.9997 RTF .1433
SGB 5244.3 R23 -.0016 R13 -.9997
SG1 5141.2 SG2 1034.9 THA 91.65

ORBIT DETERMINATION ACCURACY

ST 489.4 SR 2253.6 SS 2664.8
CRT .6001 CRS 1.0000 CST .6024
LSA 3502.5 MSA 389.6 SSA 5.2
EL1 2273.2 EL2 388.1 ALF 82.35

LAUNCH DATE DEC 7 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 24 1965

DISTANCE 575.241 EARTH TO MARS

HELIOCENTRIC CONIC

RL 147.37 LAL .00 LOL 74.93 VL 32.980 GAL 2.92 AZL 95.42 HCA 173.54 SMA 186.03 ECC .21369 INC 5.4229 V1 30.232
RP 224.80 LAP -.61 LOP 248.50 VP 21.618 GAP -2.76 AZP 84.61 TAL 16.73 TAP 190.27 RCA 146.27 APO 225.78 V2 24.465
RC 253.132 GL -44.27 GP 40.17 ZAL 64.63 ZAP 107.03 ETS 163.37 ZAE 129.89 ETE 130.80 ZAC 126.99 ETC 252.62 CLP 112.54

PLANETOCENTRIC CONIC

C3 19.890 VHL 4.460 DLA -24.61 RAL 119.13 RAD 6567.8 VEL 11.886 PTH 2.11 VHP 4.158 DPA 36.68 RAP 201.15 ECC 1.3273

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 26	1311.25	7.78	349.29	342.67	117.31	18 27 17	711.2	11.38	342.46
90.00	22 18 57	5758.93	27.10	273.67	349.18	98.55	23 54 56	5158.9	28.00	265.12
100.00	19 5 15	1118.12	5.88	334.07	341.64	119.36	19 23 53	518.1	9.75	327.42
100.00	0 5 45	5427.29	29.23	249.59	349.51	96.54	1 36 12	4827.3	29.83	240.84
110.00	19 31 56	1034.41	1.70	325.14	339.04	124.15	19 49 11	434.4	6.17	318.90
110.00	1 55 33	5083.76	34.14	223.92	349.93	91.80	3 20 16	4483.8	34.01	214.68

DIFFERENTIAL CORRECTIONS
TDE .2466 TRA -.7492 TC3 -.0758 BAU 1.2746
RDE 2.1501 RRA 1.8668 RC3 4.7926 FAU .28563
FDE-5.8375 FRA-5.0823 FC-12.4322 BSP 19335
BDE 2.1642 BRA 2.0115 BC3 4.7932 FSP 4367

MID-COURSE EXECUTION ACCURACY
SGT 1107.1 SGR 5732.6 SG3 1312.6
RRT -.3477 RRF -.9997 RTF .3554
SGB 5838.6 R23 .0042 R13 -.9998
SG1 5746.0 SG2 1035.6 THA 93.97

ORBIT DETERMINATION ACCURACY
ST 448.5 SR 2876.3 SS 2805.8
CRT .4832 CRS 1.0000 CST .4826
LSA 4024.1 MSA 392.2 SSA 4.1
EL1 2884.6 EL2 391.6 ALF 85.61

LAUNCH DATE DEC 7 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 26 1965

DISTANCE 579.200 EARTH TO MARS

HELIOCENTRIC CONIC

RL 147.37 LAL .00 LOL 74.93 VL 32.974 GAL 2.92 AZL 96.84 HCA 174.61 SMA 185.94 ECC .21329 INC 6.8430 V1 30.232
RP 224.41 LAP -.64 LOP 249.58 VP 21.657 GAP -3.03 AZP 83.19 TAL 16.72 TAP 191.32 RCA 146.28 APO 225.59 V2 24.506
RC 254.766 GL -51.54 GP 45.01 ZAL 67.64 ZAP 104.15 ETS 163.65 ZAE 125.09 ETE 130.94 ZAC 131.39 ETC 251.55 CLP 110.23

PLANETOCENTRIC CONIC

C3 25.123 VHL 5.012 DLA -31.42 RAL 116.16 RAD 6568.0 VEL 12.104 PTH 2.17 VHP 4.546 DPA 41.25 RAP 203.51 ECC 1.4135

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.78	18 8 6	1307.99	20.13	355.24	349.27	114.65	18 29 54	708.0	23.28	347.74
104.22	21 52 35	5875.42	20.15	279.89	349.28	114.64	23 30 30	5275.4	23.30	272.39
75.78	18 8 6	1307.99	20.13	355.24	349.27	114.65	18 29 54	708.0	23.28	347.74
104.22	21 52 35	5875.42	20.15	279.89	349.28	114.64	23 30 30	5275.4	23.30	272.39
110.00	20 46 35	793.25	10.78	312.37	343.98	122.64	20 59 48	193.2	15.00	305.82
110.00	0 17 12	5438.16	30.11	250.62	353.45	107.01	1 47 51	4838.2	32.14	242.00

DIFFERENTIAL CORRECTIONS
TDE .1831 TRA -.8871 TC3 -.2611 BAU 1.4573
RDE 3.0277 RRA 2.3950 RC3 4.3311 FAU .23976
FDE-5.9941 FRA-4.8026 FC3-8.2622 BSP 20930
BDE 3.0333 BRA 2.5540 BC3 4.3390 FSP 3461

MID-COURSE EXECUTION ACCURACY
SGT 1234.7 SGR 6412.6 SG3 1082.4
RRT -.5336 RRF -.9998 RTF .5417
SGB 6530.4 R23 .0072 R13 -.9998
SG1 6447.3 SG2 1038.7 THA 96.02

ORBIT DETERMINATION ACCURACY
ST 413.5 SR 3594.7 SS 2797.8
CRT .2558 CRS 1.0000 CST .2526
LSA 4556.4 MSA 399.8 SSA 3.3
EL1 3596.3 EL2 399.5 ALF 88.29

LAUNCH DATE DEC 7 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 28 1965

DISTANCE 583.160 EARTH TO MARS

HELIOCENTRIC CONIC

RL 147.37 LAL .00 LOL 74.93 VL 32.970 GAL 2.91 AZL 98.97 HCA 175.67 SMA 185.85 ECC .21292 INC 8.9694 V1 30.232
RP 224.02 LAP -.67 LOP 250.66 VP 21.697 GAP -3.30 AZP 81.06 TAL 16.70 TAP 192.37 RCA 146.28 APO 225.43 V2 24.548
RC 256.380 GL -59.87 GP 50.43 ZAL 71.31 ZAP 101.15 ETS 164.32 ZAE 119.87 ETE 131.38 ZAC 136.26 ETC 250.03 CLP 107.67

PLANETOCENTRIC CONIC

C3 35.237 VHL 5.936 DLA -39.08 RAL 111.92 RAD 6568.4 VEL 12.514 PTH 2.27 VHP 5.202 DPA 46.24 RAP 206.72 ECC 1.5799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.86	16 30 11	1637.61	21.50	22.02	352.88	123.45	16 57 28	1037.6	25.74	15.03
118.14	22 56 41	5715.09	21.52	268.10	352.89	123.44	24 31 56	5115.1	25.76	261.11
61.86	16 30 11	1637.61	21.50	22.02	352.88	123.45	16 57 28	1037.6	25.74	15.03
118.14	22 56 41	5715.09	21.52	268.10	352.89	123.44	24 31 56	5115.1	25.76	261.11
61.86	16 30 11	1637.61	21.50	22.02	352.88	123.45	16 57 28	1037.6	25.74	15.03
118.14	22 56 41	5715.09	21.52	268.10	352.89	123.44	24 31 56	5115.1	25.76	261.11

DIFFERENTIAL CORRECTIONS
TDE .0988 TRA-1.0810 TC3 -.3578 BAU 1.6631
RDE 4.2319 RRA 3.1171 RC3 3.5122 FAU .17966
FDE-5.4950 FRA-4.1460 FC3-4.4141 BSP 23711
BDE 4.2330 BRA 3.2993 BC3 3.5304 FSP 2569

MID-COURSE EXECUTION ACCURACY
SGT 1412.9 SGR 7006.6 SG3 783.2
RRT -.6658 RRF -.9997 RTF .6753
SGB 7147.6 R23 .0073 R13 -.9998
SG1 7070.9 SG2 1044.6 THA 97.82

ORBIT DETERMINATION ACCURACY
ST 414.6 SR 4248.7 SS 2484.1
CRT -.0459 CRS 1.0000 CST -.0522
LSA 4921.6 MSA 414.3 SSA 2.5
EL1 4248.8 EL2 414.1 ALF 90.26

LAUNCH DATE DEC 7 1964 FLIGHT TIME 282.00 ARRIVAL DATE SEP 15 1965

DISTANCE 619.678 EARTH TO MARS

HELIOCENTRIC CONIC

RL 147.37 LAL .00 LOL 74.93 VL 32.947 GAL 2.66 AZL 80.26 HCA 185.68 SMA 185.47 ECC .21036 INC 9.7414 V1 30.232
RP 220.56 LAP -.96 LOP 260.53 VP 22.088 GAP -5.37 AZP 99.69 TAL 15.38 TAP 201.06 RCA 146.46 APO 224.49 V2 24.924
RC 270.009 GL 63.14 GP -45.41 ZAL 73.66 ZAP 91.53 ETS 180.13 ZAE 115.05 ETE 205.35 ZAC 42.11 ETC 250.43 CLP 92.17

PLANETOCENTRIC CONIC

C3 38.965 VHL 6.242 DLA 74.39 RAL 184.56 RAD 6568.5 VEL 12.662 PTH 2.30 VHP 4.358 DPA -36.47 RAP 152.54 ECC 1.6413

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
13.15	9 52 46	4443.18	-43.28	243.47	126.43	15.97	11 6 49	3843.2	-50.92	240.41
13.15	4 9 56	4753.65	-22.77	248.35	46.66	12.54	5 29 9	4153.7	-30.57	246.76
17.80	7 10 42	4590.32	-32.44	241.39	84.34	18.59	8 27 12	3990.3	-39.98	238.49
162.20	17 59 34	2813.21	-32.43	86.14	84.32	18.59	18 46 27	2213.2	-39.97	83.24
17.80	7 10 42	4590.32	-32.44	241.39	84.34	18.59	8 27 12	3990.3	-39.98	238.49
162.20	17 59 34	2813.21	-32.43	86.14	84.32	18.59	18 46 27	2213.2	-39.97	83.24

DIFFERENTIAL CORRECTIONS
TDE 3.8158 TRA .3132 TC3-1.4921 BAU 1.7424
RDE 4.6998 RRA .9839 RC3-2.9935 FAU .27670
FDE 9.1449 FRA 1.9185 FC3-6.1478 BSP 26111
BDE 6.0538 BRA 1.0325 BC3 3.3448 FSP 3961

MID-COURSE EXECUTION ACCURACY
SGT 4108.4 SGR 6621.3 SG3 1133.8
RRT .9432 RRF .9997 RTF .9402
SGB 7792.3 R23 .0996 R13 .9947
SG1 7703.5 SG2 1173.4 THA 58.86

ORBIT DETERMINATION ACCURACY
ST 3517.5 SR 4431.2 SS 3246.9
CRT .9904 CRS-1.0000 CST -.9904
LSA 6510.2 MSA 409.9 SSA 3.6
EL1 5644.8 EL2 380.8 ALF 51.62

LAUNCH DATE DEC 7 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 623.742 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.947 GAL 2.62 AZL 81.59 HCA 186.79 SMA 185.46 ECC .21021 INC 8.4081 V1 30.232
RP 220.18 LAP -.99 LOP 261.65 VP 22.134 GAP -5.58 AZP 98.35 TAL 15.20 TAP 201.99 RCA 146.48 APO 224.45 V2 24.965
RC 271.430 GL 58.89 GP -40.99 ZAL 72.00 ZAP 90.28 ETS 178.95 ZAE 115.55 ETE 201.90 ZAC 46.17 ETC 251.93 CLP 90.37

PLANETOCENTRIC CONIC

C3 31.599 VHL 5.621 DLA 71.27 RAL 174.28 RAD 6568.3 VEL 12.368 PTH 2.23 VHP 3.969 DPA -32.38 RAP 154.68 ECC 1.5200

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
21.39	6 37 11	4529.31	-35.15	236.19	70.48	23.13	7 52 40	3929.3	-42.44	232.36
158.61	17 11 8	2768.44	-35.15	84.61	70.46	23.12	17 57 17	2168.4	-42.43	80.78
21.39	6 37 11	4529.31	-35.15	236.19	70.48	23.13	7 52 40	3929.3	-42.44	232.36
158.61	17 11 8	2768.44	-35.15	84.61	70.46	23.12	17 57 17	2168.4	-42.43	80.78
21.39	6 37 11	4529.31	-35.15	236.19	70.48	23.13	7 52 40	3929.3	-42.44	232.36
158.61	17 11 8	2768.44	-35.15	84.61	70.46	23.12	17 57 17	2168.4	-42.43	80.78

DIFFERENTIAL CORRECTIONS

TDE 3.6924 TRA .1565 TC3-1.9108 BAU 1.6061
RDE 4.2191 RRA .7059 RC3-3.2868 FAU .33065
FDE11.0155 FRA 1.8341 FC3-9.0588 BSP 24998
BDE 5.6067 BRA .7230 BC3 3.8018 FSP 4909

MID-COURSE EXECUTION ACCURACY

SGT 4361.8 SGR 6096.5 SG3 1403.0
RRT .9490 RRF .9996 RTF .9463
SGB 7496.2 R23 .1141 R13 .9931
SG1 7410.3 SG2 1131.6 THA 54.89

ORBIT DETERMINATION ACCURACY

ST 3767.0 SR 4354.0 SS 3898.2
CRT .9933 CRS-1.0000 CST -.9934
LSA 6943.3 MSA 365.3 SSA 4.4
EL1 5747.9 EL2 329.6 ALF 49.16

LAUNCH DATE DEC 7 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 627.820 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.947 GAL 2.59 AZL 82.55 HCA 187.90 SMA 185.46 ECC .21007 INC 7.4449 V1 30.232
RP 219.81 LAP -1.02 LOP 262.77 VP 22.180 GAP -5.79 AZP 97.38 TAL 15.00 TAP 202.90 RCA 146.50 APO 224.42 V2 25.006
RC 272.833 GL 55.28 GP -37.13 ZAL 70.67 ZAP 88.81 ETS 177.90 ZAE 115.44 ETE 198.69 ZAC 49.71 ETC 253.03 CLP 88.51

PLANETOCENTRIC CONIC

C3 26.920 VHL 5.188 DLA 68.31 RAL 168.02 RAD 6568.1 VEL 12.178 PTH 2.19 VHP 3.714 DPA -28.72 RAP 156.22 ECC 1.4430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
24.82	6 19 34	4479.85	-36.83	231.04	60.70	27.50	7 34 14	3879.8	-43.82	226.34
155.18	16 38 47	2737.75	-36.82	83.07	60.69	27.50	17 24 24	2137.7	-43.81	78.38
24.82	6 19 34	4479.85	-36.83	231.04	60.70	27.50	7 34 14	3879.8	-43.82	226.34
155.18	16 38 47	2737.75	-36.82	83.07	60.69	27.50	17 24 24	2137.7	-43.81	78.38
24.82	6 19 34	4479.85	-36.83	231.04	60.70	27.50	7 34 14	3879.8	-43.82	226.34
155.18	16 38 47	2737.75	-36.82	83.07	60.69	27.50	17 24 24	2137.7	-43.81	78.38

DIFFERENTIAL CORRECTIONS

TDE 3.5330 TRA .0449 TC3-2.3546 BAU 1.5076
RDE 3.6349 RRA .5189 RC3-3.4646 FAU .37480
FDE11.9510 FRA 1.6820 FC-12.0535 BSP 24125
BDE 5.0690 BRA .5208 BC3 4.1890 FSP 5695

MID-COURSE EXECUTION ACCURACY

SGT 4605.4 SGR 5607.2 SG3 1629.9
RRT .9547 RRF .9996 RTF .9522
SGB 7256.0 R23 .1275 R13 .9914
SG1 7176.6 SG2 1071.1 THA 50.86

ORBIT DETERMINATION ACCURACY

ST 3902.4 SR 4042.3 SS 4264.6
CRT .9945 CRS-1.0000 CST -.9946
LSA 7045.6 MSA 339.6 SSA 5.0
EL1 5610.8 EL2 295.5 ALF 46.01

LAUNCH DATE DEC 7 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 631.910 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.947 GAL 2.55 AZL 83.28 HCA 189.02 SMA 185.46 ECC .20994 INC 6.7165 V1 30.232
RP 219.44 LAP -1.05 LOP 263.89 VP 22.226 GAP -5.99 AZP 96.63 TAL 14.78 TAP 203.80 RCA 146.53 APO 224.40 V2 25.047
RC 274.220 GL 52.20 GP -33.79 ZAL 69.64 ZAP 87.21 ETS 177.00 ZAE 114.85 ETE 195.82 ZAC 52.78 ETC 253.85 CLP 86.65

PLANETOCENTRIC CONIC

C3 23.733 VHL 4.872 DLA 65.62 RAL 163.94 RAD 6568.0 VEL 12.046 PTH 2.15 VHP 3.541 DPA -25.47 RAP 157.35 ECC 1.3906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
27.96	6 10 19	4438.63	-37.80	226.20	53.37	31.49	7 24 17	3838.6	-44.48	220.77
152.04	16 15 29	2716.81	-37.79	81.67	53.36	31.49	17 0 45	2116.8	-44.47	76.24
27.96	6 10 19	4438.63	-37.80	226.20	53.37	31.49	7 24 17	3838.6	-44.48	220.77
152.04	16 15 29	2716.81	-37.79	81.67	53.36	31.49	17 0 45	2116.8	-44.47	76.24
27.96	6 10 19	4438.63	-37.80	226.20	53.37	31.49	7 24 17	3838.6	-44.48	220.77
152.04	16 15 29	2716.81	-37.79	81.67	53.36	31.49	17 0 45	2116.8	-44.47	76.24

DIFFERENTIAL CORRECTIONS

TDE 3.4012 TRA -.0384 TC3-2.8147 BAU 1.4364
RDE 3.1150 RRA .3925 RC3-3.5457 FAU .40941
FDE12.3406 FRA 1.5152 FC-14.9347 BSP 23587
BDE 4.6121 BRA .3943 BC3 4.5271 FSP 6349

MID-COURSE EXECUTION ACCURACY

SGT 4851.3 SGR 5158.2 SG3 1814.5
RRT .9594 RRF .9995 RTF .9569
SGB 7081.1 R23 .1404 R13 .9896
SG1 7009.1 SG2 1007.3 THA 46.83

ORBIT DETERMINATION ACCURACY

ST 4001.2 SR 3680.4 SS 4460.3
CRT .9950 CRS-1.0000 CST -.9952
LSA 7024.5 MSA 323.9 SSA 5.7
EL1 5429.7 EL2 270.1 ALF 42.60

LAUNCH DATE DEC 7 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 636.010 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.947 GAL 2.51 AZL 83.85 HCA 190.14 SMA 185.47 ECC .20983 INC 6.1459 V1 30.232
RP 219.07 LAP -1.08 LOP 265.02 VP 22.273 GAP -6.18 AZP 96.05 TAL 14.55 TAP 204.69 RCA 146.55 APO 224.39 V2 25.088
RC 275.589 GL 49.56 GP -30.89 ZAL 68.84 ZAP 85.53 ETS 176.24 ZAE 113.90 ETE 193.29 ZAC 55.43 ETC 254.48 CLP 84.79

PLANETOCENTRIC CONIC

C3 21.443 VHL 4.631 DLA 63.21 RAL 161.16 RAD 6567.9 VEL 11.951 PTH 2.13 VHP 3.421 DPA -22.60 RAP 158.16 ECC 1.3529

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.80	6 5 49	4403.49	-38.29	221.77	47.67	35.05	7 19 12	3803.5	-44.67	215.73
149.20	15 57 47	2702.67	-38.28	80.46	47.65	35.05	16 42 49	2102.7	-44.67	74.43
30.80	6 5 49	4403.49	-38.29	221.77	47.67	35.05	7 19 12	3803.5	-44.67	215.73
149.20	15 57 47	2702.67	-38.28	80.46	47.65	35.05	16 42 49	2102.7	-44.67	74.43
30.80	6 5 49	4403.49	-38.29	221.77	47.67	35.05	7 19 12	3803.5	-44.67	215.73
149.20	15 57 47	2702.67	-38.28	80.46	47.65	35.05	16 42 49	2102.7	-44.67	74.43

DIFFERENTIAL CORRECTIONS

TDE 3.2984 TRA -.1056 TC3-3.2911 BAU 1.3901
RDE 2.6787 RRA .3028 RC3-3.5612 FAU .43652
FDE12.3835 FRA 1.3436 FC-17.6241 BSP 23216
BDE 4.2491 BRA .3207 BC3 4.8491 FSP 6849

MID-COURSE EXECUTION ACCURACY

SGT 5102.0 SGR 4749.1 SG3 1960.3
RRT .9632 RRF .9994 RTF .9607
SGB 6970.2 R23 .1522 R13 .9877
SG1 6906.2 SG2 942.9 THA 42.87

ORBIT DETERMINATION ACCURACY

ST 4083.1 SR 3325.3 SS 4542.8
CRT .9953 CRS-1.0000 CST -.9956
LSA 6947.6 MSA 313.3 SSA 6.4
EL1 5260.0 EL2 249.1 ALF 39.13

LAUNCH DATE DEC 7 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 640.120 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.948 GAL 2.47 AZL 84.31 HCA 191.27 SMA 185.49 ECC .20974 INC 5.6869 V1 30.232
RP 218.70 LAP -1.11 LOP 266.15 VP 22.319 GAP -6.37 AZP 95.58 TAL 14.30 TAP 205.57 RCA 146.58 APO 224.39 V2 25.128
RC 276.940 GL 47.26 GP -28.36 ZAL 68.24 ZAP 83.80 ETS 175.61 ZAE 112.70 ETE 191.09 ZAC 57.73 ETC 254.98 CLP 82.95

PLANETOCENTRIC CONIC

C3 19.727 VHL 4.441 DLA 61.05 RAL 159.21 RAD 6567.8 VEL 11.879 PTH 2.11 VHP 3.337 DPA -20.06 RAP 158.74 ECC 1.3247

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
33.36	6 4 14	4372.85	-38.48	217.76	43.13	38.20	7 17 7	3772.9	-44.57	211.24
146.64	15 43 47	2693.41	-38.47	79.47	43.12	38.19	16 28 41	2093.4	-44.56	72.95
33.36	6 4 14	4372.85	-38.48	217.76	43.13	38.20	7 17 7	3772.9	-44.57	211.24
146.64	15 43 47	2693.41	-38.47	79.47	43.12	38.19	16 28 41	2093.4	-44.56	72.95
33.36	6 4 14	4372.85	-38.48	217.76	43.13	38.20	7 17 7	3772.9	-44.57	211.24
146.64	15 43 47	2693.41	-38.47	79.47	43.12	38.19	16 28 41	2093.4	-44.56	72.95

DIFFERENTIAL CORRECTIONS
TDE 3.2223 TRA -.1590 TC3-3.7756 BAU 1.3625
RDE 2.3193 RRA .2396 RC3-3.5267 FAU .45697
FDE12.2113 FRA 1.1879 FC-20.0546 BSP 23062
BDE 3.9702 BRA .2876 BC3 5.1665 FSP 7221

MID-COURSE EXECUTION ACCURACY
SGT 5357.9 SGR 4378.7 SG3 2072.7
RRT .9664 RRF .9992 RTF .9638
SGB 6919.6 R23 .1625 R13 .9859
SG1 6863.6 SG2 878.3 THA 39.06

ORBIT DETERMINATION ACCURACY
ST 4160.0 SR 2999.5 SS 4552.3
CRT .9955 CRS-1.0000 CST -.9958
LSA 6850.8 MSA 305.2 SSA 7.2
EL1 5123.4 EL2 230.4 ALF 35.75

LAUNCH DATE DEC 7 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 644.239 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.949 GAL 2.42 AZL 84.69 HCA 192.40 SMA 185.50 ECC .20967 INC 5.3090 V1 30.232
RP 218.34 LAP -1.14 LOP 267.28 VP 22.366 GAP -6.56 AZP 95.19 TAL 14.04 TAP 206.44 RCA 146.61 APO 224.40 V2 25.168
RC 278.273 GL 45.25 GP -26.15 ZAL 67.81 ZAP 82.04 ETS 175.08 ZAE 111.31 ETE 189.18 ZAC 59.73 ETC 255.39 CLP 81.13

PLANETOCENTRIC CONIC

C3 18.396 VHL 4.289 DLA 59.11 RAL 157.82 RAD 6567.7 VEL 11.823 PTH 2.09 VHP 3.278 DPA -17.80 RAP 159.17 ECC 1.3028

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.68	6 4 33	4345.63	-38.46	214.12	39.47	40.97	7 16 59	3745.6	-44.28	207.22
144.32	15 32 25	2687.68	-38.44	78.68	39.45	40.96	16 17 13	2087.7	-44.27	71.78
35.68	6 4 33	4345.63	-38.46	214.12	39.47	40.97	7 16 59	3745.6	-44.28	207.22
144.32	15 32 25	2687.68	-38.44	78.68	39.45	40.96	16 17 13	2087.7	-44.27	71.78
35.68	6 4 33	4345.63	-38.46	214.12	39.47	40.97	7 16 59	3745.6	-44.28	207.22
144.32	15 32 25	2687.68	-38.44	78.68	39.45	40.96	16 17 13	2087.7	-44.27	71.78

DIFFERENTIAL CORRECTIONS
TDE 3.1648 TRA -.2038 TC3-4.2703 BAU 1.3505
RDE 2.0266 RRA .1967 RC3-3.4520 FAU .47120
FDE11.9247 FRA 1.0656 FC-22.1752 BSP 23101
BDE 3.7581 BRA .2832 BC3 5.4911 FSP 7515

MID-COURSE EXECUTION ACCURACY
SGT 5619.0 SGR 4044.7 SG3 2157.0
RRT .9689 RRF .9989 RTF .9663
SGB 6923.4 R23 .1708 R13 .9843
SG1 6874.9 SG2 817.6 THA 35.47

ORBIT DETERMINATION ACCURACY
ST 4232.2 SR 2713.0 SS 4521.1
CRT .9955 CRS-1.0000 CST -.9959
LSA 6754.3 MSA 301.6 SSA 8.0
EL1 5022.5 EL2 215.7 ALF 32.61

LAUNCH DATE DEC 7 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 648.369 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.951 GAL 2.37 AZL 85.01 HCA 193.54 SMA 185.53 ECC .20960 INC 4.9927 V1 30.232
RP 217.98 LAP -1.17 LOP 268.42 VP 22.413 GAP -6.74 AZP 94.85 TAL 13.76 TAP 207.30 RCA 146.64 APO 224.42 V2 25.208
RC 279.589 GL 43.49 GP -24.20 ZAL 67.51 ZAP 80.29 ETS 174.63 ZAE 109.79 ETE 187.54 ZAC 61.49 ETC 255.72 CLP 79.34

PLANETOCENTRIC CONIC

C3 17.335 VHL 4.164 DLA 57.36 RAL 156.84 RAD 6567.7 VEL 11.778 PTH 2.08 VHP 3.239 DPA -15.78 RAP 159.47 ECC 1.2853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.78	6 6 9	4321.11	-38.30	210.83	36.47	43.41	7 18 10	3721.1	-43.87	203.63
142.22	15 23 0	2684.54	-38.29	78.06	36.46	43.40	16 7 45	2084.5	-43.86	70.86
37.78	6 6 9	4321.11	-38.30	210.83	36.47	43.41	7 18 10	3721.1	-43.87	203.63
142.22	15 23 0	2684.54	-38.29	78.06	36.46	43.40	16 7 45	2084.5	-43.86	70.86
37.78	6 6 9	4321.11	-38.30	210.83	36.47	43.41	7 18 10	3721.1	-43.87	203.63
142.22	15 23 0	2684.54	-38.29	78.06	36.46	43.40	16 7 45	2084.5	-43.86	70.86

DIFFERENTIAL CORRECTIONS
TDE 3.1227 TRA -.2391 TC3-4.7660 BAU 1.3516
RDE 1.7809 RRA .1638 RC3-3.3611 FAU .48181
FDE11.5331 FRA .9488 FC-24.0625 BSP 23280
BDE 3.5949 BRA .2898 BC3 5.8320 FSP 7689

MID-COURSE EXECUTION ACCURACY
SGT 5881.3 SGR 3743.6 SG3 2218.4
RRT .9713 RRF .9986 RTF .9685
SGB 6971.7 R23 .1768 R13 .9829
SG1 6930.6 SG2 756.0 THA 32.15

ORBIT DETERMINATION ACCURACY
ST 4302.9 SR 2455.4 SS 4449.2
CRT .9956 CRS-1.0000 CST -.9961
LSA 6652.2 MSA 295.6 SSA 8.9
EL1 4950.1 EL2 200.0 ALF 29.66

LAUNCH DATE DEC 7 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 652.507 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.952 GAL 2.32 AZL 85.28 HCA 194.68 SMA 185.56 ECC .20956 INC 4.7237 V1 30.232
RP 217.62 LAP -1.20 LOP 269.57 VP 22.460 GAP -6.91 AZP 94.57 TAL 13.46 TAP 208.14 RCA 146.67 APO 224.44 V2 25.248
RC 280.887 GL 41.93 GP -22.48 ZAL 67.34 ZAP 78.54 ETS 174.26 ZAE 108.18 ETE 186.13 ZAC 63.04 ETC 256.01 CLP 77.58

PLANETOCENTRIC CONIC

C3 16.468 VHL 4.058 DLA 55.78 RAL 156.16 RAD 6567.7 VEL 11.741 PTH 2.07 VHP 3.214 DPA -13.98 RAP 159.68 ECC 1.2710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.71	6 8 40	4298.69	-38.05	207.83	34.01	45.58	7 20 19	3698.7	-43.40	200.39
140.29	15 15 4	2683.34	-38.04	77.60	34.00	45.57	15 59 47	2083.3	-43.39	70.15
39.71	6 8 40	4298.69	-38.05	207.83	34.01	45.58	7 20 19	3698.7	-43.40	200.39
140.29	15 15 4	2683.34	-38.04	77.60	34.00	45.57	15 59 47	2083.3	-43.39	70.15
39.71	6 8 40	4298.69	-38.05	207.83	34.01	45.58	7 20 19	3698.7	-43.40	200.39
140.29	15 15 4	2683.34	-38.04	77.60	34.00	45.57	15 59 47	2083.3	-43.39	70.15

DIFFERENTIAL CORRECTIONS
TDE 3.0927 TRA -.2663 TC3-5.2643 BAU 1.3619
RDE 1.5788 RRA .1430 RC3-3.2490 FAU .48781
FDE11.1117 FRA .8754 FC-25.6452 BSP 23626
BDE 3.4724 BRA .3023 BC3 6.1862 FSP 7816

MID-COURSE EXECUTION ACCURACY
SGT 6145.7 SGR 3471.5 SG3 2260.0
RRT .9731 RRF .9983 RTF .9702
SGB 7058.4 R23 .1808 R13 .9818
SG1 7023.6 SG2 700.2 THA 29.11

ORBIT DETERMINATION ACCURACY
ST 4373.1 SR 2233.1 SS 4363.7
CRT .9956 CRS-1.0000 CST -.9961
LSA 6562.6 MSA 292.7 SSA 9.8
EL1 4906.7 EL2 187.5 ALF 26.99

LAUNCH DATE DEC 7 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 656.654 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.954 GAL 2.27 AZL 85.51 HCA 195.83 SMA 185.59 ECC .20953 INC 4.4921 V1 30.232
RP 217.27 LAP -1.22 LOP 270.71 VP 22.508 GAP -7.09 AZP 94.32 TAL 13.15 TAP 208.98 RCA 146.70 APO 224.48 V2 25.287
RC 282.167 GL 40.54 GP -20.94 ZAL 67.27 ZAP 76.81 ETS 173.96 ZAE 106.51 ETE 184.91 ZAC 64.41 ETC 256.25 CLP 75.86

PLANETOCENTRIC CONIC

C3 15.744 VHL 3.968 DLA 54.33 RAL 155.72 RAD 6567.6 VEL 11.710 PTH 2.06 VHP 3.200 DPA -12.36 RAP 159.82 ECC 1.2591

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.48	6 11 54	4277.94	-37.74	205.09	31.99	47.50	7 23 12	3677.9	-42.88	197.45
138.52	15 8 18	2683.65	-37.73	77.26	31.97	47.49	15 53 2	2083.6	-42.87	69.63
41.48	6 11 54	4277.94	-37.74	205.09	31.99	47.50	7 23 12	3677.9	-42.88	197.45
138.52	15 8 18	2683.65	-37.73	77.26	31.97	47.49	15 53 2	2083.6	-42.87	69.63
41.48	6 11 54	4277.94	-37.74	205.09	31.99	47.50	7 23 12	3677.9	-42.88	197.45
138.52	15 8 18	2683.65	-37.73	77.26	31.97	47.49	15 53 2	2083.6	-42.87	69.63

DIFFERENTIAL CORRECTIONS
TDE 3.0713 TRA -.2865 TC3-5.7615 BAU 1.3797
RDE 1.4088 RRA .1283 RC3-3.1264 FAU .49045
FDE10.6612 FRA .8202 FC-26.9689 BSP 24089
BDE 3.3790 BRA .3139 BC3 6.5550 FSP 7881

MID-COURSE EXECUTION ACCURACY
SGT 6409.1 SGR 3224.1 SG3 2284.6
RRT .9747 RRF .9978 RTF .9718
SGB 7174.4 R23 .1825 R13 .9809
SG1 7145.1 SG2 646.8 THA 26.35

ORBIT DETERMINATION ACCURACY
ST 4442.1 SR 2037.9 SS 4263.6
CRT .9955 CRS-1.0000 CST -.9961
LSA 6479.2 MSA 289.4 SSA 10.8
EL1 4884.1 EL2 175.6 ALF 24.58

LAUNCH DATE DEC 7 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 660.810 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.956 GAL 2.21 AZL 85.71 HCA 196.98 SMA 185.63 ECC .20951 INC 4.2903 V1 30.232
RP 216.91 LAP -1.25 LOP 271.86 VP 22.555 GAP -7.25 AZP 94.10 TAL 12.83 TAP 209.80 RCA 146.74 APO 224.52 V2 25.327
RC 283.431 GL 39.30 GP -19.57 ZAL 67.30 ZAP 75.10 ETS 173.70 ZAE 104.80 ETE 183.86 ZAC 65.64 ETC 256.46 CLP 74.17

PLANETOCENTRIC CONIC

C3 15.130 VHL 3.890 DLA 53.01 RAL 155.46 RAD 6567.6 VEL 11.684 PTH 2.05 VHP 3.196 DPA -10.90 RAP 159.93 ECC 1.2490

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.11	6 15 38	4258.58	-37.40	202.56	30.31	49.23	7 26 36	3658.6	-42.35	194.77
136.89	15 2 31	2685.08	-37.39	77.04	30.30	49.22	15 47 16	2085.1	-42.34	69.26
43.11	6 15 38	4258.58	-37.40	202.56	30.31	49.23	7 26 36	3658.6	-42.35	194.77
136.89	15 2 31	2685.08	-37.39	77.04	30.30	49.22	15 47 16	2085.1	-42.34	69.26
43.11	6 15 38	4258.58	-37.40	202.56	30.31	49.23	7 26 36	3658.6	-42.35	194.77
136.89	15 2 31	2685.08	-37.39	77.04	30.30	49.22	15 47 16	2085.1	-42.34	69.26

DIFFERENTIAL CORRECTIONS
TDE 3.0542 TRA -.3018 TC3-6.2618 BAU 1.4043
RDE 1.2648 RRA .1192 RC3-2.9980 FAU .49035
FDE10.1964 FRA .7917 FC-28.0583 BSP 24621
BDE 3.3058 BRA .3245 BC3 6.9424 FSP 7904

MID-COURSE EXECUTION ACCURACY
SGT 6672.0 SGR 2999.3 SG3 2295.4
RRT .9758 RRF .9972 RTF .9730
SGB 7315.1 R23 .1827 R13 .9803
SG1 7290.5 SG2 600.0 THA 23.86

ORBIT DETERMINATION ACCURACY
ST 4506.7 SR 1866.4 SS 4153.9
CRT .9954 CRS -.9999 CST -.9961
LSA 6400.5 MSA 287.9 SSA 11.8
EL1 4875.1 EL2 165.8 ALF 22.43

LAUNCH DATE DEC 7 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 664.974 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.959 GAL 2.15 AZL 85.89 HCA 198.13 SMA 185.67 ECC .20951 INC 4.1128 V1 30.232
RP 216.57 LAP -1.28 LOP 273.02 VP 22.602 GAP -7.42 AZP 93.91 TAL 12.49 TAP 210.62 RCA 146.77 APO 224.57 V2 25.365
RC 284.679 GL 38.19 GP -18.33 ZAL 67.41 ZAP 73.43 ETS 173.49 ZAE 103.08 ETE 182.95 ZAC 66.74 ETC 256.64 CLP 72.52

PLANETOCENTRIC CONIC

C3 14.600 VHL 3.821 DLA 51.79 RAL 155.36 RAD 6567.6 VEL 11.661 PTH 2.05 VHP 3.198 DPA -9.58 RAP 160.00 ECC 1.2403

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.64	6 19 50	4240.25	-37.03	200.20	28.93	50.79	7 30 30	3640.2	-41.81	192.30
135.36	14 57 29	2687.49	-37.02	76.91	28.92	50.78	15 42 17	2087.5	-41.80	69.01
44.64	6 19 50	4240.25	-37.03	200.20	28.93	50.79	7 30 30	3640.2	-41.81	192.30
135.36	14 57 29	2687.49	-37.02	76.91	28.92	50.78	15 42 17	2087.5	-41.80	69.01
44.64	6 19 50	4240.25	-37.03	200.20	28.93	50.79	7 30 30	3640.2	-41.81	192.30
135.36	14 57 29	2687.49	-37.02	76.91	28.92	50.78	15 42 17	2087.5	-41.80	69.01

DIFFERENTIAL CORRECTIONS
TDE 3.0413 TRA -.3115 TC3-6.7624 BAU 1.4337
RDE 1.1423 RRA .1137 RC3-2.8677 FAU .48806
FDE 9.7308 FRA .7815 FC-28.9404 BSP 25201
BDE 3.2488 BRA .3316 BC3 7.3453 FSP 7877

MID-COURSE EXECUTION ACCURACY
SGT 6933.6 SGR 2795.1 SG3 2295.1
RRT .9767 RRF .9964 RTF .9741
SGB 7475.8 R23 .1810 R13 .9799
SG1 7454.9 SG2 557.7 THA 21.62

ORBIT DETERMINATION ACCURACY
ST 4568.7 SR 1716.1 SS 4039.5
CRT .9952 CRS -.9999 CST -.9960
LSA 6328.8 MSA 286.7 SSA 12.8
EL1 4877.9 EL2 157.1 ALF 20.52

LAUNCH DATE DEC 7 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 669.144 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.962 GAL 2.09 AZL 86.04 HCA 199.29 SMA 185.71 ECC .20952 INC 3.9554 V1 30.232
RP 216.22 LAP -1.31 LOP 274.17 VP 22.649 GAP -7.58 AZP 93.73 TAL 12.13 TAP 211.42 RCA 146.80 APO 224.63 V2 25.404
RC 285.910 GL 37.18 GP -17.22 ZAL 67.59 ZAP 71.79 ETS 173.31 ZAE 101.36 ETE 182.16 ZAC 67.74 ETC 256.80 CLP 70.90

PLANETOCENTRIC CONIC

C3 14.137 VHL 3.760 DLA 50.65 RAL 155.38 RAD 6567.6 VEL 11.641 PTH 2.04 VHP 3.208 DPA -8.38 RAP 160.05 ECC 1.2327

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.08	6 24 23	4222.81	-36.65	198.00	27.80	52.21	7 34 46	3622.8	-41.26	190.00
133.92	14 53 7	2690.66	-36.64	76.86	27.79	52.20	15 37 58	2090.7	-41.25	68.87
46.08	6 24 23	4222.81	-36.65	198.00	27.80	52.21	7 34 46	3622.8	-41.26	190.00
133.92	14 53 7	2690.66	-36.64	76.86	27.79	52.20	15 37 58	2090.7	-41.25	68.87
46.08	6 24 23	4222.81	-36.65	198.00	27.80	52.21	7 34 46	3622.8	-41.26	190.00
133.92	14 53 7	2690.66	-36.64	76.86	27.79	52.20	15 37 58	2090.7	-41.25	68.87

DIFFERENTIAL CORRECTIONS
TDE 3.0404 TRA -.3071 TC3-7.2403 BAU 1.4619
RDE 1.0418 RRA .1160 RC3-2.7217 FAU .48129
FDE 9.3156 FRA .8409 FC-29.4739 BSP 26080
BDE 3.2140 BRA .3282 BC3 7.7349 FSP 7931

MID-COURSE EXECUTION ACCURACY
SGT 7187.1 SGR 2605.2 SG3 2280.8
RRT .9770 RRF .9955 RTF .9749
SGB 7644.7 R23 .1781 R13 .9795
SG1 7626.7 SG2 523.5 THA 19.60

ORBIT DETERMINATION ACCURACY
ST 4641.4 SR 1591.0 SS 3942.1
CRT .9950 CRS -.9999 CST -.9959
LSA 6287.2 MSA 289.7 SSA 13.6
EL1 4904.2 EL2 150.9 ALF 18.85

LAUNCH DATE DEC 7 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 673.325 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	32.964	GAL	2.03	AZL	86.18	HCA	200.45	SMA	185.76	ECC	.20955	INC	3.8149
RP	215.88	LAP	-1.33	LOP	275.34	VP	22.696	GAP	-7.73	AZP	93.58	TAL	11.77	TAP	212.21	RCA	146.84	APO	224.69
RC	287.127	GL	36.27	GP	-16.20	ZAL	67.84	ZAP	70.18	ETS	173.17	ZAE	99.63	ETE	181.47	ZAC	68.64	ETC	256.93

V1	30.232	V2	25.442	CLP	69.33														

PLANETOCENTRIC CONIC

C3	13.728	VHL	3.705	DLA	49.59	RAL	155.51	RAD	6567.5	VEL	11.624	PTH	2.04	VHP	3.222	DPA	-7.30	RAP	160.09

ECC	1.2259																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.43	6 29 16	4206.09	-36.26	195.92	26.88	53.51	7 39 22	3606.1	-40.72	187.85
132.57	14 49 18	2694.48	-36.25	76.88	26.87	53.50	15 34 12	2094.5	-40.71	68.81
47.43	6 29 16	4206.09	-36.26	195.92	26.88	53.51	7 39 22	3606.1	-40.72	187.85
132.57	14 49 18	2694.48	-36.25	76.88	26.87	53.50	15 34 12	2094.5	-40.71	68.81
47.43	6 29 16	4206.09	-36.26	195.92	26.88	53.51	7 39 22	3606.1	-40.72	187.85
132.57	14 49 18	2694.48	-36.25	76.88	26.87	53.50	15 34 12	2094.5	-40.71	68.81

DIFFERENTIAL CORRECTIONS

TDE	3.0286	TRA	-.3087	TC3	-7.7439	BAU	1.4991
RDE	.9482	RRA	.1128	RC3	-2.5989	FAU	.47656
FDE	8.8321	FRA	.8391	FC	-30.0547	BSP	26666
BDE	3.1736	BRA	.3286	BC3	8.1684	FSP	7796

MID-COURSE EXECUTION ACCURACY

SGT	7443.5	SGR	2435.4	SG3	2263.9		
RRT	.9775	RRF	.9944	RTF	.9757		
SGB	7831.8	R23	.1732	R13	.9794		
SG1	7816.5	SG2	489.0	THA	17.81		

ORBIT DETERMINATION ACCURACY

ST	4691.8	SR	1469.6	SS	3810.5		
CRT	.9948	CRS	-.9999	CST	-.9958		
LSA	6213.7	MSA	286.8	SSA	14.7		
EL1	4914.5	EL2	142.9	ALF	17.32		

LAUNCH DATE DEC 7 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 677.515 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	32.968	GAL	1.97	AZL	86.31	HCA	201.61	SMA	185.82	ECC	.20960	INC	3.6885
RP	215.54	LAP	-1.36	LOP	276.50	VP	22.742	GAP	-7.88	AZP	93.43	TAL	11.39	TAP	213.00	RCA	146.87	APO	224.76
RC	288.329	GL	35.44	GP	-15.28	ZAL	68.15	ZAP	68.61	ETS	173.05	ZAE	97.92	ETE	180.87	ZAC	69.47	ETC	257.06

V1	30.232	V2	25.480	CLP	67.79														

PLANETOCENTRIC CONIC

C3	13.362	VHL	3.655	DLA	48.58	RAL	155.74	RAD	6567.5	VEL	11.608	PTH	2.03	VHP	3.241	DPA	-6.31	RAP	160.13

ECC	1.2199																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.72	6 34 25	4189.92	-35.86	193.96	26.14	54.71	7 44 15	3589.9	-40.19	185.82
131.28	14 45 56	2698.87	-35.85	76.96	26.13	54.70	15 30 55	2098.9	-40.18	68.83
48.72	6 34 25	4189.92	-35.86	193.96	26.14	54.71	7 44 15	3589.9	-40.19	185.82
131.28	14 45 56	2698.87	-35.85	76.96	26.13	54.70	15 30 55	2098.9	-40.18	68.83
48.72	6 34 25	4189.92	-35.86	193.96	26.14	54.71	7 44 15	3589.9	-40.19	185.82
131.28	14 45 56	2698.87	-35.85	76.96	26.13	54.70	15 30 55	2098.9	-40.18	68.83

DIFFERENTIAL CORRECTIONS

TDE	3.0200	TRA	-.3028	TC3	-8.2417	BAU	1.5372
RDE	.8680	RRA	.1127	RC3	-2.4751	FAU	.47000
FDE	8.3729	FRA	.8662	FC	-30.4521	BSP	27340
BDE	3.1423	BRA	.3231	BC3	8.6053	FSP	7669

MID-COURSE EXECUTION ACCURACY

SGT	7695.9	SGR	2279.6	SG3	2239.9		
RRT	.9776	RRF	.9931	RTF	.9763		
SGB	8026.4	R23	.1670	R13	.9793		
SG1	8013.2	SG2	460.4	THA	16.21		

ORBIT DETERMINATION ACCURACY

ST	4742.0	SR	1364.0	SS	3684.0		
CRT	.9946	CRS	-.9999	CST	-.9957		
LSA	6151.2	MSA	285.6	SSA	15.7		
EL1	4932.4	EL2	136.4	ALF	15.98		

LAUNCH DATE DEC 7 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 681.711 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	32.971	GAL	1.90	AZL	86.43	HCA	202.78	SMA	185.87	ECC	.20966	INC	3.5740
RP	215.21	LAP	-1.38	LOP	277.67	VP	22.789	GAP	-8.03	AZP	93.30	TAL	10.99	TAP	213.77	RCA	146.90	APO	224.84
RC	289.516	GL	34.68	GP	-14.44	ZAL	68.53	ZAP	67.08	ETS	172.96	ZAE	96.23	ETE	180.36	ZAC	70.23	ETC	257.16

V1	30.232	V2	25.517	CLP	66.29														

PLANETOCENTRIC CONIC

C3	13.032	VHL	3.610	DLA	47.64	RAL	156.05	RAD	6567.5	VEL	11.594	PTH	2.03	VHP	3.264	DPA	-5.41	RAP	160.17

ECC	1.2145																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.95	6 39 52	4174.18	-35.46	192.08	25.55	55.82	7 49 26	3574.2	-39.66	183.89
130.05	14 42 58	2703.79	-35.45	77.10	25.54	55.81	15 28 2	2103.8	-39.65	68.92
49.95	6 39 52	4174.18	-35.46	192.08	25.55	55.82	7 49 26	3574.2	-39.66	183.89
130.05	14 42 58	2703.79	-35.45	77.10	25.54	55.81	15 28 2	2103.8	-39.65	68.92
49.95	6 39 52	4174.18	-35.46	192.08	25.55	55.82	7 49 26	3574.2	-39.66	183.89
130.05	14 42 58	2703.79	-35.45	77.10	25.54	55.81	15 28 2	2103.8	-39.65	68.92

DIFFERENTIAL CORRECTIONS

TDE	3.0123	TRA	-.2919	TC3	-8.7359	BAU	1.5762
RDE	.7988	RRA	.1142	RC3	-2.3520	FAU	.46194
FDE	7.9347	FRA	.9074	FC	-30.6877	BSP	28049
BDE	3.1164	BRA	.3135	BC3	9.0469	FSP	7538

MID-COURSE EXECUTION ACCURACY

SGT	7944.3	SGR	2136.2	SG3	2209.7		
RRT	.9774	RRF	.9914	RTF	.9769		
SGB	8226.5	R23	.1594	R13	.9793		
SG1	8214.9	SG2	436.8	THA	14.77		

ORBIT DETERMINATION ACCURACY

ST	4789.2	SR	1271.4	SS	3561.3		
CRT	.9943	CRS	-.9998	CST	-.9955		
LSA	6095.5	MSA	285.2	SSA	16.8		
EL1	4953.4	EL2	130.8	ALF	14.80		

LAUNCH DATE DEC 7 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 685.916 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	32.974	GAL	1.83	AZL	86.53	HCA	203.95	SMA	185.94	ECC	.20973	INC	3.4699
RP	214.88	LAP	-1.41	LOP	278.84	VP	22.835	GAP	-8.18	AZP	93.17	TAL	10.58	TAP	214.53	RCA	146.94	APO	224.93
RC	290.691	GL	33.99	GP	-13.67	ZAL	68.95	ZAP	65.59	ETS	172.88	ZAE	94.56	ETE	179.90	ZAC	70.92	ETC	257.26

V1	30.232	V2	25.554	CLP	64.83														

PLANETOCENTRIC CONIC

C3	12.732	VHL	3.568	DLA	46.73	RAL	156.43	RAD	6567.5	VEL	11.581	PTH	2.03	VHP	3.291	DPA	-4.59	RAP	160.22

ECC	1.2095																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.13	6 45 33	4158.77	-35.06	190.27	25.11	56.86	7 54 52	3558.8	-39.13	182.05
128.87	14 40 21	2709.20	-35.05	77.29	25.10	56.85	15 25 30	2109.2	-39.12	69.07
51.13	6 45 33	4158.77	-35.06	190.27	25.11	56.86	7 54 52	3558.8	-39.13	182.05
128.87	14 40 21	2709.20	-35.05	77.29	25.10	56.85	15 25 30	2109.2	-39.12	69.07
51.13	6 45 33	4158.77	-35.06	190.27	25.11	56.86	7 54 52	3558.8	-39.13	182.05
128.87	14 40 21	2709.20	-35.05	77.29	25.10	56.85	15 25 30	2109.2	-39.12	69.07

DIFFERENTIAL CORRECTIONS

TDE	3.0056	TRA	-.2743	TC3	-9.2235	BAU	1.6153
RDE	.7380	RRA	.1109	RC3	-2.2311	FAU	.45275
FDE	7.5087	FRA	.9622	FC	-30.7852	BSP	28804
BDE	3.0949	BRA	.2981	BC3	9.4895	FSP	7401

MID-COURSE EXECUTION ACCURACY

SGT	8187.2	SGR	2003.6	SG3	2174.0		
RRT	.9768	RRF	.9895	RTF	.9774		
SGB	8428.8	R23	.1508	R13	.9793		
SG1	8418.5	SG2	417.2	THA	13.48		

ORBIT DETERMINATION ACCURACY

ST	4834.1	SR	1188.9	SS	3438.7		
CRT	.9941	CRS	-.9998	CST	-.9953		
LSA	6043.5	MSA	285.0	SSA	17.8		
EL1	4976.5	EL2	125.7	ALF	13.75		

LAUNCH DATE DEC 7 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 690.128 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.978 GAL 1.76 AZL 86.63 HCA 205.13 SMA 186.00 ECC .20982 INC 3.3745 V1 30.232
RP 214.56 LAP -1.43 LOP 280.02 VP 22.882 GAP -8.32 AZP 93.06 TAL 10.16 TAP 215.28 RCA 146.97 APO 225.03 V2 25.590
RC 291.851 GL 33.35 GP -12.96 ZAL 69.43 ZAP 64.14 ETS 172.82 ZAE 92.91 ETE 179.51 ZAC 71.57 ETC 257.34 CLP 63.41

PLANETOCENTRIC CONIC

C3 12.458 VHL 3.530 DLA 45.87 RAL 156.89 RAD 6567.5 VEL 11.569 PTH 2.02 VHP 3.321 DPA -3.84 RAP 160.28 ECC 1.2050

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.28	6 51 32	4143.52	-34.65	188.51	24.79	57.83	8 0 35	3543.5	-38.61	180.26
127.72	14 38 0	2715.15	-34.64	77.54	24.78	57.82	15 23 15	2115.1	-38.60	69.29
52.28	6 51 32	4143.52	-34.65	188.51	24.79	57.83	8 0 35	3543.5	-38.61	180.26
127.72	14 38 0	2715.15	-34.64	77.54	24.78	57.82	15 23 15	2115.1	-38.60	69.29
52.28	6 51 32	4143.52	-34.65	188.51	24.79	57.83	8 0 35	3543.5	-38.61	180.26
127.72	14 38 0	2715.15	-34.64	77.54	24.78	57.82	15 23 15	2115.1	-38.60	69.29

DIFFERENTIAL CORRECTIONS
TDE 2.9961 TRA -.2533 TC3-9.7142 BAU 1.6558
RDE .6844 RRA .1200 RC3-2.1158 FAU .44318
FDE 7.0950 FRA 1.0219 FC-30.7978 BSP 29513
BDE 3.0733 BRA .2803 BC3 9.9420 FSP 7242

MID-COURSE EXECUTION ACCURACY
SGT 8427.8 SGR 1882.4 SG3 2135.6
RRT .9758 RRF .9872 RTF .9778
SGB 8635.5 R23 .1413 R13 .9793
SG1 8626.1 SG2 402.1 THA 12.32

ORBIT DETERMINATION ACCURACY
ST 4871.2 SR 1115.1 SS 3316.1
CRT .9938 CRS -.9998 CST -.9951
LSA 5990.5 MSA 285.4 SSA 18.8
EL1 4995.7 EL2 121.2 ALF 12.82

LAUNCH DATE DEC 7 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 694.347 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.982 GAL 1.68 AZL 86.71 HCA 206.31 SMA 186.07 ECC .20993 INC 3.2871 V1 30.232
RP 214.24 LAP -1.46 LOP 281.20 VP 22.927 GAP -8.46 AZP 92.95 TAL 9.72 TAP 216.03 RCA 147.01 APO 225.13 V2 25.626
RC 292.998 GL 32.76 GP -12.31 ZAL 69.96 ZAP 62.72 ETS 172.78 ZAE 91.29 ETE 179.16 ZAC 72.17 ETC 257.41 CLP 62.02

PLANETOCENTRIC CONIC

C3 12.206 VHL 3.494 DLA 45.03 RAL 157.40 RAD 6567.5 VEL 11.558 PTH 2.02 VHP 3.353 DPA -3.17 RAP 160.36 ECC 1.2009

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.39	6 57 45	4128.40	-34.25	186.80	24.58	58.75	8 6 34	3528.4	-38.09	178.53
126.61	14 35 53	2721.58	-34.23	77.83	24.57	58.74	15 21 14	2121.6	-38.08	69.55
53.39	6 57 45	4128.40	-34.25	186.80	24.58	58.75	8 6 34	3528.4	-38.09	178.53
126.61	14 35 53	2721.58	-34.23	77.83	24.57	58.74	15 21 14	2121.6	-38.08	69.55
53.39	6 57 45	4128.40	-34.25	186.80	24.58	58.75	8 6 34	3528.4	-38.09	178.53
126.61	14 35 53	2721.58	-34.23	77.83	24.57	58.74	15 21 14	2121.6	-38.08	69.55

DIFFERENTIAL CORRECTIONS
TDE 2.9891 TRA -.2244 TC-10.1924 BAU 1.6950
RDE .6378 RRA .1241 RC3-2.0020 FAU .43258
FDE 6.7059 FRA 1.0950 FC-30.6820 BSP 30312
BDE 3.0564 BRA .2564 BC310.3872 FSP 7097

MID-COURSE EXECUTION ACCURACY
SGT 8661.5 SGR 1770.2 SG3 2093.3
RRT .9744 RRF .9845 RTF .9781
SGB 8840.6 R23 .1310 R13 .9793
SG1 8831.9 SG2 390.6 THA 11.28

ORBIT DETERMINATION ACCURACY
ST 4909.3 SR 1050.3 SS 3199.5
CRT .9935 CRS -.9997 CST -.9948
LSA 5946.3 MSA 286.2 SSA 19.7
EL1 5019.0 EL2 117.1 ALF 12.01

LAUNCH DATE DEC 7 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 698.574 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.986 GAL 1.61 AZL 86.79 HCA 207.49 SMA 186.14 ECC .21005 INC 3.2062 V1 30.232
RP 213.93 LAP -1.48 LOP 282.38 VP 22.973 GAP -8.59 AZP 92.84 TAL 9.27 TAP 216.76 RCA 147.04 APO 225.24 V2 25.662
RC 294.131 GL 32.21 GP -11.70 ZAL 70.53 ZAP 61.35 ETS 172.74 ZAE 89.69 ETE 178.85 ZAC 72.72 ETC 257.47 CLP 60.68

PLANETOCENTRIC CONIC

C3 11.973 VHL 3.460 DLA 44.23 RAL 157.98 RAD 6567.5 VEL 11.548 PTH 2.02 VHP 3.389 DPA -2.55 RAP 160.45 ECC 1.1970

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.49	7 4 15	4113.32	-33.84	185.13	24.46	59.62	8 12 48	3513.3	-37.58	176.83
125.51	14 33 58	2728.52	-33.82	78.17	24.46	59.61	15 19 26	2128.5	-37.57	69.88
54.49	7 4 15	4113.32	-33.84	185.13	24.46	59.62	8 12 48	3513.3	-37.58	176.83
125.51	14 33 58	2728.52	-33.82	78.17	24.46	59.61	15 19 26	2128.5	-37.57	69.88
54.49	7 4 15	4113.32	-33.84	185.13	24.46	59.62	8 12 48	3513.3	-37.58	176.83
125.51	14 33 58	2728.52	-33.82	78.17	24.46	59.61	15 19 26	2128.5	-37.57	69.88

DIFFERENTIAL CORRECTIONS
TDE 2.9768 TRA -.1931 TC-10.6747 BAU 1.7353
RDE .5956 RRA .1280 RC3-1.8937 FAU .42182
FDE 6.3198 FRA 1.1662 FC-30.5009 BSP 31043
BDE 3.0358 BRA .2317 BC310.8413 FSP 6930

MID-COURSE EXECUTION ACCURACY
SGT 8891.9 SGR 1666.6 SG3 2048.8
RRT .9724 RRF .9813 RTF .9784
SGB 9046.8 R23 .1203 R13 .9794
SG1 9038.7 SG2 382.5 THA 10.35

ORBIT DETERMINATION ACCURACY
ST 4935.9 SR 991.0 SS 3078.7
CRT .9932 CRS -.9997 CST -.9945
LSA 5894.1 MSA 287.1 SSA 20.7
EL1 5033.1 EL2 113.3 ALF 11.28

LAUNCH DATE DEC 7 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 702.807 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 32.990 GAL 1.53 AZL 86.87 HCA 208.67 SMA 186.21 ECC .21019 INC 3.1314 V1 30.232
RP 213.62 LAP -1.50 LOP 283.57 VP 23.018 GAP -8.73 AZP 92.75 TAL 8.80 TAP 217.48 RCA 147.07 APO 225.35 V2 25.697
RC 295.251 GL 31.70 GP -11.14 ZAL 71.15 ZAP 60.01 ETS 172.72 ZAE 88.13 ETE 178.59 ZAC 73.25 ETC 257.52 CLP 59.37

PLANETOCENTRIC CONIC

C3 11.757 VHL 3.429 DLA 43.44 RAL 158.60 RAD 6567.4 VEL 11.539 PTH 2.01 VHP 3.426 DPA -1.99 RAP 160.56 ECC 1.1935

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.57	7 11 0	4098.20	-33.42	183.48	24.44	60.45	8 19 18	3498.2	-37.06	175.17
124.43	14 32 13	2735.99	-33.41	78.56	24.44	60.44	15 17 49	2136.0	-37.05	70.25
55.57	7 11 0	4098.20	-33.42	183.48	24.44	60.45	8 19 18	3498.2	-37.06	175.17
124.43	14 32 13	2735.99	-33.41	78.56	24.44	60.44	15 17 49	2136.0	-37.05	70.25
55.57	7 11 0	4098.20	-33.42	183.48	24.44	60.45	8 19 18	3498.2	-37.06	175.17
124.43	14 32 13	2735.99	-33.41	78.56	24.44	60.44	15 17 49	2136.0	-37.05	70.25

DIFFERENTIAL CORRECTIONS
TDE 2.9648 TRA -.1558 TC-11.1495 BAU 1.7748
RDE .5586 RRA .1322 RC3-1.7879 FAU .41042
FDE 5.9559 FRA 1.2425 FC-30.2223 BSP 31760
BDE 3.0170 BRA .2043 BC311.2919 FSP 6758

MID-COURSE EXECUTION ACCURACY
SGT 9117.7 SGR 1570.7 SG3 2001.7
RRT .9699 RRF .9775 RTF .9787
SGB 9252.0 R23 .1092 R13 .9795
SG1 9244.3 SG2 377.4 THA 9.50

ORBIT DETERMINATION ACCURACY
ST 4960.7 SR 938.6 SS 2963.0
CRT .9929 CRS -.9997 CST -.9941
LSA 5846.9 MSA 288.2 SSA 21.7
EL1 5047.6 EL2 109.8 ALF 10.65

LAUNCH DATE DEC 7 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 707.048 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	32.995	GAL	1.44	AZL	86.94	HCA	209.86	SMA	186.29	ECC	.21035	INC	3.0619	V1	30.232
RP	213.31	LAP	-1.52	LOP	284.76	VP	23.063	GAP	-8.86	AZP	92.66	TAL	8.32	TAP	218.19	RCA	147.10	APO	225.47	V2	25.731
RC	296.356	GL	31.22	GP	-10.63	ZAL	71.82	ZAP	58.71	ETS	172.70	ZAE	86.60	ETE	178.35	ZAC	73.74	ETC	257.57	CLP	58.10

PLANETOCENTRIC CONIC

C3	11.556	VHL	3.399	DLA	42.67	RAL	159.28	RAD	6567.4	VEL	11.530	PTH	2.01	VHP	3.466	DPA	-1.48	RAP	160.69	ECC	1.1902

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.64	7 18 3	4082.89	-33.00	181.83	24.50	61.25	8 26 6	3482.9	-36.55	173.52
123.36	14 30 34	2744.10	-32.99	79.00	24.50	61.24	15 16 18	2144.1	-36.54	70.68
56.64	7 18 3	4082.89	-33.00	181.83	24.50	61.25	8 26 6	3482.9	-36.55	173.52
123.36	14 30 34	2744.10	-32.99	79.00	24.50	61.24	15 16 18	2144.1	-36.54	70.68
56.64	7 18 3	4082.89	-33.00	181.83	24.50	61.25	8 26 6	3482.9	-36.55	173.52
123.36	14 30 34	2744.10	-32.99	79.00	24.50	61.24	15 16 18	2144.1	-36.54	70.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.9496	TRA	-.1138	TC-11.6216	BAU	1.8143	SGT	9338.8	SGR	1482.6	SG3	1954.2	ST	4977.8	SR	890.6	SS	2844.3
RDE	.5250	RRA	.1364	RC3-1.6880	FAU	.39919	RRT	.9668	RRF	.9731	RTF	.9789	CRT	.9926	CRS	-.9996	CST	-.9937
FDE	5.5971	FRA	1.3202	FC-29.9065	BSP	32513	SGB	9455.8	R23	.0985	R13	.9795	LSA	5794.6	MSA	289.5	SSA	22.6
BDE	2.9960	BRA	.1777	BC311.7435	FSP	6578	SG1	9448.3	SG2	374.5	THA	8.74	EL1	5055.7	EL2	106.3	ALF	10.07

LAUNCH DATE DEC 7 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 711.296 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.000	GAL	1.36	AZL	87.00	HCA	211.06	SMA	186.37	ECC	.21052	INC	2.9970	V1	30.232
RP	213.01	LAP	-1.55	LOP	285.95	VP	23.108	GAP	-8.98	AZP	92.57	TAL	7.83	TAP	218.89	RCA	147.13	APO	225.60	V2	25.765
RC	297.448	GL	30.77	GP	-10.14	ZAL	72.53	ZAP	57.44	ETS	172.69	ZAE	85.09	ETE	178.15	ZAC	74.20	ETC	257.60	CLP	56.86

PLANETOCENTRIC CONIC

C3	11.369	VHL	3.372	DLA	41.91	RAL	160.00	RAD	6567.4	VEL	11.522	PTH	2.01	VHP	3.508	DPA	-1.02	RAP	160.84	ECC	1.1871

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.71	7 25 25	4067.29	-32.57	180.19	24.64	62.02	8 33 12	3467.3	-36.03	171.87
122.29	14 28 58	2752.91	-32.56	79.50	24.63	62.00	15 14 51	2152.9	-36.02	71.17
57.71	7 25 25	4067.29	-32.57	180.19	24.64	62.02	8 33 12	3467.3	-36.03	171.87
122.29	14 28 58	2752.91	-32.56	79.50	24.63	62.00	15 14 51	2152.9	-36.02	71.17
57.71	7 25 25	4067.29	-32.57	180.19	24.64	62.02	8 33 12	3467.3	-36.03	171.87
122.29	14 28 58	2752.91	-32.56	79.50	24.63	62.00	15 14 51	2152.9	-36.02	71.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.9321	TRA	-.0660	TC-12.0876	BAU	1.8530	SGT	9554.6	SGR	1400.9	SG3	1905.0	ST	4988.8	SR	847.6	SS	2728.7
RDE	.4952	RRA	.1409	RC3-1.5908	FAU	.38757	RRT	.9629	RRF	.9679	RTF	.9790	CRT	.9924	CRS	-.9996	CST	-.9931
FDE	5.2556	FRA	1.4020	FC-29.5140	BSP	33244	SGB	9656.8	R23	.0880	R13	.9795	LSA	5741.7	MSA	291.2	SSA	23.5
BDE	2.9737	BRA	.1556	BC312.1918	FSP	6404	SG1	9649.5	SG2	374.1	THA	8.05	EL1	5059.2	EL2	103.1	ALF	9.57

LAUNCH DATE DEC 7 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 715.551 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.004	GAL	1.27	AZL	87.06	HCA	212.25	SMA	186.45	ECC	.21071	INC	2.9363	V1	30.232
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.152	GAP	-9.11	AZP	92.48	TAL	7.32	TAP	219.58	RCA	147.16	APO	225.74	V2	25.798
RC	298.526	GL	30.34	GP	-9.70	ZAL	73.28	ZAP	56.22	ETS	172.69	ZAE	83.62	ETE	177.96	ZAC	74.64	ETC	257.63	CLP	55.66

PLANETOCENTRIC CONIC

C3	11.194	VHL	3.346	DLA	41.16	RAL	160.77	RAD	6567.4	VEL	11.514	PTH	2.01	VHP	3.552	DPA	-.61	RAP	161.01	ECC	1.1842

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.78	7 33 6	4051.37	-32.14	178.54	24.85	62.76	8 40 37	3451.4	-35.50	170.22
121.22	14 27 26	2762.42	-32.13	80.05	24.84	62.75	15 13 28	2162.4	-35.49	71.73
58.78	7 33 6	4051.37	-32.14	178.54	24.85	62.76	8 40 37	3451.4	-35.50	170.22
121.22	14 27 26	2762.42	-32.13	80.05	24.84	62.75	15 13 28	2162.4	-35.49	71.73
58.78	7 33 6	4051.37	-32.14	178.54	24.85	62.76	8 40 37	3451.4	-35.50	170.22
121.22	14 27 26	2762.42	-32.13	80.05	24.84	62.75	15 13 28	2162.4	-35.49	71.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.9118	TRA	-.0140	TC-12.5512	BAU	1.8916	SGT	9767.4	SGR	1325.5	SG3	1855.5	ST	4992.8	SR	808.5	SS	2612.7
RDE	.4683	RRA	.1450	RC3-1.4982	FAU	.37606	RRT	.9584	RRF	.9620	RTF	.9792	CRT	.9922	CRS	-.9995	CST	-.9925
FDE	4.9243	FRA	1.4797	FC-29.0843	BSP	33943	SGB	9856.9	R23	.0776	R13	.9796	LSA	5685.2	MSA	292.7	SSA	24.4
BDE	2.9492	BRA	.1457	BC312.6403	FSP	6219	SG1	9849.7	SG2	375.2	THA	7.42	EL1	5056.9	EL2	99.8	ALF	9.13

LAUNCH DATE DEC 7 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 719.812 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.009	GAL	1.18	AZL	87.12	HCA	213.45	SMA	186.54	ECC	.21092	INC	2.8793	V1	30.232
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.195	GAP	-9.23	AZP	92.40	TAL	6.80	TAP	220.26	RCA	147.19	APO	225.88	V2	25.831
RC	299.592	GL	29.94	GP	-9.28	ZAL	74.08	ZAP	55.02	ETS	172.69	ZAE	82.17	ETE	177.81	ZAC	75.05	ETC	257.65	CLP	54.49

PLANETOCENTRIC CONIC

C3	11.031	VHL	3.321	DLA	40.42	RAL	161.58	RAD	6567.4	VEL	11.507	PTH	2.00	VHP	3.598	DPA	-.23	RAP	161.20	ECC	1.1815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.86	7 41 7	4034.99	-31.70	176.87	25.12	63.48	8 48 22	3435.0	-34.97	168.55
120.14	14 25 52	2772.77	-31.68	80.67	25.12	63.47	15 12 5	2172.8	-34.96	72.35
59.86	7 41 7	4034.99	-31.70	176.87	25.12	63.48	8 48 22	3435.0	-34.97	168.55
120.14	14 25 52	2772.77	-31.68	80.67	25.12	63.47	15 12 5	2172.8	-34.96	72.35
59.86	7 41 7	4034.99	-31.70	176.87	25.12	63.48	8 48 22	3435.0	-34.97	168.55
120.14	14 25 52	2772.77	-31.68	80.67	25.12	63.47	15 12 5	2172.8	-34.96	72.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.8897	TRA	.0439	TC-13.0050	BAU	1.9291	SGT	9974.4	SGR	1256.0	SG3	1805.5	ST	4991.9	SR	773.9	SS	2501.9
RDE	.4444	RRA	.1494	RC3-1.4084	FAU	.36436	RRT	.9529	RRF	.9552	RTF	.9793	CRT	.9920	CRS	-.9994	CST	-.9919
FDE	4.6131	FRA	1.5612	FC-28.5961	BSP	34659	SGB	10053.1	R23	.0681	R13	.9796	LSA	5629.4	MSA	294.8	SSA	25.3
BDE	2.9237	BRA	.1557	BC313.0810	FSP	6041	SG1	10046.0	SG2	378.3	THA	6.85	EL1	5050.6	EL2	96.5	ALF	8.75

LAUNCH DATE DEC 7 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 724.080 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.014	GAL	1.09	AZL	87.17	HCA	214.65	SMA	186.62	ECC	.21114	INC	2.8257	V1	30.232
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.238	GAP	-9.35	AZP	92.33	TAL	6.27	TAP	220.92	RCA	147.22	APO	226.03	V2	25.863
RC	300.645	GL	29.56	GP	-8.89	ZAL	74.91	ZAP	53.87	ETS	172.70	ZAE	80.76	ETE	177.67	ZAC	75.45	ETC	257.66	CLP	53.36

PLANETOCENTRIC CONIC

C3	10.879	VHL	3.298	DLA	39.68	RAL	162.44	RAD	6567.4	VEL	11.501	PTH	2.00	VHP	3.645	DPA	.10	RAP	161.41	ECC	1.1790

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.96	7 49 31	4018.06	-31.24	175.17	25.46	64.18	8 56 29	3418.1	-34.43	166.86
119.04	14 24 16	2784.01	-31.23	81.37	25.46	64.17	15 10 41	2184.0	-34.42	73.05
60.96	7 49 31	4018.06	-31.24	175.17	25.46	64.18	8 56 29	3418.1	-34.43	166.86
119.04	14 24 16	2784.01	-31.23	81.37	25.46	64.17	15 10 41	2184.0	-34.42	73.05
60.96	7 49 31	4018.06	-31.24	175.17	25.46	64.18	8 56 29	3418.1	-34.43	166.86
119.04	14 24 16	2784.01	-31.23	81.37	25.46	64.17	15 10 41	2184.0	-34.42	73.05

DIFFERENTIAL CORRECTIONS

TDE	2.8640	TRA	.1062	TC-13.4524	BAU	1.9660	
RDE	.4227	RRA	.1534	RC3-1.3217	FAU	.35263	
FDE	4.3091	FRA	1.6389	FC-28.0612	BSP	35344	
BDE	2.8950	BRA	.1866	BC313.5172	FSP	5858	

MID-COURSE EXECUTION ACCURACY

SGT10176.4	SGR	1191.3	SG3	1754.5		
RRT	.9464	RRF	.9473	RTF	.9794	
SGB10245.9	R23	.0591	R13	.9797		
SG110238.7	SG2	382.5	THA	6.33		

ORBIT DETERMINATION ACCURACY

ST	4982.7	SR	742.0	SS	2389.5
CRT	.9919	CRS	-.9993	CST	-.9910
LSA	5567.6	MSA	296.8	SSA	26.2
EL1	5036.7	EL2	93.2	ALF	8.41

LAUNCH DATE DEC 7 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 728.354 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.020	GAL	1.00	AZL	87.22	HCA	215.86	SMA	186.71	ECC	.21139	INC	2.7751	V1	30.232
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.281	GAP	-9.46	AZP	92.25	TAL	5.72	TAP	221.58	RCA	147.24	APO	226.18	V2	25.895
RC	301.687	GL	29.20	GP	-8.52	ZAL	75.79	ZAP	52.74	ETS	172.70	ZAE	79.37	ETE	177.54	ZAC	75.83	ETC	257.67	CLP	52.25

PLANETOCENTRIC CONIC

C3	10.738	VHL	3.277	DLA	38.94	RAL	163.33	RAD	6567.4	VEL	11.495	PTH	2.00	VHP	3.694	DPA	.40	RAP	161.65	ECC	1.1767

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.07	7 58 21	4000.35	-30.78	173.43	25.86	64.87	9 5 1	3400.3	-33.88	165.12
117.93	14 22 33	2796.38	-30.76	82.14	25.85	64.85	15 9 9	2196.4	-33.87	73.83
62.07	7 58 21	4000.35	-30.78	173.43	25.86	64.87	9 5 1	3400.3	-33.88	165.12
117.93	14 22 33	2796.38	-30.76	82.14	25.85	64.85	15 9 9	2196.4	-33.87	73.83
62.07	7 58 21	4000.35	-30.78	173.43	25.86	64.87	9 5 1	3400.3	-33.88	165.12
117.93	14 22 33	2796.38	-30.76	82.14	25.85	64.85	15 9 9	2196.4	-33.87	73.83

DIFFERENTIAL CORRECTIONS

TDE	2.8352	TRA	.1741	TC-13.8972	BAU	2.0029	
RDE	.4033	RRA	.1574	RC3-1.2396	FAU	.34127	
FDE	4.0212	FRA	1.7161	FC-27.5152	BSP	36051	
BDE	2.8638	BRA	.2347	BC313.9524	FSP	5691	

MID-COURSE EXECUTION ACCURACY

SGT10377.0	SGR	1132.4	SG3	1705.2		
RRT	.9389	RRF	.9384	RTF	.9795	
SGB10438.6	R23	.0507	R13	.9797		
SG110431.4	SG2	387.8	THA	5.86		

ORBIT DETERMINATION ACCURACY

ST	4966.3	SR	713.5	SS	2280.7
CRT	.9919	CRS	-.9990	CST	-.9901
LSA	5503.2	MSA	299.1	SSA	27.0
EL1	5016.5	EL2	89.7	ALF	8.11

LAUNCH DATE DEC 7 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 732.631 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.025	GAL	.90	AZL	87.27	HCA	217.07	SMA	186.81	ECC	.21165	INC	2.7273	V1	30.232
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.323	GAP	-9.57	AZP	92.18	TAL	5.16	TAP	222.23	RCA	147.27	APO	226.34	V2	25.926
RC	302.717	GL	28.85	GP	-8.18	ZAL	76.72	ZAP	51.65	ETS	172.72	ZAE	78.02	ETE	177.43	ZAC	76.19	ETC	257.67	CLP	51.18

PLANETOCENTRIC CONIC

C3	10.606	VHL	3.257	DLA	38.20	RAL	164.26	RAD	6567.4	VEL	11.489	PTH	2.00	VHP	3.744	DPA	.66	RAP	161.91	ECC	1.1746

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.22	8 7 37	3981.83	-30.30	171.64	26.31	65.54	9 13 59	3381.8	-33.32	163.34
116.78	14 20 42	2809.89	-30.29	83.01	26.31	65.53	15 7 32	2209.9	-33.31	74.71
63.22	8 7 37	3981.83	-30.30	171.64	26.31	65.54	9 13 59	3381.8	-33.32	163.34
116.78	14 20 42	2809.89	-30.29	83.01	26.31	65.53	15 7 32	2209.9	-33.31	74.71
63.22	8 7 37	3981.83	-30.30	171.64	26.31	65.54	9 13 59	3381.8	-33.32	163.34
116.78	14 20 42	2809.89	-30.29	83.01	26.31	65.53	15 7 32	2209.9	-33.31	74.71

DIFFERENTIAL CORRECTIONS

TDE	2.8203	TRA	.2649	TC-14.2700	BAU	2.0300	
RDE	.3878	RRA	.1639	RC3-1.1506	FAU	.32772	
FDE	3.7834	FRA	1.8397	FC-26.7496	BSP	37138	
BDE	2.8469	BRA	.3115	BC314.3163	FSP	5607	

MID-COURSE EXECUTION ACCURACY

SGT10552.9	SGR	1077.9	SG3	1650.3		
RRT	.9292	RRF	.9282	RTF	.9794	
SGB10607.8	R23	.0458	R13	.9796		
SG110600.4	SG2	396.7	THA	5.43		

ORBIT DETERMINATION ACCURACY

ST	4972.8	SR	691.5	SS	2196.6
CRT	.9920	CRS	-.9987	CST	-.9889
LSA	5471.6	MSA	305.5	SSA	27.4
EL1	5019.9	EL2	86.2	ALF	7.86

LAUNCH DATE DEC 7 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 736.918 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.030	GAL	.80	AZL	87.32	HCA	218.28	SMA	186.90	ECC	.21194	INC	2.6820	V1	30.232
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.364	GAP	-9.69	AZP	92.11	TAL	4.58	TAP	222.87	RCA	147.29	APO	226.51	V2	25.956
RC	303.736	GL	28.51	GP	-7.86	ZAL	77.68	ZAP	50.59	ETS	172.73	ZAE	76.69	ETE	177.34	ZAC	76.54	ETC	257.66	CLP	50.14

PLANETOCENTRIC CONIC

C3	10.485	VHL	3.238	DLA	37.45	RAL	165.22	RAD	6567.4	VEL	11.484	PTH	2.00	VHP	3.796	DPA	.88	RAP	162.19	ECC	1.1726

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.40	8 17 24	3962.21	-29.81	169.78	26.82	66.20	9 23 26	3362.2	-32.75	161.49
115.60	14 18 35	2824.86	-29.80	83.98	26.82	66.18	15 5 40	2224.9	-32.74	75.69
64.40	8 17 24	3962.21	-29.81	169.78	26.82	66.20	9 23 26	3362.2	-32.75	161.49
115.60	14 18 35	2824.86	-29.80	83.98	26.82	66.18	15 5 40	2224.9	-32.74	75.69
64.40	8 17 24	3962.21	-29.81	169.78	26.82	66.20	9 23 26	3362.2	-32.75	161.49
115.60	14 18 35	2824.86	-29.80	83.98	26.82	66.18	15 5 40	2224.9	-32.74	75.69

DIFFERENTIAL CORRECTIONS

TDE	2.7775	TRA	.3362	TC-14.7207	BAU	2.0690	
RDE	.3708	RRA	.1666	RC3-1.0783	FAU	.31749	
FDE	3.4969	FRA	1.8936	FC-26.2140	BSP	37611	
BDE	2.8021	BRA	.3752	BC314.7601	FSP	5385	

MID-COURSE EXECUTION ACCURACY

SGT10751.7	SGR	1027.6	SG3	1603.2		
RRT	.9196	RRF	.9168	RTF	.9795	
SGB10800.7	R23	.0377	R13	.9796		
SG110793.2	SG2	402.2	THA	5.03		

ORBIT DETERMINATION ACCURACY

ST	4928.0	SR	665.8	SS	2078.2
CRT	.9922	CRS	-.9982	CST	-.9876
LSA	5380.7	MSA	306.9	SSA	28.4
EL1	4972.1	EL2	82.4	ALF	7.64

LAUNCH DATE DEC 7 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 741.210 EARTH TO MARS
RL 147.37 LAL .00 LOL 74.93 VL 33.036 GAL .70 AZL 87.36 HCA 219.50 SMA 187.00 ECC .21224 INC 2.6389 V1 30.232
RP 211.08 LAP -1.68 LOP 294.40 VP 23.405 GAP -9.80 AZP 92.04 TAL 4.00 TAP 223.49 RCA 147.31 APO 226.69 V2 25.986
RC 304.746 GL 28.18 GP -7.56 ZAL 78.68 ZAP 49.56 ETS 172.74 ZAE 75.39 ETE 177.26 ZAC 76.87 ETC 257.65 CLP 49.13
PLANETOCENTRIC CONIC
C3 10.374 VHL 3.221 DLA 36.69 RAL 166.21 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 3.849 DPA 1.08 RAP 162.49 ECC 1.1707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.62	8 27 44	3941.36	-29.30	167.83	27.38	66.85	9 33 26	3341.4	-32.16	159.56
114.38	14 16 12	2841.40	-29.29	85.07	27.37	66.83	15 3 33	2241.4	-32.15	76.79
65.62	8 27 44	3941.36	-29.30	167.83	27.38	66.85	9 33 26	3341.4	-32.16	159.56
114.38	14 16 12	2841.40	-29.29	85.07	27.37	66.83	15 3 33	2241.4	-32.15	76.79
65.62	8 27 44	3941.36	-29.30	167.83	27.38	66.85	9 33 26	3341.4	-32.16	159.56
114.38	14 16 12	2841.40	-29.29	85.07	27.37	66.83	15 3 33	2241.4	-32.15	76.79

DIFFERENTIAL CORRECTIONS
TDE 2.7344 TRA .4156 TC-15.1461 BAU 2.1052
RDE .3557 RRA .1695 RC3-1.0056 FAU .30671
FDE 3.2285 FRA 1.9518 FC-25.5958 BSP 38146
BDE 2.7575 BRA .4489 BC315.1794 FSP 5187

MID-COURSE EXECUTION ACCURACY
SGT10940.9 SGR 980.6 SG3 1554.2
RRT .9084 RRF .9039 RTF .9796
SGB10984.8 R23 .0306 R13 .9797
SG110977.2 SG2 408.7 THA 4.66

ORBIT DETERMINATION ACCURACY
ST 4880.9 SR 643.1 SS 1965.1
CRT .9924 CRS -.9975 CST -.9861
LSA 5291.8 MSA 308.9 SSA 29.3
EL1 4922.5 EL2 78.3 ALF 7.45

LAUNCH DATE DEC 7 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 745.507 EARTH TO MARS
RL 147.37 LAL .00 LOL 74.93 VL 33.042 GAL .59 AZL 87.40 HCA 220.71 SMA 187.10 ECC .21257 INC 2.5979 V1 30.232
RP 210.82 LAP -1.69 LOP 295.62 VP 23.445 GAP -9.90 AZP 91.97 TAL 3.39 TAP 224.11 RCA 147.33 APO 226.87 V2 26.015
RC 305.746 GL 27.86 GP -7.28 ZAL 79.72 ZAP 48.55 ETS 172.76 ZAE 74.11 ETE 177.18 ZAC 77.20 ETC 257.63 CLP 48.14
PLANETOCENTRIC CONIC
C3 10.272 VHL 3.205 DLA 35.93 RAL 167.24 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 3.904 DPA 1.25 RAP 162.82 ECC 1.1691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.89	8 38 43	3918.99	-28.78	165.78	27.99	67.49	9 44 2	3319.0	-31.56	157.52
113.11	14 13 26	2859.80	-28.77	86.29	27.98	67.47	15 1 6	2259.8	-31.55	78.04
66.89	8 38 43	3918.99	-28.78	165.78	27.99	67.49	9 44 2	3319.0	-31.56	157.52
113.11	14 13 26	2859.80	-28.77	86.29	27.98	67.47	15 1 6	2259.8	-31.55	78.04
66.89	8 38 43	3918.99	-28.78	165.78	27.99	67.49	9 44 2	3319.0	-31.56	157.52
113.11	14 13 26	2859.80	-28.77	86.29	27.98	67.47	15 1 6	2259.8	-31.55	78.04

DIFFERENTIAL CORRECTIONS
TDE 2.6879 TRA .5015 TC-15.5616 BAU 2.1409
RDE .3422 RRA .1726 RC3 -.9356 FAU .29613
FDE 2.9739 FRA 2.0134 FC-24.9575 BSP 38708
BDE 2.7096 BRA .5304 BC315.5897 FSP 5007

MID-COURSE EXECUTION ACCURACY
SGT11127.3 SGR 937.7 SG3 1506.3
RRT .8955 RRF .8895 RTF .9796
SGB11166.7 R23 .0246 R13 .9797
SG111159.0 SG2 416.1 THA 4.32

ORBIT DETERMINATION ACCURACY
ST 4825.8 SR 622.7 SS 1855.7
CRT .9928 CRS -.9964 CST -.9842
LSA 5198.2 MSA 312.0 SSA 30.1
EL1 4865.3 EL2 74.1 ALF 7.30

LAUNCH DATE DEC 7 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 749.809 EARTH TO MARS
RL 147.37 LAL .00 LOL 74.93 VL 33.047 GAL .49 AZL 87.44 HCA 221.94 SMA 187.20 ECC .21291 INC 2.5588 V1 30.232
RP 210.58 LAP -1.71 LOP 296.84 VP 23.485 GAP -10.01 AZP 91.90 TAL 2.78 TAP 224.71 RCA 147.34 APO 227.06 V2 26.043
RC 306.737 GL 27.54 GP -7.01 ZAL 80.80 ZAP 47.58 ETS 172.77 ZAE 72.86 ETE 177.12 ZAC 77.51 ETC 257.61 CLP 47.19
PLANETOCENTRIC CONIC
C3 10.180 VHL 3.191 DLA 35.16 RAL 168.30 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 3.959 DPA 1.39 RAP 163.17 ECC 1.1675

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.23	8 50 24	3894.81	-28.24	163.61	28.65	68.12	9 55 19	3294.8	-30.94	155.37
111.77	14 10 11	2880.38	-28.23	87.68	28.64	68.11	14 58 12	2280.4	-30.94	79.44
68.23	8 50 24	3894.81	-28.24	163.61	28.65	68.12	9 55 19	3294.8	-30.94	155.37
111.77	14 10 11	2880.38	-28.23	87.68	28.64	68.11	14 58 12	2280.4	-30.94	79.44
68.23	8 50 24	3894.81	-28.24	163.61	28.65	68.12	9 55 19	3294.8	-30.94	155.37
111.77	14 10 11	2880.38	-28.23	87.68	28.64	68.11	14 58 12	2280.4	-30.94	79.44

DIFFERENTIAL CORRECTIONS
TDE 2.6416 TRA .5958 TC-15.9599 BAU 2.1754
RDE .3306 RRA .1759 RC3 -.8689 FAU .28597
FDE 2.7415 FRA 2.0786 FC-24.3185 BSP 39317
BDE 2.6622 BRA .6213 BC315.9835 FSP 4838

MID-COURSE EXECUTION ACCURACY
SGT11311.0 SGR 899.6 SG3 1460.9
RRT .8815 RRF .8738 RTF .9797
SGB11346.7 R23 .0191 R13 .9798
SG111338.8 SG2 423.8 THA 4.02

ORBIT DETERMINATION ACCURACY
ST 4769.6 SR 605.1 SS 1755.3
CRT .9933 CRS -.9949 CST -.9820
LSA 5108.4 MSA 315.7 SSA 30.9
EL1 4807.3 EL2 69.5 ALF 7.18

LAUNCH DATE DEC 7 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 754.116 EARTH TO MARS
RL 147.37 LAL .00 LOL 74.93 VL 33.053 GAL .38 AZL 87.48 HCA 223.16 SMA 187.30 ECC .21329 INC 2.5214 V1 30.232
RP 210.34 LAP -1.72 LOP 298.06 VP 23.524 GAP -10.11 AZP 91.84 TAL 2.15 TAP 225.30 RCA 147.35 APO 227.25 V2 26.071
RC 307.719 GL 27.23 GP -6.76 ZAL 81.92 ZAP 46.63 ETS 172.79 ZAE 71.64 ETE 177.06 ZAC 77.81 ETC 257.59 CLP 46.25
PLANETOCENTRIC CONIC
C3 10.098 VHL 3.178 DLA 34.38 RAL 169.39 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 4.016 DPA 1.51 RAP 163.53 ECC 1.1662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.64	9 2 58	3868.31	-27.68	161.28	29.35	68.74	10 7 27	3268.3	-30.31	153.05
110.36	14 6 19	2903.64	-27.67	89.26	29.35	68.73	14 54 42	2303.6	-30.30	81.04
69.64	9 2 58	3868.31	-27.68	161.28	29.35	68.74	10 7 27	3268.3	-30.31	153.05
110.36	14 6 19	2903.64	-27.67	89.26	29.35	68.73	14 54 42	2303.6	-30.30	81.04
69.64	9 2 58	3868.31	-27.68	161.28	29.35	68.74	10 7 27	3268.3	-30.31	153.05
110.36	14 6 19	2903.64	-27.67	89.26	29.35	68.73	14 54 42	2303.6	-30.30	81.04

DIFFERENTIAL CORRECTIONS
TDE 2.5893 TRA .6941 TC-16.3464 BAU 2.2095
RDE .3199 RRA .1788 RC3 -.8040 FAU .27588
FDE 2.5147 FRA 2.1366 FC-23.6507 BSP 39848
BDE 2.6090 BRA .7167 BC316.3662 FSP 4650

MID-COURSE EXECUTION ACCURACY
SGT11490.4 SGR 864.0 SG3 1415.2
RRT .8657 RRF .8564 RTF .9798
SGB11522.8 R23 .0140 R13 .9799
SG111514.7 SG2 431.6 THA 3.73

ORBIT DETERMINATION ACCURACY
ST 4701.0 SR 588.9 SS 1654.0
CRT .9939 CRS -.9928 CST -.9793
LSA 5007.9 MSA 319.3 SSA 31.7
EL1 4737.3 EL2 64.6 ALF 7.10

LAUNCH DATE DEC 7 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 758.428 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.059 GAL .26 AZL 87.51 HCA 224.39 SMA 187.41 ECC .21368 INC 2.4855 V1 30.232
RP 210.10 LAP -1.74 LOP 299.29 VP 23.562 GAP -10.22 AZP 91.78 TAL 1.50 TAP 225.89 RCA 147.36 APO 227.46 V2 26.098
RC 308.691 GL 26.92 GP -6.52 ZAL 83.07 ZAP 45.72 ETS 172.80 ZAE 70.44 ETE 177.01 ZAC 78.11 ETC 257.56 CLP 45.35

PLANETOCENTRIC CONIC

C3 10.027 VHL 3.166 DLA 33.58 RAL 170.51 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 4.074 DPA 1.60 RAP 163.92 ECC 1.1650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.15	9 16 35	3838.94	-27.10	158.74	30.10	69.37	10 20 33	3238.9	-29.65	150.54
108.85	14 1 37	2930.16	-27.09	91.08	30.10	69.35	14 50 27	2330.2	-29.65	82.88
71.15	9 16 35	3838.94	-27.10	158.74	30.10	69.37	10 20 33	3238.9	-29.65	150.54
108.85	14 1 37	2930.16	-27.09	91.08	30.10	69.35	14 50 27	2330.2	-29.65	82.88
110.00	14 57 15	2759.89	-30.76	79.22	31.47	74.30	15 43 15	2159.9	-32.61	70.48
110.00	13 20 7	3057.21	-23.54	99.28	28.42	64.47	14 11 4	2457.2	-26.78	91.61

DIFFERENTIAL CORRECTIONS
TDE 2.5336 TRA .7964 TC-16.7037 BAU 2.2412
RDE .3103 RRA .1811 RC3 -.7382 FAU .26522
FDE 2.2953 FRA 2.1807 FC-22.9007 BSP 40433
BDE 2.5525 BRA .8167 BC316.7200 FSP 4486

MID-COURSE EXECUTION ACCURACY
SGT11658.0 SGR 829.8 SG3 1366.1
RRT .8477 RRF .8365 RTF .9800
SGB11687.5 R23 .0087 R13 .9800
SG111679.3 SG2 439.4 THA 3.46

ORBIT DETERMINATION ACCURACY
ST 4624.5 SR 573.8 SS 1552.8
CRT .9946 CRS -.9898 CST -.9763
LSA 4901.2 MSA 321.6 SSA 32.4
EL1 4659.6 EL2 59.3 ALF 7.04

LAUNCH DATE DEC 7 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 762.744 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.066 GAL .15 AZL 87.55 HCA 225.62 SMA 187.52 ECC .21410 INC 2.4511 V1 30.232
RP 209.88 LAP -1.75 LOP 300.52 VP 23.600 GAP -10.32 AZP 91.72 TAL .84 TAP 226.46 RCA 147.37 APO 227.66 V2 26.124
RC 309.654 GL 26.61 GP -6.30 ZAL 84.27 ZAP 44.82 ETS 172.82 ZAE 69.26 ETE 176.97 ZAC 78.40 ETC 257.53 CLP 44.47

PLANETOCENTRIC CONIC

C3 9.965 VHL 3.157 DLA 32.77 RAL 171.65 RAD 6567.4 VEL 11.461 PTH 1.99 VHP 4.134 DPA 1.66 RAP 164.33 ECC 1.1640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.78	9 31 26	3805.94	-26.50	155.94	30.90	69.99	10 34 52	3205.9	-28.98	147.77
107.22	13 55 52	2960.71	-26.49	93.18	30.89	69.97	14 45 12	2360.7	-28.97	85.01
72.78	9 31 26	3805.94	-26.50	155.94	30.90	69.99	10 34 52	3205.9	-28.98	147.77
107.22	13 55 52	2960.71	-26.49	93.18	30.89	69.97	14 45 12	2360.7	-28.97	85.01
110.00	15 27 27	2678.76	-32.11	73.28	32.76	77.58	16 12 5	2078.8	-33.48	64.32
110.00	12 59 2	3135.88	-21.15	104.13	28.32	62.50	13 51 18	2535.9	-24.66	96.74

DIFFERENTIAL CORRECTIONS
TDE 2.4733 TRA .9048 TC-17.0544 BAU 2.2738
RDE .3012 RRA .1833 RC3 -.6776 FAU .25554
FDE 2.0763 FRA 2.2224 FC-22.2009 BSP 41020
BDE 2.4916 BRA .9231 BC317.0679 FSP 4338

MID-COURSE EXECUTION ACCURACY
SGT11828.0 SGR 799.0 SG3 1320.8
RRT .8288 RRF .8150 RTF .9801
SGB11854.9 R23 .0027 R13 .9801
SG111846.5 SG2 446.3 THA 3.21

ORBIT DETERMINATION ACCURACY
ST 4538.8 SR 559.5 SS 1448.5
CRT .9953 CRS -.9854 CST -.9722
LSA 4785.9 MSA 325.3 SSA 33.1
EL1 4572.8 EL2 53.7 ALF 7.00

LAUNCH DATE DEC 7 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 767.064 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.072 GAL .03 AZL 87.58 HCA 226.85 SMA 187.63 ECC .21454 INC 2.4182 V1 30.232
RP 209.66 LAP -1.76 LOP 301.75 VP 23.637 GAP -10.42 AZP 91.65 TAL .17 TAP 227.02 RCA 147.37 APO 227.88 V2 26.149
RC 310.607 GL 26.31 GP -6.09 ZAL 85.51 ZAP 43.95 ETS 172.83 ZAE 68.11 ETE 176.93 ZAC 78.68 ETC 257.49 CLP 43.61

PLANETOCENTRIC CONIC

C3 9.914 VHL 3.149 DLA 31.94 RAL 172.82 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 4.194 DPA 1.71 RAP 164.75 ECC 1.1632

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.56	9 47 53	3768.26	-25.88	152.82	31.73	70.60	10 50 41	3168.3	-28.29	144.66
105.44	13 48 44	2996.35	-25.87	95.66	31.73	70.58	14 38 40	2396.3	-28.28	87.51
74.56	9 47 53	3768.26	-25.88	152.82	31.73	70.60	10 50 41	3168.3	-28.29	144.66
105.44	13 48 44	2996.35	-25.87	95.66	31.73	70.58	14 38 40	2396.3	-28.28	87.51
110.00	15 51 6	2617.42	-32.91	68.67	33.83	80.19	16 34 43	2017.4	-33.91	59.58
110.00	12 44 41	3195.18	-19.24	107.68	28.52	61.19	13 37 56	2595.2	-22.94	100.48

DIFFERENTIAL CORRECTIONS
TDE 2.3891 TRA 1.0149 TC-17.4296 BAU 2.3117
RDE .2897 RRA .1862 RC3 -.6286 FAU .24862
FDE 1.7914 FRA 2.2811 FC-21.7103 BSP 40792
BDE 2.4066 BRA 1.0318 BC317.4409 FSP 3876

MID-COURSE EXECUTION ACCURACY
SGT12004.6 SGR 770.8 SG3 1285.8
RRT .8112 RRF .7919 RTF .9789
SGB12029.3 R23 -.0056 R13 .9789
SG112020.9 SG2 450.1 THA 2.99

ORBIT DETERMINATION ACCURACY
ST 4408.5 SR 540.8 SS 1303.8
CRT .9958 CRS -.9760 CST -.9623
LSA 4616.2 MSA 341.9 SSA 34.0
EL1 4441.3 EL2 48.9 ALF 6.97

LAUNCH DATE DEC 7 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 771.385 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.078 GAL -.09 AZL 87.61 HCA 228.08 SMA 187.74 ECC .21501 INC 2.3864 V1 30.232
RP 209.44 LAP -1.78 LOP 302.99 VP 23.673 GAP -10.52 AZP 91.59 TAL 359.49 TAP 227.57 RCA 147.37 APO 228.10 V2 26.174
RC 311.551 GL 26.00 GP -5.89 ZAL 86.78 ZAP 43.11 ETS 172.84 ZAE 66.98 ETE 176.90 ZAC 78.96 ETC 257.45 CLP 42.78

PLANETOCENTRIC CONIC

C3 9.874 VHL 3.142 DLA 31.10 RAL 174.01 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 4.255 DPA 1.73 RAP 165.20 ECC 1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.57	10 6 33	3723.74	-25.24	149.20	32.61	71.21	11 8 37	3123.7	-27.57	141.07
103.43	13 39 33	3039.26	-25.23	98.66	32.61	71.19	14 30 13	2439.3	-27.57	90.53
76.57	10 6 33	3723.74	-25.24	149.20	32.61	71.21	11 8 37	3123.7	-27.57	141.07
103.43	13 39 33	3039.26	-25.23	98.66	32.61	71.19	14 30 13	2439.3	-27.57	90.53
110.00	16 11 45	2565.18	-33.45	64.69	34.81	82.49	16 54 31	1965.2	-34.12	55.51
110.00	12 33 32	3245.82	-17.56	110.63	28.89	60.19	13 27 38	2645.8	-21.39	103.60

DIFFERENTIAL CORRECTIONS
TDE 2.3709 TRA 1.1691 TC-17.5910 BAU 2.3232
RDE .2903 RRA .1912 RC3 -.5481 FAU .23296
FDE 1.7701 FRA 2.3875 FC-20.4258 BSP 42767
BDE 2.3886 BRA 1.1847 BC317.5995 FSP 4174

MID-COURSE EXECUTION ACCURACY
SGT12128.6 SGR 751.4 SG3 1225.1
RRT .7802 RRF .7697 RTF .9799
SGB12151.9 R23 .0064 R13 .9800
SG112142.8 SG2 469.5 THA 2.77

ORBIT DETERMINATION ACCURACY
ST 4399.5 SR 543.3 SS 1320.1
CRT .9969 CRS -.9733 CST -.9635
LSA 4612.7 MSA 339.8 SSA 34.0
EL1 4432.7 EL2 42.7 ALF 7.02

LAUNCH DATE DEC 7 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 775.716 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.085 GAL -.22 AZL 87.64 HCA 229.32 SMA 187.85 ECC .21551 INC 2.3557 V1 30.232
RP 209.24 LAP -1.79 LOP 304.22 VP 23.708 GAP -10.61 AZP 91.54 TAL 358.79 TAP 228.10 RCA 147.37 APO 228.34 V2 26.198
RC 312.486 GL 25.68 GP -5.70 ZAL 88.08 ZAP 42.28 ETS 172.86 ZAE 65.87 ETE 176.87 ZAC 79.23 ETC 257.41 CLP 41.97

PLANETOCENTRIC CONIC

C3 9.846 VHL 3.138 DLA 30.24 RAL 175.22 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 4.318 DPA 1.74 RAP 165.66 ECC 1.1620

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.91	10 28 26	3669.14	-24.59	144.87	33.53	71.81	11 29 35	3069.1	-26.84	136.76
101.09	13 27 20	3092.71	-24.57	102.43	33.53	71.80	14 18 52	2492.7	-26.83	94.32
78.91	10 28 26	3669.14	-24.59	144.87	33.53	71.81	11 29 35	3069.1	-26.84	136.76
101.09	13 27 20	3092.71	-24.57	102.43	33.53	71.80	14 18 52	2492.7	-26.83	94.32
110.00	16 30 35	2518.48	-33.80	61.09	35.74	84.59	17 12 34	1918.5	-34.18	51.87
110.00	12 24 21	3291.37	-16.00	113.24	29.39	59.38	13 19 12	2691.4	-19.94	106.34

DIFFERENTIAL CORRECTIONS
TDE 2.2743 TRA 1.2796 TC-17.9549 BAU 2.3643
RDE .2815 RRA .1922 RC3 -.5009 FAU .22595
FDE 1.5223 FRA 2.4037 FC-19.8678 BSP 42766
BDE 2.2916 BRA 1.2940 BC317.9619 FSP 3913

MID-COURSE EXECUTION ACCURACY
SGT12309.4 SGR 726.6 SG3 1187.8
RRT .7574 RRF .7419 RTF .9796
SGB12330.9 R23 -.0018 R13 .9796
SG112321.7 SG2 473.9 THA 2.56

ORBIT DETERMINATION ACCURACY
ST 4244.8 SR 528.3 SS 1190.9
CRT .9973 CRS -.9594 CST -.9525
LSA 4426.3 MSA 350.2 SSA 34.9
EL1 4277.4 EL2 38.5 ALF 7.08

LAUNCH DATE DEC 7 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 780.048 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.091 GAL -.34 AZL 87.67 HCA 230.56 SMA 187.97 ECC .21604 INC 2.3262 V1 30.232
RP 209.04 LAP -1.80 LOP 305.46 VP 23.742 GAP -10.71 AZP 91.48 TAL 358.07 TAP 228.63 RCA 147.36 APO 228.57 V2 26.221
RC 313.411 GL 25.37 GP -5.53 ZAL 89.42 ZAP 41.48 ETS 172.87 ZAE 64.78 ETE 176.84 ZAC 79.49 ETC 257.37 CLP 41.18

PLANETOCENTRIC CONIC

C3 9.829 VHL 3.135 DLA 29.37 RAL 176.45 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 4.381 DPA 1.72 RAP 166.15 ECC 1.1618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.88	10 56 6	3596.09	-23.90	139.20	34.50	72.42	11 56 2	2996.1	-26.09	131.13
98.12	13 9 29	3165.09	-23.89	107.56	34.49	72.40	14 2 14	2565.1	-26.08	99.48
100.00	14 11 15	2967.28	-27.08	93.88	35.47	76.83	15 0 42	2367.3	-28.62	85.41
100.00	12 37 1	3269.14	-20.79	114.06	33.29	68.03	13 31 30	2669.1	-23.59	106.38
110.00	16 48 14	2475.48	-34.03	57.75	36.64	86.56	17 29 29	1875.5	-34.13	48.51
110.00	12 16 31	3333.70	-14.51	115.62	29.99	58.71	13 12 5	2733.7	-18.55	108.84

DIFFERENTIAL CORRECTIONS
TDE 2.2021 TRA 1.4130 TC-18.2178 BAU 2.3946
RDE .2769 RRA .1940 RC3 -.4479 FAU .21708
FDE 1.3627 FRA 2.4398 FC-19.1201 BSP 43369
BDE 2.2195 BRA 1.4262 BC318.2233 FSP 3785

MID-COURSE EXECUTION ACCURACY
SGT12468.4 SGR 707.4 SG3 1146.6
RRT .7313 RRF .7146 RTF .9799
SGB12488.4 R23 -.0044 R13 .9798
SG112479.1 SG2 482.1 THA 2.38

ORBIT DETERMINATION ACCURACY
ST 4135.8 SR 520.6 SS 1115.8
CRT .9976 CRS -.9453 CST -.9443
LSA 4300.3 MSA 355.9 SSA 35.5
EL1 4168.2 EL2 35.9 ALF 7.16

LAUNCH DATE DEC 7 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 784.382 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.098 GAL -.47 AZL 87.70 HCA 231.80 SMA 188.08 ECC .21660 INC 2.2976 V1 30.232
RP 208.85 LAP -1.81 LOP 306.71 VP 23.776 GAP -10.81 AZP 91.42 TAL 357.35 TAP 229.15 RCA 147.34 APO 228.82 V2 26.243
RC 314.329 GL 25.04 GP -5.36 ZAL 90.80 ZAP 40.70 ETS 172.88 ZAE 63.71 ETE 176.82 ZAC 79.75 ETC 257.32 CLP 40.41

PLANETOCENTRIC CONIC

C3 9.825 VHL 3.134 DLA 28.47 RAL 177.70 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 4.446 DPA 1.68 RAP 166.65 ECC 1.1617

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
86.90	11 41 50	3464.54	-23.20	129.29	35.50	73.02	12 39 35	2864.5	-25.31	121.24
93.10	12 33 42	3286.47	-23.19	116.98	35.50	73.00	13 28 39	2696.5	-25.30	108.94
100.00	14 46 21	2869.23	-28.41	86.89	36.87	80.27	15 34 10	2269.2	-29.46	78.25
100.00	12 11 52	3367.02	-18.18	120.15	33.49	65.86	13 8 0	2767.0	-21.29	112.74
110.00	17 5 0	2435.22	-34.15	54.62	37.54	88.41	17 45 35	1835.2	-33.99	45.37
110.00	12 9 43	3373.78	-13.08	117.85	30.68	58.13	13 5 57	2773.8	-17.20	111.16

DIFFERENTIAL CORRECTIONS
TDE 2.1214 TRA 1.5531 TC-18.4456 BAU 2.4233
RDE .2723 RRA .1957 RC3 -.3953 FAU .20798
FDE 1.1931 FRA 2.4752 FC-18.3266 BSP 43861
BDE 2.1388 BRA 1.5654 BC318.4498 FSP 3636

MID-COURSE EXECUTION ACCURACY
SGT12616.6 SGR 689.1 SG3 1103.9
RRT .7028 RRF .6846 RTF .9797
SGB12635.4 R23 -.0070 R13 .9797
SG112625.9 SG2 489.9 THA 2.20

ORBIT DETERMINATION ACCURACY
ST 4012.1 SR 512.6 SS 1034.9
CRT .9974 CRS -.9244 CST -.9318
LSA 4158.9 MSA 365.6 SSA 36.0
EL1 4044.6 EL2 36.7 ALF 7.26

LAUNCH DATE DEC 7 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 788.720 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.104 GAL -.61 AZL 87.73 HCA 233.04 SMA 188.20 ECC .21718 INC 2.2700 V1 30.232
RP 208.67 LAP -1.81 LOP 307.95 VP 23.809 GAP -10.90 AZP 91.37 TAL 356.61 TAP 229.65 RCA 147.33 APO 229.07 V2 26.264
RC 315.238 GL 24.72 GP -5.20 ZAL 92.20 ZAP 39.95 ETS 172.89 ZAE 62.66 ETE 176.80 ZAC 80.01 ETC 257.27 CLP 39.66

PLANETOCENTRIC CONIC

C3 9.833 VHL 3.136 DLA 27.56 RAL 178.96 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 4.512 DPA 1.63 RAP 167.16 ECC 1.1618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 10 10	3193.88	-26.17	110.31	37.54	78.79	14 3 24	2593.9	-27.46	101.88
90.00	11 15 28	3567.47	-18.87	135.19	35.22	68.49	12 14 55	2967.5	-21.63	127.60
100.00	15 12 59	2797.99	-29.12	81.72	38.07	82.91	15 59 37	2198.0	-29.79	72.98
100.00	11 55 20	3438.60	-16.13	124.48	33.97	64.49	12 52 39	2838.6	-19.44	117.25
110.00	17 21 5	2397.08	-34.18	51.64	38.43	90.17	18 1 2	1797.1	-33.78	42.42
110.00	12 3 43	3412.28	-11.69	119.96	31.44	57.65	13 0 36	2812.3	-15.88	113.36

DIFFERENTIAL CORRECTIONS
TDE 2.0390 TRA 1.7002 TC-18.6532 BAU 2.4526
RDE .2687 RRA .1974 RC3 -.3463 FAU .19959
FDE 1.0361 FRA 2.5095 FC-17.5719 BSP 44413
BDE 2.0566 BRA 1.7116 BC318.6564 FSP 3504

MID-COURSE EXECUTION ACCURACY
SGT12767.7 SGR 673.5 SG3 1064.5
RRT .6739 RRF .6540 RTF .9797
SGB12785.4 R23 -.0097 R13 .9796
SG112775.8 SG2 497.3 THA 2.04

ORBIT DETERMINATION ACCURACY
ST 3886.8 SR 505.9 SS 962.8
CRT .9965 CRS -.8970 CST -.9166
LSA 4018.4 MSA 376.6 SSA 36.4
EL1 3919.4 EL2 41.9 ALF 7.39

LAUNCH DATE DEC 7 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 793.060 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.111 GAL -.74 AZL 87.76 HCA 234.29 SMA 188.32 ECC .21780 INC 2.2431 V1 30.232
RP 208.49 LAP -1.82 LOP 309.20 VP 23.841 GAP -11.00 AZP 91.31 TAL 355.85 TAP 230.14 RCA 147.30 APO 229.34 V2 26.285
RC 316.140 GL 24.38 GP -5.04 ZAL 93.64 ZAP 30.21 ETS 172.90 ZAE 61.63 ETE 176.78 ZAC 80.27 ETC 257.22 CLP 39.94

PLANETOCENTRIC CONIC

C3 9.855 VHL 3.139 DLA 26.64 RAL 180.24 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 4.578 DPA 1.56 RAP 167.70 ECC 1.1622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 43 28	3100.95	-27.23	103.72	38.90	81.93	14 35 9	2500.9	-28.07	95.15
90.00	10 52 23	3661.30	-16.43	140.99	35.63	66.61	11 53 24	3061.3	-19.45	133.62
100.00	15 35 58	2738.26	-29.54	77.33	39.20	85.18	16 21 36	2138.3	-29.89	68.54
100.00	11 42 34	3499.22	-14.32	128.07	34.61	63.48	12 40 53	2899.2	-17.77	120.98
110.00	17 36 39	2360.64	-34.14	48.79	39.34	91.86	18 16 0	1760.6	-33.50	39.61
110.00	11 58 22	3449.61	-10.32	121.99	32.28	57.23	12 55 52	2849.6	-14.57	115.46

DIFFERENTIAL CORRECTIONS

TDE 1.9506 TRA 1.8518 TC-18.8295 BAU 2.4812
RDE .2658 RRA .1987 RC3 -.2980 FAU .19106
FDE .8880 FRA 2.5366 FC-16.7834 BSP 44901
BDE 1.9686 BRA 1.8625 BC318.8319 FSP 3367

MID-COURSE EXECUTION ACCURACY

SGT12912.7 SGR 659.5 SG3 1024.1
RRT .6427 RRF .6216 RTF .9796
SGB12929.6 R23 -.0116 R13 .9796
SG112919.7 SG2 505.0 THA 1.88

ORBIT DETERMINATION ACCURACY

ST 3753.1 SR 500.1 SS 896.9
CRT .9946 CRS -.8616 CST -.8983
LSA 3871.5 MSA 388.0 SSA 36.8
EL1 3786.0 EL2 51.6 ALF 7.55

LAUNCH DATE DEC 7 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 797.402 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.118 GAL -.88 AZL 87.78 HCA 235.54 SMA 188.44 ECC .21845 INC 2.2171 V1 30.232
RP 208.32 LAP -1.83 LOP 310.45 VP 23.872 GAP -11.09 AZP 91.25 TAL 355.08 TAP 230.62 RCA 147.28 APO 229.61 V2 26.304
RC 317.035 GL 24.04 GP -4.90 ZAL 95.11 ZAP 30.49 ETS 172.90 ZAE 60.62 ETE 176.77 ZAC 80.52 ETC 257.17 CLP 38.23

PLANETOCENTRIC CONIC

C3 9.892 VHL 3.145 DLA 25.69 RAL 181.53 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 4.646 DPA 1.48 RAP 168.25 ECC 1.1628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 9 52	3030.10	-27.81	98.61	40.12	84.43	15 0 22	2430.1	-28.29	89.98
90.00	10 36 17	3733.61	-14.42	145.35	36.26	65.36	11 38 31	3133.6	-17.63	138.14
100.00	15 56 49	2685.31	-29.78	73.41	40.28	87.23	16 41 34	2085.3	-29.84	64.60
100.00	11 32 2	3553.63	-12.65	131.24	35.37	62.69	12 31 15	2953.6	-16.21	124.26
110.00	17 51 47	2325.61	-34.03	46.06	40.25	93.47	18 30 32	1725.6	-33.17	36.93
110.00	11 53 33	3486.09	-8.97	123.95	33.19	56.88	12 51 39	2886.1	-13.27	117.49

DIFFERENTIAL CORRECTIONS

TDE 1.8601 TRA 2.0114 TC-18.9746 BAU 2.5095
RDE .2637 RRA .2000 RC3 -.2521 FAU .18289
FDE .7506 FRA 2.5645 FC-16.0070 BSP 45429
BDE 1.8787 BRA 2.0213 BC318.9763 FSP 3243

MID-COURSE EXECUTION ACCURACY

SGT13056.4 SGR 647.6 SG3 985.6
RRT .6108 RRF .5888 RTF .9795
SGB13072.4 R23 -.0132 R13 .9795
SG113062.4 SG2 512.5 THA 1.74

ORBIT DETERMINATION ACCURACY

ST 3619.2 SR 495.5 SS 840.1
CRT .9912 CRS .8168 CST .8765
LSA 3726.6 MSA 401.4 SSA 37.1
EL1 3652.4 EL2 65.0 ALF 7.73

LAUNCH DATE DEC 7 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 801.745 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.125 GAL -1.02 AZL 87.81 HCA 236.79 SMA 188.56 ECC .21914 INC 2.1918 V1 30.232
RP 208.16 LAP -1.83 LOP 311.70 VP 23.902 GAP -11.18 AZP 91.20 TAL 354.30 TAP 231.09 RCA 147.24 APO 229.88 V2 26.323
RC 317.924 GL 23.68 GP -4.76 ZAL 96.60 ZAP 37.79 ETS 172.91 ZAE 59.63 ETE 176.75 ZAC 80.77 ETC 257.12 CLP 37.53

PLANETOCENTRIC CONIC

C3 9.943 VHL 3.153 DLA 24.73 RAL 182.84 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 4.715 DPA 1.38 RAP 168.81 ECC 1.1636

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 32 58	2969.82	-28.13	94.23	41.28	86.60	15 22 28	2369.8	-28.30	85.57
90.00	10 23 35	3795.94	-12.62	149.04	37.02	64.44	11 26 51	3195.9	-15.96	141.96
100.00	16 16 13	2636.96	-29.88	69.82	41.36	89.12	17 0 10	2037.0	-29.68	61.02
100.00	11 23 1	3604.03	-11.05	134.14	36.22	62.05	12 23 5	3004.0	-14.71	127.25
110.00	18 6 32	2291.80	-33.86	43.44	41.19	95.01	18 44 44	1691.8	-32.79	34.36
110.00	11 49 11	3521.96	-7.63	125.86	34.16	56.58	12 47 53	2922.0	-11.98	119.46

DIFFERENTIAL CORRECTIONS

TDE 1.7656 TRA 2.1757 TC-19.0861 BAU 2.5372
RDE .2622 RRA .2008 RC3 -.2078 FAU .17482
FDE .6179 FRA 2.5828 FC-15.2218 BSP 45932
BDE 1.7849 BRA 2.1849 BC319.0873 FSP 3118

MID-COURSE EXECUTION ACCURACY

SGT13195.3 SGR 636.9 SG3 946.9
RRT .5777 RRF .5543 RTF .9794
SGB13210.6 R23 -.0151 R13 .9794
SG113200.4 SG2 519.6 THA 1.60

ORBIT DETERMINATION ACCURACY

ST 3482.5 SR 491.5 SS 788.4
CRT .9859 CRS -.7599 CST -.8501
LSA 3580.0 MSA 416.1 SSA 37.3
EL1 3516.1 EL2 81.6 ALF 7.92

LAUNCH DATE DEC 7 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 806.090 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.132 GAL -1.17 AZL 87.83 HCA 238.04 SMA 188.69 ECC .21986 INC 2.1671 V1 30.232
RP 208.01 LAP -1.84 LOP 312.95 VP 23.931 GAP -11.28 AZP 91.15 TAL 353.50 TAP 231.54 RCA 147.20 APO 230.17 V2 26.341
RC 318.808 GL 23.32 GP -4.63 ZAL 98.12 ZAP 37.11 ETS 172.91 ZAE 58.65 ETE 176.74 ZAC 81.02 ETC 257.06 CLP 36.86

PLANETOCENTRIC CONIC

C3 10.010 VHL 3.164 DLA 23.76 RAL 184.15 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 4.784 DPA 1.27 RAP 169.39 ECC 1.1647

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 54 4	2916.05	-28.28	90.31	42.42	88.56	15 42 40	2316.0	-28.18	81.64
90.00	10 12 58	3852.38	-10.94	152.34	37.89	63.72	11 17 10	3252.4	-14.39	145.35
100.00	16 34 34	2591.99	-29.88	66.48	42.43	90.88	17 17 46	1992.0	-29.44	57.70
100.00	11 15 9	3651.67	-9.52	136.84	37.15	61.53	12 16 0	3051.7	-13.25	130.04
110.00	18 20 59	2259.05	-33.63	40.90	42.14	96.49	18 58 38	1659.0	-32.37	31.90
110.00	11 45 13	3557.37	-6.30	127.74	35.19	56.33	12 44 30	2957.4	-10.68	121.39

DIFFERENTIAL CORRECTIONS

TDE 1.6668 TRA 2.3477 TC-19.1690 BAU 2.5653
RDE .2615 RRA .2016 RC3 -.1662 FAU .16719
FDE .4945 FRA 2.6021 FC-14.4608 BSP 46437
BDE 1.6872 BRA 2.3563 BC319.1698 FSP 3000

MID-COURSE EXECUTION ACCURACY

SGT13334.6 SGR 628.0 SG3 910.4
RRT .5443 RRF .5199 RTF .9793
SGB13349.4 R23 -.0167 R13 .9793
SG113339.0 SG2 526.7 THA 1.47

ORBIT DETERMINATION ACCURACY

ST 3344.6 SR 488.4 SS 746.7
CRT .9778 CRS -.6911 CST -.8202
LSA 3434.2 MSA 433.0 SSA 37.4
EL1 3378.6 EL2 101.3 ALF 8.13

LAUNCH DATE DEC 7 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 810.436 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.139 GAL -1.32 AZL 87.86 HCA 239.29 SMA 188.81 ECC .22062 INC 2.1431 V1 30.232
RP 207.86 LAP -1.84 LOP 314.21 VP 23.959 GAP -11.37 AZP 91.09 TAL 352.69 TAP 231.99 RCA 147.16 APO 230.47 V2 26.357
RC 319.685 GL 22.95 GP -4.51 ZAL 99.66 ZAP 36.44 ETS 172.92 ZAE 57.69 ETE 176.73 ZAC 81.26 ETC 257.01 CLP 36.20

PLANETOCENTRIC CONIC

C3 10.093 VHL 3.177 DLA 22.77 RAL 185.47 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 4.855 DPA 1.14 RAP 169.98 ECC 1.1661

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 13 45	2866.81	-28.31	86.71	43.54	90.37	16 1 31	2266.8	-27.96	78.06
90.00	10 3 49	3904.92	-9.34	155.37	38.85	63.15	11 8 54	3304.9	-12.87	148.47
100.00	16 52 6	2549.67	-29.80	63.33	43.50	92.53	17 34 36	1949.7	-29.13	54.59
100.00	11 8 9	3697.29	-8.03	139.41	38.15	61.11	12 9 46	3097.3	-11.83	132.68
110.00	18 35 9	2227.27	-33.36	38.46	43.12	97.92	19 12 16	1627.3	-31.91	29.54
110.00	11 41 35	3592.46	-4.97	129.59	36.27	56.14	12 41 27	2992.5	-9.39	123.28

DIFFERENTIAL CORRECTIONS
TDE 1.5647 TRA 2.5263 TC-19.2132 BAU 2.5925
RDE .2613 RRA .2021 RC3 -.1262 FAU .15965
FDE .3763 FRA 2.6159 FC-13.6940 BSP 46934
BDE 1.5864 BRA 2.5344 BC319.2136 FSP 2882

MID-COURSE EXECUTION ACCURACY
SGT13468.7 SGR 620.3 SG3 874.1
RRT .5102 RRF .4845 RTF .9791
SGB13483.0 R23 -.0184 R13 .9791
SG113472.5 SG2 533.4 THA 1.35

ORBIT DETERMINATION ACCURACY
ST 3208.6 SR 486.0 SS 712.5
CRT .9662 CRS -.6088 CST -.7865
LSA 3291.3 MSA 452.2 SSA 37.3
EL1 3242.8 EL2 123.9 ALF 8.34

LAUNCH DATE DEC 7 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 814.783 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.146 GAL -1.47 AZL 87.88 HCA 240.55 SMA 188.94 ECC .22142 INC 2.1197 V1 30.232
RP 207.73 LAP -1.85 LOP 315.46 VP 23.987 GAP -11.47 AZP 91.04 TAL 351.87 TAP 232.42 RCA 147.10 APO 230.77 V2 26.373
RC 320.558 GL 22.57 GP -4.39 ZAL 101.23 ZAP 35.80 ETS 172.92 ZAE 56.74 ETE 176.72 ZAC 81.51 ETC 256.95 CLP 35.56

PLANETOCENTRIC CONIC

C3 10.193 VHL 3.193 DLA 21.76 RAL 186.80 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 4.927 DPA .99 RAP 170.59 ECC 1.1678

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 32 23	2820.97	-28.25	83.36	44.67	92.05	16 19 24	2221.0	-27.67	74.74
90.00	9 55 46	3954.72	-7.80	158.21	39.88	62.69	11 1 40	3354.7	-11.40	151.38
100.00	17 8 59	2509.52	-29.64	60.36	44.59	94.09	17 50 48	1909.5	-28.76	51.66
100.00	11 1 51	3741.41	-6.57	141.87	39.22	60.77	12 4 13	3141.4	-10.42	135.20
110.00	18 49 4	2196.37	-33.05	36.11	44.12	99.28	19 25 40	1596.4	-31.42	27.26
110.00	11 38 15	3627.32	-3.65	131.42	37.41	55.99	12 38 42	3027.3	-8.09	125.14

DIFFERENTIAL CORRECTIONS
TDE 1.4602 TRA 2.7116 TC-19.2223 BAU 2.6195
RDE .2619 RRA .2024 RC3 -.0884 FAU .15232
FDE .2678 FRA 2.6261 FC-12.9372 BSP 47447
BDE 1.4835 BRA 2.7191 BC319.2225 FSP 2773

MID-COURSE EXECUTION ACCURACY
SGT13600.6 SGR 614.0 SG3 838.7
RRT .4758 RRF .4491 RTF .9790
SGB13614.4 R23 -.0199 R13 .9790
SG113603.7 SG2 540.0 THA 1.23

ORBIT DETERMINATION ACCURACY
ST 3077.9 SR 484.5 SS 687.7
CRT .9501 CRS -.5173 CST -.7529
LSA 3155.3 MSA 472.7 SSA 37.2
EL1 3112.2 EL2 149.4 ALF 8.53

LAUNCH DATE DEC 7 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 819.130 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.153 GAL -1.63 AZL 87.90 HCA 241.81 SMA 189.07 ECC .22226 INC 2.0968 V1 30.232
RP 207.60 LAP -1.85 LOP 316.72 VP 24.013 GAP -11.56 AZP 90.99 TAL 351.03 TAP 232.84 RCA 147.05 APO 231.09 V2 26.388
RC 321.425 GL 22.18 GP -4.28 ZAL 102.81 ZAP 35.17 ETS 172.92 ZAE 55.81 ETE 176.71 ZAC 81.75 ETC 256.89 CLP 34.94

PLANETOCENTRIC CONIC

C3 10.312 VHL 3.211 DLA 20.75 RAL 188.13 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 5.000 DPA .84 RAP 171.22 ECC 1.1697

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 50 12	2777.85	-28.10	80.21	45.81	93.62	16 36 30	2177.8	-27.31	71.63
90.00	9 48 33	4002.50	-6.29	160.92	40.98	62.33	10 55 16	3402.5	-9.95	154.15
100.00	17 25 18	2471.19	-29.42	57.53	45.69	95.56	18 6 29	1871.2	-28.34	48.89
100.00	10 56 8	3784.39	-5.14	144.26	40.35	60.51	11 59 13	3184.4	-9.03	137.63
110.00	19 2 45	2166.32	-32.70	33.83	45.15	100.58	19 38 51	1566.3	-30.89	25.08
110.00	11 35 11	3662.03	-2.32	133.23	38.60	55.89	12 36 13	3062.0	-6.78	126.99

DIFFERENTIAL CORRECTIONS
TDE 1.3512 TRA 2.9029 TC-19.1964 BAU 2.6465
RDE .2632 RRA .2024 RC3 -.0524 FAU .14511
FDE .1664 FRA 2.6322 FC-12.1830 BSP 47922
BDE 1.3766 BRA 2.9100 BC319.1965 FSP 2663

MID-COURSE EXECUTION ACCURACY
SGT13729.1 SGR 608.9 SG3 803.7
RRT .4409 RRF .4134 RTF .9787
SGB13742.6 R23 -.0209 R13 .9787
SG113731.8 SG2 546.4 THA 1.12

ORBIT DETERMINATION ACCURACY
ST 2951.3 SR 483.7 SS 671.1
CRT .9282 CRS -.4181 CST -.7211
LSA 3024.6 MSA 494.7 SSA 37.0
EL1 2985.4 EL2 177.9 ALF 8.68

LAUNCH DATE DEC 7 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 823.477 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.160 GAL -1.79 AZL 87.93 HCA 243.06 SMA 189.20 ECC .22314 INC 2.0745 V1 30.232
RP 207.48 LAP -1.85 LOP 317.98 VP 24.039 GAP -11.66 AZP 90.94 TAL 350.18 TAP 233.25 RCA 146.98 APO 231.41 V2 26.402
RC 322.286 GL 21.79 GP -4.17 ZAL 104.41 ZAP 34.55 ETS 172.92 ZAE 54.90 ETE 176.70 ZAC 81.99 ETC 256.84 CLP 34.33

PLANETOCENTRIC CONIC

C3 10.450 VHL 3.233 DLA 19.72 RAL 189.46 RAD 6567.4 VEL 11.482 PTH 2.00 VHP 5.074 DPA .67 RAP 171.85 ECC 1.1720

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 7 21	2736.96	-27.89	77.24	46.97	95.09	16 52 58	2137.0	-26.89	68.71
90.00	9 42 3	4048.74	-4.83	163.53	42.15	62.06	10 49 31	3448.7	-8.53	156.80
100.00	17 41 10	2434.46	-29.15	54.83	46.82	96.95	18 21 44	1834.5	-27.88	46.26
100.00	10 50 55	3826.47	-3.72	146.58	41.54	60.32	11 54 42	3226.5	-7.65	139.99
110.00	19 16 13	2137.06	-32.31	31.64	46.21	101.82	19 51 50	1537.1	-30.34	22.97
110.00	11 32 21	3696.63	-1.00	135.04	39.84	55.83	12 33 58	3096.6	-5.48	128.81

DIFFERENTIAL CORRECTIONS
TDE 1.2401 TRA 3.1027 TC-19.1309 BAU 2.6727
RDE .2651 RRA .2021 RC3 -.0183 FAU .13805
FDE .0706 FRA 2.6354 FC-11.4371 BSP 48417
BDE 1.2682 BRA 3.1093 BC319.1309 FSP 2557

MID-COURSE EXECUTION ACCURACY
SGT13854.3 SGR 604.8 SG3 769.5
RRT .4061 RRF .3778 RTF .9784
SGB13867.5 R23 -.0221 R13 .9784
SG113856.5 SG2 552.6 THA 1.02

ORBIT DETERMINATION ACCURACY
ST 2835.6 SR 483.5 SS 662.1
CRT .8993 CRS -.3134 CST -.6927
LSA 2905.5 MSA 519.0 SSA 36.7
EL1 2868.9 EL2 209.0 ALF 8.76

LAUNCH DATE DEC 7 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 827.823 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.168 GAL -1.95 AZL 87.95 HCA 244.32 SMA 189.33 ECC .22406 INC 2.0525 V1 30.232
RP 207.36 LAP -1.85 LOP 319.24 VP 24.063 GAP -11.75 AZP 90.89 TAL 349.32 TAP 233.64 RCA 146.91 APO 231.75 V2 26.416
RC 323.141 GL 21.38 GP -4.07 ZAL 106.02 ZAP 33.95 ETS 172.91 ZAE 54.00 ETE 176.69 ZAC 82.23 ETC 256.78 CLP 33.74

PLANETOCENTRIC CONIC

C3 10.608 VHL 3.257 DLA 18.69 RAL 190.79 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 5.149 DPA .49 RAP 172.50 ECC 1.1746

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 56	2697.99	-27.63	74.42	48.15	96.48	17 8 54	2098.0	-26.44	65.95
90.00	9 36 6	4093.79	-3.38	166.05	43.37	61.87	10 44 20	3493.8	-7.12	159.36
100.00	17 56 36	2399.16	-28.83	52.26	47.97	98.27	18 36 36	1799.2	-27.38	43.75
100.00	10 46 7	3867.85	-2.32	148.86	42.79	60.19	11 50 35	3267.9	-6.27	142.30
110.00	19 29 29	2108.59	-31.89	29.52	47.30	103.01	20 4 37	1508.6	-29.77	20.95
110.00	11 29 44	3731.19	.32	136.84	41.13	55.82	12 31 55	3131.2	-4.17	130.63

DIFFERENTIAL CORRECTIONS
TDE 1.1257 TRA 3.3083 TC-19.0316 BAU 2.6990
RDE .2676 RRA .2016 RC3 .0132 FAU .13130
FDE -.0193 FRA 2.6345 FC-10.7161 BSP 48899
BDE 1.1570 BRA 3.3144 BC319.0316 FSP 2454

MID-COURSE EXECUTION ACCURACY
SGT13976.9 SGR 601.6 SG3 736.5
RRT .3718 RRF .3424 RTF .9780
SGB13989.8 R23 -.0235 R13 .9780
SG113978.7 SG2 558.4 THA .92

ORBIT DETERMINATION ACCURACY
ST 2730.7 SR 484.0 SS 659.7
CRT .8620 CRS -.2073 CST -.6706
LSA 2797.9 MSA 544.6 SSA 36.2
EL1 2762.6 EL2 242.5 ALF 8.75

LAUNCH DATE DEC 7 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 832.168 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.175 GAL -2.12 AZL 87.97 HCA 245.59 SMA 189.46 ECC .22503 INC 2.0311 V1 30.232
RP 207.26 LAP -1.85 LOP 320.50 VP 24.087 GAP -11.85 AZP 90.84 TAL 348.44 TAP 234.03 RCA 146.82 APO 232.09 V2 26.428
RC 323.990 GL 20.96 GP -3.97 ZAL 107.65 ZAP 33.37 ETS 172.91 ZAE 53.11 ETE 176.69 ZAC 82.47 ETC 256.72 CLP 33.16

PLANETOCENTRIC CONIC

C3 10.787 VHL 3.284 DLA 17.65 RAL 192.13 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 5.225 DPA .30 RAP 173.16 ECC 1.1775

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 2	2660.72	-27.31	71.74	49.34	97.79	17 24 23	2060.7	-25.95	63.33
90.00	9 30 39	4137.88	-1.97	168.52	44.66	61.75	10 39 37	3537.9	-5.73	161.86
100.00	18 11 41	2365.17	-28.47	49.79	49.14	99.52	18 51 6	1765.2	-26.86	41.36
100.00	10 41 41	3908.67	-.94	151.10	44.09	60.12	11 46 50	3308.7	-4.91	144.56
110.00	19 42 32	2080.89	-31.45	27.48	48.42	104.14	20 17 13	1480.9	-29.19	19.01
110.00	11 27 19	3765.71	1.64	138.64	42.47	55.85	12 30 4	3165.7	-2.85	132.44

DIFFERENTIAL CORRECTIONS
TDE 1.0101 TRA 3.5217 TC-18.8957 BAU 2.7251
RDE .2708 RRA .2008 RC3 .0427 FAU .12472
FDE -.1005 FRA 2.6289 FC-10.0094 BSP 49397
BDE 1.0457 BRA 3.5274 BC318.8958 FSP 2354

MID-COURSE EXECUTION ACCURACY
SGT14097.2 SGR 599.3 SG3 704.2
RRT .3379 RRF .3075 RTF .9777
SGB14109.9 R23 -.0248 R13 .9777
SG114098.6 SG2 564.0 THA .82

ORBIT DETERMINATION ACCURACY
ST 2642.7 SR 485.2 SS 662.6
CRT .8154 CRS -.1071 CST -.6592
LSA 2708.0 MSA 569.3 SSA 35.6
EL1 2672.5 EL2 277.7 ALF 8.61

LAUNCH DATE DEC 7 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 836.511 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.182 GAL -2.29 AZL 87.99 HCA 246.85 SMA 189.59 ECC .22605 INC 2.0100 V1 30.232
RP 207.16 LAP -1.85 LOP 321.77 VP 24.109 GAP -11.95 AZP 90.79 TAL 347.55 TAP 234.40 RCA 146.73 APO 232.45 V2 26.439
RC 324.833 GL 20.54 GP -3.87 ZAL 109.28 ZAP 32.80 ETS 172.91 ZAE 52.24 ETE 176.68 ZAC 82.71 ETC 256.66 CLP 32.59

PLANETOCENTRIC CONIC

C3 10.989 VHL 3.315 DLA 16.60 RAL 193.46 RAD 6567.4 VEL 11.506 PTH 2.00 VHP 5.302 DPA .10 RAP 173.83 ECC 1.1809

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 41	2624.98	-26.95	69.18	50.56	99.02	17 39 26	2025.0	-25.43	60.84
90.00	9 25 37	4181.21	-.57	170.93	45.99	61.69	10 35 18	3581.2	-4.35	164.29
100.00	18 26 25	2332.40	-28.08	47.44	50.34	100.70	19 5 18	1732.4	-26.31	39.08
100.00	10 37 34	3949.03	.43	153.31	45.44	60.11	11 43 23	3349.0	-3.55	146.78
110.00	19 55 25	2053.96	-30.98	25.52	49.57	105.22	20 29 39	1454.0	-28.59	17.14
110.00	11 25 4	3800.23	2.96	140.44	43.86	55.93	12 28 24	3200.2	-1.53	134.24

DIFFERENTIAL CORRECTIONS
TDE .8903 TRA 3.7421 TC-18.7277 BAU 2.7514
RDE .2747 RRA .1998 RC3 .0700 FAU .11829
FDE -.1761 FRA 2.6212 FC3-9.3188 BSP 49857
BDE .9317 BRA 3.7475 BC318.7278 FSP 2257

MID-COURSE EXECUTION ACCURACY
SGT14215.6 SGR 597.8 SG3 672.7
RRT .3042 RRF .2733 RTF .9772
SGB14228.2 R23 -.0258 R13 .9772
SG114216.8 SG2 569.4 THA .73

ORBIT DETERMINATION ACCURACY
ST 2570.3 SR 486.9 SS 670.0
CRT .7582 CRS -.0119 CST -.6577
LSA 2634.1 MSA 593.7 SSA 35.0
EL1 2597.1 EL2 314.2 ALF 8.30

LAUNCH DATE DEC 7 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 840.852 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.190 GAL -2.46 AZL 88.01 HCA 248.11 SMA 189.72 ECC .22711 INC 1.9893 V1 30.232
RP 207.08 LAP -1.85 LOP 323.03 VP 24.130 GAP -12.05 AZP 90.74 TAL 346.64 TAP 234.75 RCA 146.63 APO 232.81 V2 26.449
RC 325.671 GL 20.10 GP -3.78 ZAL 110.92 ZAP 32.24 ETS 172.90 ZAE 51.38 ETE 176.67 ZAC 82.95 ETC 256.61 CLP 32.04

PLANETOCENTRIC CONIC

C3 11.214 VHL 3.349 DLA 15.55 RAL 194.79 RAD 6567.4 VEL 11.515 PTH 2.01 VHP 5.381 DPA -.11 RAP 174.52 ECC 1.1846

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 58	2590.65	-26.56	66.74	51.81	100.19	17 54 8	1990.7	-24.89	58.48
90.00	9 20 56	4223.90	.81	173.31	47.38	61.69	10 31 20	3623.9	-2.98	166.68
100.00	18 40 51	2300.79	-27.66	45.18	51.57	101.82	19 19 11	1700.8	-25.75	36.90
100.00	10 33 44	3989.00	1.78	155.50	46.84	60.16	11 40 13	3389.0	-2.20	148.98
110.00	20 8 5	2027.81	-30.50	23.64	50.76	106.24	20 41 53	1427.8	-27.98	15.35
110.00	11 22 59	3834.74	4.27	142.25	45.28	56.05	12 26 54	3234.7	-.21	136.04

DIFFERENTIAL CORRECTIONS
TDE .7685 TRA 3.9696 TC-18.5270 BAU 2.7777
RDE .2792 RRA .1984 RC3 .0953 FAU .11204
FDE -.2459 FRA 2.6079 FC3-8.6492 BSP 50331
BDE .8176 BRA 3.9746 BC318.5273 FSP 2162

MID-COURSE EXECUTION ACCURACY
SGT14331.8 SGR 596.9 SG3 641.8
RRT .2712 RRF .2393 RTF .9766
SGB14344.2 R23 -.0270 R13 .9766
SG114332.7 SG2 574.5 THA .65

ORBIT DETERMINATION ACCURACY
ST 2518.0 SR 489.2 SS 679.7
CRT .6907 CRS .0761 CST -.6655
LSA 2580.9 MSA 615.9 SSA 34.3
EL1 2541.0 EL2 350.6 ALF 7.79

LAUNCH DATE DEC 7 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 845.191 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.197 GAL -2.64 AZL 88.03 HCA 249.38 SMA 189.86 ECC .22823 INC 1.9690 V1 30.232
RP 207.00 LAP -1.84 LOP 324.30 VP 24.151 GAP -12.15 AZP 90.69 TAL 345.72 TAP 235.10 RCA 146.53 APO 233.19 V2 26.459
RC 326.503 GL 19.66 GP -3.70 ZAL 112.56 ZAP 31.70 ETS 172.89 ZAE 50.54 ETE 176.66 ZAC 83.19 ETC 256.55 CLP 31.51

PLANETOCENTRIC CONIC

C3 11.465 VHL 3.386 DLA 14.49 RAL 196.11 RAD 6567.4 VEL 11.526 PTH 2.01 VHP 5.461 DPA -.34 RAP 175.22 ECC 1.1887

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 52	2557.64	-26.15	64.42	53.08	101.28	18 8 30	1957.6	-24.33	56.22
90.00	9 16 35	4266.06	2.17	175.67	48.81	61.76	10 27 41	3666.1	-1.62	169.04
100.00	18 54 58	2270.29	-27.21	43.02	52.83	102.87	19 32 49	1670.3	-25.17	34.82
100.00	10 30 10	4028.65	3.12	157.68	48.28	60.26	11 37 18	3428.6	-.86	151.16
110.00	20 20 35	2002.43	-30.00	21.83	51.97	107.20	20 53 57	1402.4	-27.36	13.64
110.00	11 21 3	3869.27	5.58	144.07	46.76	56.22	12 25 32	3269.3	1.11	137.84

DIFFERENTIAL CORRECTIONS
TDE .6442 TRA 4.2043 TC-18.2942 BAU 2.8041
RDE .2843 RRA .1967 RC3 .1184 FAU .10595
FDE -.3100 FRA 2.5917 FC3-8.0005 BSP 50801
BDE .7041 BRA 4.2089 BC318.2946 FSP 2070

MID-COURSE EXECUTION ACCURACY
SGT14445.2 SGR 596.7 SG3 611.8
RRT .2387 RRF .2060 RTF .9760
SGB14457.5 R23 -.0281 R13 .9759
SG114445.9 SG2 579.4 THA .57

ORBIT DETERMINATION ACCURACY
ST 2487.2 SR 492.0 SS 691.5
CRT .6136 CRS .1562 CST -.6814
LSA 2549.8 MSA 635.2 SSA 33.6
EL1 2505.9 EL2 385.6 ALF 7.09

LAUNCH DATE DEC 7 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 849.526 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.205 GAL -2.82 AZL 88.05 HCA 250.64 SMA 189.99 ECC .22940 INC 1.9489 V1 30.232
RP 206.93 LAP -1.84 LOP 325.56 VP 24.170 GAP -12.25 AZP 90.65 TAL 344.79 TAP 235.43 RCA 146.41 APO 233.58 V2 26.467
RC 327.330 GL 19.22 GP -3.62 ZAL 114.20 ZAP 31.17 ETS 172.88 ZAE 49.71 ETE 176.65 ZAC 83.43 ETC 256.50 CLP 30.98

PLANETOCENTRIC CONIC

C3 11.741 VHL 3.427 DLA 13.44 RAL 197.43 RAD 6567.4 VEL 11.538 PTH 2.01 VHP 5.541 DPA -.57 RAP 175.92 ECC 1.1932

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 27	2525.89	-25.70	62.20	54.38	102.31	18 22 32	1925.9	-23.75	54.07
90.00	9 12 30	4307.76	3.51	178.00	50.30	61.88	10 24 18	3707.8	-.28	171.36
100.00	19 8 49	2240.87	-26.75	40.96	54.11	103.87	19 46 10	1640.9	-24.58	32.83
100.00	10 26 49	4068.02	4.45	159.85	49.78	60.41	11 34 37	3468.0	.48	153.32
110.00	20 32 53	1977.85	-29.50	20.10	53.22	108.11	21 5 51	1377.8	-26.74	12.00
110.00	11 19 15	3903.80	6.89	145.89	48.27	56.43	12 24 18	3303.8	2.43	139.64

DIFFERENTIAL CORRECTIONS
TDE .5186 TRA 4.4470 TC-18.0295 BAU 2.8302
RDE .2901 RRA .1947 RC3 .1394 FAU .10002
FDE -.3679 FRA 2.5718 FC3-7.3747 BSP 51256
BDE .5942 BRA 4.4512 BC318.0300 FSP 1979

MID-COURSE EXECUTION ACCURACY
SGT14555.7 SGR 597.0 SG3 582.6
RRT .2071 RRF .1736 RTF .9752
SGB14568.0 R23 -.0293 R13 .9752
SG114556.3 SG2 584.0 THA .49

ORBIT DETERMINATION ACCURACY
ST 2479.9 SR 495.3 SS 703.8
CRT .5291 CRS .2275 CST -.7036
LSA 2543.0 MSA 650.0 SSA 32.8
EL1 2494.1 EL2 417.9 ALF 6.21

LAUNCH DATE DEC 7 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 853.858 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.212 GAL -3.01 AZL 88.07 HCA 251.91 SMA 190.13 ECC .23062 INC 1.9292 V1 30.232
RP 206.86 LAP -1.83 LOP 326.83 VP 24.189 GAP -12.36 AZP 90.60 TAL 343.84 TAP 235.75 RCA 146.28 APO 233.98 V2 26.474
RC 328.152 GL 18.77 GP -3.54 ZAL 115.84 ZAP 30.66 ETS 172.87 ZAE 48.89 ETE 176.65 ZAC 83.66 ETC 256.44 CLP 30.47

PLANETOCENTRIC CONIC

C3 12.046 VHL 3.471 DLA 12.39 RAL 198.73 RAD 6567.5 VEL 11.551 PTH 2.02 VHP 5.623 DPA -.81 RAP 176.64 ECC 1.1982

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 42	2495.35	-25.24	60.08	55.71	103.28	18 36 18	1895.4	-23.17	52.02
90.00	9 8 41	4349.06	4.83	180.31	51.83	62.06	10 21 10	3749.1	1.06	173.67
100.00	19 22 24	2212.51	-26.27	38.99	55.43	104.80	19 59 17	1612.5	-23.98	30.94
100.00	10 23 40	4107.13	5.76	162.02	51.32	60.62	11 32 7	3507.1	1.80	155.46
110.00	20 45 0	1954.07	-28.98	18.44	54.50	108.97	21 17 34	1354.1	-26.12	10.42
110.00	11 17 34	3938.33	8.18	147.72	49.83	56.69	12 23 13	3338.3	3.74	141.45

DIFFERENTIAL CORRECTIONS
TDE .3908 TRA 4.6977 TC-17.7350 BAU 2.8562
RDE .2964 RRA .1924 RC3 .1583 FAU .09423
FDE -.4209 FRA 2.5471 FC3-6.7725 BSP 51714
BDE .4905 BRA 4.7017 BC317.7357 FSP 1890

MID-COURSE EXECUTION ACCURACY
SGT14663.3 SGR 597.7 SG3 554.0
RRT .1763 RRF .1417 RTF .9743
SGB14675.5 R23 -.0308 R13 .9743
SG114663.7 SG2 588.3 THA .41

ORBIT DETERMINATION ACCURACY
ST 2495.4 SR 499.0 SS 715.9
CRT .4392 CRS .2918 CST -.7290
LSA 2559.6 MSA 660.3 SSA 32.0
EL1 2505.3 EL2 446.5 ALF 5.18

LAUNCH DATE DEC 7 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 858.185 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.220 GAL -3.20 AZL 88.09 HCA 253.18 SMA 190.27 ECC .23190 INC 1.9098 V1 30.232
RP 206.81 LAP -1.83 LOP 328.10 VP 24.206 GAP -12.46 AZP 90.55 TAL 342.89 TAP 236.06 RCA 146.14 APO 234.39 V2 26.480
RC 328.970 GL 18.31 GP -3.46 ZAL 117.48 ZAP 30.15 ETS 172.86 ZAE 48.08 ETE 176.64 ZAC 83.90 ETC 256.39 CLP 29.97

PLANETOCENTRIC CONIC

C3 12.379 VHL 3.518 DLA 11.35 RAL 200.03 RAD 6567.5 VEL 11.566 PTH 2.02 VHP 5.707 DPA -1.06 RAP 177.37 ECC 1.2037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 8 40	2465.98	-24.77	58.06	57.07	104.18	18 49 46	1866.0	-22.58	50.07
90.00	9 5 6	4390.00	6.13	182.62	53.41	62.30	10 18 16	3790.0	2.38	175.95
100.00	19 35 44	2185.19	-25.78	37.11	56.77	105.68	20 12 9	1585.2	-23.38	29.13
100.00	10 20 43	4146.02	7.06	164.18	52.90	60.88	11 29 49	3546.0	3.12	157.60
110.00	20 56 55	1931.12	-28.46	16.85	55.81	109.78	21 29 7	1331.1	-25.50	8.93
110.00	11 16 1	3972.86	9.47	149.57	51.44	57.00	12 22 14	3372.9	5.06	143.26

DIFFERENTIAL CORRECTIONS
TDE .2617 TRA 4.9556 TC-17.4165 BAU 2.8826
RDE .3034 RRA .1897 RC3 .1752 FAU .08861
FDE -.4680 FRA 2.5194 FC3-6.1970 BSP 52157
BDE .4007 BRA 4.9592 BC317.4174 FSP 1805

MID-COURSE EXECUTION ACCURACY
SGT14769.3 SGR 598.9 SG3 526.3
RRT .1462 RRF .1109 RTF .9733
SGB14781.5 R23 -.0320 R13 .9732
SG114769.6 SG2 592.4 THA .34

ORBIT DETERMINATION ACCURACY
ST 2532.6 SR 503.1 SS 727.0
CRT .3474 CRS .3483 CST -.7561
LSA 2598.4 MSA 665.5 SSA 31.1
EL1 2538.8 EL2 470.6 ALF 4.09

LAUNCH DATE DEC 7 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 862.508 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.228 GAL -3.39 AZL 88.11 HCA 254.44 SMA 190.41 ECC .23324 INC 1.8906 V1 30.232
RP 206.77 LAP -1.82 LOP 329.37 VP 24.222 GAP -12.57 AZP 90.51 TAL 341.91 TAP 236.36 RCA 146.00 APO 234.82 V2 26.486
RC 329.784 GL 17.85 GP -3.39 ZAL 119.11 ZAP 29.66 ETS 172.85 ZAE 47.28 ETE 176.63 ZAC 84.14 ETC 256.34 CLP 29.49

PLANETOCENTRIC CONIC

C3 12.744 VHL 3.570 DLA 10.31 RAL 201.33 RAD 6567.5 VEL 11.581 PTH 2.03 VHP 5.791 DPA -1.32 RAP 178.11 ECC 1.2097

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 22 21	2437.75	-24.28	56.13	58.46	105.03	19 2 59	1837.8	-21.98	48.21
90.00	9 1 43	4430.62	7.41	184.92	55.03	62.59	10 15 56	3830.6	3.68	178.22
100.00	19 48 48	2158.91	-25.29	35.31	58.14	106.50	20 24 47	1558.9	-22.78	27.41
100.00	10 17 56	4184.70	8.33	166.34	54.53	61.19	11 27 41	3584.7	4.42	159.73
110.00	21 8 40	1900.00	-27.94	15.34	57.15	110.54	21 40 29	1309.0	-24.89	7.50
110.00	11 14 34	4007.37	10.74	151.43	53.08	57.35	12 21 22	3407.4	6.36	145.08

DIFFERENTIAL CORRECTIONS
TDE .1311 TRA 5.2214 TC-17.0749 BAU 2.9093
RDE .3111 RRA .1867 RC3 .1900 FAU .08319
FDE -.5084 FRA 2.4872 FC3-5.6516 BSP 52613
BDE .3376 BRA 5.2248 BC317.0760 FSP 1721

MID-COURSE EXECUTION ACCURACY
SGT14873.5 SGR 600.4 SG3 499.4
RRT .1171 RRF .0808 RTF .9722
SGB14885.6 R23 -.0335 R13 .9721
SG114873.6 SG2 596.2 THA .27

ORBIT DETERMINATION ACCURACY
ST 2589.9 SR 507.6 SS 736.2
CRT .2564 CRS .3984 CST -.7827
LSA 2657.6 MSA 666.1 SSA 30.3
EL1 2593.3 EL2 490.0 ALF 2.98

LAUNCH DATE DEC 7 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 866.824 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.235 GAL -3.59 AZL 88.13 HCA 255.71 SMA 190.55 ECC .23464 INC 1.8715 V1 30.232
RP 206.73 LAP -1.81 LOP 330.64 VP 24.237 GAP -12.68 AZP 90.46 TAL 340.93 TAP 236.64 RCA 145.84 APO 235.26 V2 26.490
RC 330.595 GL 17.39 GP -3.32 ZAL 120.73 ZAP 29.18 ETS 172.83 ZAE 46.50 ETE 176.62 ZAC 84.38 ETC 256.29 CLP 29.01

PLANETOCENTRIC CONIC

C3 13.141 VHL 3.625 DLA 9.28 RAL 202.61 RAD 6567.5 VEL 11.599 PTH 2.03 VHP 5.877 DPA -1.59 RAP 178.86 ECC 1.2163

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 45	2410.66	-23.79	54.30	59.87	105.82	19 15 56	1810.7	-21.39	46.45
90.00	8 58 31	4470.93	8.67	187.21	56.69	62.94	10 13 2	3870.9	4.97	180.48
100.00	20 1 38	2133.65	-24.79	33.60	59.54	107.27	20 37 12	1533.7	-22.19	25.77
100.00	10 15 19	4223.16	9.59	168.51	56.20	61.55	11 25 42	3623.2	5.71	161.86
110.00	21 20 13	1887.74	-27.43	13.90	58.52	111.25	21 51 41	1287.7	-24.29	6.14
110.00	11 13 14	4041.85	12.00	153.31	54.76	57.75	12 20 35	3441.8	7.66	146.91

DIFFERENTIAL CORRECTIONS
TDE -.0020 TRA 5.4930 TC-16.7150 BAU 2.9368
RDE .3193 RRA .1834 RC3 .2029 FAU .07790
FDE -.5474 FRA 2.4510 FC3-5.1322 BSP 53019
BDE .3193 BRA 5.4970 BC316.7162 FSP 1639

MID-COURSE EXECUTION ACCURACY
SGT14975.8 SGR 602.1 SG3 473.2
RRT .0886 RRF .0511 RTF .9708
SGB14987.9 R23 -.0352 R13 .9708
SG114975.9 SG2 599.7 THA .20

ORBIT DETERMINATION ACCURACY
ST 2664.4 SR 512.3 SS 744.2
CRT .1680 CRS .4440 CST -.8071
LSA 2733.9 MSA 663.5 SSA 29.4
EL1 2665.9 EL2 504.7 ALF 1.92

LAUNCH DATE DEC 7 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 871.135 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.243 GAL -3.79 AZL 88.15 HCA 256.98 SMA 190.69 ECC .23611 INC 1.8528 V1 30.232
RP 206.70 LAP -1.81 LOP 331.90 VP 24.251 GAP -12.79 AZP 90.42 TAL 339.93 TAP 236.91 RCA 145.66 APO 235.71 V2 26.493
RC 331.403 GL 16.92 GP -3.26 ZAL 122.34 ZAP 28.72 ETS 172.82 ZAE 45.72 ETE 176.61 ZAC 84.62 ETC 256.24 CLP 28.55

PLANETOCENTRIC CONIC

C3 13.573 VHL 3.684 DLA 8.26 RAL 203.87 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 5.965 DPA -1.87 RAP 179.62 ECC 1.2234

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 48 53	2384.66	-23.30	52.55	61.31	106.56	19 28 38	1784.7	-20.81	44.77
90.00	8 55 30	4510.96	9.90	189.51	58.40	63.33	10 10 41	3911.0	6.24	182.74
100.00	20 14 14	2109.42	-24.29	31.97	60.97	107.98	20 49 23	1509.4	-21.60	24.21
100.00	10 12 51	4261.44	10.82	170.68	57.91	61.96	11 23 52	3661.4	6.99	163.99
110.00	21 31 35	1867.34	-26.92	12.53	59.92	111.91	22 2 43	1267.3	-23.70	4.85
110.00	11 11 59	4076.28	13.24	155.20	56.49	58.20	12 19 55	3476.3	8.94	148.74

DIFFERENTIAL CORRECTIONS
TDE -.1352 TRA 5.7759 TC-16.3326 BAU 2.9639
RDE .3281 RRA .1797 RC3 .2141 FAU .07272
FDE -.5797 FRA 2.4112 FC3-4.6382 BSP 53449
BDE .3549 BRA 5.7787 BC316.3340 FSP 1560

MID-COURSE EXECUTION ACCURACY
SGT15075.1 SGR 604.1 SG3 447.7
RRT .0612 RRF .0225 RTF .9692
SGB15087.2 R23 -.0369 R13 .9692
SG115075.1 SG2 603.0 THA .14

ORBIT DETERMINATION ACCURACY
ST 2754.9 SR 517.3 SS 749.6
CRT .0854 CRS .4842 CST -.8290
LSA 2825.8 MSA 658.1 SSA 28.6
EL1 2755.3 EL2 515.3 ALF .95

LAUNCH DATE DEC 7 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 875.439 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.251 GAL -4.00 AZL 88.17 HCA 258.25 SMA 190.83 ECC .23764 INC 1.8342 V1 30.232
RP 206.68 LAP -1.80 LOP 333.17 VP 24.265 GAP -12.91 AZP 90.37 TAL 338.91 TAP 237.16 RCA 145.48 APO 236.18 V2 26.495
RC 332.208 GL 16.46 GP -3.19 ZAL 123.94 ZAP 28.26 ETS 172.80 ZAE 44.96 ETE 176.60 ZAC 84.86 ETC 256.20 CLP 28.10

PLANETOCENTRIC CONIC

C3 14.041 VHL 3.747 DLA 7.25 RAL 205.13 RAD 6567.6 VEL 11.637 PTH 2.04 VHP 6.053 DPA -2.15 RAP 180.39 ECC 1.2311

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 46	2359.77	-22.81	50.89	62.78	107.25	19 41 6	1759.8	-20.23	43.17
90.00	8 52 39	4550.71	11.11	191.81	60.14	63.78	10 8 29	3950.7	7.49	184.99
100.00	20 26 35	2086.21	-23.79	30.43	62.43	108.65	21 1 21	1486.2	-21.02	22.72
100.00	10 10 31	4299.49	12.03	172.86	59.67	62.43	11 22 10	3699.5	8.24	166.11
110.00	21 42 46	1847.81	-26.41	11.24	61.34	112.53	22 13 34	1247.8	-23.13	3.62
110.00	11 10 49	4110.66	14.47	157.11	58.25	58.69	12 19 20	3510.7	10.22	150.59

DIFFERENTIAL CORRECTIONS
TDE -.2699 TRA 6.0653 TC-15.9369 BAU 2.9919
RDE .3375 RRA .1756 RC3 .2234 FAU .06773
FDE -.6080 FRA 2.3666 FC3-4.1763 BSP 53837
BDE .4322 BRA 6.0678 BC315.9384 FSP 1479

MID-COURSE EXECUTION ACCURACY
SGT15173.0 SGR 606.3 SG3 423.0
RRT .0345 RRF -.0056 RTF .9675
SGB15185.1 R23 -.0391 R13 .9675
SG115173.0 SG2 606.0 THA .08

ORBIT DETERMINATION ACCURACY
ST 2857.4 SR 522.5 SS 752.6
CRT .0086 CRS .5206 CST -.8479
LSA 2929.1 MSA 650.8 SSA 27.8
EL1 2857.4 EL2 522.5 ALF .09

LAUNCH DATE DEC 7 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 879.735 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.258 GAL -4.22 AZL 88.18 HCA 259.52 SMA 190.97 ECC .23925 INC 1.8158 V1 30.232
RP 206.67 LAP -1.79 LOP 334.44 VP 24.277 GAP -13.03 AZP 90.33 TAL 337.89 TAP 237.41 RCA 145.28 APO 236.66 V2 26.497
RC 333.009 GL 16.00 GP -3.13 ZAL 125.52 ZAP 27.82 ETS 172.79 ZAE 44.21 ETE 176.58 ZAC 85.10 ETC 256.15 CLP 27.66

PLANETOCENTRIC CONIC

C3 14.547 VHL 3.814 DLA 6.25 RAL 206.37 RAD 6567.6 VEL 11.659 PTH 2.05 VHP 6.143 DPA -2.44 RAP 181.16 ECC 1.2394

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 24	2335.95	-22.32	49.32	64.27	107.90	19 53 20	1736.0	-19.66	41.65
90.00	8 49 56	4590.18	12.28	194.11	61.93	64.28	10 6 26	3990.2	8.72	187.24
100.00	20 38 43	2064.01	-23.30	28.96	63.91	109.28	21 13 7	1464.0	-20.46	21.32
100.00	10 8 18	4337.35	13.21	175.05	61.46	62.94	11 20 36	3737.4	9.48	168.25
110.00	21 53 45	1829.17	-25.92	10.01	62.79	113.10	22 24 14	1229.2	-22.57	2.46
110.00	11 9 45	4144.96	15.67	159.04	60.05	59.23	12 18 50	3545.0	11.48	152.45

DIFFERENTIAL CORRECTIONS
TDE -.4047 TRA 6.3627 TC-15.5298 BAU 3.0206
RDE .3476 RRA .1711 RC3 .2311 FAU .06285
FDE -.6308 FRA 2.3187 FC3-3.7405 BSP 54232
BDE .5335 BRA 6.3650 BC315.5315 FSP 1402

MID-COURSE EXECUTION ACCURACY
SGT15269.6 SGR 608.7 SG3 398.9
RRT .0086 RRF -.0327 RTF .9655
SGB15281.8 R23 -.0410 R13 .9655
SG115269.6 SG2 608.7 THA .02

ORBIT DETERMINATION ACCURACY
ST 2969.3 SR 527.9 SS 752.6
CRT -.0610 CRS .5527 CST -.8643
LSA 3041.2 MSA 642.1 SSA 27.0
EL1 2969.5 EL2 526.9 ALF 179.36

LAUNCH DATE DEC 7 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 884.023 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.266 GAL -4.43 AZL 88.20 HCA 260.79 SMA 191.11 ECC .24092 INC 1.7975 V1 30.232
RP 206.67 LAP -1.77 LOP 335.71 VP 24.288 GAP -13.15 AZP 90.29 TAL 336.85 TAP 237.64 RCA 145.07 APO 237.16 V2 26.497
RC 333.807 GL 15.53 GP -3.08 ZAL 127.08 ZAP 27.39 ETS 172.77 ZAE 43.47 ETE 176.57 ZAC 85.34 ETC 256.11 CLP 27.23

PLANETOCENTRIC CONIC

C3 15.094 VHL 3.885 DLA 5.27 RAL 207.60 RAD 6567.6 VEL 11.682 PTH 2.05 VHP 6.235 DPA -2.74 RAP 181.95 ECC 1.2484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 47	2313.21	-21.83	47.83	65.79	108.49	20 5 21	1713.2	-19.11	40.22
90.00	8 47 21	4629.39	13.43	196.42	63.76	64.83	10 4 31	4029.4	9.93	189.49
100.00	20 50 37	2042.83	-22.82	27.57	65.42	109.85	21 24 40	1442.8	-19.90	19.99
100.00	10 6 13	4375.00	14.37	177.25	63.29	63.50	11 19 8	3775.0	10.69	170.38
110.00	22 4 33	1811.43	-25.44	8.86	64.27	113.64	22 34 45	1211.4	-22.03	1.37
110.00	11 8 46	4179.17	16.85	160.99	61.90	59.81	12 18 25	3579.2	12.72	154.32

DIFFERENTIAL CORRECTIONS
TDE -.5422 TRA 6.6672 TC-15.1129 BAU 3.0501
RDE .3582 RRA .1662 RC3 .2373 FAU .05813
FDE -.6506 FRA 2.2661 FC3-3.3338 BSP 54579
BDE .6498 BRA 6.6693 BC315.1148 FSP 1326

MID-COURSE EXECUTION ACCURACY
SGT15363.6 SGR 611.2 SG3 375.6
RRT -.0166 RRF -.0595 RTF .9632
SGB15375.8 R23 .0434 R13 -.9632
SG115363.6 SG2 611.1 THA 179.96

ORBIT DETERMINATION ACCURACY
ST 3088.4 SR 533.4 SS 750.4
CRT -.1247 CRS .5826 CST -.8780
LSA 3159.8 MSA 633.0 SSA 26.2
EL1 3089.2 EL2 529.1 ALF 178.73

LAUNCH DATE DEC 7 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 888.301 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.274 GAL -4.66 AZL 88.22 HCA 262.06 SMA 191.26 ECC .24267 INC 1.7794 V1 30.232
RP 206.68 LAP -1.76 LOP 336.98 VP 24.297 GAP -13.28 AZP 90.25 TAL 335.80 TAP 237.86 RCA 144.84 APO 237.67 V2 26.496
RC 334.601 GL 15.07 GP -3.02 ZAL 128.62 ZAP 26.97 ETS 172.75 ZAE 42.74 ETE 176.55 ZAC 85.58 ETC 256.07 CLP 26.81

PLANETOCENTRIC CONIC

C3 15.684 VHL 3.960 DLA 4.30 RAL 208.82 RAD 6567.6 VEL 11.708 PTH 2.06 VHP 6.328 DPA -3.04 RAP 182.75 ECC 1.2581

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 56	2291.53	-21.36	46.41	67.33	109.05	20 17 8	1691.5	-18.56	38.86
90.00	8 44 54	4668.33	14.54	198.73	65.62	65.43	10 2 43	4068.3	11.11	191.74
100.00	21 2 18	2022.65	-22.34	26.26	66.95	110.39	21 36 0	1422.7	-19.37	18.73
100.00	10 4 14	4412.44	15.49	179.46	65.16	64.11	11 17 46	3812.4	11.88	172.52
110.00	22 15 10	1794.58	-24.98	7.77	65.77	114.13	22 45 5	1194.6	-21.51	.34
110.00	11 7 51	4213.27	18.01	162.96	63.78	60.44	12 18 4	3613.3	13.94	156.21

DIFFERENTIAL CORRECTIONS
TDE -.6790 TRA 6.9819 TC-14.6853 BAU 3.0797
RDE .3693 RRA .1610 RC3 .2420 FAU .05350
FDE -.6658 FRA 2.2101 FC3-2.9530 BSP 54940
BDE .7729 BRA 6.9838 BC314.6873 FSP 1251

MID-COURSE EXECUTION ACCURACY
SGT15455.4 SGR 613.8 SG3 352.9
RRT -.0409 RRF -.0853 RTF .9606
SGB15467.6 R23 .0460 R13 -.9606
SG115455.4 SG2 613.3 THA 179.91

ORBIT DETERMINATION ACCURACY
ST 3212.7 SR 538.9 SS 745.3
CRT -.1813 CRS .6094 CST -.8892
LSA 3282.9 MSA 623.8 SSA 25.5
EL1 3214.2 EL2 529.7 ALF 178.21

LAUNCH DATE DEC 7 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 892.570 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.282 GAL -4.88 AZL 88.24 HCA 263.33 SMA 191.40 ECC .24450 INC 1.7614 V1 30.232
RP 206.69 LAP -1.75 LOP 338.25 VP 24.306 GAP -13.40 AZP 90.20 TAL 334.74 TAP 238.06 RCA 144.60 APO 238.20 V2 26.494
RC 335.390 GL 14.61 GP -2.97 ZAL 130.15 ZAP 26.56 ETS 172.73 ZAE 42.02 ETE 176.54 ZAC 85.82 ETC 256.04 CLP 26.40

PLANETOCENTRIC CONIC

C3 16.319 VHL 4.040 DLA 3.35 RAL 210.02 RAD 6567.7 VEL 11.735 PTH 2.07 VHP 6.423 DPA -3.35 RAP 183.55 ECC 1.2686

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 51	2270.89	-20.89	45.08	68.89	109.56	20 28 42	1670.9	-18.04	37.57
90.00	8 42 35	4707.00	15.62	201.06	67.52	66.08	10 1 2	4107.0	12.26	194.00
100.00	21 13 45	2003.47	-21.88	25.02	68.50	110.89	21 47 9	1403.5	-18.85	17.54
100.00	10 2 21	4449.65	16.58	181.68	67.07	64.77	11 16 31	3849.7	13.05	174.67
110.00	22 25 35	1778.64	-24.53	6.75	67.29	114.59	22 55 14	1178.6	-21.01	359.37
110.00	11 7 0	4247.25	19.14	164.94	65.70	61.12	12 17 48	3647.2	15.14	158.11

DIFFERENTIAL CORRECTIONS
TDE -.8166 TRA 7.3037 TC-14.2537 BAU 3.1102
RDE .3810 RRA .1554 RC3 .2454 FAU .04898
FDE -.6772 FRA 2.1497 FC3-2.5982 BSP 55274
BDE .9012 BRA 7.3053 BC314.2559 FSP 1178

MID-COURSE EXECUTION ACCURACY
SGT15544.7 SGR 616.5 SG3 330.8
RRT -.0646 RRF -.1106 RTF .9574
SGB15557.0 R23 .0488 R13 -.9574
SG115544.8 SG2 615.2 THA 179.85

ORBIT DETERMINATION ACCURACY
ST 3339.4 SR 544.5 SS 737.5
CRT -.2320 CRS .6340 CST -.8983
LSA 3407.9 MSA 614.7 SSA 24.8
EL1 3341.9 EL2 529.3 ALF 177.78

LAUNCH DATE DEC 7 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 896.827 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.290	GAL	-5.12	AZL	88.26	HCA	264.60	SMA	191.55	ECC	.24641	INC	1.7434
RP	206.72	LAP	-1.74	LOP	339.52	VP	24.314	GAP	-13.54	AZP	90.16	TAL	333.66	TAP	238.25	RCA	144.35	APO	238.74
RC	336.176	GL	18.16	GP	-2.92	ZAL	131.65	ZAP	26.16	ETS	172.71	ZAE	41.31	ETE	176.52	ZAC	86.06	ETC	256.00

V1	30.232	V2	26.491	CLP	26.00														

PLANETOCENTRIC CONIC

C3	17.002	VHL	4.123	DLA	2.42	RAL	211.21	RAD	6567.7	VEL	11.764	PTH	2.08	VHP	6.520	DPA	-3.67	RAP	184.37

ECC	1.2798	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	20 2 32	2251.30	-20.44	43.82	70.48	110.03	20 40 3	1651.3	-17.53	36.36							
		90.00	8 40 22	4745.40	16.67	203.39	69.46	66.77	9 59 27	4145.4	13.39	196.26							
		100.00	21 25 0	1985.29	-21.44	23.86	70.08	111.35	21 58 5	1385.3	-18.35	16.42							
		100.00	10 0 35	4486.64	17.64	183.91	69.01	65.47	11 15 21	3886.6	14.19	176.83							
		110.00	22 35 50	1763.60	-24.10	5.79	68.84	115.01	23 5 13	1163.6	-20.53	358.47							
		110.00	11 6 14	4281.10	20.24	166.95	67.65	61.85	12 17 35	3681.1	16.32	160.03							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.9552	TRA	7.6341	TC-13.8229	BAU	3.1425	SGT15634.3	SGR	619.3	SG3	309.4	ST	3467.6	SR	550.1	SS	726.9		
RDE	.3933	RRA	.1493	RC3 .2475	FAU	.04462	RRT -.0875	RRF	-.1354	RTF	.9539	CRT	-.2774	CRS	.6566	CST	-.9058		
FDE	-.6847	FRA	2.0853	FC3-2.2718	BSP	55582	SGB15646.6	R23	.0519	R13	-.9539	LSA	3533.8	MSA	605.8	SSA	24.2		
BDE	1.0330	BRA	7.6355	BC313.8251	FSP	1106	SG115634.4	SG2	616.9	THA	179.80	EL1	3471.0	EL2	528.0	ALF	177.42		

LAUNCH DATE DEC 7 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 901.073 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.298	GAL	-5.36	AZL	88.27	HCA	265.86	SMA	191.69	ECC	.24840	INC	1.7256
RP	206.75	LAP	-1.72	LOP	340.79	VP	24.321	GAP	-13.67	AZP	90.12	TAL	332.57	TAP	238.43	RCA	144.08	APO	239.31
RC	336.957	GL	13.71	GP	-2.87	ZAL	133.13	ZAP	25.77	ETS	172.69	ZAE	40.61	ETE	176.50	ZAC	86.30	ETC	255.97

V1	30.232	V2	26.488	CLP	25.62														

PLANETOCENTRIC CONIC

C3	17.735	VHL	4.211	DLA	1.50	RAL	212.38	RAD	6567.7	VEL	11.795	PTH	2.09	VHP	6.618	DPA	-3.99	RAP	185.19

ECC	1.2919	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	20 13 59	2232.72	-20.00	42.63	72.09	110.47	20 51 12	1632.7	-17.04	35.21							
		90.00	8 38 15	4783.53	17.68	205.74	71.44	67.51	9 57 58	4183.5	14.48	198.52							
		100.00	21 36 2	1968.09	-21.01	22.76	71.67	111.77	22 8 50	1368.1	-17.87	15.37							
		100.00	9 58 53	4523.39	18.67	186.16	70.99	66.22	11 14 17	3923.4	15.30	178.99							
		110.00	22 45 53	1749.45	-23.69	4.90	70.41	115.39	23 15 2	1149.5	-20.08	357.62							
		110.00	11 5 32	4314.79	21.31	168.98	69.65	62.62	12 17 27	3714.8	17.47	161.96							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.0934	TRA	7.9743	TC-13.3842	BAU	3.1740	SGT15718.8	SGR	622.0	SG3	288.7	ST	3595.5	SR	555.6	SS	714.0		
RDE	.4061	RRA	.1428	RC3 .2485	FAU	.04033	RRT -.1096	RRF	-.1594	RTF	.9497	CRT	-.3174	CRS	.6777	CST	-.9115		
FDE	-.6890	FRA	2.0172	FC3-1.9685	BSP	55879	SGB15731.1	R23	.0555	R13	-.9497	LSA	3659.1	MSA	597.6	SSA	23.6		
BDE	1.1664	BRA	7.9756	BC313.3865	FSP	1036	SG115719.0	SG2	618.3	THA	179.75	EL1	3599.9	EL2	526.3	ALF	177.13		

LAUNCH DATE DEC 7 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 905.306 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.306	GAL	-5.60	AZL	88.29	HCA	267.13	SMA	191.84	ECC	.25048	INC	1.7078
RP	206.79	LAP	-1.71	LOP	342.06	VP	24.326	GAP	-13.81	AZP	90.09	TAL	331.47	TAP	238.60	RCA	143.79	APO	239.89
RC	337.733	GL	13.27	GP	-2.82	ZAL	134.59	ZAP	25.39	ETS	172.67	ZAE	39.92	ETE	176.48	ZAC	86.54	ETC	255.94

V1	30.232	V2	26.483	CLP	25.24														

PLANETOCENTRIC CONIC

C3	18.522	VHL	4.304	DLA	.61	RAL	213.53	RAD	6567.7	VEL	11.828	PTH	2.09	VHP	6.718	DPA	-4.32	RAP	186.02

ECC	1.3048	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	20 25 14	2215.15	-19.58	41.52	73.72	110.87	21 2 9	1615.1	-16.57	34.14							
		90.00	8 36 14	4821.37	18.65	208.09	73.44	68.30	9 56 35	4221.4	15.54	200.80							
		100.00	21 46 51	1951.85	-20.59	21.73	73.29	112.16	22 19 23	1351.9	-17.41	14.38							
		100.00	9 57 17	4559.90	19.65	188.43	73.01	67.01	11 13 17	3959.9	16.37	181.17							
		110.00	22 55 45	1736.20	-23.30	4.06	72.00	115.75	23 24 41	1136.2	-19.65	356.83							
		110.00	11 4 53	4348.32	22.34	171.03	71.68	63.43	12 17 21	3748.3	18.60	163.91							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.2333	TRA	8.3219	TC-12.9535	BAU	3.2082	SGT15804.1	SGR	624.8	SG3	268.6	ST	3722.3	SR	561.1	SS	698.7		
RDE	.4195	RRA	.1359	RC3 .2485	FAU	.03617	RRT -.1313	RRF	-.1832	RTF	.9448	CRT	-.3536	CRS	.6976	CST	-.9160		
FDE	-.6902	FRA	1.9444	FC3-1.6904	BSP	56132	SGB15816.4	R23	.0595	R13	-.9448	LSA	3782.9	MSA	589.7	SSA	23.0		
BDE	1.3027	BRA	8.3230	BC312.9559	FSP	966	SG115804.3	SG2	619.4	THA	179.70	EL1	3727.7	EL2	524.1	ALF	176.89		

LAUNCH DATE DEC 7 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 909.525 EARTH TO MARS

RL	147.37	LAL	.00	LOL	74.93	VL	33.314	GAL	-5.85	AZL	88.31	HCA	268.40	SMA	191.99	ECC	.25265	INC	1.6901
RP	206.84	LAP	-1.69	LOP	343.33	VP	24.331	GAP	-13.96	AZP	90.05	TAL	330.35	TAP	238.75	RCA	143.48	APO	240.49
RC	338.506	GL	12.83	GP	-2.77	ZAL	136.02	ZAP	25.02	ETS	172.65	ZAE	39.24	ETE	176.46	ZAC	86.78	ETC	255.92

V1	30.232	V2	26.477	CLP	24.87														

PLANETOCENTRIC CONIC

C3	19.366	VHL	4.401	DLA	-.26	RAL	214.68	RAD	6567.8	VEL	11.864	PTH	2.10	VHP	6.820	DPA	-4.66	RAP	186.86

ECC	1.3187	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	20 36 15	2190.57	-19.18	40.47	75.36	111.24	21 12 54	1598.6	-16.12	33.13							
		90.00	8 34 19	4858.94	19.58	210.46	75.48	69.12	9 55 18	4258.9	16.56	203.08							
		100.00	21 57 28	1936.58	-20.20	20.77	74.93	112.52	22 29 45	1336.6	-16.97	13.46							
		100.00	9 55 47	4596.16	20.60	190.70	75.05	67.85	11 12 23	3996.2	17.42	183.36							
		110.00	23 5 26	1723.84	-22.93	3.29	73.60	116.07	23 34 10	1123.8	-19.24	356.10							
		110.00	11 4 18	4381.66	23.35	173.11	73.74	64.29	12 17 20	3781.7	19.69	165.87							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.3717	TRA	8.6796	TC-12.5226	BAU	3.2428	SGT15886.2	SGR	627.5	SG3	249.1	ST	3846.1	SR	566.4	SS	681.0		
RDE	.4333	RRA	.1286	RC3 .2476	FAU	.03209	RRT -.1521	RRF	-.2063	RTF	.9389	CRT	-.3853	CRS	.7162	CST	-.9191		
FDE	-.6878	FRA	1.8677	FC3-1.4348	BSP	56398	SGB15898.6	R23	.0640	R13	-.9389	LSA	3903.5	MSA	582.6	SSA	22.4		
BDE	1.4385	BRA	8.6805	BC312.5251	FSP	899	SG115886.5	SG2	620.2	THA	179.66	EL1	3852.4	EL2	521.8	ALF	176.69		

LAUNCH DATE DEC 7 1964 FLIGHT TIME 420.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 913.729 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.322 GAL -6.11 AZL 88.33 HCA 269.67 SMA 192.14 ECC .25492 INC 1.6724 V1 30.232
RP 206.90 LAP -1.67 LOP 344.60 VP 24.334 GAP -14.11 AZP 90.01 TAL 329.23 TAP 238.89 RCA 143.16 APO 241.11 V2 26.470
RC 339.274 GL 12.40 GP -2.73 ZAL 137.43 ZAP 24.66 ETS 172.63 ZAE 38.57 ETE 176.44 ZAC 87.03 ETC 255.89 CLP 24.52

PLANETOCENTRIC CONIC

C3 20.269 VHL 4.502 DLA -1.12 RAL 215.80 RAD 6567.8 VEL 11.902 PTH 2.11 VHP 6.923 DPA -5.00 RAP 187.71 ECC 1.3336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 47 4	2182.95	-18.79	39.49	77.03	111.58	21 23 27	1583.0	-15.62	32.18
90.00	8 32 29	4896.22	20.46	212.83	77.56	69.99	9 54 5	4296.2	17.55	205.37
100.00	22 7 54	1922.24	-19.82	19.87	76.58	112.84	22 39 56	1322.2	-16.56	12.60
100.00	9 54 20	4632.16	21.51	192.99	77.13	68.73	11 11 33	4032.2	18.43	185.55
110.00	23 14 57	1712.34	-22.59	2.58	75.22	116.37	23 43 29	1112.3	-18.86	355.42
110.00	11 3 47	4414.82	24.31	175.20	75.84	65.19	12 17 21	3814.8	20.76	167.85

DIFFERENTIAL CORRECTIONS
TDE-1.5123 TRA 9.0450 TC-12.0982 BAU 3.2790
RDE .4477 RRA .1209 RC3 .2458 FAU .02814
FDE -.6827 FRA 1.7872 FC3-1.2019 BSP 56587
BDE 1.5771 BRA 9.0458 BC312.1007 FSP 832

MID-COURSE EXECUTION ACCURACY
SGT15986.5 SGR 630.3 SG3 230.2
RRT -.1725 RRF -.2289 RTF .9320
SGB15978.9 R23 .0689 R13 -.9320
SG115986.8 SG2 620.8 THA 179.61

ORBIT DETERMINATION ACCURACY
ST 3967.5 SR 571.6 SS 661.2
CRT -.4141 CRS .7339 CST -.9213
LSA 4021.6 MSA 575.7 SSA 21.9
EL1 3974.7 EL2 519.4 ALF 176.53

LAUNCH DATE DEC 7 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 917.918 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.330 GAL -6.37 AZL 88.35 HCA 270.93 SMA 192.29 ECC .25728 INC 1.6547 V1 30.232
RP 206.97 LAP -1.65 LOP 345.86 VP 24.337 GAP -14.26 AZP 89.97 TAL 328.09 TAP 239.02 RCA 142.82 APO 241.76 V2 26.462
RC 340.039 GL 11.98 GP -2.69 ZAL 138.81 ZAP 24.31 ETS 172.61 ZAE 37.91 ETE 176.41 ZAC 87.27 ETC 255.87 CLP 24.17

PLANETOCENTRIC CONIC

C3 21.235 VHL 4.608 DLA -1.95 RAL 216.91 RAD 6567.9 VEL 11.942 PTH 2.13 VHP 7.029 DPA -5.34 RAP 188.56 ECC 1.3495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 57 41	2168.29	-18.42	38.57	78.71	111.89	21 33 49	1568.3	-15.29	31.30
90.00	8 30 44	4933.20	21.31	215.22	79.66	70.90	9 52 57	4333.2	18.50	207.66
100.00	22 18 7	1908.82	-19.47	19.03	78.25	113.14	22 49 56	1308.8	-16.17	11.79
100.00	9 52 59	4667.90	22.37	195.29	79.24	69.64	11 10 47	4067.9	19.40	187.76
110.00	23 24 16	1701.71	-22.27	1.92	76.86	116.63	23 52 38	1101.7	-18.51	354.80
110.00	11 3 18	4447.77	25.23	177.31	77.98	66.14	12 17 26	3847.8	21.79	169.85

DIFFERENTIAL CORRECTIONS
TDE-1.6520 TRA 9.4200 TC-11.6791 BAU 3.3164
RDE .4625 RRA .1127 RC3 .2433 FAU .02424
FDE -.6743 FRA 1.7020 FC3 -.9883 BSP 56782
BDE 1.7155 BRA 9.4207 BC311.6816 FSP 767

MID-COURSE EXECUTION ACCURACY
SGT16044.3 SGR 633.0 SG3 211.9
RRT -.1923 RRF -.2510 RTF .9235
SGB16056.7 R23 .0745 R13 -.9235
SG116044.7 SG2 621.1 THA 179.56

ORBIT DETERMINATION ACCURACY
ST 4084.5 SR 576.6 SS 639.0
CRT -.4396 CRS .7509 CST -.9224
LSA 4135.2 MSA 569.4 SSA 21.4
EL1 4092.5 EL2 516.9 ALF 176.39

LAUNCH DATE DEC 7 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 922.089 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.338 GAL -6.64 AZL 88.36 HCA 272.20 SMA 192.44 ECC .25974 INC 1.6370 V1 30.232
RP 207.04 LAP -1.64 LOP 347.13 VP 24.338 GAP -14.43 AZP 89.94 TAL 326.94 TAP 239.14 RCA 142.45 APO 242.42 V2 26.453
RC 340.800 GL 11.56 GP -2.65 ZAL 140.17 ZAP 23.97 ETS 172.58 ZAE 37.26 ETE 176.39 ZAC 87.51 ETC 255.86 CLP 23.83

PLANETOCENTRIC CONIC

C3 22.269 VHL 4.719 DLA -2.76 RAL 218.01 RAD 6567.9 VEL 11.985 PTH 2.14 VHP 7.137 DPA -5.69 RAP 189.43 ECC 1.3665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 8 5	2154.55	-18.07	37.72	80.40	112.18	21 44 0	1554.5	-14.90	30.47
90.00	8 29 4	4969.89	22.10	217.61	81.79	71.84	9 51 53	4369.9	19.42	209.97
100.00	22 28 8	1896.31	-19.13	18.26	79.93	113.42	22 59 45	1296.3	-15.80	11.05
100.00	9 51 41	4703.36	23.19	197.61	81.38	70.60	11 10 5	4103.4	20.34	189.98
110.00	23 33 26	1691.92	-21.97	1.32	78.51	116.87	24 1 38	1091.9	-18.18	354.23
110.00	11 2 53	4480.51	26.12	179.45	80.14	67.12	12 17 34	3880.5	22.79	171.87

DIFFERENTIAL CORRECTIONS
TDE-1.7906 TRA 9.8052 TC-11.2663 BAU 3.3549
RDE .4778 RRA .1040 RC3 .2402 FAU .02044
FDE -.6633 FRA 1.6130 FC3 -.7948 BSP 56950
BDE 1.8533 BRA 9.8057 BC311.2688 FSP 703

MID-COURSE EXECUTION ACCURACY
SGT16119.8 SGR 635.6 SG3 194.3
RRT -.2113 RRF -.2725 RTF .9131
SGB16132.3 R23 .0810 R13 -.9132
SG116120.3 SG2 621.2 THA 179.52

ORBIT DETERMINATION ACCURACY
ST 4196.9 SR 581.4 SS 615.1
CRT -.4622 CRS .7673 CST -.9223
LSA 4244.0 MSA 563.6 SSA 20.9
EL1 4205.6 EL2 514.5 ALF 176.28

LAUNCH DATE DEC 7 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 6 1966

HELIOCENTRIC CONIC DISTANCE 926.241 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.346 GAL -6.91 AZL 88.38 HCA 273.46 SMA 192.59 ECC .26231 INC 1.6193 V1 30.232
RP 207.13 LAP -1.62 LOP 348.39 VP 24.339 GAP -14.59 AZP 89.90 TAL 325.78 TAP 239.24 RCA 142.07 APO 243.10 V2 26.444
RC 341.558 GL 11.16 GP -2.61 ZAL 141.51 ZAP 23.64 ETS 172.56 ZAE 36.62 ETE 176.36 ZAC 87.76 ETC 255.84 CLP 23.50

PLANETOCENTRIC CONIC

C3 23.373 VHL 4.835 DLA -3.55 RAL 219.09 RAD 6567.9 VEL 12.031 PTH 2.15 VHP 7.247 DPA -6.04 RAP 190.30 ECC 1.3847

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 18 18	2141.71	-17.74	36.92	82.11	112.44	21 53 59	1541.7	-14.54	29.70
90.00	8 27 28	5006.28	22.86	220.01	83.94	72.81	9 50 54	4406.3	20.29	212.28
100.00	22 37 59	1884.67	-18.81	17.54	81.63	113.67	23 9 23	1284.7	-15.45	10.35
100.00	9 50 28	4738.55	23.97	199.93	83.55	71.59	11 9 27	4138.6	21.23	192.21
110.00	23 42 25	1682.96	-21.69	.77	80.18	117.09	24 10 28	1083.0	-17.88	353.71
110.00	11 2 31	4513.03	26.96	181.60	82.34	68.14	12 17 44	3913.0	23.75	173.90

DIFFERENTIAL CORRECTIONS
TDE-1.9307 TRA10.1999 TC-10.8637 BAU 3.3955
RDE .4936 RRA .0949 RC3 .2366 FAU .01672
FDE -.6495 FRA 1.5198 FC3 -.6194 BSP 57069
BDE 1.9928 BRA10.2004 BC310.8663 FSP 640

MID-COURSE EXECUTION ACCURACY
SGT16194.5 SGR 638.1 SG3 177.2
RRT -.2300 RRF -.2933 RTF .9003
SGB16207.1 R23 .0883 R13 -.9004
SG116195.2 SG2 621.0 THA 179.48

ORBIT DETERMINATION ACCURACY
ST 4305.4 SR 586.0 SS 589.3
CRT -.4827 CRS .7834 CST -.9214
LSA 4349.2 MSA 558.1 SSA 20.4
EL1 4314.8 EL2 512.1 ALF 176.19

LAUNCH DATE DEC 7 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 8 1966

HELIOCENTRIC CONIC DISTANCE 930.374 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.354 GAL -7.19 AZL 88.40 HCA 274.72 SMA 192.74 ECC .26498 INC 1.6016 V1 30.232
RP 207.22 LAP -1.60 LOP 349.66 VP 24.338 GAP -14.76 AZP 89.87 TAL 324.60 TAP 239.33 RCA 141.67 APO 243.81 V2 26.433
RC 342.314 GL 10.76 GP -2.57 ZAL 142.82 ZAP 23.32 ETS 172.54 ZAE 35.99 ETE 176.33 ZAC 88.00 ETC 255.83 CLP 23.19

PLANETOCENTRIC CONIC

C3 24.553 VHL 4.955 DLA -4.32 RAL 220.15 RAD 6568.0 VEL 12.080 PTH 2.16 VHP 7.359 DPA -6.40 RAP 191.18 ECC 1.4041

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 28 19	2129.74	-17.42	36.18	83.84	112.68	22 3 49	1529.7	-14.20	28.99
90.00	8 25 57	5042.36	23.56	222.42	86.12	73.82	9 49 59	4442.4	21.12	214.60
100.00	22 47 38	1873.88	-18.52	16.87	83.34	113.89	23 18 52	1273.9	-15.13	9.72
100.00	9 49 19	4773.45	24.70	202.27	85.74	72.61	11 8 52	4173.5	22.09	194.45
110.00	23 51 13	1674.79	-21.44	.27	81.86	117.29	24 19 8	1074.8	-17.61	353.24
110.00	11 2 13	4545.31	27.76	183.77	84.56	69.20	12 17 58	3945.3	24.68	175.95

DIFFERENTIAL CORRECTIONS
TDE-2.0700 TRA10.6041 TC-10.4897 BAU 3.4375
RDE .5090 RRA .0854 RC3 .2324 FAU .01307
FDE -.6332 FRA 1.4224 FC3 -.4609 BSP 57180
BDE 2.1318 BRA10.6044 BC310.4723 FSP 579

MID-COURSE EXECUTION ACCURACY
SGT16266.1 SGR 640.6 SG3 160.8
RRT -.2480 RRF -.3133 RTF .8842
SGB16278.7 R23 .0967 R13 -.8843
SG116266.9 SG2 620.6 THA 179.44

ORBIT DETERMINATION ACCURACY
ST 4408.4 SR 590.3 SS 561.9
CRT -.5009 CRS .7993 CST -.9194
LSA 4448.8 MSA 553.0 SSA 20.0
EL1 4418.5 EL2 509.7 ALF 176.11

LAUNCH DATE DEC 7 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 10 1966

HELIOCENTRIC CONIC DISTANCE 934.485 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.362 GAL -7.48 AZL 88.42 HCA 275.99 SMA 192.89 ECC .26777 INC 1.5838 V1 30.232
RP 207.32 LAP -1.58 LOP 350.92 VP 24.337 GAP -14.94 AZP 89.83 TAL 323.42 TAP 239.40 RCA 141.24 APO 244.54 V2 26.421
RC 343.066 GL 10.37 GP -2.53 ZAL 144.10 ZAP 23.01 ETS 172.52 ZAE 35.37 ETE 176.30 ZAC 88.24 ETC 255.83 CLP 22.88

PLANETOCENTRIC CONIC

C3 25.812 VHL 5.081 DLA -5.07 RAL 221.20 RAD 6568.0 VEL 12.132 PTH 2.17 VHP 7.473 DPA -6.76 RAP 192.07 ECC 1.4248

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 9	2118.63	-17.13	35.50	85.57	112.90	22 13 28	1518.6	-13.88	28.33
90.00	8 24 30	5078.13	24.22	224.84	88.32	74.86	9 49 8	4478.1	21.91	216.93
100.00	22 57 6	1863.93	-18.24	16.26	85.07	114.10	23 28 10	1263.9	-14.83	9.13
100.00	9 48 13	4808.06	25.39	204.61	87.96	73.66	11 8 22	4208.1	22.90	196.69
110.00	0 3 48	1667.42	-21.20	359.83	83.55	117.46	0 31 36	1067.4	-17.36	352.81
110.00	11 1 57	4577.34	28.51	185.96	86.82	70.30	12 18 14	3977.3	25.56	178.02

DIFFERENTIAL CORRECTIONS
TDE-2.2088 TRA11.0182 TC-10.0853 BAU 3.4811
RDE .5265 RRA .0754 RC3 .2279 FAU .00950
FDE -.6146 FRA 1.3208 FC3 -.3185 BSP 57251
BDE 2.2706 BRA11.0184 BC310.0879 FSP 519

MID-COURSE EXECUTION ACCURACY
SGT16335.1 SGR 643.0 SG3 145.1
RRT -.2654 RRF -.3323 RTF .8637
SGB16347.7 R23 .1066 R13 -.8637
SG116336.0 SG2 619.9 THA 179.40

ORBIT DETERMINATION ACCURACY
ST 4506.1 SR 594.3 SS 533.1
CRT -.5173 CRS .8154 CST -.9161
LSA 4543.2 MSA 548.3 SSA 19.5
EL1 4516.7 EL2 507.4 ALF 176.05

LAUNCH DATE DEC 7 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 12 1966

HELIOCENTRIC CONIC DISTANCE 938.574 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.371 GAL -7.78 AZL 88.43 HCA 277.25 SMA 193.04 ECC .27068 INC 1.5659 V1 30.232
RP 207.43 LAP -1.55 LOP 352.18 VP 24.334 GAP -15.13 AZP 89.80 TAL 322.22 TAP 239.46 RCA 140.79 APO 245.30 V2 26.408
RC 343.815 GL 9.99 GP -2.50 ZAL 145.36 ZAP 22.71 ETS 172.50 ZAE 34.76 ETE 176.27 ZAC 88.49 ETC 255.83 CLP 22.58

PLANETOCENTRIC CONIC

C3 27.155 VHL 5.211 DLA -5.80 RAL 222.24 RAD 6568.1 VEL 12.187 PTH 2.19 VHP 7.590 DPA -7.13 RAP 192.96 ECC 1.4469

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 48	2108.33	-16.86	34.86	87.32	113.09	22 22 56	1508.3	-13.59	27.71
90.00	8 23 6	5113.59	24.83	227.26	90.54	75.93	9 48 20	4513.6	22.65	219.26
100.00	23 6 24	1854.78	-17.99	15.70	86.80	114.29	23 37 19	1254.8	-14.56	8.59
100.00	9 47 12	4842.37	26.02	206.96	90.19	74.74	11 7 54	4242.4	23.67	198.95
110.00	0 12 17	1660.79	-21.00	359.43	85.24	117.62	0 39 58	1060.8	-17.13	352.43
110.00	11 1 44	4609.12	29.22	188.16	89.10	71.42	12 18 33	4009.1	26.41	180.10

DIFFERENTIAL CORRECTIONS
TDE-2.3466 TRA11.4439 TC3-9.7107 BAU 3.5263
RDE .5435 RRA .0649 RC3 .2230 FAU .00597
FDE -.5935 FRA 1.2147 FC3 -.1904 BSP 57313
BDE 2.4087 BRA11.4441 BC3 9.7133 FSP 460

MID-COURSE EXECUTION ACCURACY
SGT16402.4 SGR 645.2 SG3 130.1
RRT -.2823 RRF -.3498 RTF .8369
SGB16415.1 R23 .1180 R13 -.8370
SG116403.4 SG2 618.9 THA 179.36

ORBIT DETERMINATION ACCURACY
ST 4598.4 SR 598.0 SS 502.9
CRT -.5318 CRS .8315 CST -.9113
LSA 4632.4 MSA 544.0 SSA 19.1
EL1 4609.5 EL2 505.2 ALF 176.00

LAUNCH DATE DEC 7 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 14 1966

HELIOCENTRIC CONIC DISTANCE 942.639 EARTH TO MARS

RL 147.37 LAL .00 LOL 74.93 VL 33.379 GAL -8.08 AZL 88.45 HCA 278.51 SMA 193.20 ECC .27371 INC 1.5480 V1 30.232
RP 207.54 LAP -1.53 LOP 353.44 VP 24.330 GAP -15.32 AZP 89.77 TAL 321.01 TAP 239.51 RCA 140.32 APO 246.08 V2 26.395
RC 344.561 GL 9.61 GP -2.46 ZAL 146.60 ZAP 22.42 ETS 172.47 ZAE 34.15 ETE 176.23 ZAC 88.73 ETC 255.83 CLP 22.29

PLANETOCENTRIC CONIC

C3 28.588 VHL 5.347 DLA -6.50 RAL 223.26 RAD 6568.1 VEL 12.246 PTH 2.20 VHP 7.709 DPA -7.49 RAP 193.87 ECC 1.4705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 17	2098.82	-16.60	34.28	89.07	113.27	22 32 16	1498.8	-13.31	27.15
90.00	8 21 47	5148.72	25.39	229.68	92.78	77.02	9 47 36	4548.7	23.35	221.60
100.00	23 15 31	1846.40	-17.75	15.19	88.54	114.45	23 46 18	1246.4	-14.30	8.10
100.00	9 46 14	4876.38	26.61	209.32	92.45	75.85	11 7 30	4276.4	24.40	201.22
110.00	0 20 37	1654.91	-20.81	359.07	86.95	117.75	0 48 12	1054.9	-16.93	352.09
110.00	11 1 33	4640.63	29.89	190.37	91.40	72.58	12 18 54	4040.6	27.21	182.20

DIFFERENTIAL CORRECTIONS
TDE-2.4842 TRA11.8790 TC3-9.3487 BAU 3.5740
RDE .5610 RRA .0539 RC3 .2179 FAU .00250
FDE -.5703 FRA 1.1046 FC3 -.0756 BSP 57319
BDE 2.5467 BRA11.8791 BC3 9.3512 FSP 403

MID-COURSE EXECUTION ACCURACY
SGT16467.3 SGR 647.4 SG3 115.9
RRT -.2988 RRF -.3650 RTF .8012
SGB16480.0 R23 .1313 R13 -.8013
SG116468.4 SG2 617.7 THA 179.33

ORBIT DETERMINATION ACCURACY
ST 4685.0 SR 601.4 SS 471.6
CRT -.5449 CRS .8482 CST -.9048
LSA 4716.1 MSA 539.8 SSA 18.8
EL1 4696.6 EL2 503.1 ALF 175.95

LAUNCH DATE DEC 8 1964 FLIGHT TIME 140.00 ARRIVAL DATE APR 27 1965

HELIOCENTRIC CONIC DISTANCE 372.436 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	35.795	GAL	-1.33	AZL	88.72	HCA	114.35	SMA	255.21	ECC	.42315	INC	1.2779
RP	244.68	LAP	1.16	LOP	190.30	VP	23.765	GAP	24.93	AZP	90.53	TAL	355.51	TAP	109.86	RCA	147.22	APO	363.20
RC	128.267	GL	8.15	GP	1.73	ZAL	96.24	ZAP	175.45	ETS	156.35	ZAE	152.91	ETE	.98	ZAC	90.71	ETC	256.01

V1	30.236	V2	22.418	CLP	175.79														

PLANETOCENTRIC CONIC

C3	31.725	VHL	5.633	DLA	10.55	RAL	176.14	RAD	6568.3	VEL	12.373	PTH	2.23	VHP	11.346	DPA	.32	RAP	186.81
ECC	1.5221																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 0	2661.42	-27.32	71.79	49.37	97.77	17 20 21	2061.4	-25.96	63.38
90.00	7 19 18	4638.34	13.69	196.95	43.24	64.97	8 36 37	4038.3	10.20	190.00
100.00	18 2 35	2382.13	-28.65	51.02	49.15	98.90	18 42 17	1782.1	-27.13	42.55
100.00	8 35 23	4392.86	14.91	178.30	42.63	63.79	9 48 36	3792.9	11.26	171.40
110.00	19 22 45	2131.27	-32.23	31.21	48.38	102.07	19 58 17	1531.3	-30.23	22.56
110.00	9 31 43	4216.49	18.12	163.14	40.86	60.51	10 41 59	3616.5	14.05	156.39

DIFFERENTIAL CORRECTIONS

TDE	.5266	TRA	-1.4518	TC3	.8808	BAU	.3737
RDE	-.5582	RRA	-.2497	RC3	-.0260	FAU	.05611
FDE	-.0845	FRA	.6497	FC3	-1.5313	BSP	5941
BDE	.7674	BRA	1.4731	BC3	.8812	FSP	427

MID-COURSE EXECUTION ACCURACY

SGT	1878.3	SGR	624.6	SG3	160.1		
RRT	.0468	RRF	-.0643	RTF	-.7950		
SGB	1979.4	R23	-.0225	R13	-.7951		
SG1	1878.6	SG2	623.8	THA	1.00		

ORBIT DETERMINATION ACCURACY

ST	700.6	SR	573.1	SS	220.8		
CRT	-.6705	CRS	-.2575	CST	.8774		
LSA	846.1	MSA	388.7	SSA	35.3		
EL1	831.2	EL2	358.4	ALF	143.39		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 142.00 ARRIVAL DATE APR 29 1965

HELIOCENTRIC CONIC DISTANCE 374.130 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	35.658	GAL	-1.17	AZL	88.74	HCA	115.25	SMA	250.48	ECC	.41214	INC	1.2619
RP	244.46	LAP	1.14	LOP	191.20	VP	23.579	GAP	24.30	AZP	90.54	TAL	356.00	TAP	111.25	RCA	147.25	APO	353.72
RC	130.354	GL	8.23	GP	1.78	ZAL	95.28	ZAP	174.94	ETS	158.10	ZAE	152.72	ETE	1.22	ZAC	90.84	ETC	255.99

V1	30.236	V2	22.440	CLP	175.26														

PLANETOCENTRIC CONIC

C3	30.109	VHL	5.487	DLA	11.01	RAL	175.28	RAD	6568.2	VEL	12.308	PTH	2.22	VHP	11.070	DPA	.21	RAP	187.17
ECC	1.4955																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 28 47	2663.48	-27.34	71.93	47.72	97.69	17 13 11	2063.5	-25.99	63.52
90.00	7 19 38	4610.02	12.86	195.27	41.53	64.56	8 36 28	4010.0	9.33	188.38
100.00	17 55 39	2383.33	-28.67	51.11	47.50	98.86	18 35 23	1783.3	-27.14	42.64
100.00	8 35 27	4365.40	14.07	176.68	40.92	63.35	9 48 12	3765.4	10.38	169.83
110.00	19 16 25	2130.63	-32.22	31.16	46.74	102.10	19 51 55	1530.6	-30.22	22.52
110.00	9 31 11	4190.86	17.25	161.66	39.14	60.02	10 41 2	3590.9	13.14	154.97

DIFFERENTIAL CORRECTIONS

TDE	.5038	TRA	-1.4246	TC3	.9563	BAU	.3851
RDE	-.5417	RRA	-.2418	RC3	-.0244	FAU	.05796
FDE	-.0742	FRA	.6447	FC3	-1.6666	BSP	6144
BDE	.7398	BRA	1.4450	BC3	.9566	FSP	450

MID-COURSE EXECUTION ACCURACY

SGT	1917.0	SGR	621.9	SG3	168.9		
RRT	.0537	RRF	-.0688	RTF	-.8004		
SGB	2015.4	R23	-.0207	R13	-.8006		
SG1	1917.3	SG2	620.9	THA	1.12		

ORBIT DETERMINATION ACCURACY

ST	696.0	SR	570.9	SS	216.7		
CRT	-.6607	CRS	-.2164	CST	.8625		
LSA	837.7	MSA	392.7	SSA	36.5		
EL1	824.3	EL2	361.9	ALF	143.40		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 375.992 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	35.527	GAL	-1.00	AZL	88.75	HCA	116.16	SMA	246.14	ECC	.40168	INC	1.2457
RP	244.23	LAP	1.12	LOP	192.11	VP	23.402	GAP	23.68	AZP	90.55	TAL	356.50	TAP	112.66	RCA	147.27	APO	345.01
RC	132.477	GL	8.30	GP	1.83	ZAL	94.29	ZAP	174.41	ETS	159.53	ZAE	152.58	ETE	1.47	ZAC	90.98	ETC	255.98

V1	30.236	V2	22.463	CLP	174.72														

PLANETOCENTRIC CONIC

C3	28.616	VHL	5.349	DLA	11.47	RAL	174.39	RAD	6568.1	VEL	12.247	PTH	2.20	VHP	10.801	DPA	.10	RAP	187.53
ECC	1.4709																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 21 24	2666.15	-27.36	72.12	46.07	97.60	17 5 51	2066.2	-26.02	63.71
90.00	7 19 54	4581.88	12.04	193.62	39.83	64.17	8 36 16	3981.9	8.46	186.76
100.00	17 48 33	2385.13	-28.68	51.24	45.86	98.79	18 28 18	1785.1	-27.17	42.76
100.00	8 35 27	4338.14	13.24	175.09	39.22	62.95	9 47 45	3738.1	9.50	168.29
110.00	19 9 54	2130.55	-32.22	31.15	45.10	102.10	19 45 25	1530.5	-30.22	22.51
110.00	9 30 35	4165.48	16.38	160.21	37.43	59.57	10 40 0	3565.5	12.22	153.57

DIFFERENTIAL CORRECTIONS

TDE	.4820	TRA	-1.3956	TC3	1.0360	BAU	.3964
RDE	-.5259	RRA	-.2341	RC3	-.0224	FAU	.05984
FDE	-.0629	FRA	.6394	FC3	-1.8104	BSP	6343
BDE	.7134	BRA	1.4151	BC3	1.0362	FSP	477

MID-COURSE EXECUTION ACCURACY

SGT	1954.9	SGR	619.1	SG3	178.0		
RRT	.0602	RRF	-.0741	RTF	-.8063		
SGB	2050.6	R23	-.0201	R13	-.8065		
SG1	1955.3	SG2	617.8	THA	1.21		

ORBIT DETERMINATION ACCURACY

ST	690.7	SR	568.4	SS	212.5		
CRT	-.6512	CRS	-.1689	CST	.8432		
LSA	828.7	MSA	396.5	SSA	37.6		
EL1	816.8	EL2	364.8	ALF	143.38		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 378.008 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	35.401	GAL	-.84	AZL	88.77	HCA	117.07	SMA	242.15	ECC	.39172	INC	1.2292
RP	243.99	LAP	1.09	LOP	193.02	VP	23.234	GAP	23.06	AZP	90.56	TAL	357.01	TAP	114.08	RCA	147.30	APO	337.00
RC	134.631	GL	8.37	GP	1.89	ZAL	93.28	ZAP	173.88	ETS	160.71	ZAE	152.48	ETE	1.71	ZAC	91.11	ETC	255.96

V1	30.236	V2	22.486	CLP	174.17		

PLANETOCENTRIC CONIC

C3	27.237	VHL	5.219	DLA	11.94	RAL	173.47	RAD	6568.1	VEL	12.191	PTH	2.19	VHP	10.540	DPA	.00	RAP	187.89
ECC	1.4482																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 13 51	2669.44	-27.39	72.36	44.43	97.49	16 58 21	2069.4	-26.07	63.94
90.00	7 20 7	4553.97	11.20	192.00	38.14	63.82	8 36 1	3954.0	7.60	185.18
100.00	17 41 16	2387.50	-28.71	51.41	44.21	98.71	18 21 4	1787.5	-27.21	42.93
100.00	8 35 23	4311.14	12.39	173.53	37.53	62.58	9 47 15	3711.1	8.62	166.77
110.00	19 3 15	2131.00	-32.22	31.19	43.47	102.08	19 38 46	1531.0	-30.22	22.54
110.00	9 29 54	4140.41	15.51	158.78	35.73	59.15	10 38 55	3540.4	11.31	152.20

DIFFERENTIAL CORRECTIONS

TDE	.4603	TRA	-1.3656	TC3	1.1217	BAU	.4085
RDE	-.5107	RRA	-.2267	RC3	-.0199	FAU	.06180
FDE	-.0491	FRA	.6325	FC3	-1.9644	BSP	6533
BDE	.6876	BRA	1.3843	BC3	1.1219	FSP	508

MID-COURSE EXECUTION ACCURACY

SGT	1993.6	SGR	616.0	SG3	187.5		
RRT	.0668	RRF	-.0805	RTF	-.8125		
SGB	2086.6	R23	-.0206	R13	-.8126		
SG1	1994.1	SG2	614.5	THA	1.31		

ORBIT DETERMINATION ACCURACY

ST	684.1	SR	565.9	SS	207.7		
CRT	-.6414	CRS	-.1088	CST	.8159		
LSA	818.2	MSA	400.4	SSA	38.7		
EL1	808.2	EL2	367.5	ALF	143.28		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 380.161 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	35.282	GAL	-.68	AZL	88.79	HCA	117.98	SMA	238.47	ECC	.38224	INC	1.2124	V1	30.236
RP	243.75	LAP	1.07	LOP	193.93	VP	23.074	GAP	22.44	AZP	90.57	TAL	357.53	TAP	115.51	RCA	147.31	APO	329.62	V2	22.510
RC	136.814	GL	8.42	GP	1.95	ZAL	92.25	ZAP	173.33	ETS	161.70	ZAE	152.43	ETE	1.97	ZAC	91.25	ETC	255.95	CLP	173.62

PLANETOCENTRIC CONIC

C3	25.963	VHL	5.095	DLA	12.40	RAL	172.53	RAD	6568.0	VEL	12.138	PTH	2.18	VHP	10.285	DPA	-.10	RAP	188.24	ECC	1.4273

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 9	2673.29	-27.42	72.64	42.79	97.35	16 50 42	2073.3	-26.12	64.21
90.00	7 20 17	4526.36	10.37	190.40	36.47	63.50	8 35 44	3926.4	6.73	183.61
100.00	17 33 51	2390.43	-28.74	51.62	42.58	98.60	18 13 41	1790.4	-27.25	43.14
100.00	8 35 16	4284.45	11.55	171.99	35.85	62.24	9 46 40	3684.5	7.75	165.27
110.00	18 56 27	2131.96	-32.24	31.26	41.84	102.04	19 31 59	1532.0	-30.24	22.61
110.00	9 29 9	4115.69	14.65	157.39	34.05	58.76	10 37 45	3515.7	10.40	150.86

DIFFERENTIAL CORRECTIONS

TDE	.4390	TRA	-1.3350	TC3	1.2086	BAU	.4195
RDE	-.4962	RRA	-.2194	RC3	-.0170	FAU	.06382
FDE	-.0349	FRA	.6249	FC3	-2.1279	BSP	6702
BDE	.6625	BRA	1.3529	BC3	1.2087	FSP	541

MID-COURSE EXECUTION ACCURACY

SGT	2030.5	SGR	612.8	SG3	197.4
RRT	.0736	RRF	-.0874	RTF	-.8181
SGB	2120.9	R23	-.0213	R13	-.8183
SG1	2031.0	SG2	610.9	THA	1.40

ORBIT DETERMINATION ACCURACY

ST	676.5	SR	563.1	SS	203.3
CRT	-.6314	CRS	-.0433	CST	.7836
LSA	806.9	MSA	404.2	SSA	39.9
EL1	798.7	EL2	369.9	ALF	143.14

LAUNCH DATE DEC 8 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 382.438 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	35.167	GAL	-.53	AZL	88.80	HCA	118.90	SMA	235.06	ECC	.37323	INC	1.1953	V1	30.236
RP	243.50	LAP	1.05	LOP	194.85	VP	22.923	GAP	21.82	AZP	90.58	TAL	358.05	TAP	116.95	RCA	147.38	APO	322.79	V2	22.535
RC	139.022	GL	8.47	GP	2.01	ZAL	91.19	ZAP	172.78	ETS	162.54	ZAE	152.43	ETE	2.23	ZAC	91.38	ETC	255.94	CLP	173.06

PLANETOCENTRIC CONIC

C3	24.788	VHL	4.979	DLA	12.87	RAL	171.55	RAD	6568.0	VEL	12.090	PTH	2.16	VHP	10.038	DPA	-.19	RAP	188.58	ECC	1.4079

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 58 18	2677.69	-27.46	72.95	41.15	97.20	16 42 55	2077.7	-26.18	64.52
90.00	7 20 23	4499.09	9.54	188.83	34.81	63.21	8 35 22	3899.1	5.87	182.07
100.00	17 26 18	2393.87	-28.77	51.87	40.95	98.47	18 6 12	1793.9	-27.30	43.38
100.00	8 35 4	4258.15	10.71	170.49	34.19	61.93	9 46 2	3658.2	6.88	163.80
110.00	18 49 33	2133.40	-32.26	31.36	40.22	101.98	19 25 6	1533.4	-30.27	22.71
110.00	9 28 19	4091.38	13.78	156.04	32.38	58.41	10 36 30	3491.4	9.50	149.55

DIFFERENTIAL CORRECTIONS

TDE	.4199	TRA	-1.3034	TC3	1.3019	BAU	.4315
RDE	-.4824	RRA	-.2124	RC3	-.0133	FAU	.06599
FDE	-.0204	FRA	.6148	FC3	-2.3048	BSP	6862
BDE	.6396	BRA	1.3206	BC3	1.3020	FSP	574

MID-COURSE EXECUTION ACCURACY

SGT	2069.1	SGR	609.3	SG3	208.0
RRT	.0795	RRF	-.0944	RTF	-.8238
SGB	2157.0	R23	-.0228	R13	-.8240
SG1	2069.8	SG2	607.1	THA	1.47

ORBIT DETERMINATION ACCURACY

ST	669.4	SR	560.2	SS	199.1
CRT	-.6229	CRS	.0259	CST	.7452
LSA	796.4	MSA	406.9	SSA	41.2
EL1	789.9	EL2	371.4	ALF	143.02

LAUNCH DATE DEC 8 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 384.829 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	35.058	GAL	-.38	AZL	88.82	HCA	119.81	SMA	231.91	ECC	.36465	INC	1.1779	V1	30.236
RP	243.25	LAP	1.02	LOP	195.76	VP	22.779	GAP	21.21	AZP	90.59	TAL	358.58	TAP	118.40	RCA	147.34	APO	316.47	V2	22.560
RC	141.251	GL	8.51	GP	2.07	ZAL	90.12	ZAP	172.21	ETS	163.25	ZAE	152.47	ETE	2.50	ZAC	91.52	ETC	255.93	CLP	172.49

PLANETOCENTRIC CONIC

C3	23.703	VHL	4.869	DLA	13.33	RAL	170.56	RAD	6568.0	VEL	12.045	PTH	2.15	VHP	9.796	DPA	-.27	RAP	188.93	ECC	1.3901

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 50 19	2682.59	-27.50	73.31	39.53	97.03	16 35 2	2082.6	-26.24	64.87
90.00	7 20 25	4472.24	8.71	187.29	33.16	62.95	8 34 57	3872.2	5.01	180.56
100.00	17 18 38	2397.80	-28.81	52.16	39.33	98.32	17 58 35	1797.8	-27.36	43.66
100.00	8 34 48	4232.25	9.88	169.02	32.54	61.64	9 45 20	3632.3	6.02	162.36
110.00	18 42 31	2135.29	-32.28	31.51	38.61	101.90	19 18 7	1535.3	-30.31	22.85
110.00	9 27 24	4067.53	12.93	154.72	30.73	58.08	10 35 11	3467.5	8.62	148.28

DIFFERENTIAL CORRECTIONS

TDE	.3964	TRA	-1.2721	TC3	1.3974	BAU	.4428
RDE	-.4692	RRA	-.2055	RC3	-.0091	FAU	.06823
FDE	-.0025	FRA	.6045	FC3	-2.4922	BSP	7031
BDE	.6142	BRA	1.2886	BC3	1.3975	FSP	611

MID-COURSE EXECUTION ACCURACY

SGT	2106.2	SGR	605.6	SG3	219.0
RRT	.0885	RRF	-.1034	RTF	-.8295
SGB	2191.6	R23	-.0236	R13	-.8297
SG1	2107.0	SG2	603.0	THA	1.59

ORBIT DETERMINATION ACCURACY

ST	657.5	SR	557.2	SS	195.6
CRT	-.6092	CRS	.1145	CST	.6946
LSA	781.0	MSA	411.5	SSA	42.6
EL1	776.4	EL2	374.2	ALF	142.64

LAUNCH DATE DEC 8 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 387.322 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	34.953	GAL	-.23	AZL	88.84	HCA	120.73	SMA	228.98	ECC	.35650	INC	1.1601	V1	30.236
RP	243.00	LAP	1.00	LOP	196.68	VP	22.644	GAP	20.60	AZP	90.59	TAL	359.12	TAP	119.85	RCA	147.35	APO	310.61	V2	22.585
RC	143.499	GL	8.54	GP	2.14	ZAL	89.03	ZAP	171.64	ETS	163.86	ZAE	152.55	ETE	2.78	ZAC	91.66	ETC	255.92	CLP	171.92

PLANETOCENTRIC CONIC

C3	22.702	VHL	4.765	DLA	13.79	RAL	169.54	RAD	6567.9	VEL	12.003	PTH	2.14	VHP	9.561	DPA	-.35	RAP	189.26	ECC	1.3736

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 42 15	2687.94	-27.55	73.69	37.91	96.84	16 27 3	2087.9	-26.31	65.24
90.00	7 20 23	4445.84	7.89	185.78	31.54	62.72	8 34 28	3845.8	4.17	179.08
100.00	17 10 52	2402.17	-28.86	52.48	37.72	98.16	17 50 54	1802.2	-27.43	43.97
100.00	8 34 27	4206.85	9.06	167.59	30.91	61.39	9 44 34	3606.8	5.17	160.96
110.00	18 35 25	2137.59	-32.32	31.68	37.01	101.80	19 11 3	1537.6	-30.35	23.01
110.00	9 26 23	4044.19	12.09	153.44	29.10	57.78	10 33 47	3444.2	7.75	147.03

DIFFERENTIAL CORRECTIONS

TDE	.3748	TRA	-1.2385	TC3	1.4972	BAU	.4544
RDE	-.4566	RRA	-.1909	RC3	-.0040	FAU	.07061
FDE	.0164	FRA	.5916	FC3	-2.6927	BSP	7182
BDE	.5907	BRA	1.2544	BC3	1.4972	FSP	651

MID-COURSE EXECUTION ACCURACY

SGT	2142.5	SGR	601.8	SG3	230.6
RRT	.0967	RRF	-.1129	RTF	-.8352
SGB	2225.4	R23	-.0254	R13	-.8355
SG1	2143.4	SG2	598.7	THA	1.69

ORBIT DETERMINATION ACCURACY

ST	645.4	SR	554.0	SS	193.0
CRT	-.5970	CRS	.2088	CST	.6334
LSA	765.9	MSA	415.1	SSA	44.0
EL1	763.0	EL2	376.0	ALF	142.20

LAUNCH DATE DEC 8 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 389.910 EARTH TO MARS

RL 147.35 LAL .00 LOL -75.95 VL 34.853 GAL -.09 AZL 88.86 HCA 121.65 SMA 226.26 ECC .34874 INC 1.1419 V1 30.236
RP 242.74 LAP .97 LOP 197.60 VP 22.515 GAP 20.00 AZP 90.60 TAL 359.67 TAP 121.31 RCA 147.35 APO 305.16 V2 22.611
RC 145.763 GL 8.56 GP 2.21 ZAL 87.92 ZAP 171.06 ETS 164.39 ZAE 152.67 ETE 3.07 ZAC 91.80 ETC 255.91 CLP 171.33

PLANETOCENTRIC CONIC

C3 21.779 VHL 4.667 DLA 14.24 RAL 168.50 RAD 6567.9 VEL 11.965 PTH 2.13 VHP 9.332 DPA -.43 RAP 189.60 ECC 1.3584

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 34 5	2693.71	-27.59	74.11	36.31	96.63	16 18 59	2093.7	-26.39	65.65
90.00	7 20 15	4419.96	7.08	184.31	29.93	62.51	8 33 55	3820.0	3.34	177.63
100.00	17 3 1	2406.92	-28.90	52.82	36.12	97.99	17 43 8	1806.9	-27.50	44.30
100.00	8 34 1	4181.98	8.24	166.19	29.30	61.16	9 43 43	3582.0	4.33	159.58
110.00	18 28 14	2140.26	-32.35	31.88	35.42	101.69	19 3 55	1540.3	-30.40	23.20
110.00	9 25 17	4021.41	11.26	152.19	27.49	57.51	10 32 18	3421.4	6.89	145.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3511 TRA-1.2101 TC3 1.6013 BAU .4662 SGT 2183.8 SGR 597.8 SG3 242.7 ST 631.8 SR 550.8 SS 192.6
RDE -.4447 RRA -.1924 RC3 .0017 FAU .07308 RRT .1077 RRF -.1240 RTF -.8404 CRT -.5795 CRS .3152 CST .5607
FDE .0379 FRA .5784 FC3-2.9051 BSP 7253 SGB 2264.1 R23 -.0264 R13 -.8407 LSA 748.8 MSA 420.6 SSA 45.4
BDE .5665 BRA 1.2253 BC3 1.6013 FSP 688 SG1 2184.8 SG2 594.1 THA 1.82 EL1 747.4 EL2 379.5 ALF 141.68

LAUNCH DATE DEC 8 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 392.584 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 34.758 GAL .05 AZL 88.88 HCA 122.57 SMA 223.72 ECC .34136 INC 1.1234 V1 30.236
RP 242.47 LAP .95 LOP 198.52 VP 22.394 GAP 19.40 AZP 90.60 TAL .22 TAP 122.78 RCA 147.35 APO 300.09 V2 22.638
RC 148.041 GL 8.57 GP 2.28 ZAL 86.81 ZAP 170.46 ETS 164.85 ZAE 152.83 ETE 3.38 ZAC 91.95 ETC 255.90 CLP 170.74

PLANETOCENTRIC CONIC

C3 20.928 VHL 4.575 DLA 14.69 RAL 167.45 RAD 6567.9 VEL 11.929 PTH 2.12 VHP 9.108 DPA -.50 RAP 189.92 ECC 1.3444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 25 52	2699.82	-27.64	74.55	34.71	96.42	16 10 52	2099.8	-26.46	66.08
90.00	7 20 2	4394.66	6.28	182.88	28.34	62.33	8 33 17	3794.7	2.53	176.21
100.00	16 55 6	2412.02	-28.95	53.19	34.53	97.80	17 35 18	1812.0	-27.57	44.66
100.00	8 33 29	4157.70	7.44	164.83	27.71	60.97	9 42 47	3557.7	3.51	158.24
110.00	18 21 0	2143.25	-32.39	32.10	33.84	101.56	18 56 44	1543.3	-30.46	23.42
110.00	9 24 5	3999.23	10.44	150.99	25.89	57.26	10 30 44	3399.2	6.05	144.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3633 TRA-1.1527 TC3 1.7375 BAU .4862 SGT 2227.5 SGR 593.0 SG3 257.1 ST 640.1 SR 546.6 SS 185.7
RDE -.4326 RRA -.1860 RC3 .0089 FAU .07627 RRT .0953 RRF -.1235 RTF -.8520 CRT -.6120 CRS .2833 CST .5517
FDE .0308 FRA .5565 FC3-3.1550 BSP 7369 SGB 2305.1 R23 -.0363 R13 -.8523 LSA 760.0 MSA 403.9 SSA 47.1
BDE .5649 BRA 1.1677 BC3 1.7376 FSP 724 SG1 2228.3 SG2 590.1 THA 1.56 EL1 758.6 EL2 364.8 ALF 142.27

LAUNCH DATE DEC 8 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 395.336 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 34.667 GAL .19 AZL 88.90 HCA 123.49 SMA 221.36 ECC .33434 INC 1.1043 V1 30.236
RP 242.20 LAP .92 LOP 199.44 VP 22.279 GAP 18.80 AZP 90.61 TAL .77 TAP 124.26 RCA 147.35 APO 295.37 V2 22.664
RC 150.330 GL 8.56 GP 2.36 ZAL 85.68 ZAP 169.86 ETS 165.25 ZAE 153.03 ETE 3.69 ZAC 92.09 ETC 255.89 CLP 170.13

PLANETOCENTRIC CONIC

C3 20.144 VHL 4.488 DLA 15.12 RAL 166.37 RAD 6567.8 VEL 11.896 PTH 2.11 VHP 8.890 DPA -.56 RAP 190.25 ECC 1.3315

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 36	2706.23	-27.69	75.01	33.13	96.19	16 2 43	2106.2	-26.54	66.53
90.00	7 19 44	4370.00	5.50	181.49	26.77	62.18	8 32 34	3770.0	1.73	174.83
100.00	16 47 10	2417.39	-29.00	53.59	32.95	97.60	17 27 27	1817.4	-27.64	45.05
100.00	8 32 51	4134.06	6.66	163.51	26.13	60.79	9 41 46	3534.1	2.72	156.94
110.00	18 13 44	2146.52	-32.44	32.35	32.28	101.42	18 49 31	1546.5	-30.52	23.65
110.00	9 22 46	3977.70	9.65	149.83	24.31	57.05	10 29 4	3377.7	5.24	143.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3166 TRA-1.1310 TC3 1.8290 BAU .4926 SGT 2257.4 SGR 589.1 SG3 269.9 ST 605.9 SR 543.6 SS 191.2
RDE -.4222 RRA -.1796 RC3 .0164 FAU .07885 RRT .1214 RRF -.1428 RTF -.8526 CRT -.5642 CRS .4837 CST .4102
FDE .0731 FRA .5342 FC3-3.3889 BSP 7352 SGB 2333.0 R23 -.0320 R13 -.8529 LSA 721.5 MSA 419.7 SSA 49.1
BDE .5277 BRA 1.1452 BC3 1.8290 FSP 756 SG1 2258.6 SG2 584.4 THA 1.95 EL1 721.5 EL2 376.9 ALF 140.45

LAUNCH DATE DEC 8 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 398.161 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 34.579 GAL .33 AZL 88.92 HCA 124.42 SMA 219.15 ECC .32766 INC 1.0848 V1 30.236
RP 241.93 LAP .89 LOP 200.37 VP 22.171 GAP 18.21 AZP 90.61 TAL 1.33 TAP 125.74 RCA 147.34 APO 290.96 V2 22.692
RC 152.629 GL 8.54 GP 2.44 ZAL 84.55 ZAP 169.24 ETS 165.60 ZAE 153.27 ETE 4.03 ZAC 92.24 ETC 255.88 CLP 169.52

PLANETOCENTRIC CONIC

C3 19.422 VHL 4.407 DLA 15.55 RAL 165.28 RAD 6567.8 VEL 11.866 PTH 2.11 VHP 8.678 DPA -.62 RAP 190.56 ECC 1.3196

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 19	2712.89	-27.73	75.49	31.56	95.95	15 54 32	2112.9	-26.62	67.00
90.00	7 19 20	4346.00	4.73	180.14	25.21	62.05	8 31 46	3746.0	.96	173.50
100.00	16 39 12	2423.01	-29.05	54.00	31.39	97.38	17 19 35	1823.0	-27.72	45.44
100.00	8 32 8	4111.10	5.89	162.24	24.58	60.64	9 40 39	3511.1	1.94	155.68
110.00	18 6 27	2150.02	-32.49	32.61	30.73	101.28	18 42 17	1550.0	-30.59	23.90
110.00	9 21 22	3956.85	8.87	148.71	22.76	56.85	10 27 19	3356.9	4.45	142.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3044 TRA-1.0915 TC3 1.9455 BAU .5052 SGT 2294.9 SGR 584.9 SG3 283.4 ST 595.4 SR 540.1 SS 196.2
RDE -.4119 RRA -.1736 RC3 .0246 FAU .08154 RRT .1268 RRF -.1561 RTF -.8593 CRT -.5624 CRS .5780 CST .3063
FDE .0962 FRA .5159 FC3-3.6345 BSP 7395 SGB 2368.3 R23 -.0400 R13 -.8596 LSA 712.1 MSA 418.6 SSA 50.4
BDE .5122 BRA 1.1052 BC3 1.9457 FSP 814 SG1 2296.2 SG2 579.9 THA 1.98 EL1 711.8 EL2 373.6 ALF 139.93

LAUNCH DATE DEC 8 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 401.053 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	34.496	GAL	.46	AZL	88.94	HCA	125.34	SMA	217.09	ECC	.32132	INC	1.0648
RP	241.65	LAP	.87	LOP	201.29	VP	22.070	GAP	17.62	AZP	90.62	TAL	1.88	TAP	127.23	RCA	147.33	APO	286.84
RC	154.936	GL	8.51	GP	2.53	ZAL	83.41	ZAP	168.61	ETS	165.91	ZAE	153.54	ETE	4.39	ZAC	92.39	ETC	255.87

V1	30.236	V2	22.720	CLP	168.89														

PLANETOCENTRIC CONIC

C3	18.758	VHL	4.331	DLA	15.96	RAL	164.18	RAD	6567.8	VEL	11.838	PTH	2.10	VHP	8.471	DPA	-.66	RAP	190.87
ECC	1.3087																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 1 3	2719.66	-27.78	75.98	30.01	95.71	15 46 23	2119.7	-26.70	67.48
90.00	7 18 48	4322.80	3.99	178.84	23.69	61.94	8 30 51	3722.8	.21	172.20
100.00	16 31 16	2428.75	-29.10	54.42	29.84	97.17	17 11 45	1828.8	-27.80	45.85
100.00	8 31 17	4088.94	5.15	161.01	23.05	60.51	9 39 26	3488.9	1.19	154.47
110.00	17 59 11	2153.66	-32.53	32.88	29.20	101.12	18 35 5	1553.7	-30.66	24.16
110.00	9 19 51	3936.79	8.12	147.64	21.22	56.68	10 25 28	3336.8	3.68	141.37

DIFFERENTIAL CORRECTIONS

TDE	.2791	TRA	-1.0673	TC3	2.0488	BAU	.5139
RDE	-.4020	RRA	-.1676	RC3	.0545	FAU	.08469
FDE	.1184	FRA	.4955	FC3	-3.9088	BSP	7701
BDE	.4894	BRA	1.0804	BC3	2.0491	FSP	862

MID-COURSE EXECUTION ACCURACY

SGT	2332.9	SGR	580.4	SG3	298.7		
RRT	.1443	RRF	-.1703	RTF	-.8619		
SGB	2404.0	R23	-.0383	R13	-.8623		
SG1	2334.5	SG2	574.0	THA	2.19		

ORBIT DETERMINATION ACCURACY

ST	577.3	SR	536.3	SS	202.7
CRT	-.5356	CRS	.6567	CST	.2359
LSA	692.4	MSA	424.0	SSA	52.5
EL1	691.2	EL2	378.2	ALF	138.92

LAUNCH DATE DEC 8 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 404.006 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	34.417	GAL	.58	AZL	88.96	HCA	126.27	SMA	215.16	ECC	.31529	INC	1.0444
RP	241.36	LAP	.84	LOP	202.22	VP	21.975	GAP	17.04	AZP	90.62	TAL	2.44	TAP	128.71	RCA	147.32	APO	283.00
RC	157.250	GL	8.47	GP	2.62	ZAL	82.27	ZAP	167.97	ETS	166.18	ZAE	153.85	ETE	4.77	ZAC	92.54	ETC	255.86

V1	30.236	V2	22.748	CLP	168.26														

PLANETOCENTRIC CONIC

C3	18.147	VHL	4.260	DLA	16.36	RAL	163.07	RAD	6567.7	VEL	11.812	PTH	2.09	VHP	8.269	DPA	-.70	RAP	191.17
ECC	1.2986																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 50	2726.53	-27.83	76.48	28.48	95.47	15 38 17	2126.5	-26.78	67.97
90.00	7 18 10	4300.40	3.27	177.59	22.18	61.86	8 29 50	3700.4	-.51	170.95
100.00	16 23 22	2434.58	-29.15	54.84	28.31	96.95	17 3 56	1834.6	-27.88	46.27
100.00	8 30 19	4067.58	4.44	159.83	21.54	60.41	9 38 7	3467.6	.46	153.29
110.00	17 51 57	2157.42	-32.58	33.16	27.68	100.96	18 27 54	1557.4	-30.73	24.43
110.00	9 18 14	3917.51	7.40	146.62	19.71	56.53	10 23 31	3317.5	2.95	140.36

DIFFERENTIAL CORRECTIONS

TDE	.2562	TRA	-1.0355	TC3	2.1511	BAU	.5220
RDE	-.3926	RRA	-.1616	RC3	.0453	FAU	.08790
FDE	.1425	FRA	.4684	FC3	-4.1934	BSP	7885
+ BDE	.4688	BRA	1.0481	BC3	2.1515	FSP	914

MID-COURSE EXECUTION ACCURACY

SGT	2363.1	SGR	575.9	SG3	314.3		
RRT	.1600	RRF	-.1852	RTF	-.8649		
SGB	2432.3	R23	-.0389	R13	-.8653		
SG1	2365.0	SG2	568.0	THA	2.37		

ORBIT DETERMINATION ACCURACY

ST	558.0	SR	532.4	SS	210.8
CRT	-.5126	CRS	.7306	CST	.1555
LSA	674.4	MSA	426.0	SSA	54.7
EL1	671.1	EL2	380.1	ALF	137.62

LAUNCH DATE DEC 8 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 407.017 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	34.340	GAL	.71	AZL	88.98	HCA	127.20	SMA	213.35	ECC	.30956	INC	1.0234
RP	241.08	LAP	.82	LOP	203.16	VP	21.885	GAP	16.46	AZP	90.62	TAL	3.00	TAP	130.20	RCA	147.31	APO	279.39
RC	159.568	GL	8.41	GP	2.71	ZAL	81.13	ZAP	167.32	ETS	166.41	ZAE	154.20	ETE	5.17	ZAC	92.69	ETC	255.86

V1	30.236	V2	22.777	CLP	167.61														

PLANETOCENTRIC CONIC

C3	17.585	VHL	4.193	DLA	16.74	RAL	161.95	RAD	6567.7	VEL	11.788	PTH	2.08	VHP	8.072	DPA	-.74	RAP	191.47
ECC	1.2894																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 40	2733.41	-27.87	76.98	26.96	95.22	15 30 14	2133.4	-26.86	68.46
90.00	7 17 24	4278.87	2.58	176.38	20.69	61.79	8 28 43	3678.9	-1.21	169.75
100.00	16 15 31	2440.43	-29.19	55.27	26.80	96.73	16 56 12	1840.4	-27.96	46.69
100.00	8 29 14	4047.08	3.75	158.70	20.05	60.32	9 36 41	3447.1	-.23	152.17
110.00	17 44 46	2161.22	-32.63	33.45	26.18	100.80	18 20 47	1561.2	-30.80	24.71
110.00	9 16 29	3899.06	6.71	145.64	18.22	56.40	10 21 28	3299.1	2.25	139.39

DIFFERENTIAL CORRECTIONS

TDE	.2352	TRA	-1.0044	TC3	2.2601	BAU	.5315
RDE	-.3836	RRA	-.1558	RC3	.0574	FAU	.09130
FDE	.1667	FRA	.4407	FC3	-4.4952	BSP	8085
BDE	.4500	BRA	1.0164	BC3	2.2608	FSP	972

MID-COURSE EXECUTION ACCURACY

SGT	2397.9	SGR	571.4	SG3	330.8		
RRT	.1762	RRF	-.2014	RTF	-.8685		
SGB	2465.0	R23	-.0401	R13	-.8690		
SG1	2400.1	SG2	561.9	THA	2.54		

ORBIT DETERMINATION ACCURACY

ST	539.8	SR	528.4	SS	220.8
CRT	-.4898	CRS	.7897	CST	.0839
LSA	658.7	MSA	426.9	SSA	56.9
EL1	652.0	EL2	381.4	ALF	136.24

LAUNCH DATE DEC 8 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 410.081 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	34.268	GAL	.83	AZL	89.00	HCA	128.14	SMA	211.65	ECC	.30411	INC	1.0018
RP	240.79	LAP	.79	LOP	204.09	VP	21.802	GAP	15.89	AZP	90.62	TAL	3.56	TAP	131.70	RCA	147.29	APO	276.02
RC	161.890	GL	8.34	GP	2.81	ZAL	80.00	ZAP	166.65	ETS	166.61	ZAE	154.58	ETE	5.60	ZAC	92.85	ETC	255.85

V1	30.236	V2	22.806	CLP	166.95														

PLANETOCENTRIC CONIC

C3	17.068	VHL	4.131	DLA	17.11	RAL	160.83	RAD	6567.7	VEL	11.767	PTH	2.08	VHP	7.880	DPA	-.76	RAP	191.76
ECC	1.2809																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 36	2740.23	-27.91	77.47	25.46	94.98	15 22 17	2140.2	-26.93	68.95
90.00	7 16 30	4258.26	1.92	175.23	19.23	61.74	8 27 28	3658.3	-1.87	168.60
100.00	16 7 46	2446.23	-29.24	55.70	25.31	96.51	16 48 33	1846.2	-28.03	47.10
100.00	8 28 1	4027.48	3.09	157.62	18.58	60.25	9 35 8	3427.5	-.90	151.10
110.00	17 37 39	2165.01	-32.68	33.73	24.70	100.64	18 13 44	1565.0	-30.87	24.98
110.00	9 14 37	3881.47	6.04	144.71	16.75	56.29	10 19 19	3281.5	1.57	138.48

DIFFERENTIAL CORRECTIONS

TDE	.2167	TRA	-.9709	TC3	2.3673	BAU	.5404
RDE	-.3752	RRA	-.1501	RC3	.0707	FAU	.09485
FDE	.1922	FRA	.4098	FC3	-4.8112	BSP	8189
BDE	.4332	BRA	.9825	BC3	2.3684	FSP	1025

MID-COURSE EXECUTION ACCURACY

SGT	2429.3	SGR	567.0	SG3	348.1		
RRT	.1922	RRF	-.2191	RTF	-.8720		
SGB	2494.6	R23	-.0431	R13	-.8725		
SG1	2431.9	SG2	555.9	THA	2.71		

ORBIT DETERMINATION ACCURACY

ST	521.9	SR	524.4	SS	233.0
CRT	-.4700	CRS	.8390	CST	.0129
LSA	646.0	MSA	425.3	SSA	59.1
EL1	634.3	EL2	380.9	ALF	134.71

LAUNCH DATE DEC 8 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 413.194 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	34.198	GAL	.95	AZL	89.02	HCA	129.07	SMA	210.06	ECC	.29893	INC	.9796	V1	30.236
RP	240.49	LAP	.76	LOP	205.02	VP	21.723	GAP	15.32	AZP	90.62	TAL	4.11	TAP	133.19	RCA	147.27	APO	272.85	V2	22.836
RC	164.213	GL	8.25	GP	2.91	ZAL	78.87	ZAP	165.97	ETS	166.79	ZAE	154.99	ETE	6.07	ZAC	93.01	ETC	255.84	CLP	166.27

PLANETOCENTRIC CONIC

C3	16.594	VHL	4.074	DLA	17.45	RAL	159.70	RAD	6567.7	VEL	11.746	PTH	2.07	VHP	7.693	DPA	-.77	RAP	192.04	ECC	1.2731

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 28 40	2746.89	-27.95	77.96	23.98	94.74	15 14 26	2146.9	-27.00	69.42
90.00	7 15 27	4238.63	1.29	174.13	17.79	61.71	8 26 5	3638.6	-2.51	167.51
100.00	16 0 8	2451.90	-29.28	56.11	23.83	96.29	16 41 0	1851.9	-28.10	47.51
100.00	8 26 39	4008.85	2.46	156.59	17.14	60.20	9 33 28	3408.9	-1.53	150.07
110.00	17 30 39	2168.72	-32.73	34.01	23.24	100.48	18 6 47	1568.7	-30.93	25.25
110.00	9 12 38	3864.80	5.41	143.83	15.30	56.20	10 17 3	3264.8	.94	137.61

DIFFERENTIAL CORRECTIONS

TDE	.1977	TRA	-.9362	TC3	2.4732	BAU	.5490
RDE	-.3671	RRA	-.1443	RC3	.0854	FAU	.09858
FDE	.2183	FRA	.3743	FC3	-5.1432	BSP	8336
BDE	.4169	BRA	.9472	BC3	2.4747	FSP	1087

MID-COURSE EXECUTION ACCURACY

SGT	2458.2	SGR	562.7	SG3	366.1		
RRT	.2099	RRF	-.2380	RTF	-.8755		
SGB	2521.8	R23	-.0456	R13	-.8760		
SG1	2461.2	SG2	549.5	THA	2.89		

ORBIT DETERMINATION ACCURACY

ST	502.5	SR	520.2	SS	246.5
CRT	-.4477	CRS	.8779	CST	-.0496
LSA	634.3	MSA	421.6	SSA	61.6
EL1	615.6	EL2	379.7	ALF	132.78

LAUNCH DATE DEC 8 1964 FLIGHT TIME 174.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 416.353 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	34.132	GAL	1.06	AZL	89.04	HCA	130.01	SMA	208.56	ECC	.29401	INC	.9567	V1	30.236
RP	240.19	LAP	.73	LOP	205.96	VP	21.651	GAP	14.76	AZP	90.62	TAL	4.67	TAP	134.68	RCA	147.24	APO	269.88	V2	22.866
RC	166.536	GL	8.15	GP	3.02	ZAL	77.75	ZAP	165.28	ETS	166.95	ZAE	155.44	ETE	6.57	ZAC	93.17	ETC	255.84	CLP	165.59

PLANETOCENTRIC CONIC

C3	16.158	VHL	4.020	DLA	17.78	RAL	158.57	RAD	6567.6	VEL	11.728	PTH	2.07	VHP	7.511	DPA	-.78	RAP	192.32	ECC	1.2659

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 20 52	2753.33	-27.99	78.43	22.52	94.50	15 6 45	2153.3	-27.07	69.88
90.00	7 14 14	4220.04	.69	173.10	16.37	61.69	8 24 34	3620.0	-3.10	166.47
100.00	15 52 39	2457.37	-29.32	56.51	22.38	96.09	16 33 36	1857.4	-28.17	47.90
100.00	8 25 9	3991.24	1.86	155.63	15.72	60.16	9 31 40	3391.2	-2.13	149.11
110.00	17 23 45	2172.30	-32.77	34.28	21.80	100.32	17 59 58	1572.3	-31.00	25.51
110.00	9 10 31	3849.07	4.82	143.00	13.88	56.12	10 14 40	3249.1	.33	136.79

DIFFERENTIAL CORRECTIONS

TDE	.1789	TRA	-.9029	TC3	2.5811	BAU	.5580
RDE	-.3595	RRA	-.1386	RC3	.1016	FAU	.10253
FDE	.2469	FRA	.3372	FC3	-5.4935	BSP	8436
BDE	.4015	BRA	.9135	BC3	2.5831	FSP	1149

MID-COURSE EXECUTION ACCURACY

SGT	2489.5	SGR	558.8	SG3	385.3		
RRT	.2295	RRF	-.2592	RTF	-.8789		
SGB	2551.4	R23	-.0487	R13	-.8796		
SG1	2493.0	SG2	543.1	THA	3.10		

ORBIT DETERMINATION ACCURACY

ST	483.0	SR	516.1	SS	263.1
CRT	-.4223	CRS	.9084	CST	-.1027
LSA	625.3	MSA	416.9	SSA	64.0
EL1	597.0	EL2	378.5	ALF	130.54

LAUNCH DATE DEC 8 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 419.556 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	34.068	GAL	1.17	AZL	89.07	HCA	130.95	SMA	207.15	ECC	.28933	INC	.9331	V1	30.236
RP	239.88	LAP	.70	LOP	206.90	VP	21.583	GAP	14.21	AZP	90.61	TAL	5.22	TAP	136.18	RCA	147.22	APO	267.09	V2	22.897
RC	168.857	GL	8.03	GP	3.14	ZAL	76.63	ZAP	164.57	ETS	167.08	ZAE	155.92	ETE	7.11	ZAC	93.33	ETC	255.83	CLP	164.88

PLANETOCENTRIC CONIC

C3	15.758	VHL	3.970	DLA	18.09	RAL	157.44	RAD	6567.6	VEL	11.711	PTH	2.06	VHP	7.332	DPA	-.77	RAP	192.58	ECC	1.2593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 13 14	2759.49	-28.02	78.87	21.08	94.28	14 59 13	2159.5	-27.13	70.32
90.00	7 12 52	4202.51	.12	172.12	14.97	61.68	8 22 54	3602.5	-3.67	165.49
100.00	15 45 18	2462.59	-29.36	56.90	20.94	95.89	16 26 21	1862.6	-28.23	48.27
100.00	8 23 28	3974.64	1.30	154.72	14.32	60.13	9 29 43	3374.6	-2.69	148.19
110.00	17 17 0	2175.71	-32.81	34.54	20.37	100.18	17 53 15	1575.7	-31.06	25.76
110.00	9 8 16	3834.28	4.26	142.23	12.47	56.05	10 12 11	3234.3	-.23	136.02

DIFFERENTIAL CORRECTIONS

TDE	.1738	TRA	-.8587	TC3	2.7130	BAU	.5721
RDE	-.3522	RRA	-.1330	RC3	.1192	FAU	.10669
FDE	.2733	FRA	.2970	FC3	-5.8615	BSP	8291
BDE	.3927	BRA	.8689	BC3	2.7157	FSP	1215

MID-COURSE EXECUTION ACCURACY

SGT	2530.3	SGR	555.1	SG3	405.4		
RRT	.2418	RRF	-.2810	RTF	-.8855		
SGB	2590.5	R23	-.0585	R13	-.8863		
SG1	2534.0	SG2	537.8	THA	3.18		

ORBIT DETERMINATION ACCURACY

ST	469.1	SR	511.9	SS	278.6
CRT	-.4314	CRS	.9288	CST	-.1793
LSA	626.8	MSA	403.0	SSA	66.3
EL1	588.9	EL2	367.9	ALF	129.27

LAUNCH DATE DEC 8 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 422.798 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	34.008	GAL	1.28	AZL	89.09	HCA	131.90	SMA	205.83	ECC	.28490	INC	.9089	V1	30.236
RP	239.58	LAP	.68	LOP	207.85	VP	21.520	GAP	13.66	AZP	90.61	TAL	5.77	TAP	137.67	RCA	147.19	APO	264.47	V2	22.928
RC	171.174	GL	7.90	GP	3.26	ZAL	75.54	ZAP	163.84	ETS	167.19	ZAE	156.43	ETE	7.70	ZAC	93.50	ETC	255.82	CLP	164.17

PLANETOCENTRIC CONIC

C3	15.392	VHL	3.923	DLA	18.37	RAL	156.32	RAD	6567.6	VEL	11.695	PTH	2.06	VHP	7.159	DPA	-.75	RAP	192.84	ECC	1.2533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 5 51	2765.18	-28.05	79.29	19.66	94.08	14 51 56	2165.2	-27.19	70.73
90.00	7 11 18	4186.19	-.41	171.21	13.61	61.69	8 21 5	3586.2	-4.19	164.57
100.00	15 38 12	2467.39	-29.39	57.25	19.53	95.71	16 19 19	1867.4	-28.29	48.62
100.00	8 21 39	3959.22	.77	153.87	12.95	60.12	9 27 38	3359.2	-3.21	147.35
110.00	17 10 26	2178.81	-32.85	34.78	18.98	100.04	17 46 45	1578.8	-31.11	25.98
110.00	9 5 54	3820.57	3.73	141.51	11.10	56.00	10 9 34	3220.6	-.76	135.30

DIFFERENTIAL CORRECTIONS

TDE	.1467	TRA	-.8347	TC3	2.7888	BAU	.5746
RDE	-.3452	RRA	-.1272	RC3	.1386	FAU	.11101
FDE	.3029	FRA	.2527	FC3	-6.2439	BSP	8647
BDE	.3751	BRA	.8443	BC3	2.7922	FSP	1287

MID-COURSE EXECUTION ACCURACY

SGT	2546.4	SGR	551.6	SG3	426.3		
RRT	.2715	RRF	-.3057	RTF	-.8854		
SGB	2605.5	R23	-.0565	R13	-.8862		
SG1	2551.0	SG2	529.9	THA	3.52		

ORBIT DETERMINATION ACCURACY

ST	445.7	SR	507.5	SS	297.2
CRT	-.3764	CRS	.9445	CST	-.1875
LSA	616.5	MSA	399.8	SSA	69.3
EL1	564.1	EL2	371.5	ALF	125.46

LAUNCH DATE DEC 8 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 426.078 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.950	GAL	1.38	AZL	89.12	HCA	132.84	SMA	204.58	ECC	.28069	INC	.8837	V1	30.236
RP	239.26	LAP	.65	LOP	208.79	VP	21.463	GAP	13.12	AZP	90.60	TAL	6.31	TAP	139.15	RCA	147.16	APO	262.00	V2	22.959
RC	173.485	GL	7.75	GP	3.39	ZAL	74.45	ZAP	163.10	ETS	167.29	ZAE	156.97	ETE	8.35	ZAC	93.67	ETC	255.82	CLP	163.44

PLANETOCENTRIC CONIC

C3	15.056	VHL	3.880	DLA	18.63	RAL	155.21	RAD	6567.6	VEL	11.681	PTH	2.05	VHP	6.989	DPA	-.72	RAP	193.08	ECC	1.2478

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 58 41	2770.43	-28.07	79.67	18.27	93.89	14 44 51	2170.4	-27.24	71.10
90.00	7 9 34	4171.05	-.90	170.37	12.26	61.70	8 19 5	3571.0	-4.67	163.72
100.00	15 31 17	2471.80	-29.42	57.57	18.15	95.54	16 12 29	1871.8	-28.34	48.94
100.00	8 19 39	3944.91	.29	153.08	11.60	60.11	9 25 23	3344.9	-3.69	146.56
110.00	17 4 2	2181.61	-32.88	34.99	17.60	99.92	17 40 24	1581.6	-31.16	26.19
110.00	9 3 23	3807.86	3.25	140.84	9.75	55.95	10 6 51	3207.9	-1.24	134.64

DIFFERENTIAL CORRECTIONS

TDE	.1301	TRA	-.8035	TC3	2.8852	BAU	.5817
RDE	-.3385	RRA	-.1214	RC3	.1598	FAU	.11560
FDE	.3314	FRA	.2062	FC3	-6.6472	BSP	8786
BDE	.3627	BRA	.8126	BC3	2.8896	FSP	1362

MID-COURSE EXECUTION ACCURACY

SGT	2572.5	SGR	548.7	SG3	448.6		
RRT	.2965	RRF	-.3318	RTF	-.8879		
SGB	2630.4	R23	-.0598	R13	-.8888		
SG1	2577.9	SG2	522.9	THA	3.77		

ORBIT DETERMINATION ACCURACY

ST	427.2	SR	503.1	SS	315.3		
CRT	-.3465	CRS	.9541	CST	-.2126		
LSA	614.5	MSA	390.1	SSA	72.1		
EL1	547.9	EL2	368.0	ALF	122.32		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 429.393 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.895	GAL	1.48	AZL	89.14	HCA	133.79	SMA	203.40	ECC	.27669	INC	.8578	V1	30.236
RP	238.95	LAP	.62	LOP	209.74	VP	21.409	GAP	12.58	AZP	90.59	TAL	6.85	TAP	140.64	RCA	147.13	APO	259.68	V2	22.991
RC	175.790	GL	7.59	GP	3.52	ZAL	73.38	ZAP	162.34	ETS	167.37	ZAE	157.55	ETE	9.05	ZAC	93.85	ETC	255.81	CLP	162.69

PLANETOCENTRIC CONIC

C3	14.749	VHL	3.840	DLA	18.86	RAL	154.10	RAD	6567.6	VEL	11.668	PTH	2.05	VHP	6.824	DPA	-.68	RAP	193.32	ECC	1.2427

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 51 47	2775.12	-28.09	80.01	16.90	93.72	14 38 2	2175.1	-27.28	71.44
90.00	7 7 37	4157.14	-1.35	169.59	10.94	61.71	8 16 55	3557.1	-5.12	162.94
100.00	15 24 38	2475.70	-29.45	57.86	16.78	95.39	16 5 54	1875.7	-28.39	49.22
100.00	8 17 28	3931.78	-.16	152.36	10.28	60.11	9 22 59	3331.8	-4.13	145.83
110.00	16 57 51	2184.04	-32.91	35.17	16.24	99.81	17 34 16	1584.0	-31.21	26.36
110.00	9 0 43	3796.21	2.81	140.23	8.43	55.92	10 4 0	3196.2	-1.69	134.03

DIFFERENTIAL CORRECTIONS

TDE	.1156	TRA	-.7697	TC3	2.9792	BAU	.5885
RDE	-.3322	RRA	-.1156	RC3	.1826	FAU	.12037
FDE	.3606	FRA	.1543	FC3	-7.0657	BSP	8865
BDE	.3518	BRA	.7784	BC3	2.9847	FSP	1439

MID-COURSE EXECUTION ACCURACY

SGT	2595.9	SGR	546.4	SG3	471.7		
RRT	.3220	RRF	-.3595	RTF	-.8906		
SGB	2652.7	R23	-.0643	R13	-.8916		
SG1	2602.1	SG2	516.1	THA	4.04		

ORBIT DETERMINATION ACCURACY

ST	408.7	SR	498.6	SS	334.2		
CRT	-.3205	CRS	.9599	CST	-.2377		
LSA	615.6	MSA	377.9	SSA	75.0		
EL1	533.7	EL2	361.7	ALF	119.00		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 432.742 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.842	GAL	1.58	AZL	89.17	HCA	134.74	SMA	202.30	ECC	.27289	INC	.8310	V1	30.236
RP	238.63	LAP	.59	LOP	210.69	VP	21.361	GAP	12.06	AZP	90.59	TAL	7.38	TAP	142.12	RCA	147.09	APO	257.50	V2	23.024
RC	178.086	GL	7.41	GP	3.66	ZAL	72.33	ZAP	161.57	ETS	167.43	ZAE	158.15	ETE	9.83	ZAC	94.03	ETC	255.81	CLP	161.92

PLANETOCENTRIC CONIC

C3	14.467	VHL	3.804	DLA	19.07	RAL	153.00	RAD	6567.6	VEL	11.656	PTH	2.05	VHP	6.662	DPA	-.63	RAP	193.55	ECC	1.2381

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 45 10	2779.19	-28.11	80.31	15.56	93.57	14 31 29	2179.2	-27.32	71.73
90.00	7 5 28	4144.50	-1.75	168.89	9.65	61.73	8 14 33	3544.5	-5.52	162.23
100.00	15 18 15	2479.06	-29.47	58.11	15.44	95.26	15 59 34	1879.1	-28.43	49.46
100.00	8 15 5	3919.86	-.56	151.71	8.98	60.11	9 20 25	3319.9	-4.53	145.18
110.00	16 51 54	2186.06	-32.93	35.32	14.91	99.73	17 28 20	1586.1	-31.24	26.51
110.00	8 57 55	3785.63	2.40	139.68	7.13	55.89	10 1 1	3185.6	-2.09	133.48

DIFFERENTIAL CORRECTIONS

TDE	.1085	TRA	-.7312	TC3	3.0877	BAU	.5986
RDE	-.3261	RRA	-.1097	RC3	.2076	FAU	.12549
FDE	.3884	FRA	.0983	FC3	-7.5091	BSP	8822
BDE	.3437	BRA	.7394	BC3	3.0947	FSP	1520

MID-COURSE EXECUTION ACCURACY

SGT	2627.2	SGR	544.8	SG3	496.3		
RRT	.3454	RRF	-.3888	RTF	-.8948		
SGB	2683.1	R23	-.0720	R13	-.8960		
SG1	2634.2	SG2	509.9	THA	4.26		

ORBIT DETERMINATION ACCURACY

ST	392.3	SR	494.1	SS	352.0		
CRT	-.3178	CRS	.9622	CST	-.2798		
LSA	620.2	MSA	362.2	SSA	78.0		
EL1	524.7	EL2	350.2	ALF	116.90		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 436.122 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.792	GAL	1.67	AZL	89.20	HCA	135.69	SMA	201.25	ECC	.26929	INC	.8031	V1	30.236
RP	238.31	LAP	.56	LOP	211.64	VP	21.316	GAP	11.53	AZP	90.57	TAL	7.90	TAP	143.59	RCA	147.06	APO	255.45	V2	23.056
RC	180.373	GL	7.22	GP	3.82	ZAL	71.31	ZAP	160.77	ETS	167.48	ZAE	158.77	ETE	10.70	ZAC	94.22	ETC	255.80	CLP	161.14

PLANETOCENTRIC CONIC

C3	14.210	VHL	3.770	DLA	19.25	RAL	151.92	RAD	6567.6	VEL	11.645	PTH	2.04	VHP	6.505	DPA	-.56	RAP	193.77	ECC	1.2339

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 38 54	2782.50	-28.12	80.55	14.24	93.45	14 25 16	2182.5	-27.35	71.97
90.00	7 3 6	4133.24	-2.12	168.26	8.38	61.76	8 12 0	3533.2	-5.88	161.59
100.00	15 12 10	2481.74	-29.48	58.31	14.13	95.16	15 53 32	1881.7	-28.46	49.65
100.00	8 12 31	3909.23	-.92	151.13	7.71	60.12	9 17 41	3309.2	-4.89	144.59
110.00	16 46 12	2187.55	-32.95	35.44	13.60	99.66	17 22 39	1587.6	-31.27	26.62
110.00	8 54 59	3776.18	2.04	139.19	5.86	55.87	9 57 55	3176.2	-2.45	132.98

DIFFERENTIAL CORRECTIONS

TDE	.0899	TRA	-.7061	TC3	3.1546	BAU	.6009
RDE	-.3203	RRA	-.1037	RC3	.2345	FAU	.13071
FDE	.4183	FRA	.0408	FC3	-7.9633	BSP	9056
BDE	.3327	BRA	.7136	BC3	3.1633	FSP	1608

MID-COURSE EXECUTION ACCURACY

SGT	2639.5	SGR	544.2	SG3	521.6		
RRT	.3786	RRF	-.4206	RTF	-.8952		
SGB	2695.1	R23	-.0745	R13	-.8965		
SG1	2647.9	SG2	502.1	THA	4.63		

ORBIT DETERMINATION ACCURACY

ST	374.2	SR	489.4	SS	371.6		
CRT	-.2678	CRS	.9626	CST	-.2720		
LSA	621.8	MSA	352.8	SSA	80.8		
EL1	509.5	EL2	346.3	ALF	112.30		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 439.532 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.744	GAL	1.76	AZL	89.23	HCA	136.65	SMA	200.26	ECC	.26587	INC	.7742
RP	237.98	LAP	.53	LOP	212.60	VP	21.276	GAP	11.02	AZP	90.56	TAL	8.41	TAP	145.06	RCA	147.02	APO	253.51
RC	182.651	GL	7.00	GP	3.98	ZAL	70.30	ZAP	159.96	ETS	167.52	ZAE	159.43	ETE	11.65	ZAC	94.41	ETC	255.80

PLANETOCENTRIC CONIC

C3	13.974	VHL	3.738	DLA	19.40	RAL	150.85	RAD	6567.6	VEL	11.634	PTH	2.04	VHP	6.352	DPA	-.48	RAP	193.98

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 32 58	2785.05	-28.13	80.73	12.95	93.36	14 19 23	2185.0	-27.37	72.15
90.00	7 0 31	4123.33	-2.43	167.70	7.13	61.78	8 9 14	3523.3	-6.19	161.04
100.00	15 6 24	2483.74	-29.50	58.45	12.84	95.08	15 47 48	1883.7	-28.48	49.80
100.00	8 9 45	3899.88	-1.24	150.61	6.47	60.13	9 14 45	3299.9	-5.20	144.07
110.00	16 40 45	2188.53	-32.96	35.51	12.31	99.62	17 17 14	1588.5	-31.28	26.69
110.00	8 51 54	3767.84	1.72	138.75	4.62	55.86	9 54 41	3167.8	-2.77	132.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0784	TRA	-.6743	TC3	3.2345	BAU	.6063	SGT	2657.6	SGR	544.6	SG3	548.5	ST	357.4
RDE	-.3147	RRA	-.0975	RC3	.2636	FAU	.13625	RRT	.4093	RRF	-.4537	RTF	-.8973	CRT	-.2420
FDE	.4474	FRA	-.0232	FC3	-8.4410	BSP	9144	SGB	2712.9	R23	-.0803	R13	-.8987	LSA	626.6
BDE	.3243	BRA	.6813	BC3	3.2452	FSP	1700	SG1	2667.3	SG2	495.1	THA	4.97	EL1	499.4

SR	484.7	SS	390.5		
CRS	.9608	CST	-.2848		
MSA	339.8	SSA	83.9		
EL2	336.6	ALF	109.02		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 442.969 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.698	GAL	1.85	AZL	89.26	HCA	137.61	SMA	199.33	ECC	.26263	INC	.7442
RP	237.65	LAP	.50	LOP	213.56	VP	21.239	GAP	10.51	AZP	90.55	TAL	8.92	TAP	146.53	RCA	146.98	APO	251.69
RC	184.919	GL	6.77	GP	4.15	ZAL	69.32	ZAP	159.12	ETS	167.54	ZAE	160.11	ETE	12.72	ZAC	94.60	ETC	255.79

PLANETOCENTRIC CONIC

C3	13.759	VHL	3.709	DLA	19.52	RAL	149.79	RAD	6567.5	VEL	11.625	PTH	2.04	VHP	6.203	DPA	-.38	RAP	194.17

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 27 23	2786.74	-28.14	80.86	11.68	93.29	14 13 50	2186.7	-27.39	72.27
90.00	6 57 41	4114.84	-2.71	167.23	5.91	61.80	8 6 16	3514.8	-6.46	160.56
100.00	15 0 58	2484.97	-29.50	58.55	11.57	95.03	15 42 23	1885.0	-28.49	49.89
100.00	8 6 47	3891.83	-1.51	150.17	5.25	60.14	9 11 39	3291.8	-5.47	143.63
110.00	16 35 35	2188.93	-32.97	35.54	11.05	99.60	17 12 4	1588.9	-31.29	26.72
110.00	8 48 39	3760.64	1.45	138.38	3.40	55.84	9 51 20	3160.6	-3.04	132.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0689	TRA	-.6428	TC3	3.3130	BAU	.6118	SGT	2676.2	SGR	546.4	SG3	576.8	ST	341.5
RDE	-.3093	RRA	-.0912	RC3	.2953	FAU	.14211	RRT	.4411	RRF	-.4885	RTF	-.8994	CRT	-.2207
FDE	.4757	FRA	-.0912	FC3	-8.9418	BSP	9187	SGB	2731.4	R23	-.0870	R13	-.9010	LSA	632.1
BDE	.3169	BRA	.6493	BC3	3.3262	FSP	1794	SG1	2687.4	SG2	488.3	THA	5.32	EL1	490.7

SR	479.9	SS	408.7		
CRS	.9573	CST	-.2982		
MSA	326.9	SSA	86.9		
EL2	325.8	ALF	106.24		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 446.434 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.654	GAL	1.94	AZL	89.29	HCA	138.57	SMA	198.46	ECC	.25956	INC	.7130
RP	237.31	LAP	.47	LOP	214.52	VP	21.207	GAP	10.01	AZP	90.53	TAL	9.41	TAP	147.98	RCA	146.94	APO	249.97
RC	187.176	GL	6.53	GP	4.33	ZAL	68.36	ZAP	158.26	ETS	167.56	ZAE	160.81	ETE	13.92	ZAC	94.81	ETC	255.79

PLANETOCENTRIC CONIC

C3	13.562	VHL	3.683	DLA	19.62	RAL	148.76	RAD	6567.5	VEL	11.617	PTH	2.04	VHP	6.057	DPA	-.27	RAP	194.36

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 22 12	2787.50	-28.14	80.91	10.44	93.27	14 8 40	2187.5	-27.39	72.33
90.00	6 54 36	4107.78	-2.94	166.83	4.71	61.82	8 3 4	3507.8	-6.68	160.16
100.00	14 55 53	2485.39	-29.51	58.58	10.33	95.02	15 37 19	1885.4	-28.50	49.92
100.00	8 3 36	3885.12	-1.74	149.80	4.05	60.15	9 8 21	3285.1	-5.70	143.25
110.00	16 30 43	2188.70	-32.96	35.52	9.81	99.61	17 7 12	1588.7	-31.29	26.70
110.00	8 45 15	3754.58	1.22	138.06	2.20	55.84	9 47 50	3154.6	-3.28	131.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0618	TRA	-.6103	TC3	3.3857	BAU	.6168	SGT	2691.4	SGR	549.6	SG3	606.2	ST	326.0
RDE	-.3040	RRA	-.0846	RC3	.3293	FAU	.14820	RRT	.4734	RRF	-.5242	RTF	-.9015	CRT	-.2081
FDE	.5025	FRA	-.1650	FC3	-9.4601	BSP	9222	SGB	2747.0	R23	-.0946	R13	-.9034	LSA	637.7
BDE	.3102	BRA	.6161	BC3	3.4016	FSP	1894	SG1	2704.4	SG2	481.8	THA	5.70	EL1	483.4

SR	474.9	SS	425.7		
CRS	.9524	CST	-.3175		
MSA	313.4	SSA	90.1		
EL2	313.3	ALF	104.19		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 449.924 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.612	GAL	2.02	AZL	89.32	HCA	139.53	SMA	197.62	ECC	.25665	INC	.6804
RP	236.98	LAP	.44	LOP	215.48	VP	21.178	GAP	9.51	AZP	90.52	TAL	9.90	TAP	149.43	RCA	146.90	APO	248.35
RC	189.421	GL	6.26	GP	4.52	ZAL	67.42	ZAP	157.38	ETS	167.56	ZAE	161.54	ETE	15.27	ZAC	95.02	ETC	255.78

PLANETOCENTRIC CONIC

C3	13.383	VHL	3.658	DLA	19.68	RAL	147.74	RAD	6567.5	VEL	11.609	PTH	2.03	VHP	5.915	DPA	-.13	RAP	194.53

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 17 25	2787.30	-28.14	80.90	9.23	93.27	14 3 52	2187.3	-27.39	72.31
90.00	6 51 16	4102.18	-3.11	166.52	3.54	61.84	7 59 38	3502.2	-6.86	159.84
100.00	14 51 11	2484.94	-29.50	58.54	9.11	95.03	15 32 36	1884.9	-28.49	49.88
100.00	8 0 11	3879.77	-1.92	149.51	2.88	60.16	9 4 51	3279.8	-5.88	142.96
110.00	16 26 9	2187.80	-32.95	35.46	8.59	99.65	17 2 37	1587.8	-31.27	26.64
110.00	8 41 42	3749.67	1.03	137.80	1.04	55.83	9 44 12	3149.7	-3.46	131.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0610	TRA	-.5733	TC3	3.4710	BAU	.6245	SGT	2714.4	SGR	554.6	SG3	637.9	ST	311.1
RDE	-.2988	RRA	-.0777	RC3	.3664	FAU	.15476	RRT	.5044	RRF	-.5609	RTF	-.9048	CRT	-.2259
FDE	.5264	FRA	-.2465	FC	-10.0115	BSP	9100	SGB	2770.5	R23	-.1042	R13	-.9069	LSA	643.5
BDE	.3050	BRA	.5786	BC3	3.4903	FSP	1993	SG1	2729.3	SG2	476.3	THA	6.07	EL1	478.4

SR	469.7	SS	440.5		
CRS	.9456	CST	-.3625		
MSA	297.6	SSA	94.1		
EL2	297.6	ALF	104.03		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 453.436 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.572 GAL 2.10 AZL 89.35 HCA 140.50 SMA 196.84 ECC .25389 INC .6466 V1 30.236
RP 236.64 LAP .41 LOP 216.45 VP 21.153 GAP 9.02 AZP 90.50 TAL 10.37 TAP 150.87 RCA 146.87 APO 246.82 V2 23.226
RC 191.655 GL 5.98 GP 4.72 ZAL 66.52 ZAP 156.48 ETS 167.55 ZAE 162.28 ETE 16.79 ZAC 95.23 ETC 255.78 CLP 156.94

PLANETOCENTRIC CONIC

C3 13.218 VHL 3.636 DLA 19.72 RAL 146.75 RAD 6567.5 VEL 11.602 PTH 2.03 VHP 5.777 DPA .02 RAP 194.69 ECC 1.2175

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 13 5	2785.99	-28.14	80.80	8.04	93.32	13 59 31	2186.0	-27.38	72.22
90.00	6 47 40	4098.13	-3.25	166.29	2.40	61.85	7 55 58	3498.1	-6.98	159.61
100.00	14 46 53	2483.51	-29.50	58.44	7.93	95.09	15 28 16	1883.5	-28.48	49.78
100.00	7 56 33	3875.84	-2.05	149.30	1.74	60.17	9 1 9	3275.8	-6.01	142.74
110.00	16 21 56	2186.14	-32.93	35.33	7.40	99.72	16 58 22	1586.1	-31.24	26.52
110.00	8 38 0	3745.98	.89	137.61	359.90	55.83	9 40 26	3146.0	-3.60	131.40

DIFFERENTIAL CORRECTIONS
TDE .0452 TRA -.5540 TC3 3.4973 BAU .6222
RDE -.2940 RRA -.0708 RC3 .4056 FAU .16122
FDE .5560 FRA -.3247 FC-10.5588 BSP 9378
BDE .2974 BRA .5585 BC3 3.5208 FSP 2113

MID-COURSE EXECUTION ACCURACY
SGT 2707.8 SGR 561.8 SG3 669.3
RRT .5435 RRF -.5988 RTF -.9038
SGB 2765.5 R23 -.1100 R13 -.9062
SG1 2725.5 SG2 468.5 THA 6.63

ORBIT DETERMINATION ACCURACY
ST 297.2 SR 464.7 SS 459.5
CRT -.1626 CRS .9401 CST -.3299
LSA 649.0 MSA 291.7 SSA 95.9
EL1 468.8 EL2 290.6 ALF 99.69

LAUNCH DATE DEC 8 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 456.972 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.534 GAL 2.17 AZL 89.39 HCA 141.47 SMA 196.10 ECC .25128 INC .6111 V1 30.236
RP 236.29 LAP .38 LOP 217.42 VP 21.132 GAP 8.54 AZP 90.48 TAL 10.84 TAP 152.31 RCA 146.83 APO 245.38 V2 23.261
RC 193.877 GL 5.68 GP 4.94 ZAL 65.64 ZAP 155.56 ETS 167.53 ZAE 163.04 ETE 18.53 ZAC 95.46 ETC 255.77 CLP 156.03

PLANETOCENTRIC CONIC

C3 13.069 VHL 3.615 DLA 19.72 RAL 145.77 RAD 6567.5 VEL 11.595 PTH 2.03 VHP 5.642 DPA .19 RAP 194.84 ECC 1.2151

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 9 10	2783.61	-28.13	80.63	6.88	93.41	13 55 34	2183.6	-27.36	72.05
90.00	6 43 49	4095.57	-3.33	166.15	1.28	61.86	7 52 4	3495.6	-7.06	159.47
100.00	14 42 59	2481.12	-29.48	58.26	6.76	95.18	15 24 20	1881.1	-28.45	49.61
100.00	7 52 41	3873.30	-2.14	149.16	.62	60.18	8 57 15	3273.3	-6.09	142.60
110.00	16 18 2	2183.74	-32.91	35.15	6.23	99.83	16 54 25	1583.7	-31.20	26.34
110.00	8 34 8	3743.44	.79	137.48	358.79	55.82	9 36 31	3143.4	-3.70	131.27

DIFFERENTIAL CORRECTIONS
TDE .0401 TRA -.5254 TC3 3.5460 BAU .6245
RDE -.2891 RRA -.0633 RC3 .4484 FAU .16820
FDE .5802 FRA -.4140 FC-11.1428 BSP 9427
BDE .2919 BRA .5292 BC3 3.5742 FSP 2231

MID-COURSE EXECUTION ACCURACY
SGT 2712.8 SGR 571.3 SG3 703.2
RRT .5783 RRF -.6364 RTF -.9049
SGB 2772.3 R23 -.1194 R13 -.9077
SG1 2733.5 SG2 462.6 THA 7.15

ORBIT DETERMINATION ACCURACY
ST 283.5 SR 459.4 SS 474.6
CRT -.1529 CRS .9324 CST -.3456
LSA 654.2 MSA 280.9 SSA 98.9
EL1 462.6 EL2 278.2 ALF 98.47

LAUNCH DATE DEC 8 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 460.530 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.498 GAL 2.24 AZL 89.43 HCA 142.44 SMA 195.40 ECC .24880 INC .5741 V1 30.236
RP 235.94 LAP .35 LOP 218.39 VP 21.113 GAP 8.07 AZP 90.46 TAL 11.29 TAP 153.73 RCA 146.78 APO 244.02 V2 23.297
RC 196.086 GL 5.35 GP 5.17 ZAL 64.79 ZAP 154.60 ETS 167.50 ZAE 163.81 ETE 20.52 ZAC 95.69 ETC 255.76 CLP 155.10

PLANETOCENTRIC CONIC

C3 12.932 VHL 3.596 DLA 19.69 RAL 144.82 RAD 6567.5 VEL 11.590 PTH 2.03 VHP 5.511 DPA .38 RAP 194.97 ECC 1.2128

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 5 43	2780.08	-28.11	80.37	5.74	93.54	13 52 3	2180.1	-27.33	71.79
90.00	6 39 40	4094.57	-3.36	166.10	.18	61.87	7 47 55	3494.6	-7.10	159.41
100.00	14 39 29	2477.71	-29.46	58.01	5.62	95.31	15 20 47	1877.7	-28.41	49.36
100.00	7 48 35	3872.17	-2.18	149.09	359.52	60.18	8 53 7	3272.2	-6.13	142.54
110.00	16 14 28	2180.54	-32.87	34.91	5.08	99.97	16 50 49	1580.5	-31.14	26.11
110.00	8 30 5	3742.11	.74	137.41	357.70	55.82	9 32 28	3142.1	-3.75	131.20

DIFFERENTIAL CORRECTIONS
TDE .0369 TRA -.4984 TC3 3.5889 BAU .6263
RDE -.2842 RRA -.0554 RC3 .4947 FAU .17552
FDE .6016 FRA -.5076 FC-11.7508 BSP 9438
BDE .2866 BRA .5014 BC3 3.6228 FSP 2353

MID-COURSE EXECUTION ACCURACY
SGT 2716.1 SGR 583.5 SG3 738.6
RRT .6126 RRF -.6736 RTF -.9059
SGB 2778.1 R23 -.1297 R13 -.9090
SG1 2740.2 SG2 457.2 THA 7.71

ORBIT DETERMINATION ACCURACY
ST 271.0 SR 453.9 SS 487.8
CRT -.1516 CRS .9238 CST -.3669
LSA 658.5 MSA 270.9 SSA 101.9
EL1 456.7 EL2 266.2 ALF 97.86

LAUNCH DATE DEC 8 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 464.109 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.464 GAL 2.31 AZL 89.46 HCA 143.42 SMA 194.74 ECC .24645 INC .5350 V1 30.236
RP 235.59 LAP .32 LOP 219.36 VP 21.098 GAP 7.60 AZP 90.43 TAL 11.73 TAP 155.14 RCA 146.74 APO 242.73 V2 23.333
RC 198.280 GL 5.01 GP 5.42 ZAL 63.97 ZAP 153.63 ETS 167.47 ZAE 164.58 ETE 22.82 ZAC 95.94 ETC 255.76 CLP 154.15

PLANETOCENTRIC CONIC

C3 12.807 VHL 3.579 DLA 19.63 RAL 143.89 RAD 6567.5 VEL 11.584 PTH 2.03 VHP 5.384 DPA .60 RAP 195.09 ECC 1.2108

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 2 43	2775.36	-28.09	80.03	4.62	93.71	13 48 58	2175.4	-27.28	71.46
90.00	6 35 15	4095.11	-3.34	166.13	359.10	61.86	7 43 30	3495.1	-7.08	159.44
100.00	14 36 25	2473.22	-29.43	57.68	4.50	95.48	15 17 38	1873.2	-28.36	49.04
100.00	7 44 15	3872.48	-2.17	149.11	358.45	60.18	8 48 47	3272.5	-6.12	142.55
110.00	16 11 15	2176.49	-32.82	34.60	3.96	100.14	16 47 32	1576.5	-31.07	25.81
110.00	8 25 53	3741.98	.73	137.40	356.64	55.82	9 28 15	3142.0	-3.76	131.20

DIFFERENTIAL CORRECTIONS
TDE .0378 TRA -.4688 TC3 3.6330 BAU .6290
RDE -.2794 RRA -.0470 RC3 .5449 FAU .18326
FDE .6189 FRA -.6105 FC-12.3886 BSP 9379
BDE .2819 BRA .4711 BC3 3.6736 FSP 2476

MID-COURSE EXECUTION ACCURACY
SGT 2720.3 SGR 598.8 SG3 776.1
RRT .6451 RRF -.7099 RTF -.9073
SGB 2785.4 R23 -.1413 R13 -.9110
SG1 2748.3 SG2 452.9 THA 8.31

ORBIT DETERMINATION ACCURACY
ST 258.6 SR 448.1 SS 498.7
CRT -.1762 CRS .9135 CST -.4097
LSA 661.7 MSA 259.5 SSA 105.6
EL1 451.4 EL2 252.7 ALF 98.48

LAUNCH DATE DEC 8 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 467.707 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.431	GAL	2.38	AZL	89.51	HCA	144.40	SMA	194.11	ECC	.24423	INC	.4941	V1	30.236
RP	235.24	LAP	.29	LOP	220.34	VP	21.086	GAP	7.14	AZP	90.40	TAL	12.15	TAP	156.55	RCA	146.70	APO	241.52	V2	23.369
RC	200.460	GL	4.64	GP	5.68	ZAL	63.18	ZAP	152.62	ETS	167.42	ZAE	165.35	ETE	25.46	ZAC	96.19	ETC	255.75	CLP	153.17

PLANETOCENTRIC CONIC

C3	12.692	VHL	3.563	DLA	19.53	RAL	142.99	RAD	6567.5	VEL	11.579	PTH	2.03	VHP	5.260	DPA	.84	RAP	195.20	ECC	1.2089

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 0 12	2769.37	-28.07	79.59	3.53	93.92	13 46 22	2169.4	-27.23	71.03
90.00	6 30 33	4097.26	-3.27	166.25	358.05	61.86	7 38 50	3497.3	-7.01	159.56
100.00	14 33 47	2467.60	-29.39	57.27	3.40	95.70	15 14 55	1867.6	-28.29	48.63
100.00	7 39 39	3874.27	-2.11	149.21	357.41	60.18	8 44 13	3274.3	-6.06	142.65
110.00	16 8 25	2171.54	-32.76	34.23	2.85	100.36	16 44 37	1571.5	-30.99	25.45
110.00	8 21 31	3743.09	.78	137.46	355.61	55.82	9 23 54	3143.1	-3.71	131.25

DIFFERENTIAL CORRECTIONS

TDE	.0338	TRA	-.4470	TC3	3.6465	BAU	.6270
RDE	-.2746	RRA	-.0383	RC3	.5983	FAU	.19107
FDE	.6369	FRA	-.7146	FC-13.0328		BSP	9465
BDE	.2767	BRA	.4487	BC3	3.6953	FSP	2614

MID-COURSE EXECUTION ACCURACY

SGT	2708.5	SGR	617.3	SG3	814.0		
RRT	.6780	RRF	-.7448	RTF	-.9069		
SGB	2777.9	R23	-.1532	R13	-.9112		
SG1	2741.5	SG2	448.3	THA	9.03		

ORBIT DETERMINATION ACCURACY

ST	247.8	SR	442.2	SS	510.3
CRT	-.1691	CRS	.9038	CST	-.4231
LSA	664.7	MSA	252.8	SSA	107.8
EL1	445.1	EL2	242.7	ALF	97.72

LAUNCH DATE DEC 8 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 471.325 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.400	GAL	2.44	AZL	89.55	HCA	145.38	SMA	193.52	ECC	.24213	INC	.4512	V1	30.236
RP	234.89	LAP	.26	LOP	221.32	VP	21.077	GAP	6.69	AZP	90.37	TAL	12.56	TAP	157.94	RCA	146.67	APO	240.38	V2	23.405
RC	202.623	GL	4.25	GP	5.96	ZAL	62.42	ZAP	151.58	ETS	167.37	ZAE	166.12	ETE	28.54	ZAC	96.46	ETC	255.74	CLP	152.16

PLANETOCENTRIC CONIC

C3	12.588	VHL	3.548	DLA	19.39	RAL	142.10	RAD	6567.5	VEL	11.575	PTH	2.02	VHP	5.139	DPA	1.10	RAP	195.29	ECC	1.2072

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 58 10	2762.10	-28.03	79.06	2.46	94.19	13 44 12	2162.1	-27.16	70.51
90.00	6 25 33	4101.00	-3.15	166.46	357.03	61.84	7 33 54	3501.0	-6.89	159.77
100.00	14 31 36	2460.82	-29.35	56.77	2.33	95.96	15 12 37	1860.8	-28.21	48.15
100.00	7 34 49	3877.52	-2.00	149.39	356.39	60.17	8 39 26	3277.5	-5.95	142.83
110.00	16 5 56	2165.67	-32.69	33.78	1.76	100.61	16 42 2	1565.7	-30.88	25.03
110.00	8 16 58	3745.44	.87	137.58	354.60	55.83	9 19 23	3145.4	-3.62	131.38

DIFFERENTIAL CORRECTIONS

TDE	.0363	TRA	-.4215	TC3	3.6695	BAU	.6274
RDE	-.2696	RRA	-.0288	RC3	.6566	FAU	.19942
FDE	.6485	FRA	-.8282	FC-13.7149		BSP	9409
BDE	.2721	BRA	.4225	BC3	3.7278	FSP	2750

MID-COURSE EXECUTION ACCURACY

SGT	2702.6	SGR	639.6	SG3	854.5		
RRT	.7076	RRF	-.7778	RTF	-.9075		
SGB	2777.3	R23	-.1665	R13	-.9125		
SG1	2741.3	SG2	445.6	THA	9.77		

ORBIT DETERMINATION ACCURACY

ST	237.5	SR	435.9	SS	518.4
CRT	-.2051	CRS	.8917	CST	-.4713
LSA	665.9	MSA	243.5	SSA	111.3
EL1	439.7	EL2	230.4	ALF	98.81

LAUNCH DATE DEC 8 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 474.961 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.370	GAL	2.50	AZL	89.59	HCA	146.36	SMA	192.96	ECC	.24014	INC	.4058	V1	30.236
RP	234.53	LAP	.22	LOP	222.31	VP	21.071	GAP	6.24	AZP	90.34	TAL	12.96	TAP	159.32	RCA	146.63	APO	239.30	V2	23.442
RC	204.770	GL	3.83	GP	6.26	ZAL	61.69	ZAP	150.52	ETS	167.30	ZAE	166.86	ETE	32.12	ZAC	96.74	ETC	255.73	CLP	151.13

PLANETOCENTRIC CONIC

C3	12.493	VHL	3.535	DLA	19.22	RAL	141.25	RAD	6567.5	VEL	11.571	PTH	2.02	VHP	5.023	DPA	1.39	RAP	195.37	ECC	1.2056

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 56 38	2753.49	-27.99	78.44	1.41	94.50	13 42 31	2153.5	-27.07	69.89
90.00	6 20 16	4106.37	-2.98	166.76	356.02	61.83	7 28 42	3506.4	-6.72	160.08
100.00	14 29 52	2452.82	-29.29	56.18	1.27	96.26	15 10 45	1852.8	-28.11	47.57
100.00	7 29 42	3882.27	-1.84	149.65	355.39	60.16	8 34 25	3282.3	-5.79	143.10
110.00	16 3 50	2158.81	-32.60	33.27	.69	100.90	16 39 49	1558.8	-30.75	24.54
110.00	8 12 13	3749.05	1.00	137.77	353.61	55.83	9 14 42	3149.0	-3.49	131.57

DIFFERENTIAL CORRECTIONS

TDE	.0376	TRA	-.3997	TC3	3.6761	BAU	.6256
RDE	-.2646	RRA	-.0187	RC3	.7195	FAU	.20804
FDE	.6573	FRA	-.9475	FC-14.4169		BSP	9413
BDE	.2673	BRA	.4001	BC3	3.7459	FSP	2898

MID-COURSE EXECUTION ACCURACY

SGT	2688.4	SGR	666.1	SG3	896.4		
RRT	.7357	RRF	-.8085	RTF	-.9071		
SGB	2769.7	R23	-.1807	R13	-.9131		
SG1	2733.9	SG2	443.6	THA	10.61		

ORBIT DETERMINATION ACCURACY

ST	228.4	SR	429.4	SS	525.6
CRT	-.2345	CRS	.8789	CST	-.5119
LSA	666.2	MSA	236.4	SSA	114.1
EL1	433.9	EL2	219.7	ALF	99.59

LAUNCH DATE DEC 8 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 478.615 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.342	GAL	2.56	AZL	89.64	HCA	147.35	SMA	192.44	ECC	.23826	INC	.3583	V1	30.236
RP	234.17	LAP	.19	LOP	223.29	VP	21.068	GAP	5.80	AZP	90.30	TAL	13.34	TAP	160.69	RCA	146.59	APO	238.29	V2	23.479
RC	206.900	GL	3.39	GP	6.58	ZAL	60.99	ZAP	149.42	ETS	167.23	ZAE	167.56	ETE	36.30	ZAC	97.04	ETC	255.73	CLP	150.07

PLANETOCENTRIC CONIC

C3	12.406	VHL	3.522	DLA	19.01	RAL	140.41	RAD	6567.5	VEL	11.567	PTH	2.02	VHP	4.909	DPA	1.72	RAP	195.44	ECC	1.2042

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 55 35	2743.50	-27.93	77.71	.38	94.86	13 41 18	2143.5	-26.96	69.18
90.00	6 14 40	4113.39	-2.75	167.15	355.04	61.81	7 23 13	3513.4	-6.50	160.47
100.00	14 28 36	2443.57	-29.22	55.50	.24	96.61	15 9 19	1843.6	-28.00	46.91
100.00	7 24 20	3888.55	-1.62	149.99	354.41	60.15	8 29 9	3288.6	-5.58	143.44
110.00	16 2 8	2150.93	-32.50	32.68	359.64	101.24	16 37 59	1550.9	-30.61	23.97
110.00	8 7 17	3753.95	1.19	138.03	352.65	55.84	9 9 51	3154.0	-3.30	131.82

DIFFERENTIAL CORRECTIONS

TDE	.0404	TRA	-.3785	TC3	3.6739	BAU	.6232
RDE	-.2596	RRA	-.0079	RC3	.7872	FAU	.21691
FDE	.6629	FRA	-1.0733	FC-15.1369		BSP	9388
BDE	.2627	BRA	.3786	BC3	3.7573	FSP	3052

MID-COURSE EXECUTION ACCURACY

SGT	2669.5	SGR	697.1	SG3	939.6		
RRT	.7610	RRF	-.8367	RTF	-.9067		
SGB	2759.0	R23	-.1958	R13	-.9137		
SG1	2723.2	SG2	443.3	THA	11.55		

ORBIT DETERMINATION ACCURACY

ST	220.2	SR	422.6	SS	531.8
CRT	-.2756	CRS	.8651	CST	-.5585
LSA	666.0	MSA	229.7	SSA	116.7
EL1	428.3	EL2	208.9	ALF	100.76

LAUNCH DATE DEC 8 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 482.285 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.315 GAL 2.61 AZL 89.69 HCA 148.34 SMA 191.94 ECC .23648 INC .3076 V1 30.236
RP 233.80 LAP .16 LOP 224.28 VP 21.067 GAP 5.37 AZP 90.26 TAL 13.71 TAP 162.05 RCA 146.55 APO 237.33 V2 23.517
RC 209.011 GL 2.92 GP 6.92 ZAL 60.32 ZAP 148.29 ETS 167.15 ZAE 168.20 ETE 41.15 ZAC 97.36 ETC 255.72 CLP 148.98

PLANETOCENTRIC CONIC

C3 12.327 VHL 3.511 DLA 18.76 RAL 139.61 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 4.799 DPA 2.07 RAP 195.49 ECC 1.2029

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 55 2	2732.08	-27.86	76.88	359.37	95.27	13 40 35	2132.1	-26.84	68.36
90.00	6 8 45	4122.09	-2.47	167.63	354.08	61.78	7 17 27	3522.1	-6.23	160.97
100.00	14 27 47	2433.00	-29.13	54.73	359.22	97.01	15 8 20	1833.0	-27.86	46.16
100.00	7 18 41	3896.39	-1.36	150.42	353.46	60.14	8 23 38	3296.4	-5.32	143.88
110.00	16 0 48	2141.97	-32.38	32.01	358.60	101.62	16 36 30	1542.0	-30.44	23.33
110.00	8 2 9	3760.19	1.43	138.35	351.72	55.84	9 4 50	3160.2	-3.06	132.15

DIFFERENTIAL CORRECTIONS

TDE .0458 TRA -.3593 TC3 3.6644 BAU .6203
RDE -.2541 RRA .0038 RC3 .8609 FAU .22622
FDE .6597 FRA-1.2062 FC-15.8884 BSP 9347
BDE .2582 BRA .3593 BC3 3.7642 FSP 3210

MID-COURSE EXECUTION ACCURACY

SGT 2647.6 SGR 733.1 SG3 984.9
RRT .7834 RRF -.8621 RTF -.9058
SGB 2747.2 R23 -.2120 R13 -.9142
SG1 2710.9 SG2 445.0 THA 12.58

ORBIT DETERMINATION ACCURACY

ST 214.6 SR 415.0 SS 534.3
CRT -.3362 CRS .8484 CST -.6165
LSA 662.9 MSA 223.5 SSA 119.6
EL1 423.1 EL2 198.3 ALF 102.69

LAUNCH DATE DEC 8 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 485.972 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.289 GAL 2.66 AZL 89.75 HCA 149.33 SMA 191.47 ECC .23479 INC .2537 V1 30.236
RP 233.44 LAP .13 LOP 225.28 VP 21.069 GAP 4.95 AZP 90.22 TAL 14.06 TAP 163.39 RCA 146.51 APO 236.42 V2 23.555
RC 211.104 GL 2.41 GP 7.29 ZAL 59.69 ZAP 147.13 ETS 167.06 ZAE 168.76 ETE 46.75 ZAC 97.69 ETC 255.71 CLP 147.86

PLANETOCENTRIC CONIC

C3 12.254 VHL 3.501 DLA 18.47 RAL 138.82 RAD 6567.5 VEL 11.560 PTH 2.02 VHP 4.693 DPA 2.46 RAP 195.53 ECC 1.2017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 55 1	2719.17	-27.78	75.95	358.38	95.73	13 40 20	2119.2	-26.69	67.45
90.00	6 2 31	4132.49	-2.14	168.22	353.14	61.76	7 11 23	3532.5	-5.90	161.55
100.00	14 27 27	2421.07	-29.03	53.85	358.21	97.46	15 7 48	1821.1	-27.69	45.31
100.00	7 12 45	3905.83	-1.04	150.94	352.53	60.12	8 17 51	3305.8	-5.01	144.40
110.00	15 59 53	2131.88	-32.24	31.25	357.57	102.04	16 35 25	1531.9	-30.24	22.60
110.00	7 56 49	3767.78	1.72	138.75	350.80	55.85	8 59 36	3167.8	-2.77	132.55

DIFFERENTIAL CORRECTIONS

TDE .0518 TRA -.3415 TC3 3.6423 BAU .6163
RDE -.2484 RRA .0164 RC3 .9402 FAU .23575
FDE .6513 FRA-1.3463 FC-16.6552 BSP 9316
BDE .2537 BRA .3419 BC3 3.7617 FSP 3378

MID-COURSE EXECUTION ACCURACY

SGT 2618.6 SGR 774.2 SG3 1031.4
RRT .8028 RRF -.8846 RTF -.9046
SGB 2730.7 R23 -.2286 R13 -.9146
SG1 2693.6 SG2 448.8 THA 13.74

ORBIT DETERMINATION ACCURACY

ST 210.4 SR 407.1 SS 535.6
CRT -.4019 CRS .8298 CST -.6719
LSA 658.9 MSA 218.7 SSA 121.9
EL1 418.1 EL2 187.6 ALF 104.78

LAUNCH DATE DEC 8 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 489.675 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.265 GAL 2.71 AZL 89.80 HCA 150.33 SMA 191.02 ECC .23320 INC .1958 V1 30.236
RP 233.07 LAP .10 LOP 226.27 VP 21.074 GAP 4.53 AZP 90.17 TAL 14.40 TAP 164.73 RCA 146.48 APO 235.57 V2 23.593
RC 213.179 GL 1.87 GP 7.69 ZAL 59.09 ZAP 145.93 ETS 166.97 ZAE 169.20 ETE 53.13 ZAC 98.04 ETC 255.69 CLP 146.71

PLANETOCENTRIC CONIC

C3 12.189 VHL 3.491 DLA 18.13 RAL 138.06 RAD 6567.5 VEL 11.557 PTH 2.02 VHP 4.590 DPA 2.89 RAP 195.55 ECC 1.2006

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 55 30	2704.73	-27.68	74.90	357.39	96.24	13 40 34	2104.7	-26.52	66.43
90.00	5 55 56	4144.66	-1.75	168.89	352.22	61.73	7 5 1	3544.7	-5.51	162.24
100.00	14 27 36	2407.70	-28.91	52.88	357.22	97.96	15 7 44	1807.7	-27.51	44.36
100.00	7 6 31	3916.92	-.66	151.55	351.62	60.11	8 11 48	3316.9	-4.63	145.01
110.00	15 59 22	2120.59	-32.07	30.41	356.56	102.51	16 34 43	1520.6	-30.02	21.80
110.00	7 51 14	3776.80	2.06	139.22	349.92	55.87	8 54 11	3176.8	-2.43	133.02

DIFFERENTIAL CORRECTIONS

TDE .0591 TRA -.3251 TC3 3.6139 BAU .6122
RDE -.2423 RRA .0302 RC3 1.0269 FAU .24572
FDE .6357 FRA-1.4947 FC-17.4532 BSP 9249
BDE .2494 BRA .3265 BC3 3.7570 FSP 3547

MID-COURSE EXECUTION ACCURACY

SGT 2586.9 SGR 821.5 SG3 1080.0
RRT .8195 RRF -.9044 RTF -.9030
SGB 2714.2 R23 -.2453 R13 -.9152
SG1 2675.8 SG2 455.2 THA 15.03

ORBIT DETERMINATION ACCURACY

ST 208.6 SR 398.5 SS 535.3
CRT -.4761 CRS .8084 CST -.7244
LSA 653.6 MSA 215.3 SSA 123.5
EL1 413.6 EL2 176.7 ALF 107.24

LAUNCH DATE DEC 8 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 493.394 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.242 GAL 2.75 AZL 89.86 HCA 151.33 SMA 190.60 ECC .23170 INC .1354 V1 30.236
RP 232.70 LAP .07 LOP 227.27 VP 21.080 GAP 4.12 AZP 90.12 TAL 14.72 TAP 166.05 RCA 146.44 APO 234.77 V2 23.631
RC 215.236 GL 1.30 GP 8.12 ZAL 58.52 ZAP 144.70 ETS 166.87 ZAE 169.49 ETE 60.22 ZAC 98.42 ETC 255.68 CLP 145.52

PLANETOCENTRIC CONIC

C3 12.129 VHL 3.483 DLA 17.74 RAL 137.32 RAD 6567.5 VEL 11.555 PTH 2.02 VHP 4.491 DPA 3.35 RAP 195.56 ECC 1.1996

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 56 30	2688.68	-27.55	73.75	356.42	96.81	13 41 19	2088.7	-26.32	65.29
90.00	5 49 1	4158.64	-1.30	169.67	351.33	61.71	6 58 20	3558.6	-5.07	163.03
100.00	14 28 15	2392.85	-28.76	51.80	356.24	98.51	15 8 7	1792.8	-27.29	43.31
100.00	6 59 58	3929.71	-.23	152.25	350.73	60.11	8 5 28	3329.7	-4.20	145.72
110.00	15 59 17	2108.03	-31.88	29.48	355.55	103.04	16 34 25	1508.0	-29.76	20.91
110.00	7 45 25	3787.29	2.46	139.77	349.05	55.90	8 48 33	3187.3	-2.03	133.56

DIFFERENTIAL CORRECTIONS

TDE .0688 TRA -.3106 TC3 3.5744 BAU .6074
RDE -.2355 RRA .0451 RC3 1.1205 FAU .25590
FDE .6097 FRA-1.6501 FC-18.2656 BSP 9181
BDE .2453 BRA .3138 BC3 3.7459 FSP 3726

MID-COURSE EXECUTION ACCURACY

SGT 2549.3 SGR 874.9 SG3 1129.8
RRT .8329 RRF -.9214 RTF -.9009
SGB 2695.3 R23 -.2621 R13 -.9157
SG1 2654.9 SG2 465.0 THA 16.47

ORBIT DETERMINATION ACCURACY

ST 210.4 SR 388.9 SS 532.5
CRT -.5603 CRS .7826 CST -.7708
LSA 646.3 MSA 214.2 SSA 124.1
EL1 410.1 EL2 165.3 ALF 110.30

LAUNCH DATE DEC 8 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 497.127 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.220 GAL 2.80 AZL 89.93 HCA 152.33 SMA 190.21 ECC .23027 INC .0699 V1 30.236
RP 232.32 LAP .03 LOP 228.27 VP 21.089 GAP 3.72 AZP 90.06 TAL 15.03 TAP 167.36 RCA 146.41 APO 234.01 V2 23.670
RC 217.275 GL .68 GP 8.58 ZAL 57.98 ZAP 143.42 ETS 166.76 ZAE 169.60 ETE 67.88 ZAC 98.82 ETC 255.67 CLP 144.31

PLANETOCENTRIC CONIC

C3 12.076 VHL 3.475 DLA 17.30 RAL 136.60 RAD 6567.5 VEL 11.553 PTH 2.02 VHP 4.396 DPA 3.86 RAP 195.56 ECC 1.1987

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 58 3	2670.95	-27.40	72.47	355.46	97.43	13 42 34	2070.9	-26.09	64.05
90.00	5 41 44	4174.51	-.78	170.56	350.45	61.69	6 51 18	3574.5	-4.56	163.92
100.00	14 29 23	2376.41	-28.59	50.61	355.26	99.11	15 8 59	1776.4	-27.04	42.15
100.00	6 53 5	3944.28	.27	153.05	349.87	60.11	7 58 49	3344.3	-3.71	146.52
110.00	15 59 37	2094.11	-31.66	28.45	354.55	103.61	16 34 31	1494.1	-29.47	19.93
110.00	7 39 20	3799.34	2.92	140.40	348.21	55.93	8 42 40	3199.3	-1.57	134.19

DIFFERENTIAL CORRECTIONS
TDE .0786 TRA -.2975 TC3 3.5213 BAU .6017
RDE -.2282 RRA .0616 RC3 1.2220 FAU .26629
FDE .5758 FRA-1.8144 FC-19.0910 BSP 9099
BDE .2414 BRA .3038 BC3 3.7273 FSP 3909

MID-COURSE EXECUTION ACCURACY
SGT 2504.0 SGR 935.0 SG3 1180.8
RRT .8436 RRF -.9359 RTF -.8983
SGB 2672.9 R23 -.2779 R13 -.9164
SG1 2629.8 SG2 478.1 THA 18.10

ORBIT DETERMINATION ACCURACY
ST 214.3 SR 378.5 SS 529.5
CRT -.6386 CRS .7531 CST -.7988
LSA 638.4 MSA 216.7 SSA 122.3
EL1 407.0 EL2 153.4 ALF 113.39

LAUNCH DATE DEC 8 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 500.874 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.200 GAL 2.84 AZL 90.00 HCA 153.33 SMA 189.84 ECC .22893 INC .0000 V1 30.236
RP 231.95 LAP .00 LOP 229.28 VP 21.101 GAP 3.32 AZP 90.00 TAL 15.32 TAP 168.66 RCA 146.38 APO 233.30 V2 23.709
RC 219.295 GL .01 GP 9.09 ZAL 57.48 ZAP 142.11 ETS 166.64 ZAE 169.49 ETE 75.84 ZAC 99.26 ETC 255.65 CLP 143.05

PLANETOCENTRIC CONIC

C3 12.028 VHL 3.468 DLA 16.80 RAL 135.90 RAD 6567.5 VEL 11.551 PTH 2.02 VHP 4.304 DPA 4.42 RAP 195.54 ECC 1.1980

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 0 8	2651.44	-27.22	71.07	354.50	98.11	13 44 20	2051.4	-25.82	62.68
90.00	5 34 3	4192.35	-.21	171.55	349.60	61.68	6 43 55	3592.4	-3.99	164.92
100.00	14 31 2	2358.29	-28.39	49.30	354.29	99.77	15 10 21	1758.3	-26.75	40.88
100.00	6 45 50	3960.73	.82	153.95	349.02	60.12	7 51 51	3360.7	-3.16	147.43
110.00	16 0 23	2078.75	-31.41	27.33	353.55	104.23	16 35 2	1478.7	-29.14	18.86
110.00	7 32 58	3813.04	3.45	141.11	347.38	55.97	8 36 31	3213.0	-1.04	134.91

DIFFERENTIAL CORRECTIONS
TDE .0913 TRA -.2874 TC3 3.4609 BAU .5964
RDE -.2198 RRA .0796 RC3 1.3329 FAU .27707
FDE .5253 FRA-1.9848 FC-19.9418 BSP 9007
BDE .2380 BRA .2982 BC3 3.7088 FSP 4095

MID-COURSE EXECUTION ACCURACY
SGT 2456.0 SGR 1002.7 SG3 1233.5
RRT .8514 RRF -.9482 RTF -.8949
SGB 2652.8 R23 -.2928 R13 -.9172
SG1 2606.1 SG2 495.7 THA 19.92

ORBIT DETERMINATION ACCURACY
ST 223.8 SR 366.4 SS 523.5
CRT -.7183 CRS .7152 CST -.8061
LSA 627.8 MSA 224.1 SSA 118.6
EL1 405.7 EL2 140.6 ALF 117.22

LAUNCH DATE DEC 8 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 504.635 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.180 GAL 2.87 AZL 90.07 HCA 154.34 SMA 189.49 ECC .22766 INC .0734 V1 30.236
RP 231.57 LAP -.03 LOP 230.29 VP 21.114 GAP 2.93 AZP 89.93 TAL 15.60 TAP 169.94 RCA 146.35 APO 232.62 V2 23.748
RC 221.297 GL -.71 GP 9.63 ZAL 57.01 ZAP 140.75 ETS 166.52 ZAE 169.16 ETE 83.74 ZAC 99.73 ETC 255.64 CLP 141.77

PLANETOCENTRIC CONIC

C3 11.987 VHL 3.462 DLA 16.25 RAL 135.21 RAD 6567.5 VEL 11.549 PTH 2.02 VHP 4.217 DPA 5.03 RAP 195.52 ECC 1.1973

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 2 48	2630.05	-27.01	69.54	353.55	98.85	13 46 38	2030.0	-25.51	61.19
90.00	5 25 57	4212.29	.44	172.67	348.76	61.69	6 36 9	3612.3	-3.35	166.03
100.00	14 33 14	2338.40	-28.15	47.87	353.33	100.49	15 12 12	1738.4	-26.42	39.50
100.00	6 38 12	3979.17	1.45	154.96	348.20	60.14	7 44 31	3379.2	-2.53	148.44
110.00	16 1 37	2061.83	-31.12	26.09	352.56	104.91	16 35 59	1461.8	-28.76	17.69
110.00	7 26 18	3828.50	4.04	141.92	346.58	56.03	8 30 6	3228.5	-.45	135.71

DIFFERENTIAL CORRECTIONS
TDE .1043 TRA -.2786 TC3 3.3873 BAU .5907
RDE -.2104 RRA .0995 RC3 1.4534 FAU .28798
FDE .4641 FRA-2.1654 FC-20.7989 BSP 8908
BDE .2348 BRA .2958 BC3 3.6860 FSP 4285

MID-COURSE EXECUTION ACCURACY
SGT 2400.4 SGR 1078.6 SG3 1287.2
RRT .8567 RRF -.9585 RTF -.8908
SGB 2631.6 R23 -.3055 R13 -.9185
SG1 2580.2 SG2 517.6 THA 21.99

ORBIT DETERMINATION ACCURACY
ST 235.5 SR 353.2 SS 519.1
CRT -.7856 CRS .6716 CST -.7849
LSA 617.4 MSA 236.7 SSA 112.2
EL1 405.1 EL2 127.1 ALF 121.04

LAUNCH DATE DEC 8 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 508.410 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.162 GAL 2.91 AZL 90.16 HCA 155.35 SMA 189.15 ECC .22646 INC .1551 V1 30.236
RP 231.20 LAP -.06 LOP 231.30 VP 21.129 GAP 2.55 AZP 89.86 TAL 15.85 TAP 171.21 RCA 146.32 APO 231.99 V2 23.788
RC 223.281 GL -1.49 GP 10.22 ZAL 56.58 ZAP 139.35 ETS 166.39 ZAE 168.59 ETE 91.27 ZAC 100.23 ETC 255.62 CLP 140.44

PLANETOCENTRIC CONIC

C3 11.952 VHL 3.457 DLA 15.62 RAL 134.55 RAD 6567.5 VEL 11.547 PTH 2.02 VHP 4.133 DPA 5.69 RAP 195.48 ECC 1.1967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 6 2	2606.64	-26.75	67.88	352.59	99.65	13 49 28	2006.6	-25.15	59.58
90.00	5 17 24	4234.46	1.15	173.90	347.95	61.70	6 27 59	3634.5	-2.64	167.27
100.00	14 35 58	2316.59	-27.87	46.31	352.36	101.27	15 14 35	1716.6	-26.03	37.99
100.00	6 30 9	3999.74	2.15	156.09	347.39	60.18	7 36 48	3399.7	-1.84	149.57
110.00	16 3 20	2043.23	-30.79	24.75	351.56	105.64	16 37 23	1443.2	-28.34	16.41
110.00	7 19 16	3845.87	4.70	142.84	345.81	56.10	8 23 22	3245.9	.21	136.62

DIFFERENTIAL CORRECTIONS
TDE .1185 TRA -.2725 TC3 3.2986 BAU .5847
RDE -.1996 RRA .1214 RC3 1.5839 FAU .29892
FDE .3866 FRA-2.3530 FC-21.6531 BSP 8816
BDE .2321 BRA .2983 BC3 3.6592 FSP 4480

MID-COURSE EXECUTION ACCURACY
SGT 2336.7 SGR 1162.9 SG3 1341.2
RRT .8592 RRF -.9669 RTF -.8856
SGB 2610.1 R23 -.3157 R13 -.9201
SG1 2552.7 SG2 544.7 THA 24.33

ORBIT DETERMINATION ACCURACY
ST 251.1 SR 338.2 SS 516.0
CRT -.8423 CRS .6196 CST -.7331
LSA 606.4 MSA 255.3 SSA 103.8
EL1 405.9 EL2 112.8 ALF 125.13

LAUNCH DATE DEC 8 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 512.199 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.144 GAL 2.94 AZL 90.24 HCA 156.37 SMA 188.84 ECC .22533 INC .2427 V1 30.236
RP 230.82 LAP -.10 LOP 232.32 VP 21.147 GAP 2.18 AZP 89.78 TAL 16.10 TAP 172.47 RCA 146.29 APO 231.39 V2 23.827
RC 225.247 GL -2.34 GP 10.86 ZAL 56.19 ZAP 137.91 ETS 166.25 ZAE 167.79 ETE 98.15 ZAC 100.78 ETC 255.60 CLP 139.08

PLANETOCENTRIC CONIC

C3 11.923 VHL 3.453 DLA 14.92 RAL 133.89 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 4.053 DPA 6.41 RAP 195.44 ECC 1.1962

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 9 52	2581.07	-26.45	66.07	351.64	100.51	13 52 53	1981.1	-24.73	57.82
90.00	5 8 21	4259.04	1.94	175.27	347.15	61.74	6 19 21	3659.0	-1.85	168.65
100.00	14 39 17	2292.71	-27.54	44.61	351.39	102.10	15 17 29	1692.7	-25.60	36.35
100.00	6 21 38	4022.62	2.92	157.35	346.61	60.24	7 28 40	3422.6	-1.06	150.83
110.00	16 5 33	2022.80	-30.41	23.28	350.56	106.43	16 39 15	1422.8	-27.86	15.01
110.00	7 11 51	3865.30	5.43	143.86	345.05	56.20	8 16 17	3265.3	.96	137.63

DIFFERENTIAL CORRECTIONS
TDE .1341 TRA -.2691 TC3 3.1999 BAU .5796
RDE -.1068 RRA .1457 RC3 1.7270 FAU .31011
FDE .2886 FRA-2.5484 FC-22.5164 BSP 8730
BDE .2299 BRA .3061 BC3 3.6362 FSP 4674

MID-COURSE EXECUTION ACCURACY
SGT 2268.6 SGR 1257.4 SG3 1396.3
RRT .8592 RRF -.9738 RTF -.8792
SGB 2593.8 R23 -.3225 R13 -.9226
SG1 2528.8 SG2 577.1 THA 26.98

ORBIT DETERMINATION ACCURACY
ST 270.4 SR 320.9 SS 515.9
CRT -.8873 CRS .5577 CST -.6468
LSA 595.4 MSA 280.9 SSA 94.1
EL1 408.0 EL2 98.1 ALF 129.51

LAUNCH DATE DEC 8 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 516.000 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.128 GAL 2.97 AZL 90.34 HCA 157.39 SMA 188.55 ECC .22426 INC .3392 V1 30.236
RP 230.43 LAP -.13 LOP 233.33 VP 21.166 GAP 1.81 AZP 89.69 TAL 16.32 TAP 173.71 RCA 146.26 APO 230.83 V2 23.867
RC 227.193 GL -3.26 GP 11.55 ZAL 55.84 ZAP 136.42 ETS 166.10 ZAE 166.78 ETE 104.26 ZAC 101.38 ETC 255.57 CLP 137.68

PLANETOCENTRIC CONIC

C3 11.903 VHL 3.450 DLA 14.14 RAL 133.25 RAD 6567.5 VEL 11.545 PTH 2.02 VHP 3.978 DPA 7.20 RAP 195.39 ECC 1.1959

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 14 20	2553.15	-26.09	64.10	350.68	101.43	13 56 53	1953.2	-24.25	55.91
90.00	4 58 46	4286.22	2.82	176.79	346.38	61.81	6 10 12	3686.2	-.97	170.16
100.00	14 43 12	2266.59	-27.16	42.76	350.42	103.00	15 20 58	1666.6	-25.09	34.57
100.00	6 12 36	4048.02	3.78	158.75	345.85	60.33	7 20 4	3448.0	-.20	152.22
110.00	16 8 17	2000.38	-29.96	21.68	349.56	107.28	16 41 37	1400.4	-27.31	13.50
110.00	7 4 0	3887.00	6.25	145.00	344.32	56.33	8 8 47	3287.0	1.78	138.77

DIFFERENTIAL CORRECTIONS
TDE .1503 TRA -.2675 TC3 3.0880 BAU .5755
RDE -.1721 RRA .1728 RC3 1.8822 FAU .32117
FDE .1738 FRA-2.7519 FC-23.3600 BSP 8657
BDE .2285 BRA .3185 BC3 3.6164 FSP 4874

MID-COURSE EXECUTION ACCURACY
SGT 2193.7 SGR 1362.4 SG3 1451.2
RRT .8567 RRF -.9794 RTF -.8716
SGB 2582.3 R23 -.3247 R13 -.9262
SG1 2508.1 SG2 614.7 THA 30.00

ORBIT DETERMINATION ACCURACY
ST 292.1 SR 301.8 SS 523.1
CRT -.9197 CRS .4940 CST -.5298
LSA 587.6 MSA 312.5 SSA 83.6
EL1 411.5 EL2 84.1 ALF 133.98

LAUNCH DATE DEC 8 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 519.814 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.112 GAL 3.00 AZL 90.44 HCA 158.41 SMA 188.27 ECC .22326 INC .4428 V1 30.236
RP 230.05 LAP -.16 LOP 234.36 VP 21.187 GAP 1.45 AZP 89.59 TAL 16.53 TAP 174.94 RCA 146.24 APO 230.31 V2 23.907
RC 229.120 GL -4.26 GP 12.32 ZAL 55.53 ZAP 134.88 ETS 165.96 ZAE 165.56 ETE 109.55 ZAC 102.03 ETC 255.55 CLP 136.24

PLANETOCENTRIC CONIC

C3 11.891 VHL 3.448 DLA 13.27 RAL 132.62 RAD 6567.5 VEL 11.545 PTH 2.01 VHP 3.907 DPA 8.07 RAP 195.34 ECC 1.1957

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 19 29	2522.67	-25.66	61.97	349.71	102.41	14 1 32	1922.7	-23.69	53.85
90.00	4 48 35	4316.30	3.78	178.48	345.63	61.92	6 0 31	3716.3	-.00	171.84
100.00	14 47 45	2238.00	-26.70	40.76	349.44	103.96	15 25 3	1638.0	-24.52	32.64
100.00	6 3 0	4076.20	4.73	160.30	345.12	60.45	7 10 56	3476.2	.76	153.77
110.00	16 11 34	1975.75	-29.45	19.95	348.54	108.19	16 44 30	1375.7	-26.68	11.86
110.00	6 55 40	3911.22	7.17	146.28	343.61	56.49	8 0 52	3311.2	2.71	140.03

DIFFERENTIAL CORRECTIONS
TDE .1674 TRA -.2695 TC3 2.9622 BAU .5729
RDE -.1541 RRA .2034 RC3 2.0525 FAU .33231
FDE .0295 FRA-2.9653 FC-24.1940 BSP 8607
BDE .2275 BRA .3376 BC3 3.6038 FSP 5064

MID-COURSE EXECUTION ACCURACY
SGT 2112.5 SGR 1479.8 SG3 1506.6
RRT .8512 RRF -.9840 RTF -.8618
SGB 2579.3 R23 -.3221 R13 -.9309
SG1 2494.0 SG2 657.9 THA 33.44

ORBIT DETERMINATION ACCURACY
ST 316.5 SR 279.6 SS 540.1
CRT -.9376 CRS .4291 CST -.3802
LSA 584.4 MSA 351.0 SSA 73.0
EL1 415.8 EL2 74.0 ALF 138.77

LAUNCH DATE DEC 8 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 523.640 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.098 GAL 3.02 AZL 90.56 HCA 159.44 SMA 188.02 ECC .22231 INC .5586 V1 30.236
RP 229.67 LAP -.20 LOP 235.38 VP 21.210 GAP 1.10 AZP 89.48 TAL 16.72 TAP 176.16 RCA 146.22 APO 229.81 V2 23.948
RC 231.027 GL -5.37 GP 13.15 ZAL 55.27 ZAP 133.29 ETS 165.80 ZAE 164.17 ETE 114.06 ZAC 102.75 ETC 255.51 CLP 134.76

PLANETOCENTRIC CONIC

C3 11.890 VHL 3.448 DLA 12.30 RAL 131.99 RAD 6567.5 VEL 11.545 PTH 2.01 VHP 3.841 DPA 9.01 RAP 195.29 ECC 1.1957

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 25 21	2489.34	-25.15	59.66	348.74	103.46	14 6 51	1889.3	-23.05	51.62
90.00	4 37 42	4349.60	4.85	180.34	344.92	62.07	5 50 12	3749.6	1.07	173.70
100.00	14 53 0	2206.69	-26.17	38.59	348.45	104.99	15 29 47	1606.7	-23.86	30.55
100.00	5 52 45	4107.48	5.77	162.03	344.41	60.62	7 1 12	3507.5	1.82	155.48
110.00	16 15 27	1948.67	-28.86	18.06	347.52	109.17	16 47 56	1348.7	-25.98	10.07
110.00	6 46 47	3938.26	8.18	147.72	342.93	56.69	7 52 25	3338.3	3.74	141.45

DIFFERENTIAL CORRECTIONS
TDE .1842 TRA -.2743 TC3 2.8198 BAU .5721
RDE -.1333 RRA .2372 RC3 2.2360 FAU .34291
FDE -.1330 FRA-3.1806 FC-24.9672 BSP 8599
BDE .2274 BRA .3626 BC3 3.5987 FSP 5262

MID-COURSE EXECUTION ACCURACY
SGT 2023.1 SGR 1609.2 SG3 1559.5
RRT .8425 RRF -.9876 RTF -.8497
SGB 2585.1 R23 -.3133 R13 -.9371
SG1 2487.0 SG2 705.2 THA 37.34

ORBIT DETERMINATION ACCURACY
ST 341.6 SR 256.5 SS 569.9
CRT -.9359 CRS .3889 CST -.2204
LSA 593.8 MSA 388.3 SSA 63.1
EL1 420.9 EL2 73.4 ALF 143.62

LAUNCH DATE DEC 8 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 527.480 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.084 GAL 3.04 AZL 90.69 HCA 160.46 SMA 187.77 ECC .22141 INC .6854 V1 30.236
RP 229.28 LAP -.23 LOP 236.41 VP 21.234 GAP .75 AZP 89.35 TAL 16.90 TAP 177.37 RCA 146.20 APO 229.35 V2 23.988
RC 232.913 GL -6.58 GP 14.08 ZAL 55.05 ZAP 131.65 ETS 165.64 ZAE 162.61 ETE 117.87 ZAC 103.53 ETC 255.48 CLP 133.24

PLANETOCENTRIC CONIC

C3 11.903 VHL 3.450 DLA 11.20 RAL 131.36 RAD 6567.5 VEL 11.545 PTH 2.02 VHP 3.781 DPA 10.05 RAP 195.24 ECC 1.1959

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 32 0	2452.91	-24.55	57.16	347.75	104.58	14 12 53	1852.9	-22.31	49.21
90.00	4 26 3	4386.50	6.02	182.42	344.22	62.28	5 39 9	3786.5	2.26	175.76
100.00	14 58 58	2172.39	-25.54	36.23	347.45	106.08	15 35 11	1572.4	-23.09	28.29
100.00	5 41 45	4142.24	6.93	163.97	343.73	60.85	6 50 47	3542.2	2.99	157.39
110.00	16 19 59	1918.90	-28.18	16.01	346.48	110.20	16 51 58	1318.9	-25.17	8.13
110.00	6 37 14	3968.49	9.31	149.34	342.28	56.96	7 43 23	3368.5	4.89	143.03

DIFFERENTIAL CORRECTIONS
TDE .2135 TRA -.2703 TC3 2.7023 BAU .5802
RDE -.1042 RRA .2790 RC3 2.4472 FAU .35482
FDE -.3662 FRA-3.4417 FC-25.8063 BSP .8372
BDE .2376 BRA .3885 BC3 3.6458 FSP .5371

MID-COURSE EXECUTION ACCURACY
SGT 1952.5 SGR 1762.0 SG3 1619.6
RRT .8346 RRF -.9905 RTF -.8403
SGB 2630.0 R23 -.2933 R13 -.9464
SG1 2520.2 SG2 751.9 THA 41.49

ORBIT DETERMINATION ACCURACY
ST 384.3 SR 229.3 SS 629.2
CRT -.8847 CRS .3838 CST .0075
LSA 636.5 MSA 434.2 SSA 51.1
EL1 437.6 EL2 93.9 ALF 150.69

LAUNCH DATE DEC 8 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 531.329 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.071 GAL 3.06 AZL 90.83 HCA 161.50 SMA 187.55 ECC .22057 INC .8264 V1 30.236
RP 228.89 LAP -.26 LOP 237.44 VP 21.260 GAP .41 AZP 89.22 TAL 17.06 TAP 178.56 RCA 146.18 APO 228.91 V2 24.029
RC 234.778 GL -7.93 GP 15.09 ZAL 54.90 ZAP 129.95 ETS 165.48 ZAE 160.89 ETE 121.04 ZAC 104.41 ETC 255.43 CLP 131.68

PLANETOCENTRIC CONIC

C3 11.933 VHL 3.454 DLA 9.98 RAL 130.73 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 3.726 DPA 11.18 RAP 195.21 ECC 1.1964

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 39 31	2412.88	-23.83	54.45	346.75	105.76	14 19 43	1812.9	-21.44	46.59
90.00	4 13 30	4427.55	7.32	184.74	343.57	62.57	5 27 17	3827.6	3.58	178.05
100.00	15 5 47	2134.63	-24.81	33.67	346.43	107.24	15 41 22	1534.6	-22.21	25.83
100.00	5 29 55	4181.03	8.21	166.13	343.09	61.16	6 39 36	3581.0	4.30	159.53
110.00	16 25 14	1886.03	-27.39	13.79	345.43	111.31	16 56 40	1286.0	-24.24	6.03
110.00	6 26 57	4002.40	10.56	151.16	341.67	57.30	7 33 40	3402.4	6.17	144.82

DIFFERENTIAL CORRECTIONS
TDE .2266 TRA -.2865 TC3 2.5140 BAU .5840
RDE -.0738 RRA .3214 RC3 2.6612 FAU .36397
FDE -.5850 FRA-3.6572 FC-26.4067 BSP .8577
BDE .2384 BRA .4305 BC3 3.6609 FSP .5574

MID-COURSE EXECUTION ACCURACY
SGT 1841.4 SGR 1920.5 SG3 1665.8
RRT .8161 RRF -.9927 RTF -.8191
SGB 2660.6 R23 -.2721 R13 -.9548
SG1 2535.6 SG2 805.9 THA 46.47

ORBIT DETERMINATION ACCURACY
ST 406.2 SR 210.7 SS 694.6
CRT -.7788 CRS .4651 CST .1436
LSA 704.0 MSA 440.8 SSA 43.9
EL1 441.1 EL2 121.7 ALF 156.07

LAUNCH DATE DEC 8 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 535.191 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.059 GAL 3.08 AZL 90.98 HCA 162.53 SMA 187.34 ECC .21977 INC .9845 V1 30.236
RP 228.51 LAP -.30 LOP 238.48 VP 21.288 GAP .07 AZP 89.06 TAL 17.20 TAP 179.73 RCA 146.17 APO 228.51 V2 24.070
RC 236.623 GL -9.43 GP 16.21 ZAL 54.81 ZAP 128.19 ETS 165.31 ZAE 159.01 ETE 123.67 ZAC 105.38 ETC 255.38 CLP 130.08

PLANETOCENTRIC CONIC

C3 11.983 VHL 3.462 DLA 8.59 RAL 130.09 RAD 6567.5 VEL 11.549 PTH 2.02 VHP 3.678 DPA 12.43 RAP 195.19 ECC 1.1972

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 47 59	2368.83	-22.99	51.50	345.74	107.00	14 27 28	1768.8	-20.44	43.75
90.00	3 59 54	4473.38	8.74	187.35	342.97	62.96	5 14 28	3873.4	5.05	180.62
100.00	15 13 30	2093.02	-23.94	30.88	345.41	108.46	15 48 23	1493.0	-21.19	23.16
100.00	5 17 4	4224.43	9.63	168.58	342.50	61.56	6 27 29	3624.4	5.75	161.93
110.00	16 31 15	1849.68	-26.46	11.36	344.37	112.47	17 2 5	1249.7	-23.18	3.74
110.00	6 15 48	4040.54	11.95	153.24	341.11	57.73	7 23 9	3440.5	7.61	146.84

DIFFERENTIAL CORRECTIONS
TDE .2405 TRA -.3048 TC3 2.3146 BAU .5935
RDE -.0363 RRA .3698 RC3 2.8922 FAU .37224
FDE -.8413 FRA-3.8772 FC-26.8923 BSP .8845
BDE .2432 BRA .4792 BC3 3.7044 FSP .5766

MID-COURSE EXECUTION ACCURACY
SGT 1728.2 SGR 2096.7 SG3 1707.8
RRT .7918 RRF -.9945 RTF -.7927
SGB 2717.2 R23 -.2428 R13 -.9644
SG1 2578.0 SG2 858.5 THA 51.90

ORBIT DETERMINATION ACCURACY
ST 429.2 SR 204.2 SS 781.1
CRT -.5642 CRS .6204 CST .2684
LSA 800.8 MSA 439.8 SSA 37.2
EL1 446.9 EL2 161.9 ALF 162.62

LAUNCH DATE DEC 8 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 539.062 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.048 GAL 3.09 AZL 91.16 HCA 163.57 SMA 187.14 ECC .21902 INC 1.1614 V1 30.236
RP 228.12 LAP -.33 LOP 239.52 VP 21.316 GAP -.25 AZP 88.89 TAL 17.33 TAP 180.90 RCA 146.15 APO 228.13 V2 24.111
RC 238.446 GL -11.11 GP 17.46 ZAL 54.80 ZAP 126.37 ETS 165.14 ZAE 156.99 ETE 125.83 ZAC 106.46 ETC 255.31 CLP 128.44

PLANETOCENTRIC CONIC

C3 12.063 VHL 3.473 DLA 7.03 RAL 129.43 RAD 6567.5 VEL 11.552 PTH 2.02 VHP 3.637 DPA 13.81 RAP 195.21 ECC 1.1985

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 57 32	2320.20	-21.98	48.29	344.72	108.31	14 36 12	1720.2	-19.28	40.66
90.00	3 45 5	4524.80	10.32	190.31	342.42	63.48	5 0 30	3924.8	6.68	183.52
100.00	15 22 14	2047.00	-22.91	27.85	344.37	109.74	15 56 21	1447.0	-20.01	20.25
100.00	5 3 4	4273.24	11.20	171.35	341.96	62.10	6 14 17	3673.2	7.38	164.65
110.00	16 38 10	1809.37	-25.39	8.72	343.29	113.70	17 8 19	1209.4	-21.96	1.24
110.00	6 3 37	4083.63	13.51	155.61	340.61	58.30	7 11 41	3483.6	9.22	149.14

DIFFERENTIAL CORRECTIONS
TDE .2552 TRA -.3251 TC3 2.1038 BAU .6102
RDE .0118 RRA .4269 RC3 3.1448 FAU .37991
FDE-1.1523 FRA-4.1133 FC-27.2661 BSP .9157
BDE .2555 BRA .5366 BC3 3.7836 FSP .5911

MID-COURSE EXECUTION ACCURACY
SGT 1613.9 SGR 2296.9 SG3 1747.5
RRT .7599 RRF -.9958 RTF -.7592
SGB 2807.3 R23 -.2065 R13 -.9742
SG1 2656.7 SG2 907.0 THA 57.68

ORBIT DETERMINATION ACCURACY
ST 453.3 SR 223.6 SS 896.8
CRT -.2310 CRS .8009 CST .3810
LSA 932.6 MSA 434.7 SSA 31.0
EL1 457.1 EL2 215.7 ALF 171.62

LAUNCH DATE DEC 8 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 542.946 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.037 GAL 3.10 AZL 91.36 HCA 164.61 SMA 186.95 ECC .21832 INC 1.3629 V1 30.236
RP 227.73 LAP -.36 LOP 240.56 VP 21.347 GAP -.57 AZP 88.69 TAL 17.44 TAP 182.05 RCA 146.14 APO 227.77 V2 24.152
RC 240.248 GL -13.00 GP 18.86 ZAL 54.88 ZAP 124.49 ETS 164.96 ZAE 154.81 ETE 127.59 ZAC 107.68 ETC 255.24 CLP 126.76

PLANETOCENTRIC CONIC

C3 12.180 VHL 3.490 DLA 5.26 RAL 128.74 RAD 6567.5 VEL 11.557 PTH 2.02 VHP 3.605 DPA 15.33 RAP 195.26 ECC 1.2005

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 8 20	2266.26	-20.79	44.78	343.70	109.67	14 46 6	1666.3	-17.92	37.28
90.00	3 28 48	4582.84	12.06	193.68	341.95	64.19	4 45 11	3982.8	8.49	186.82
100.00	15 32 9	1995.89	-21.70	24.53	343.33	111.08	16 5 25	1395.9	-18.64	17.08
100.00	4 47 39	4328.44	12.93	174.53	341.51	62.81	5 59 48	3728.4	9.19	167.74
110.00	16 46 5	1764.51	-24.13	5.85	342.21	114.98	17 15 29	1164.5	-20.56	358.52
110.00	5 50 13	4132.58	15.24	158.34	340.19	59.03	6 59 5	3532.6	11.02	151.78

DIFFERENTIAL CORRECTIONS

TDE .2694 TRA -.3486 TC3 1.8789 BAU .6343
RDE .0719 RRA .4928 RC3 3.4122 FAU .38584
FDE-1.5070 FRA-4.3476 FC-27.4242 BSP 9585
BDE .2788 BRA .6037 BC3 3.8953 FSP 6035

MID-COURSE EXECUTION ACCURACY

SGT 1498.6 SGR 2519.3 SG3 1778.9
RRT .7175 RRF -.9969 RTF -.7155
SGB 2931.3 R23 -.1666 R13 -.9828
SG1 2773.8 SG2 948.2 THA 63.56

ORBIT DETERMINATION ACCURACY

ST 476.3 SR 280.1 SS 1036.4
CRT .0972 CRS .9196 CST .4706
LSA 1093.2 MSA 428.5 SSA 25.7
EL1 477.4 EL2 278.1 ALF 4.96

LAUNCH DATE DEC 8 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 546.840 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.027 GAL 3.11 AZL 91.59 HCA 165.66 SMA 186.78 ECC .21765 INC 1.5938 V1 30.236
RP 227.34 LAP -.39 LOP 241.61 VP 21.378 GAP -.89 AZP 88.46 TAL 17.53 TAP 183.19 RCA 146.13 APO 227.44 V2 24.193
RC 242.030 GL -15.13 GP 20.42 ZAL 55.07 ZAP 122.54 ETS 164.79 ZAE 152.47 ETE 129.00 ZAC 109.05 ETC 255.14 CLP 125.03

PLANETOCENTRIC CONIC

C3 12.349 VHL 3.514 DLA 3.24 RAL 128.01 RAD 6567.5 VEL 11.564 PTH 2.02 VHP 3.582 DPA 17.01 RAP 195.36 ECC 1.2032

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 20 35	2206.10	-19.36	40.94	342.68	111.08	14 57 21	1606.1	-16.33	33.59
90.00	3 10 43	4648.86	13.99	197.57	341.59	65.13	4 28 12	4048.9	10.52	190.61
100.00	15 43 26	1938.84	-20.26	20.91	342.30	112.46	16 15 45	1338.8	-17.04	13.60
100.00	4 30 33	4391.34	14.86	178.21	341.16	63.76	5 43 44	3791.3	11.22	171.31
110.00	16 55 10	1714.37	-22.65	2.70	341.14	116.31	17 23 44	1114.4	-18.93	355.54
110.00	5 35 19	4188.58	17.18	161.53	339.87	59.98	6 45 7	3588.6	13.06	154.84

DIFFERENTIAL CORRECTIONS

TDE .2815 TRA -.3772 TC3 1.6388 BAU .6673
RDE .1482 RRA .5697 RC3 3.6946 FAU .38990
FDE-1.9139 FRA-4.5778 FC-27.3329 BSP 10145
BDE .3182 BRA .6833 BC3 4.0418 FSP 6121

MID-COURSE EXECUTION ACCURACY

SGT 1384.5 SGR 2768.9 SG3 1801.3
RRT .6596 RRF -.9977 RTF -.6566
SGB 3095.8 R23 -.1267 R13 -.9896
SG1 2936.1 SG2 981.3 THA 69.33

ORBIT DETERMINATION ACCURACY

ST 496.0 SR 377.3 SS 1202.6
CRT .3313 CRS .9718 CST .5384
LSA 1287.0 MSA 421.6 SSA 21.1
EL1 524.4 EL2 336.7 ALF 25.05

LAUNCH DATE DEC 8 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 550.746 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.018 GAL 3.11 AZL 91.86 HCA 166.71 SMA 186.62 ECC .21703 INC 1.8611 V1 30.236
RP 226.95 LAP -.43 LOP 242.66 VP 21.411 GAP -1.20 AZP 88.19 TAL 17.61 TAP 184.32 RCA 146.12 APO 227.13 V2 24.235
RC 243.792 GL -17.56 GP 22.18 ZAL 55.39 ZAP 120.52 ETS 164.63 ZAE 149.95 ETE 130.11 ZAC 110.61 ETC 255.02 CLP 123.26

PLANETOCENTRIC CONIC

C3 12.591 VHL 3.548 DLA .94 RAL 127.23 RAD 6567.5 VEL 11.575 PTH 2.02 VHP 3.571 DPA 18.89 RAP 195.54 ECC 1.2072

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 34 36	2138.56	-17.65	36.73	341.69	112.51	15 10 15	1538.6	-14.45	29.51
90.00	2 50 26	4724.63	16.11	202.13	341.37	66.39	4 9 10	4124.6	12.78	195.03
100.00	15 56 23	1874.78	-18.54	16.93	341.29	113.88	16 27 38	1274.8	-15.16	9.77
100.00	4 11 20	4463.65	16.99	182.52	340.96	65.03	5 25 44	3863.6	13.48	175.48
110.00	17 5 38	1658.05	-20.91	359.26	340.08	117.68	17 33 16	1058.0	-17.04	352.27
110.00	5 18 35	4252.92	19.33	165.29	339.71	61.25	6 29 28	3652.9	15.35	158.44

DIFFERENTIAL CORRECTIONS

TDE .2915 TRA -.4100 TC3 1.3872 BAU .7105
RDE .2456 RRA .6608 RC3 3.9867 FAU .39149
FDE-2.3736 FRA-4.8030 FC-26.9186 BSP 10852
BDE .3812 BRA .7777 BC3 4.2212 FSP 6159

MID-COURSE EXECUTION ACCURACY

SGT 1276.3 SGR 3049.7 SG3 1811.9
RRT .5820 RRF -.9983 RTF -.5782
SGB 3306.1 R23 -.0902 R13 -.9942
SG1 3149.6 SG2 1005.0 THA 74.72

ORBIT DETERMINATION ACCURACY

ST 511.7 SR 516.7 SS 1394.8
CRT .4750 CRS .9906 CST .5874
LSA 1517.1 MSA 415.2 SSA 17.2
EL1 624.6 EL2 372.6 ALF 45.59

LAUNCH DATE DEC 8 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 554.661 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.010 GAL 3.12 AZL 92.17 HCA 167.76 SMA 186.48 ECC .21644 INC 2.1739 V1 30.236
RP 226.56 LAP -.46 LOP 243.71 VP 21.445 GAP -1.50 AZP 87.88 TAL 17.67 TAP 185.43 RCA 146.12 APO 226.84 V2 24.277
RC 245.534 GL -20.35 GP 24.17 ZAL 55.89 ZAP 118.42 ETS 164.47 ZAE 147.25 ETE 130.96 ZAC 112.38 ETC 254.86 CLP 121.44

PLANETOCENTRIC CONIC

C3 12.934 VHL 3.596 DLA -1.72 RAL 126.37 RAD 6567.5 VEL 11.590 PTH 2.03 VHP 3.576 DPA 20.98 RAP 195.81 ECC 1.2129

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 49	2062.15	-15.60	32.05	340.77	113.93	15 25 11	1462.1	-12.24	24.99
90.00	2 27 20	4812.60	18.43	207.54	341.37	68.11	3 47 33	4212.6	15.29	200.27
100.00	16 11 22	1802.33	-16.49	12.53	340.35	115.29	16 41 24	1202.3	-12.95	5.53
100.00	3 49 29	4547.64	19.33	187.66	340.97	66.74	5 5 16	3947.6	16.01	180.44
110.00	17 17 47	1594.44	-18.85	355.47	339.07	119.06	17 44 21	994.4	-14.83	348.66
110.00	4 59 33	4328.30	21.73	169.81	339.77	62.94	6 11 42	3728.3	17.93	162.74

DIFFERENTIAL CORRECTIONS

TDE .2962 TRA -.4497 TC3 1.1209 BAU .7654
RDE .3720 RRA .7703 RC3 4.2817 FAU .39014
FDE-2.8897 FRA-5.0189 FC-26.1129 BSP 11719
BDE .4755 BRA .8920 BC3 4.4260 FSP 6129

MID-COURSE EXECUTION ACCURACY

SGT 1177.4 SGR 3368.0 SG3 1808.2
RRT .4748 RRF -.9987 RTF -.4701
SGB 3567.9 R23 -.0591 R13 -.9970
SG1 3418.7 SG2 1020.9 THA 79.64

ORBIT DETERMINATION ACCURACY

ST 519.1 SR 703.8 SS 1613.4
CRT .5547 CRS .9969 CST .6161
LSA 1789.0 MSA 408.8 SSA 13.9
EL1 783.9 EL2 387.8 ALF 59.57

LAUNCH DATE DEC 8 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 558.586 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.002 GAL 3.12 AZL 92.55 HCA 168.82 SMA 186.34 ECC .21589 INC 2.5470 V1 30.236
RP 226.17 LAP -.49 LOP 244.77 VP 21.480 GAP -1.79 AZP 87.50 TAL 17.72 TAP 186.54 RCA 146.11 APO 226.57 V2 24.318
RC 247.256 GL -23.56 GP 26.44 ZAL 56.59 ZAP 116.23 ETS 164.34 ZAE 144.34 ETE 131.57 ZAC 114.41 ETC 254.65 CLP 119.58

PLANETOCENTRIC CONIC

C3 13.427 VHL 3.664 DLA -4.78 RAL 125.40 RAD 6567.5 VEL 11.611 PTH 2.03 VHP 3.600 DPA 23.34 RAP 196.22 ECC 1.2210

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 51	1974.81	-13.12	26.84	339.96	115.32	15 42 46	1374.8	-9.60	19.93
90.00	2 0 35	4916.10	20.92	214.11	341.66	70.47	3 22 31	4316.1	18.07	206.60
100.00	16 28 57	1719.66	-14.02	7.63	339.51	116.67	16 57 37	1119.7	-10.33	.78
100.00	3 24 11	4646.48	21.86	193.91	341.29	69.09	4 41 37	4046.5	18.82	186.43
110.00	17 32 2	1522.14	-16.41	351.29	338.17	120.42	17 57 25	922.1	-12.25	344.66
110.00	4 37 34	4416.76	24.36	175.32	340.14	65.25	5 51 11	3816.8	20.82	167.97

DIFFERENTIAL CORRECTIONS
TDE .2973 TRA -.4946 TC3 .8488 BAU .8317
RDE .5352 RRA .9013 RC3 4.5548 FAU .38407
FDE-3.4458 FRA-5.2024 FC-24.7643 BSP 12814
BDE .6123 BRA 1.0281 BC3 4.6332 FSP 6050

MID-COURSE EXECUTION ACCURACY
SGT 1097.9 SGR 3720.6 SG3 1781.3
RRT .3349 RRF -.9991 RTF -.3296
SGB 3879.2 R23 -.0348 R13 -.9985
SG1 3740.2 SG2 1029.1 THA 83.89

ORBIT DETERMINATION ACCURACY
ST 520.3 SR 943.6 SS 1848.5
CRT .5951 CRS .9990 CST .6290
LSA 2101.1 MSA 403.9 SSA 11.2
EL1 1003.2 EL2 393.3 ALF 68.34

LAUNCH DATE DEC 8 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 562.519 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 32.994 GAL 3.12 AZL 93.00 HCA 169.87 SMA 186.22 ECC .21538 INC 2.9973 V1 30.236
RP 225.78 LAP -.53 LOP 245.83 VP 21.516 GAP -2.08 AZP 87.05 TAL 17.75 TAP 187.63 RCA 146.11 APO 226.32 V2 24.360
RC 248.959 GL -27.27 GP 29.03 ZAL 57.57 ZAP 113.95 ETS 164.23 ZAE 141.18 ETE 131.99 ZAC 116.75 ETC 254.38 CLP 117.67

PLANETOCENTRIC CONIC

C3 14.142 VHL 3.761 DLA -8.33 RAL 124.29 RAD 6567.6 VEL 11.642 PTH 2.04 VHP 3.649 DPA 25.99 RAP 196.79 ECC 1.2327

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 32 44	1873.53	-10.10	20.94	339.37	116.59	16 3 57	1273.5	-6.45	14.16
90.00	1 28 52	5040.09	23.52	222.27	342.39	73.76	2 52 52	4440.1	21.07	214.45
100.00	16 50 2	1624.13	-11.03	2.11	338.88	117.96	17 17 6	1024.1	-7.21	355.41
100.00	2 54 15	4764.73	24.52	201.68	342.06	72.35	4 13 40	4164.7	21.88	193.88
110.00	17 49 5	1439.26	-13.49	346.64	337.43	121.71	18 13 4	839.3	-9.20	340.17
110.00	4 11 42	4522.36	27.19	182.22	341.00	68.44	5 27 4	3922.4	24.02	174.49

DIFFERENTIAL CORRECTIONS
TDE .2809 TRA -.5586 TC3 .5441 BAU .9085
RDE .7458 RRA 1.0569 RC3 4.7744 FAU .37183
FDE-4.0148 FRA-5.3245 FC-22.7628 BSP 14242
BDE .7969 BRA 1.1955 BC3 4.8053 FSP 5924

MID-COURSE EXECUTION ACCURACY
SGT 1044.3 SGR 4102.9 SG3 1723.1
RRT .1297 RRF -.9993 RTF -.1234
SGB 4233.7 R23 -.0151 R13 -.9992
SG1 4105.3 SG2 1034.8 THA 87.98

ORBIT DETERMINATION ACCURACY
ST 499.9 SR 1241.4 SS 2084.9
CRT .5827 CRS .9997 CST .6018
LSA 2445.1 MSA 398.8 SSA 9.0
EL1 1278.8 EL2 394.4 ALF 75.37

LAUNCH DATE DEC 8 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 566.464 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 32.988 GAL 3.12 AZL 93.55 HCA 170.94 SMA 186.10 ECC .21490 INC 3.5543 V1 30.236
RP 225.38 LAP -.56 LOP 246.90 VP 21.553 GAP -2.36 AZP 86.49 TAL 17.77 TAP 188.70 RCA 146.11 APO 226.09 V2 24.402
RC 250.643 GL -31.59 GP 32.01 ZAL 58.89 ZAP 111.57 ETS 164.17 ZAE 137.75 ETE 132.25 ZAC 119.44 ETC 254.02 CLP 115.70

PLANETOCENTRIC CONIC

C3 15.205 VHL 3.899 DLA -12.46 RAL 122.98 RAD 6567.6 VEL 11.687 PTH 2.06 VHP 3.734 DPA 28.98 RAP 197.60 ECC 1.2502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 1 8	1753.64	-6.38	14.10	339.15	117.65	16 30 22	1153.6	-2.62	7.43
90.00	0 50 1	5192.22	26.02	232.71	343.72	78.41	2 16 33	4592.2	24.16	224.53
100.00	17 16 5	1511.84	-7.38	355.77	338.60	119.05	17 41 17	911.8	-3.45	349.19
100.00	2 17 46	4909.25	27.14	211.62	343.45	76.95	3 39 35	4309.3	25.07	203.43
110.00	18 9 54	1343.31	-10.00	341.40	337.01	122.86	18 32 17	743.3	-5.60	335.07
110.00	3 40 26	4650.55	30.09	191.07	342.55	72.95	4 57 57	4050.6	27.46	182.87

DIFFERENTIAL CORRECTIONS
TDE .2686 TRA -.6197 TC3 .2858 BAU 1.0078
RDE 1.0400 RRA 1.2643 RC3 4.9494 FAU .35564
FDE-4.6464 FRA-5.4432 FC-20.2500 BSP 15575
BDE 1.0741 BRA 1.4080 BC3 4.9577 FSP 5573

MID-COURSE EXECUTION ACCURACY
SGT 1036.8 SGR 4566.5 SG3 1646.4
RRT -.0657 RRF -.9995 RTF .0721
SGB 4682.8 R23 -.0029 R13 -.9995
SG1 4567.1 SG2 1034.5 THA 90.90

ORBIT DETERMINATION ACCURACY
ST 483.8 SR 1635.4 SS 2345.8
CRT .5614 CRS .9999 CST .5714
LSA 2873.0 MSA 396.6 SSA 7.1
EL1 1659.1 EL2 394.6 ALF 80.00

LAUNCH DATE DEC 8 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 570.417 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 32.982 GAL 3.11 AZL 94.26 HCA 172.00 SMA 186.00 ECC .21445 INC 4.2606 V1 30.236
RP 224.99 LAP -.59 LOP 247.97 VP 21.592 GAP -2.64 AZP 85.78 TAL 17.77 TAP 189.77 RCA 146.11 APO 225.88 V2 24.444
RC 252.307 GL -36.61 GP 35.44 ZAL 60.64 ZAP 109.09 ETS 164.18 ZAE 134.00 ETE 132.40 ZAC 122.56 ETC 253.53 CLP 113.67

PLANETOCENTRIC CONIC

C3 16.832 VHL 4.103 DLA -17.25 RAL 121.39 RAD 6567.7 VEL 11.756 PTH 2.08 VHP 3.870 DPA 32.37 RAP 198.72 ECC 1.2770

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 38 38	1605.63	-1.64	5.80	339.63	118.27	17 5 23	1005.6	2.15	359.17
90.00	23 55 55	5386.42	27.92	246.58	345.84	85.10	25 25 42	4786.4	26.95	238.05
100.00	17 50 1	1375.27	-2.81	348.21	338.98	119.77	18 12 57	775.3	1.18	341.69
100.00	1 31 9	5092.02	29.25	224.78	345.69	83.56	2 56 1	4492.0	28.05	216.18
110.00	18 36 22	1230.06	-5.76	335.37	337.15	123.75	18 56 52	630.1	-1.29	329.14
110.00	3 1 17	4810.00	32.69	202.76	345.08	79.41	4 21 27	4210.0	30.89	194.01

DIFFERENTIAL CORRECTIONS
TDE .2400 TRA -.6991 TC3 .0342 BAU 1.1210
RDE 1.4311 RRA 1.5221 RC3 4.9815 FAU .33034
FDE-5.2131 FRA-5.4493 FC-16.9908 BSP 17284
BDE 1.4511 BRA 1.6750 BC3 4.9816 FSP 5147

MID-COURSE EXECUTION ACCURACY
SGT 1076.3 SGR 5065.2 SG3 1523.4
RRT -.2735 RRF -.9996 RTF .2802
SGB 5178.3 R23 .0054 R13 -.9996
SG1 5074.1 SG2 1033.4 THA 93.47

ORBIT DETERMINATION ACCURACY
ST 454.3 SR 2110.8 SS 2565.7
CRT .4850 CRS 1.0000 CST .4896
LSA 3329.9 MSA 395.8 SSA 5.6
EL1 2122.7 EL2 395.1 ALF 83.83

LAUNCH DATE DEC 8 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 574.377 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 32.976 GAL 3.10 AZL 95.19 HCA 173.07 SMA 185.90 ECC .21403 INC 5.1852 V1 30.236
RP 224.60 LAP -.63 LOP 249.04 VP 21.631 GAP -2.91 AZP 84.85 TAL 17.76 TAP 190.83 RCA 146.11 APO 225.69 V2 24.485
RC 253.951 GL -42.46 GP 39.39 ZAL 62.91 ZAP 106.49 ETS 164.32 ZAE 129.89 ETE 132.49 ZAC 126.15 ETC 252.85 CLP 111.55

PLANETOCENTRIC CONIC

C3 19.431 VHL 4.408 DLA -22.80 RAL 119.39 RAD 6567.8 VEL 11.866 PTH 2.11 VHP 4.083 DPA 36.20 RAP 200.28 ECC 1.3198

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 52	1402.69	4.89	354.46	341.54	117.93	17 58 15	802.7	8.59	347.73
90.00	22 43 44	5656.40	27.92	266.28	348.57	94.94	24 18 0	5056.4	28.31	257.64
100.00	18 39 7	1195.29	3.29	338.33	340.66	119.73	18 59 3	595.3	7.22	331.75
100.00	0 26 6	5339.03	29.74	243.08	348.71	93.15	1 55 5	4739.0	29.86	234.28
110.00	19 12 26	1090.84	-.46	328.08	338.32	124.18	19 30 37	490.8	4.03	321.87
110.00	2 9 16	5016.24	34.16	218.65	348.80	88.68	3 32 52	4416.2	33.60	209.45

DIFFERENTIAL CORRECTIONS
TDE .1939 TRA -.7996 TC3 -.1837 BAU 1.2546
RDE 1.9693 RRA 1.8614 RC3 4.8263 FAU .29590
FDE-5.6603 FRA-5.3323 FC-13.1837 BSP 19163
BDE 1.9789 BRA 2.0259 BC3 4.8298 FSP 4553

MID-COURSE EXECUTION ACCURACY
SGT 1166.6 SGR 5616.5 SG3 1354.4
RRT -.4583 RRF -.9997 RTF .4650
SGB 5736.4 R23 .0103 R13 -.9997
SG1 5642.8 SG2 1032.1 THA 95.63

ORBIT DETERMINATION ACCURACY
ST 421.9 SR 2681.2 SS 2717.2
CRT .3345 CRS 1.0000 CST .3354
LSA 3819.9 MSA 397.2 SSA 4.4
EL1 2685.0 EL2 397.0 ALF 86.92

LAUNCH DATE DEC 8 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 578.343 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 32.971 GAL 3.10 AZL 96.45 HCA 174.13 SMA 185.82 ECC .21364 INC 6.4488 V1 30.236
RP 224.21 LAP -.66 LOP 250.12 VP 21.670 GAP -3.18 AZP 83.58 TAL 17.74 TAP 191.87 RCA 146.12 APO 225.52 V2 24.527
RC 255.576 GL -49.24 GP 43.91 ZAL 65.79 ZAP 103.78 ETS 164.64 ZAE 125.39 ETE 132.62 ZAC 130.26 ETC 251.91 CLP 109.31

PLANETOCENTRIC CONIC

C3 23.832 VHL 4.882 DLA -29.18 RAL 116.77 RAD 6568.0 VEL 12.050 PTH 2.15 VHP 4.420 DPA 40.48 RAP 202.41 ECC 1.3922

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.64	18 58 1	1131.32	19.12	341.59	348.39	112.48	19 16 52	531.3	22.00	334.04
97.36	20 59 39	738.12	19.13	312.75	348.39	112.46	21 11 57	138.1	22.01	305.19
100.00	20 25 25	848.00	14.54	318.70	346.22	116.41	20 39 33	248.0	17.97	311.59
100.00	22 14 56	5784.72	23.83	274.68	350.28	108.60	23 51 21	5184.7	26.15	266.65
110.00	20 10 2	896.42	6.94	317.89	341.76	123.56	20 24 58	296.4	11.30	311.52
110.00	0 50 45	5309.06	32.30	241.21	352.89	101.85	2 19 14	4709.1	33.60	232.21

DIFFERENTIAL CORRECTIONS
TDE .1245 TRA -.9337 TC3 -.3483 BAU 1.4096
RDE 2.7112 RRA 2.3128 RC3 4.4104 FAU .25058
FDE-5.8325 FRA-5.0128 FC3-9.1026 BSP 21427
BDE 2.7140 BRA 2.4941 BC3 4.4241 FSP 3828

MID-COURSE EXECUTION ACCURACY
SGT 1308.6 SGR 6191.4 SG3 1130.7
RRT -.6050 RRF -.9997 RTF .6120
SGB 6328.2 R23 .0128 R13 -.9997
SG1 6243.3 SG2 1033.3 THA 97.49

ORBIT DETERMINATION ACCURACY
ST 404.0 SR 3318.4 SS 2727.4
CRT .0839 CRS 1.0000 CST .0819
LSA 4295.5 MSA 402.6 SSA 3.5
EL1 3318.6 EL2 402.6 ALF 89.41

LAUNCH DATE DEC 8 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 582.312 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 32.967 GAL 3.09 AZL 98.28 HCA 175.20 SMA 185.74 ECC .21328 INC 8.2770 V1 30.236
RP 223.82 LAP -.69 LOP 251.20 VP 21.711 GAP -3.44 AZP 81.75 TAL 17.71 TAP 192.91 RCA 146.13 APO 225.36 V2 24.569
RC 257.180 GL -57.01 GP 48.99 ZAL 69.31 ZAP 100.99 ETS 165.27 ZAE 120.52 ETE 132.94 ZAC 134.84 ETC 250.58 CLP 106.90

PLANETOCENTRIC CONIC

C3 31.930 VHL 5.651 DLA -36.38 RAL 113.12 RAD 6568.3 VEL 12.382 PTH 2.24 VHP 4.970 DPA 45.18 RAP 205.31 ECC 1.5255

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.14	16 52 42	1549.64	21.04	14.51	351.63	120.39	17 18 31	949.6	24.91	7.32
113.86	22 35 53	5753.35	21.05	270.92	351.64	120.38	24 11 46	5153.4	24.92	263.73
66.14	16 52 42	1549.64	21.04	14.51	351.63	120.39	17 18 31	949.6	24.91	7.32
113.86	22 35 53	5753.35	21.05	270.92	351.64	120.38	24 11 46	5153.4	24.92	263.73
66.14	16 52 42	1549.64	21.04	14.51	351.63	120.39	17 18 31	949.6	24.91	7.32
113.86	22 35 53	5753.35	21.05	270.92	351.64	120.38	24 11 46	5153.4	24.92	263.73

DIFFERENTIAL CORRECTIONS
TDE .0233 TRA-1.1258 TC3 -.4453 BAU 1.6219
RDE 3.7983 RRA 2.9962 RC3 3.7732 FAU .19840
FDE-5.6113 FRA-4.5052 FC3-5.3794 BSP 22889
BDE 3.7984 BRA 3.2007 BC3 3.7994 FSP 2808

MID-COURSE EXECUTION ACCURACY
SGT 1504.7 SGR 6874.3 SG3 870.6
RRT -.7159 RRF -.9997 RTF .7235
SGB 7037.0 R23 .0127 R13 -.9997
SG1 6960.1 SG2 1037.7 THA 99.11

ORBIT DETERMINATION ACCURACY
ST 426.3 SR 4016.4 SS 2551.6
CRT -.2291 CRS 1.0000 CST -.2338
LSA 4759.4 MSA 414.9 SSA 2.8
EL1 4017.6 EL2 414.8 ALF 91.41

LAUNCH DATE DEC 8 1964 FLIGHT TIME 284.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 622.955 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 32.947 GAL 2.78 AZL 80.86 HCA 186.34 SMA 185.40 ECC .21063 INC 9.1450 V1 30.236
RP 220.00 LAP -1.01 LOP 262.20 VP 22.151 GAP -5.70 AZP 99.09 TAL 16.11 TAP 202.45 RCA 146.35 APO 224.45 V2 24.986
RC 272.134 GL 61.01 GP -43.55 ZAL 72.27 ZAP 89.53 ETS 178.22 ZAE 113.75 ETE 202.03 ZAC 43.62 ETC 251.16 CLP 89.35

PLANETOCENTRIC CONIC

C3 35.754 VHL 5.979 DLA 73.03 RAL 178.62 RAD 6568.4 VEL 12.535 PTH 2.27 VHP 4.196 DPA -34.45 RAP 152.81 ECC 1.5884

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
13.21	9 44 7	4393.43	-46.51	242.24	123.81	17.00	10 57 21	3793.4	-54.10	238.68
13.21	3 23 34	4759.75	-22.36	248.37	36.07	12.57	4 42 54	4159.8	-30.15	246.78
19.37	6 46 19	4565.24	-33.57	239.23	76.94	20.51	8 2 24	3965.2	-41.01	235.94
160.63	17 28 43	2794.82	-33.56	85.56	76.92	20.51	18 15 18	2194.8	-41.00	82.28
19.37	6 46 19	4565.24	-33.57	239.23	76.94	20.51	8 2 24	3965.2	-41.01	235.94
160.63	17 28 43	2794.82	-33.56	85.56	76.92	20.51	18 15 18	2194.8	-41.00	82.28

DIFFERENTIAL CORRECTIONS
TDE 4.0909 TRA .2470 TC3-1.7999 BAU 1.7113
RDE 4.6067 RRA .8135 RC3-3.0949 FAU .29627
FDE10.0833 FRA 1.7854 FC3-7.1739 BSP 26262
BDE 6.1610 BRA .8502 BC3 3.5802 FSP 4327

MID-COURSE EXECUTION ACCURACY
SGT 4544.9 SGR 6349.3 SG3 1225.8
RRT .9507 RRF .9996 RTF .9474
SGB 7808.3 R23 .1145 R13 .9931
SG1 7721.9 SG2 1158.7 THA 54.86

ORBIT DETERMINATION ACCURACY
ST 3928.0 SR 4487.7 SS 3561.3
CRT .9931 CRS-1.0000 CST -.9930
LSA 6935.8 MSA 382.1 SSA 4.0
EL1 5953.8 EL2 348.0 ALF 48.83

LAUNCH DATE DEC 8 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 627.036 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.947	GAL	2.75	AZL	81.99	HCA	187.45	SMA	185.40	ECC	.21049	INC	8.0101
RP	219.62	LAP	-1.04	LOP	263.33	VP	22.197	GAP	-5.91	AZP	97.94	TAL	15.90	TAP	203.35	RCA	146.37	APO	224.42
RC	273.529	GL	57.14	GP	-39.46	ZAL	70.75	ZAP	88.07	ETS	177.19	ZAE	113.80	ETE	198.84	ZAC	47.38	ETC	252.46

V1 30.236 V2 25.027 CLP 87.50

PLANETOCENTRIC CONIC

C3 29.806 VHL 5.459 DLA 69.97 RAL 170.72 RAD 6568.2 VEL 12.296 PTH 2.21 VHP 3.879 DPA -30.61 RAP 154.61 ECC 1.4905

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
22.90	6 22 14	4510.72	-35.74	234.07	65.52	24.96	7 37 24	3910.7	-42.91	229.89
157.10	16 49 47	2757.69	-35.73	84.06	65.50	24.96	17 35 44	2157.7	-42.90	79.88
22.90	6 22 14	4510.72	-35.74	234.07	65.52	24.96	7 37 24	3910.7	-42.91	229.89
157.10	16 49 47	2757.69	-35.73	84.06	65.50	24.96	17 35 44	2157.7	-42.90	79.88
22.90	6 22 14	4510.72	-35.74	234.07	65.52	24.96	7 37 24	3910.7	-42.91	229.89
157.10	16 49 47	2757.69	-35.73	84.06	65.50	24.96	17 35 44	2157.7	-42.90	79.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.9100	TRA	.1045	TC3	-2.2464	BAU	1.5997	SGT	4791.4	SGR	5842.3	SG3	1464.9	ST	4105.3	SR	4246.9	SS	4038.0
RDE	4.0130	RRA	.5838	RC3	-3.3271	FAU	.34435	RRT	.9561	RRF	.9996	RTF	.9532	CRT	.9946	CRS	-1.0000	CST	-.9947
FDE	11.3849	FRA	1.6461	FC	-10.0018	BSP	25266	SGB	7559.8	R23	.1271	R13	.9915	LSA	7146.6	MSA	347.1	SSA	4.7
BDE	5.6029	BRA	.5930	BC3	4.0144	FSP	5152	SG1	7475.8	SG2	1096.9	THA	50.90	EL1	5898.8	EL2	305.6	ALF	45.98

LAUNCH DATE DEC 8 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 631.129 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.947	GAL	2.71	AZL	82.83	HCA	188.57	SMA	185.40	ECC	.21037	INC	7.1663
RP	219.25	LAP	-1.07	LOP	264.45	VP	22.244	GAP	-6.10	AZP	97.09	TAL	15.68	TAP	204.25	RCA	146.40	APO	224.41
RC	274.906	GL	53.83	GP	-35.87	ZAL	69.55	ZAP	86.47	ETS	176.30	ZAE	113.35	ETE	195.94	ZAC	50.67	ETC	253.43

V1 30.236 V2 25.067 CLP 85.65

PLANETOCENTRIC CONIC

C3 25.865 VHL 5.086 DLA 67.14 RAL 165.73 RAD 6568.0 VEL 12.134 PTH 2.17 VHP 3.667 DPA -27.17 RAP 155.93 ECC 1.4257

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
26.18	6 9 30	4465.75	-37.06	229.11	57.18	29.13	7 23 56	3865.7	-43.93	224.13
153.82	16 22 43	2732.04	-37.05	82.61	57.16	29.13	17 8 15	2132.0	-43.93	77.63
26.18	6 9 30	4465.75	-37.06	229.11	57.18	29.13	7 23 56	3865.7	-43.93	224.13
153.82	16 22 43	2732.04	-37.05	82.61	57.16	29.13	17 8 15	2132.0	-43.93	77.63
26.18	6 9 30	4465.75	-37.06	229.11	57.18	29.13	7 23 56	3865.7	-43.93	224.13
153.82	16 22 43	2732.04	-37.05	82.61	57.16	29.13	17 8 15	2132.0	-43.93	77.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.7292	TRA	-.0087	TC3	-2.7224	BAU	1.5242	SGT	5031.8	SGR	5374.2	SG3	1663.3	ST	4202.1	SR	3884.9	SS	4293.6
RDE	3.4316	RRA	.4227	RC3	-3.4667	FAU	.38415	RRT	-.9605	RRF	.9995	RTF	.9577	CRT	.9953	CRS	-1.0000	CST	-.9955
FDE	11.9724	FRA	1.4484	FC	-12.8579	BSP	24363	SGB	7362.2	R23	.1393	R13	.9898	LSA	7146.9	MSA	326.6	SSA	5.4
BDE	5.0678	BRA	.4228	BC3	4.4078	FSP	5794	SG1	7289.5	SG2	1031.7	THA	46.96	EL1	5716.1	EL2	276.3	ALF	42.74

LAUNCH DATE DEC 8 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 635.233 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.948	GAL	2.66	AZL	83.48	HCA	189.70	SMA	185.42	ECC	.21027	INC	6.5149
RP	218.89	LAP	-1.10	LOP	265.58	VP	22.291	GAP	-6.29	AZP	96.42	TAL	15.44	TAP	205.13	RCA	146.43	APO	224.40
RC	276.266	GL	50.99	GP	-32.75	ZAL	68.61	ZAP	84.79	ETS	175.55	ZAE	112.52	ETE	193.38	ZAC	53.53	ETC	254.17

V1 30.236 V2 25.108 CLP 83.80

PLANETOCENTRIC CONIC

C3 23.094 VHL 4.806 DLA 64.59 RAL 162.40 RAD 6567.9 VEL 12.020 PTH 2.15 VHP 3.521 DPA -24.11 RAP 156.91 ECC 1.3801

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
29.17	6 3 1	4427.68	-37.81	224.50	50.78	32.89	7 16 49	3827.7	-44.38	218.85
150.83	16 2 38	2714.45	-37.80	81.32	50.77	32.89	16 47 53	2114.4	-44.37	75.67
29.17	6 3 1	4427.68	-37.81	224.50	50.78	32.89	7 16 49	3827.7	-44.38	218.85
150.83	16 2 38	2714.45	-37.80	81.32	50.77	32.89	16 47 53	2114.4	-44.37	75.67
29.17	6 3 1	4427.68	-37.81	224.50	50.78	32.89	7 16 49	3827.7	-44.38	218.85
150.83	16 2 38	2714.45	-37.80	81.32	50.77	32.89	16 47 53	2114.4	-44.37	75.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.5942	TRA	-.0880	TC3	-3.1985	BAU	1.4657	SGT	5279.6	SGR	4949.9	SG3	1823.6	ST	4286.9	SR	3523.7	SS	4429.4
RDE	2.9457	RRA	.3219	RC3	-3.5078	FAU	.41351	RRT	.9641	RRF	.9994	RTF	.9614	CRT	.9956	CRS	-1.0000	CST	-.9958
FDE	12.1743	FRA	1.2882	FC	-15.5012	BSP	24081	SGB	7237.1	R23	.1507	R13	.9880	LSA	7093.2	MSA	315.2	SSA	6.1
BDE	4.6471	BRA	.3337	BC3	4.7471	FSP	6381	SG1	7172.1	SG2	967.2	THA	43.09	EL1	5543.4	EL2	254.8	ALF	39.40

LAUNCH DATE DEC 8 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 639.348 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.949	GAL	2.62	AZL	84.00	HCA	190.83	SMA	185.43	ECC	.21018	INC	5.9962
RP	218.52	LAP	-1.12	LOP	266.72	VP	22.338	GAP	-6.48	AZP	95.89	TAL	15.18	TAP	206.00	RCA	146.46	APO	224.41
RC	277.609	GL	48.54	GP	-30.03	ZAL	67.89	ZAP	83.06	ETS	174.93	ZAE	111.40	ETE	191.14	ZAC	56.02	ETC	254.74

V1 30.236 V2 25.148 CLP 81.97

PLANETOCENTRIC CONIC

C3 21.054 VHL 4.588 DLA 62.30 RAL 160.10 RAD 6567.9 VEL 11.935 PTH 2.12 VHP 3.419 DPA -21.41 RAP 157.63 ECC 1.3465

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
31.87	6 0 12	4394.78	-38.17	220.29	45.74	36.24	7 13 27	3794.8	-44.44	214.09
148.13	15 47 4	2702.58	-38.16	80.23	45.72	36.24	16 32 6	2102.6	-44.44	74.03
31.87	6 0 12	4394.78	-38.17	220.29	45.74	36.24	7 13 27	3794.8	-44.44	214.09
148.13	15 47 4	2702.58	-38.16	80.23	45.72	36.24	16 32 6	2102.6	-44.44	74.03
31.87	6 0 12	4394.78	-38.17	220.29	45.74	36.24	7 13 27	3794.8	-44.44	214.09
148.13	15 47 4	2702.58	-38.16	80.23	45.72	36.24	16 32 6	2102.6	-44.44	74.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.4862	TRA	-.1548	TC3	-3.6887	BAU	1.4317	SGT	5530.1	SGR	4562.3	SG3	1948.6	ST	4356.2	SR	3177.5	SS	4468.3
RDE	2.5385	RRA	.2461	RC3	-3.5022	FAU	.43700	RRT	.9672	RRF	.9992	RTF	.9644	CRT	.9958	CRS	-1.0000	CST	-.9961
FDE	12.0863	FRA	1.1119	FC	-17.9694	BSP	23809	SGB	7169.1	R23	.1608	R13	.9863	LSA	6996.1	MSA	304.9	SSA	6.9
BDE	4.3125	BRA	.2907	BC3	5.0865	FSP	6778	SG1	7112.4	SG2	900.4	THA	39.34	EL1	5386.8	EL2	234.5	ALF	36.07

LAUNCH DATE DEC 8 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 643.472 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 32.950 GAL 2.57 AZL 84.43 HCA 191.96 SMA 185.46 ECC .21010 INC 5.5732 V1 30.236
RP 218.16 LAP -1.15 LOP 267.85 VP 22.385 GAP -6.66 AZP 95.45 TAL 14.90 TAP 206.87 RCA 146.49 APO 224.42 V2 25.188
RC 278.933 GL 46.39 GP -27.65 ZAL 67.35 ZAP 81.30 ETS 174.41 ZAE 110.09 ETE 189.20 ZAC 58.19 ETC 255.20 CLP 80.17

PLANETOCENTRIC CONIC

C3 19.494 VHL 4.415 DLA 60.25 RAL 158.47 RAD 6567.8 VEL 11.869 PTH 2.11 VHP 3.348 DPA -19.01 RAP 158.16 ECC 1.3208

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.31	5 59 44	4365.77	-38.27	216.47	41.68	39.20	7 12 30	3765.8	-44.27	209.83
145.69	15 34 35	2694.86	-38.26	79.34	41.67	39.20	16 19 30	2094.9	-44.26	72.70
34.31	5 59 44	4365.77	-38.27	216.47	41.68	39.20	7 12 30	3765.8	-44.27	209.83
145.69	15 34 35	2694.86	-38.26	79.34	41.67	39.20	16 19 30	2094.9	-44.26	72.70
34.31	5 59 44	4365.77	-38.27	216.47	41.68	39.20	7 12 30	3765.8	-44.27	209.83
145.69	15 34 35	2694.86	-38.26	79.34	41.67	39.20	16 19 30	2094.9	-44.26	72.70

DIFFERENTIAL CORRECTIONS
TDE 3.4087 TRA -.2049 TC3-4.1784 BAU 1.4107
RDE 2.2109 RRA .1992 RC3-3.4413 FAU .45278
FDE11.8708 FRA .9926 FC-20.1079 BSP 23926
BDE 4.0629 BRA .2858 BC3 5.4130 FSP 7144

MID-COURSE EXECUTION ACCURACY
SGT 5785.1 SGR 4211.5 SG3 2043.4
RRT .9696 RRF .9990 RTF .9667
SGB 7155.7 R23 .1692 R13 .9846
SG1 7106.4 SG2 838.7 THA 35.79

ORBIT DETERMINATION ACCURACY
ST 4427.7 SR 2874.7 SS 4464.4
CRT .9959 CRS-1.0000 CST -.9962
LSA 6907.2 MSA 300.5 SSA 7.7
EL1 5274.5 EL2 219.2 ALF 32.95

LAUNCH DATE DEC 8 1964 FLIGHT TIME 296.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 647.606 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 32.952 GAL 2.52 AZL 84.78 HCA 193.10 SMA 185.48 ECC .21004 INC 5.2217 V1 30.236
RP 217.80 LAP -1.18 LOP 268.99 VP 22.432 GAP -6.84 AZP 95.09 TAL 14.62 TAP 207.72 RCA 146.53 APO 224.44 V2 25.228
RC 280.240 GL 44.51 GP -25.55 ZAL 66.98 ZAP 79.55 ETS 173.99 ZAE 108.62 ETE 187.52 ZAC 60.10 ETC 255.58 CLP 78.40

PLANETOCENTRIC CONIC

C3 18.264 VHL 4.274 DLA 58.40 RAL 157.32 RAD 6567.7 VEL 11.817 PTH 2.09 VHP 3.300 DPA -16.87 RAP 158.56 ECC 1.3006

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.53	6 0 51	4339.73	-38.20	213.00	38.38	41.82	7 13 11	3739.7	-43.94	206.02
143.47	15 24 18	2690.23	-38.19	78.63	38.36	41.81	16 9 8	2090.2	-43.93	71.65
36.53	6 0 51	4339.73	-38.20	213.00	38.38	41.82	7 13 11	3739.7	-43.94	206.02
143.47	15 24 18	2690.23	-38.19	78.63	38.36	41.81	16 9 8	2090.2	-43.93	71.65
36.53	6 0 51	4339.73	-38.20	213.00	38.38	41.82	7 13 11	3739.7	-43.94	206.02
143.47	15 24 18	2690.23	-38.19	78.63	38.36	41.81	16 9 8	2090.2	-43.93	71.65

DIFFERENTIAL CORRECTIONS
TDE 3.3402 TRA -.2460 TC3-4.6719 BAU 1.4052
RDE 1.9356 RRA .1630 RC3-3.3601 FAU .46457
FDE11.5215 FRA .8740 FC-22.0209 BSP 24100
BDE 3.8675 BRA .2951 BC3 5.7547 FSP 7361

MID-COURSE EXECUTION ACCURACY
SGT 6040.8 SGR 3893.2 SG3 2112.6
RRT .9718 RRF .9988 RTF .9687
SGB 7186.7 R23 .1757 R13 .9832
SG1 7144.7 SG2 776.2 THA 32.49

ORBIT DETERMINATION ACCURACY
ST 4494.4 SR 2599.5 SS 4410.7
CRT .9959 CRS-1.0000 CST -.9963
LSA 6806.2 MSA 294.3 SSA 8.6
EL1 5188.0 EL2 203.3 ALF 29.99

LAUNCH DATE DEC 8 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 651.749 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 32.954 GAL 2.47 AZL 85.08 HCA 194.24 SMA 185.52 ECC .20999 INC 4.9241 V1 30.236
RP 217.44 LAP -1.21 LOP 270.14 VP 22.479 GAP -7.02 AZP 94.77 TAL 14.31 TAP 208.55 RCA 146.56 APO 224.47 V2 25.268
RC 281.529 GL 42.85 GP -23.69 ZAL 66.73 ZAP 77.80 ETS 173.64 ZAE 107.06 ETE 186.08 ZAC 61.78 ETC 255.89 CLP 76.66

PLANETOCENTRIC CONIC

C3 17.270 VHL 4.156 DLA 56.72 RAL 156.52 RAD 6567.7 VEL 11.775 PTH 2.08 VHP 3.268 DPA -14.95 RAP 158.86 ECC 1.2842

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.55	6 3 2	4316.08	-38.02	209.85	35.67	44.14	7 14 58	3716.1	-43.52	202.59
141.45	15 15 43	2687.83	-38.00	78.08	35.65	44.13	16 0 31	2087.8	-43.51	70.82
38.55	6 3 2	4316.08	-38.02	209.85	35.67	44.14	7 14 58	3716.1	-43.52	202.59
141.45	15 15 43	2687.83	-38.00	78.08	35.65	44.13	16 0 31	2087.8	-43.51	70.82
38.55	6 3 2	4316.08	-38.02	209.85	35.67	44.14	7 14 58	3716.1	-43.52	202.59
141.45	15 15 43	2687.83	-38.00	78.08	35.65	44.13	16 0 31	2087.8	-43.51	70.82

DIFFERENTIAL CORRECTIONS
TDE 3.2962 TRA -.2847 TC3-5.1797 BAU 1.4135
RDE 1.7063 RRA .1362 RC3-3.2634 FAU .47275
FDE11.1033 FRA .7690 FC-23.6990 BSP 24272
BDE 3.7117 BRA .3156 BC3 6.1221 FSP 7477

MID-COURSE EXECUTION ACCURACY
SGT 6300.7 SGR 3606.7 SG3 2161.8
RRT .9735 RRF .9984 RTF .9704
SGB 7260.0 R23 .1801 R13 .9821
SG1 7224.3 SG2 718.9 THA 29.45

ORBIT DETERMINATION ACCURACY
ST 4551.5 SR 2356.2 SS 4328.9
CRT .9959 CRS-1.0000 CST -.9963
LSA 6702.4 MSA 290.4 SSA 9.5
EL1 5121.7 EL2 190.2 ALF 27.31

LAUNCH DATE DEC 8 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 655.901 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 32.956 GAL 2.42 AZL 85.33 HCA 195.39 SMA 185.55 ECC .20996 INC 4.6693 V1 30.236
RP 217.09 LAP -1.24 LOP 271.29 VP 22.526 GAP -7.19 AZP 94.50 TAL 13.99 TAP 209.38 RCA 146.59 APO 224.51 V2 25.307
RC 282.801 GL 41.37 GP -22.04 ZAL 66.61 ZAP 76.08 ETS 173.35 ZAE 105.44 ETE 184.84 ZAC 63.27 ETC 256.16 CLP 74.96

PLANETOCENTRIC CONIC

C3 16.447 VHL 4.056 DLA 55.20 RAL 155.98 RAD 6567.7 VEL 11.740 PTH 2.07 VHP 3.250 DPA -13.24 RAP 159.08 ECC 1.2707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.41	6 6 0	4294.31	-37.75	206.96	33.44	46.21	7 17 34	3694.3	-43.04	199.48
139.59	15 8 28	2687.16	-37.74	77.68	33.42	46.20	15 53 15	2087.2	-43.03	70.20
40.41	6 6 0	4294.31	-37.75	206.96	33.44	46.21	7 17 34	3694.3	-43.04	199.48
139.59	15 8 28	2687.16	-37.74	77.68	33.42	46.20	15 53 15	2087.2	-43.03	70.20
40.41	6 6 0	4294.31	-37.75	206.96	33.44	46.21	7 17 34	3694.3	-43.04	199.48
139.59	15 8 28	2687.16	-37.74	77.68	33.42	46.20	15 53 15	2087.2	-43.03	70.20

DIFFERENTIAL CORRECTIONS
TDE 3.2584 TRA -.3130 TC3-5.6826 BAU 1.4286
RDE 1.5163 RRA .1193 RC3-3.1497 FAU .47684
FDE10.6620 FRA .7017 FC-25.0997 BSP 24847
BDE 3.5939 BRA .3349 BC3 6.4971 FSP 7557

MID-COURSE EXECUTION ACCURACY
SGT 6560.2 SGR 3347.0 SG3 2193.2
RRT .9750 RRF .9980 RTF .9718
SGB 7364.7 R23 .1826 R13 .9811
SG1 7334.5 SG2 665.7 THA 26.68

ORBIT DETERMINATION ACCURACY
ST 4611.4 SR 2145.4 SS 4235.2
CRT .9958 CRS-1.0000 CST -.9963
LSA 6612.2 MSA 287.5 SSA 10.5
EL1 5082.8 EL2 178.7 ALF 24.89

LAUNCH DATE DEC 8 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 660.061 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.958	GAL	2.36	AZL	85.55	HCA	196.54	SMA	185.59	ECC	.20994	INC	4.4485	V1	30.236
RP	216.74	LAP	-1.27	LOP	272.44	VP	22.574	GAP	-7.35	AZP	94.27	TAL	13.66	TAP	210.20	RCA	146.63	APO	224.56	V2	25.346
RC	284.057	GL	40.06	GP	-20.57	ZAL	66.58	ZAP	74.38	ETS	173.11	ZAE	103.77	ETE	183.76	ZAC	64.60	ETC	256.38	CLP	73.29

PLANETOCENTRIC CONIC

C3	15.754	VHL	3.969	DLA	53.80	RAL	155.66	RAD	6567.6	VEL	11.711	PTH	2.06	VHP	3.241	DPA	-11.70	RAP	159.25	ECC	1.2593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.13	6 9 36	4274.01	-37.44	204.30	31.59	48.05	7 20 50	3674.0	-42.52	196.64
137.87	15 2 15	2687.86	-37.43	77.39	31.58	48.04	15 47 2	2087.9	-42.51	69.73
42.13	6 9 36	4274.01	-37.44	204.30	31.59	48.05	7 20 50	3674.0	-42.52	196.64
137.87	15 2 15	2687.86	-37.43	77.39	31.58	48.04	15 47 2	2087.9	-42.51	69.73
42.13	6 9 36	4274.01	-37.44	204.30	31.59	48.05	7 20 50	3674.0	-42.52	196.64
137.87	15 2 15	2687.86	-37.43	77.39	31.58	48.04	15 47 2	2087.9	-42.51	69.73

DIFFERENTIAL CORRECTIONS

TDE	3.2319	TRA	-.3309	TC3	-6.1767	BAU	1.4483
RDE	1.3573	RRA	.1100	RC3	-3.0228	FAU	.47719
FDE	10.2122	FRA	.6711	FC	-26.2233	BSP	25206
BDE	3.5054	BRA	.3487	BC3	6.8767	FSP	7615

MID-COURSE EXECUTION ACCURACY

SGT	6816.3	SGR	3109.5	SG3	2208.4		
RRT	.9761	RRF	.9974	RTF	.9730		
SGB	7492.0	R23	.1833	R13	.9804		
SG1	7466.6	SG2	616.7	THA	24.18		

ORBIT DETERMINATION ACCURACY

ST	4674.0	SR	1962.4	SS	4134.6		
CRT	.9957	CRS	-1.0000	CST	-.9963		
LSA	6535.3	MSA	285.5	SSA	11.4		
EL1	5066.4	EL2	168.5	ALF	22.71		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 664.229 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.961	GAL	2.30	AZL	85.74	HCA	197.69	SMA	185.64	ECC	.20994	INC	4.2552	V1	30.236
RP	216.39	LAP	-1.29	LOP	273.60	VP	22.621	GAP	-7.51	AZP	94.05	TAL	13.31	TAP	211.01	RCA	146.67	APO	224.61	V2	25.385
RC	285.296	GL	38.88	GP	-19.24	ZAL	66.64	ZAP	72.72	ETS	172.91	ZAE	102.08	ETE	182.84	ZAC	65.80	ETC	256.58	CLP	71.66

PLANETOCENTRIC CONIC

C3	15.160	VHL	3.894	DLA	52.52	RAL	155.50	RAD	6567.6	VEL	11.685	PTH	2.06	VHP	3.242	DPA	-10.31	RAP	159.38	ECC	1.2495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.73	6 13 41	4254.92	-37.10	201.83	30.07	49.72	7 24 36	3654.9	-41.99	194.04
136.27	14 56 53	2689.63	-37.08	77.20	30.06	49.71	15 41 42	2089.6	-41.98	69.41
43.73	6 13 41	4254.92	-37.10	201.83	30.07	49.72	7 24 36	3654.9	-41.99	194.04
136.27	14 56 53	2689.63	-37.08	77.20	30.06	49.71	15 41 42	2089.6	-41.98	69.41
43.73	6 13 41	4254.92	-37.10	201.83	30.07	49.72	7 24 36	3654.9	-41.99	194.04
136.27	14 56 53	2689.63	-37.08	77.20	30.06	49.71	15 41 42	2089.6	-41.98	69.41

DIFFERENTIAL CORRECTIONS

TDE	3.2109	TRA	-.3429	TC3	-6.6701	BAU	1.4735
RDE	1.2223	RRA	.1047	RC3	-2.8924	FAU	.47514
FDE	9.7549	FRA	.6613	FC	-27.1339	BSP	25813
BDE	3.4357	BRA	.3586	BC3	7.2702	FSP	7620

MID-COURSE EXECUTION ACCURACY

SGT	7070.5	SGR	2893.5	SG3	2211.4		
RRT	.9770	RRF	.9967	RTF	.9739		
SGB	7639.6	R23	.1824	R13	.9799		
SG1	7618.1	SG2	572.9	THA	21.92		

ORBIT DETERMINATION ACCURACY

ST	4734.0	SR	1801.6	SS	4026.6		
CRT	.9955	CRS	-.9999	CST	-.9962		
LSA	6464.5	MSA	284.2	SSA	12.4		
EL1	5062.8	EL2	159.6	ALF	20.77		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 668.405 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.964	GAL	2.24	AZL	85.92	HCA	198.85	SMA	185.69	ECC	.20995	INC	4.0842	V1	30.236
RP	216.05	LAP	-1.32	LOP	274.75	VP	22.668	GAP	-7.67	AZP	93.87	TAL	12.95	TAP	211.80	RCA	146.70	APO	224.67	V2	25.423
RC	286.520	GL	37.81	GP	-18.05	ZAL	66.79	ZAP	71.09	ETS	172.76	ZAE	100.39	ETE	182.03	ZAC	66.87	ETC	256.75	CLP	70.07

PLANETOCENTRIC CONIC

C3	14.643	VHL	3.827	DLA	51.33	RAL	155.48	RAD	6567.6	VEL	11.663	PTH	2.05	VHP	3.249	DPA	-9.05	RAP	159.49	ECC	1.2410

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.22	6 18 10	4236.79	-36.73	199.53	28.82	51.23	7 28 47	3636.8	-41.46	191.62
134.78	14 52 14	2692.25	-36.72	77.10	28.80	51.22	15 37 6	2092.3	-41.45	69.20
45.22	6 18 10	4236.79	-36.73	199.53	28.82	51.23	7 28 47	3636.8	-41.46	191.62
134.78	14 52 14	2692.25	-36.72	77.10	28.80	51.22	15 37 6	2092.3	-41.45	69.20
45.22	6 18 10	4236.79	-36.73	199.53	28.82	51.23	7 28 47	3636.8	-41.46	191.62
134.78	14 52 14	2692.25	-36.72	77.10	28.80	51.22	15 37 6	2092.3	-41.45	69.20

DIFFERENTIAL CORRECTIONS

TDE	3.2015	TRA	-.3415	TC3	-7.1454	BAU	1.4987
RDE	1.1113	RRA	.1076	RC3	-2.7479	FAU	.46898
FDE	9.3392	FRA	.7185	FC	-27.7269	BSP	26691
BDE	3.3889	BRA	.3580	BC3	7.6556	FSP	7694

MID-COURSE EXECUTION ACCURACY

SGT	7318.0	SGR	2694.1	SG3	2200.7		
RRT	.9772	RRF	.9959	RTF	.9746		
SGB	7798.1	R23	.1804	R13	.9794		
SG1	7779.6	SG2	537.8	THA	19.89		

ORBIT DETERMINATION ACCURACY

ST	4802.6	SR	1666.9	SS	3931.7		
CRT	.9952	CRS	-.9999	CST	-.9961		
LSA	6420.2	MSA	287.5	SSA	13.2		
EL1	5081.4	EL2	153.5	ALF	19.07		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 672.591 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.967	GAL	2.17	AZL	86.07	HCA	200.02	SMA	185.74	ECC	.20997	INC	3.9318	V1	30.236
RP	215.71	LAP	-1.34	LOP	275.92	VP	22.715	GAP	-7.82	AZP	93.70	TAL	12.58	TAP	212.59	RCA	146.74	APO	224.74	V2	25.461
RC	287.729	GL	36.85	GP	-16.97	ZAL	67.01	ZAP	69.49	ETS	172.63	ZAE	98.69	ETE	181.34	ZAC	67.85	ETC	256.89	CLP	68.52

PLANETOCENTRIC CONIC

C3	14.189	VHL	3.767	DLA	50.21	RAL	155.57	RAD	6567.6	VEL	11.644	PTH	2.04	VHP	3.262	DPA	-7.91	RAP	159.58	ECC	1.2335

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.63	6 22 59	4219.49	-36.35	197.37	27.79	52.61	7 33 18	3619.5	-40.92	189.37
133.37	14 48 11	2695.60	-36.34	77.08	27.78	52.60	15 33 6	2095.6	-40.91	69.08
46.63	6 22 59	4219.49	-36.35	197.37	27.79	52.61	7 33 18	3619.5	-40.92	189.37
133.37	14 48 11	2695.60	-36.34	77.08	27.78	52.60	15 33 6	2095.6	-40.91	69.08
46.63	6 22 59	4219.49	-36.35	197.37	27.79	52.61	7 33 18	3619.5	-40.92	189.37
133.37	14 48 11	2695.60	-36.34	77.08	27.78	52.60	15 33 6	2095.6	-40.91	69.08

DIFFERENTIAL CORRECTIONS

TDE	3.1798	TRA	-.3490	TC3	-7.6533	BAU	1.5351
RDE	1.0080	RRA	.1033	RC3	-2.6297	FAU	.46527
FDE	8.8511	FRA	.7034	FC	-28.3883	BSP	27192
BDE	3.3357	BRA	.3640	BC3	8.0925	FSP	7554

MID-COURSE EXECUTION ACCURACY

SGT	7571.4	SGR	2517.1	SG3	2188.2		
RRT	.9778	RRF	.9949	RTF	.9754		
SGB	7978.8	R23	.1761	R13	.9792		
SG1	7963.0	SG2	501.6	THA	18.08		

ORBIT DETERMINATION ACCURACY

ST	4846.2	SR	1536.1	SS	3800.9		
CRT	.9951	CRS	-.9999	CST	-.9960		
LSA	6341.2	MSA	284.1	SSA	14.3		
EL1	5081.7	EL2	145.4	ALF	17.52		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 676.785 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.970	GAL	2.11	AZL	86.20	HCA	201.18	SMA	185.80	ECC	.21002	INC	3.7953
RP	215.38	LAP	-1.37	LOP	277.09	VP	22.762	GAP	-7.97	AZP	93.54	TAL	12.19	TAP	213.37	RCA	146.78	APO	224.82
RC	288.924	GL	35.97	GP	-15.99	ZAL	67.29	ZAP	67.94	ETS	172.53	ZAE	97.01	ETE	180.73	ZAC	68.74	ETC	257.02

V1	30.236	V2	25.498	CLP	67.00														

PLANETOCENTRIC CONIC

C3	13.784	VHL	3.713	DLA	49.17	RAL	155.77	RAD	6567.5	VEL	11.626	PTH	2.04	VHP	3.279	DPA	-6.88	RAP	159.67
ECC	1.2269																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.96	6 28 7	4202.77	-35.96	195.32	26.96	53.88	7 38 10	3602.8	-40.39	187.25
132.04	14 44 37	2699.61	-35.95	77.12	26.95	53.87	15 29 37	2099.6	-40.37	69.06
47.96	6 28 7	4202.77	-35.96	195.32	26.96	53.88	7 38 10	3602.8	-40.39	187.25
132.04	14 44 37	2699.61	-35.95	77.12	26.95	53.87	15 29 37	2099.6	-40.37	69.06
47.96	6 28 7	4202.77	-35.96	195.32	26.96	53.88	7 38 10	3602.8	-40.39	187.25
132.04	14 44 37	2699.61	-35.95	77.12	26.95	53.87	15 29 37	2099.6	-40.37	69.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.1649	TRA	-.3461	TC3	-8.1473	BAU	1.5708	SGT	7818.0	SGR	2353.3	SG3	2166.4	ST	4893.6	SR	1423.7	SS	3678.1
RDE	.9206	RRA	.1035	RC3	-2.5050	FAU	.45886	RRT	.9780	RRF	.9936	RTF	.9760	CRT	.9948	CRS	-.9999	CST	-.9959
FDE	8.3947	FRA	.7275	FC	-28.8187	BSP	27854	SGB	8164.5	R23	.1705	R13	.9791	LSA	6278.7	MSA	282.7	SSA	15.4
BDE	3.2960	BRA	.3612	BC3	8.5237	FSP	7445	SG1	8150.9	SG2	471.3	THA	16.46	EL1	5094.6	EL2	138.7	ALF	16.15

LAUNCH DATE DEC 8 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 680.986 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.974	GAL	2.04	AZL	86.33	HCA	202.35	SMA	185.86	ECC	.21007	INC	3.6719
RP	215.05	LAP	-1.40	LOP	278.26	VP	22.808	GAP	-8.12	AZP	93.40	TAL	11.78	TAP	214.13	RCA	146.81	APO	224.90
RC	290.105	GL	35.17	GP	-15.09	ZAL	67.64	ZAP	66.42	ETS	172.45	ZAE	95.34	ETE	180.21	ZAC	69.55	ETC	257.13

V1	30.236	V2	25.535	CLP	65.53														

PLANETOCENTRIC CONIC

C3	13.421	VHL	3.663	DLA	48.18	RAL	156.05	RAD	6567.5	VEL	11.611	PTH	2.03	VHP	3.302	DPA	-5.94	RAP	159.75
ECC	1.2209																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.24	6 33 31	4186.56	-35.57	193.37	26.30	55.05	7 43 18	3586.6	-39.85	185.24
130.76	14 41 30	2704.16	-35.56	77.23	26.29	55.04	15 26 34	2104.2	-39.84	69.10
49.24	6 33 31	4186.56	-35.57	193.37	26.30	55.05	7 43 18	3586.6	-39.85	185.24
130.76	14 41 30	2704.16	-35.56	77.23	26.29	55.04	15 26 34	2104.2	-39.84	69.10
49.24	6 33 31	4186.56	-35.57	193.37	26.30	55.05	7 43 18	3586.6	-39.85	185.24
130.76	14 41 30	2704.16	-35.56	77.23	26.29	55.04	15 26 34	2104.2	-39.84	69.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.1499	TRA	-.3386	TC3	-8.6419	BAU	1.6085	SGT	8061.8	SGR	2203.5	SG3	2139.2	ST	4935.8	SR	1323.7	SS	3554.1
RDE	.8444	RRA	.1050	RC3	-2.3838	FAU	.45146	RRT	.9778	RRF	.9921	RTF	.9765	CRT	.9946	CRS	-.9998	CST	-.9957
FDE	7.9483	FRA	.7640	FC	-29.1215	BSP	28523	SGB	8357.5	R23	.1637	R13	.9790	LSA	6218.2	MSA	282.0	SSA	16.4
BDE	3.2611	BRA	.3545	BC3	8.9647	FSP	7318	SG1	8345.6	SG2	446.1	THA	15.01	EL1	5108.5	EL2	133.0	ALF	14.95

LAUNCH DATE DEC 8 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 685.196 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.977	GAL	1.97	AZL	86.44	HCA	203.52	SMA	185.92	ECC	.21014	INC	3.5598
RP	214.72	LAP	-1.42	LOP	279.43	VP	22.855	GAP	-8.26	AZP	93.26	TAL	11.37	TAP	214.89	RCA	146.85	APO	224.99
RC	291.272	GL	34.44	GP	-14.28	ZAL	68.04	ZAP	64.95	ETS	172.39	ZAE	93.70	ETE	179.75	ZAC	70.30	ETC	257.23

V1	30.236	V2	25.572	CLP	64.09														

PLANETOCENTRIC CONIC

C3	13.092	VHL	3.618	DLA	47.24	RAL	156.42	RAD	6567.5	VEL	11.596	PTH	2.03	VHP	3.328	DPA	-5.09	RAP	159.84
ECC	1.2155																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.46	6 39 13	4170.67	-35.17	191.50	25.78	56.15	7 48 44	3570.7	-39.33	183.32
129.54	14 38 43	2709.29	-35.16	77.39	25.77	56.14	15 23 52	2109.3	-39.32	69.22
50.46	6 39 13	4170.67	-35.17	191.50	25.78	56.15	7 48 44	3570.7	-39.33	183.32
129.54	14 38 43	2709.29	-35.16	77.39	25.77	56.14	15 23 52	2109.3	-39.32	69.22
50.46	6 39 13	4170.67	-35.17	191.50	25.78	56.15	7 48 44	3570.7	-39.33	183.32
129.54	14 38 43	2709.29	-35.16	77.39	25.77	56.14	15 23 52	2109.3	-39.32	69.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.1368	TRA	-.3252	TC3	-9.1296	BAU	1.6463	SGT	8300.4	SGR	2065.1	SG3	2106.1	ST	4976.3	SR	1235.6	SS	3432.8
RDE	.7782	RRA	.1077	RC3	-2.2634	FAU	.44271	RRT	.9773	RRF	.9903	RTF	.9770	CRT	.9943	CRS	-.9998	CST	-.9956
FDE	7.5210	FRA	.8110	FC	-29.2751	BSP	29230	SGB	8553.5	R23	.1555	R13	.9790	LSA	6164.0	MSA	281.4	SSA	17.4
BDE	3.2319	BRA	.3426	BC3	9.4060	FSP	7184	SG1	8542.9	SG2	424.9	THA	13.70	EL1	5125.8	EL2	127.8	ALF	13.88

LAUNCH DATE DEC 8 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 689.412 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.981	GAL	1.89	AZL	86.54	HCA	204.70	SMA	185.99	ECC	.21023	INC	3.4576
RP	214.40	LAP	-1.44	LOP	280.61	VP	22.901	GAP	-8.40	AZP	93.14	TAL	10.93	TAP	215.64	RCA	146.89	APO	225.09
RC	292.426	GL	33.77	GP	-13.52	ZAL	68.50	ZAP	63.51	ETS	172.35	ZAE	92.07	ETE	179.35	ZAC	70.99	ETC	257.31

V1	30.236	V2	25.608	CLP	62.69														

PLANETOCENTRIC CONIC

C3	12.792	VHL	3.577	DLA	46.35	RAL	156.86	RAD	6567.5	VEL	11.584	PTH	2.03	VHP	3.357	DPA	-4.31	RAP	159.94
ECC	1.2105																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.64	6 45 10	4155.08	-34.77	189.69	25.40	57.17	7 54 25	3555.1	-38.80	181.47
128.36	14 36 16	2714.89	-34.75	77.60	25.39	57.16	15 21 30	2114.9	-38.79	69.39
51.64	6 45 10	4155.08	-34.77	189.69	25.40	57.17	7 54 25	3555.1	-38.80	181.47
128.36	14 36 16	2714.89	-34.75	77.60	25.39	57.16	15 21 30	2114.9	-38.79	69.39
51.64	6 45 10	4155.08	-34.77	189.69	25.40	57.17	7 54 25	3555.1	-38.80	181.47
128.36	14 36 16	2714.89	-34.75	77.60	25.39	57.16	15 21 30	2114.9	-38.79	69.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.1240	TRA	-.3050	TC3	-9.6149	BAU	1.6848	SGT	8535.1	SGR	1938.3	SG3	2069.7	ST	5013.3	SR	1157.4	SS	3313.0
RDE	.7202	RRA	.1118	RC3	-2.1470	FAU	.43328	RRT	.9764	RRF	.9882	RTF	.9773	CRT	.9940	CRS	-.9998	CST	-.9953
FDE	7.1093	FRA	.8760	FC	-29.3244	BSP	29960	SGB	8752.4	R23	.1467	R13	.9789	LSA	6113.0	MSA	282.1	SSA	18.4
BDE	3.2059	BRA	.3248	BC3	9.8517	FSP	7042	SG1	8742.9	SG2	408.8	THA	12.53	EL1	5143.7	EL2	123.4	ALF	12.93

LAUNCH DATE DEC 8 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 693.637 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.985	GAL	1.82	AZL	86.64	HCA	205.88	SMA	186.06	ECC	.21033	INC	3.3638	V1	30.236
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.947	GAP	-8.54	AZP	93.03	TAL	10.49	TAP	216.37	RCA	146.92	APO	225.19	V2	25.644
RC	293.566	GL	33.15	GP	-12.83	ZAL	69.01	ZAP	62.11	ETS	172.31	ZAE	90.47	ETE	179.00	ZAC	71.63	ETC	257.39	CLP	61.33

PLANETOCENTRIC CONIC

C3	12.516	VHL	3.538	DLA	45.48	RAL	157.36	RAD	6567.5	VEL	11.572	PTH	2.02	VHP	3.389	DPA	-3.61	RAP	160.06	ECC	1.2060

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.79	6 51 23	4139.62	-34.36	187.93	25.14	58.14	8 0 23	3539.6	-38.28	179.68
127.21	14 34 3	2721.03	-34.35	77.86	25.13	58.12	15 19 24	2121.0	-38.27	69.62
52.79	6 51 23	4139.62	-34.36	187.93	25.14	58.14	8 0 23	3539.6	-38.28	179.68
127.21	14 34 3	2721.03	-34.35	77.86	25.13	58.12	15 19 24	2121.0	-38.27	69.62
52.79	6 51 23	4139.62	-34.36	187.93	25.14	58.14	8 0 23	3539.6	-38.28	179.68
127.21	14 34 3	2721.03	-34.35	77.86	25.13	58.12	15 19 24	2121.0	-38.27	69.62

DIFFERENTIAL CORRECTIONS

TDE	3.1097	TRA	-.2801	TC-10.0987	BAU	1.7237	
RDE	.6691	RRA	.1162	RC3-2.0346	FAU	.42330	
FDE	6.7116	FRA	.9460	FC-29.2798	BSP	30676	
BDE	3.1809	BRA	.3033	BC310.3017	FSP	6889	

MID-COURSE EXECUTION ACCURACY

SGT	8765.8	SGR	1821.7	SG3	2030.2		
RRT	.9750	RRF	.9856	RTF	.9776		
SGB	8953.1	R23	.1371	R13	.9789		
SG1	8944.3	SG2	396.4	THA	11.48		

ORBIT DETERMINATION ACCURACY

ST	5044.6	SR	1087.4	SS	3193.9
CRT	.9937	CRS	-.9998	CST	-.9950
LSA	6062.2	MSA	283.0	SSA	19.4
EL1	5159.1	EL2	119.5	ALF	12.10

LAUNCH DATE DEC 8 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 697.868 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.990	GAL	1.74	AZL	86.72	HCA	207.07	SMA	186.13	ECC	.21045	INC	3.2775	V1	30.236
RP	213.77	LAP	-1.49	LOP	282.97	VP	22.992	GAP	-8.67	AZP	92.92	TAL	10.03	TAP	217.10	RCA	146.96	APO	225.30	V2	25.679
RC	294.693	GL	32.57	GP	-12.19	ZAL	69.57	ZAP	60.75	ETS	172.29	ZAE	88.90	ETE	178.70	ZAC	72.23	ETC	257.45	CLP	60.01

PLANETOCENTRIC CONIC

C3	12.262	VHL	3.502	DLA	44.65	RAL	157.92	RAD	6567.5	VEL	11.561	PTH	2.02	VHP	3.424	DPA	-2.97	RAP	160.18	ECC	1.2018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.91	6 57 52	4124.22	-33.95	186.21	24.97	59.05	8 6 37	3524.2	-37.77	177.94
126.09	14 32 3	2727.70	-33.94	78.18	24.97	59.04	15 17 31	2127.7	-37.75	69.91
53.91	6 57 52	4124.22	-33.95	186.21	24.97	59.05	8 6 37	3524.2	-37.77	177.94
126.09	14 32 3	2727.70	-33.94	78.18	24.97	59.04	15 17 31	2127.7	-37.75	69.91
53.91	6 57 52	4124.22	-33.95	186.21	24.97	59.05	8 6 37	3524.2	-37.77	177.94
126.09	14 32 3	2727.70	-33.94	78.18	24.97	59.04	15 17 31	2127.7	-37.75	69.91

DIFFERENTIAL CORRECTIONS

TDE	3.0951	TRA	-.2505	TC-10.5785	BAU	1.7626	
RDE	.6238	RRA	.1204	RC3-1.9263	FAU	.41287	
FDE	6.3293	FRA	1.0141	FC-29.1509	BSP	31393	
BDE	3.1574	BRA	.2779	BC310.7524	FSP	6721	

MID-COURSE EXECUTION ACCURACY

SGT	8992.5	SGR	1714.2	SG3	1988.1		
RRT	.9734	RRF	.9826	RTF	.9779		
SGB	9154.4	R23	.1264	R13	.9789		
SG1	9146.3	SG2	386.4	THA	10.53		

ORBIT DETERMINATION ACCURACY

ST	5072.3	SR	1024.9	SS	3076.3
CRT	.9934	CRS	-.9997	CST	-.9947
LSA	6013.4	MSA	283.2	SSA	20.4
EL1	5173.5	EL2	115.6	ALF	11.36

LAUNCH DATE DEC 8 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 702.107 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.994	GAL	1.66	AZL	86.80	HCA	208.25	SMA	186.21	ECC	.21058	INC	3.1976	V1	30.236
RP	213.46	LAP	-1.51	LOP	284.16	VP	23.037	GAP	-8.80	AZP	92.82	TAL	9.56	TAP	217.81	RCA	147.00	APO	225.42	V2	25.714
RC	295.805	GL	32.04	GP	-11.61	ZAL	70.17	ZAP	59.43	ETS	172.28	ZAE	87.36	ETE	178.43	ZAC	72.78	ETC	257.50	CLP	58.72

PLANETOCENTRIC CONIC

C3	12.026	VHL	3.468	DLA	43.84	RAL	158.54	RAD	6567.5	VEL	11.550	PTH	2.02	VHP	3.462	DPA	-2.39	RAP	160.33	ECC	1.1979

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.02	7 4 38	4108.79	-33.54	184.51	24.91	59.92	8 13 7	3508.8	-37.25	176.23
124.98	14 30 13	2734.92	-33.53	78.54	24.90	59.91	15 15 48	2134.9	-37.24	70.26
55.02	7 4 38	4108.79	-33.54	184.51	24.91	59.92	8 13 7	3508.8	-37.25	176.23
124.98	14 30 13	2734.92	-33.53	78.54	24.90	59.91	15 15 48	2134.9	-37.24	70.26
55.02	7 4 38	4108.79	-33.54	184.51	24.91	59.92	8 13 7	3508.8	-37.25	176.23
124.98	14 30 13	2734.92	-33.53	78.54	24.90	59.91	15 15 48	2134.9	-37.24	70.26

DIFFERENTIAL CORRECTIONS

TDE	3.0784	TRA	-.2154	TC-11.0548	BAU	1.8013	
RDE	.5836	RRA	.1252	RC3-1.8215	FAU	.40203	
FDE	5.9606	FRA	1.0921	FC-28.9416	BSP	32107	
BDE	3.1333	BRA	.2491	BC311.2039	FSP	6556	

MID-COURSE EXECUTION ACCURACY

SGT	9214.1	SGR	1614.9	SG3	1943.8		
RRT	.9710	RRF	.9791	RTF	.9781		
SGB	9354.6	R23	.1158	R13	.9789		
SG1	9346.8	SG2	380.4	THA	9.67		

ORBIT DETERMINATION ACCURACY

ST	5093.6	SR	968.8	SS	2959.5
CRT	.9930	CRS	-.9997	CST	-.9944
LSA	5963.2	MSA	284.6	SSA	21.4
EL1	5183.7	EL2	112.2	ALF	10.70

LAUNCH DATE DEC 8 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 706.353 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	32.999	GAL	1.58	AZL	86.88	HCA	209.44	SMA	186.29	ECC	.21073	INC	3.1235	V1	30.236
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.082	GAP	-8.93	AZP	92.72	TAL	9.07	TAP	218.51	RCA	147.03	APO	225.54	V2	25.748
RC	296.904	GL	31.54	GP	-11.06	ZAL	70.83	ZAP	58.15	ETS	172.28	ZAE	85.85	ETE	178.19	ZAC	73.31	ETC	257.54	CLP	57.47

PLANETOCENTRIC CONIC

C3	11.807	VHL	3.436	DLA	43.05	RAL	159.21	RAD	6567.4	VEL	11.541	PTH	2.01	VHP	3.501	DPA	-1.87	RAP	160.49	ECC	1.1943

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.11	7 11 41	4093.23	-33.12	182.83	24.93	60.75	8 19 54	3493.2	-36.73	174.53
123.89	14 28 31	2742.75	-33.11	78.96	24.92	60.74	15 14 14	2142.8	-36.72	70.66
56.11	7 11 41	4093.23	-33.12	182.83	24.93	60.75	8 19 54	3493.2	-36.73	174.53
123.89	14 28 31	2742.75	-33.11	78.96	24.92	60.74	15 14 14	2142.8	-36.72	70.66
56.11	7 11 41	4093.23	-33.12	182.83	24.93	60.75	8 19 54	3493.2	-36.73	174.53
123.89	14 28 31	2742.75	-33.11	78.96	24.92	60.74	15 14 14	2142.8	-36.72	70.66

DIFFERENTIAL CORRECTIONS

TDE	3.0603	TRA	-.1743	TC-11.5240	BAU	1.8392	
RDE	.5476	RRA	.1301	RC3-1.7199	FAU	.39081	
FDE	5.6041	FRA	1.1730	FC-28.6559	BSP	32840	
BDE	3.1089	BRA	.2176	BC311.6516	FSP	6392	

MID-COURSE EXECUTION ACCURACY

SGT	9429.5	SGR	1522.8	SG3	1897.5		
RRT	.9681	RRF	.9749	RTF	.9782		
SGB	9551.7	R23	.1051	R13	.9789		
SG1	9544.3	SG2	376.7	THA	8.90		

ORBIT DETERMINATION ACCURACY

ST	5109.8	SR	918.1	SS	2842.9
CRT	.9927	CRS	-.9996	CST	-.9939
LSA	5912.1	MSA	285.9	SSA	22.3
EL1	5190.5	EL2	108.9	ALF	10.12

LAUNCH DATE DEC 8 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 710.605 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.003	GAL	1.49	AZL	86.95	HCA	210.64	SMA	186.37	ECC	.21089	INC	3.0544
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.126	GAP	-9.05	AZP	92.63	TAL	8.57	TAP	219.21	RCA	147.07	APO	225.67
RC	297.989	GL	31.07	GP	-10.55	ZAL	71.53	ZAP	56.90	ETS	172.28	ZAE	84.36	ETE	177.99	ZAC	73.80	ETC	257.58

V1	30.236	V2	25.782	CLP	56.25														

PLANETOCENTRIC CONIC

C3	11.603	VHL	3.406	DLA	42.27	RAL	159.93	RAD	6567.4	VEL	11.532	PTH	2.01	VHP	3.543	DPA	-1.39	RAP	160.67
ECC	1.1910																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.20	7 19 2	4077.44	-32.69	181.16	25.03	61.55	8 26 59	3477.4	-36.21	172.85
122.80	14 26 54	2751.25	-32.68	79.43	25.03	61.54	15 12 46	2151.2	-36.20	71.12
57.20	7 19 2	4077.44	-32.69	181.16	25.03	61.55	8 26 59	3477.4	-36.21	172.85
122.80	14 26 54	2751.25	-32.68	79.43	25.03	61.54	15 12 46	2151.2	-36.20	71.12
57.20	7 19 2	4077.44	-32.69	181.16	25.03	61.55	8 26 59	3477.4	-36.21	172.85
122.80	14 26 54	2751.25	-32.68	79.43	25.03	61.54	15 12 46	2151.2	-36.20	71.12

DIFFERENTIAL CORRECTIONS

TDE	3.0395	TRA	-.1292	TC	-11.9924	BAU	1.8772
RDE	.5155	RRA	.1349	RC3	-1.6228	FAU	.37954
FDE	5.2632	FRA	1.2528	FC	-28.3191	BSP	33546
BDE	3.0829	BRA	.1868	BC	312.1017	FSP	6222

MID-COURSE EXECUTION ACCURACY

SGT	9642.2	SGR	1438.1	SG3	1850.4		
RRT	.9646	RRF	.9701	RTF	.9784		
SGB	9748.9	R23	.0945	R13	.9789		
SG1	9741.6	SG2	375.5	THA	8.20		

ORBIT DETERMINATION ACCURACY

ST	5119.2	SR	872.6	SS	2728.5		
CRT	.9924	CRS	-.9996	CST	-.9934		
LSA	5859.1	MSA	287.4	SSA	23.2		
EL1	5192.0	EL2	105.7	ALF	9.61		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 714.865 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.008	GAL	1.40	AZL	87.01	HCA	211.84	SMA	186.46	ECC	.21108	INC	2.9899
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.170	GAP	-9.18	AZP	92.54	TAL	8.05	TAP	219.89	RCA	147.10	APO	225.81
RC	299.061	GL	30.63	GP	-10.08	ZAL	72.27	ZAP	55.69	ETS	172.28	ZAE	82.91	ETE	177.81	ZAC	74.26	ETC	257.60

V1	30.236	V2	25.815	CLP	55.07														

PLANETOCENTRIC CONIC

C3	11.412	VHL	3.378	DLA	41.51	RAL	160.69	RAD	6567.4	VEL	11.524	PTH	2.01	VHP	3.587	DPA	-.96	RAP	160.87
ECC	1.1878																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.29	7 26 41	4061.37	-32.26	179.48	25.21	62.32	8 34 22	3461.4	-35.68	171.17
121.71	14 25 21	2760.43	-32.25	79.96	25.20	62.31	15 11 21	2160.4	-35.67	71.65
58.29	7 26 41	4061.37	-32.26	179.48	25.21	62.32	8 34 22	3461.4	-35.68	171.17
121.71	14 25 21	2760.43	-32.25	79.96	25.20	62.31	15 11 21	2160.4	-35.67	71.65
58.29	7 26 41	4061.37	-32.26	179.48	25.21	62.32	8 34 22	3461.4	-35.68	171.17
121.71	14 25 21	2760.43	-32.25	79.96	25.20	62.31	15 11 21	2160.4	-35.67	71.65

DIFFERENTIAL CORRECTIONS

TDE	3.0179	TRA	-.0771	TC	-12.4533	BAU	1.9143
RDE	.4869	RRA	.1399	RC3	-1.5290	FAU	.36813
FDE	4.9374	FRA	1.3375	FC	-27.9262	BSP	34274
BDE	3.0570	BRA	.1597	BC	312.5468	FSP	6055

MID-COURSE EXECUTION ACCURACY

SGT	9850.1	SGR	1360.0	SG3	1802.7		
RRT	.9603	RRF	.9645	RTF	.9785		
SGB	9943.6	R23	.0842	R13	.9789		
SG1	9936.4	SG2	376.2	THA	7.56		

ORBIT DETERMINATION ACCURACY

ST	5125.0	SR	831.8	SS	2616.3		
CRT	.9922	CRS	-.9995	CST	-.9929		
LSA	5806.7	MSA	289.3	SSA	24.1		
EL1	5191.0	EL2	102.6	ALF	9.15		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 719.131 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.013	GAL	1.31	AZL	87.07	HCA	213.04	SMA	186.54	ECC	.21128	INC	2.9294
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.214	GAP	-9.29	AZP	92.46	TAL	7.53	TAP	220.56	RCA	147.13	APO	225.96
RC	300.120	GL	30.21	GP	-9.64	ZAL	73.06	ZAP	54.51	ETS	172.29	ZAE	81.48	ETE	177.65	ZAC	74.70	ETC	257.62

V1	30.236	V2	25.847	CLP	53.92														

PLANETOCENTRIC CONIC

C3	11.235	VHL	3.352	DLA	40.75	RAL	161.50	RAD	6567.4	VEL	11.516	PTH	2.01	VHP	3.632	DPA	-.50	RAP	161.09
ECC	1.1849																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.38	7 34 42	4044.83	-31.82	177.78	25.45	63.07	8 42 7	3444.8	-35.14	169.47
120.62	14 23 47	2770.47	-31.81	80.55	25.45	63.06	15 9 58	2170.5	-35.14	72.24
59.38	7 34 42	4044.83	-31.82	177.78	25.45	63.07	8 42 7	3444.8	-35.14	169.47
120.62	14 23 47	2770.47	-31.81	80.55	25.45	63.06	15 9 58	2170.5	-35.14	72.24
59.38	7 34 42	4044.83	-31.82	177.78	25.45	63.07	8 42 7	3444.8	-35.14	169.47
120.62	14 23 47	2770.47	-31.81	80.55	25.45	63.06	15 9 58	2170.5	-35.14	72.24

DIFFERENTIAL CORRECTIONS

TDE	2.9919	TRA	-.0219	TC	-12.9106	BAU	1.9511
RDE	.4609	RRA	.1444	RC3	-1.4388	FAU	.35668
FDE	4.6209	FRA	1.4159	FC	-27.4857	BSP	34944
BDE	3.0272	BRA	.1460	BC	312.9905	FSP	5877

MID-COURSE EXECUTION ACCURACY

SGT	10053.0	SGR	1287.3	SG3	1753.9		
RRT	.9551	RRF	.9580	RTF	.9786		
SGB	10135.1	R23	.0743	R13	.9789		
SG1	10128.1	SG2	378.4	THA	6.98		

ORBIT DETERMINATION ACCURACY

ST	5120.9	SR	794.5	SS	2503.2		
CRT	.9919	CRS	-.9995	CST	-.9922		
LSA	5747.7	MSA	290.9	SSA	25.0		
EL1	5181.2	EL2	99.5	ALF	8.75		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 723.403 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.019	GAL	1.22	AZL	87.13	HCA	214.24	SMA	186.63	ECC	.21149	INC	2.8725
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.257	GAP	-9.41	AZP	92.38	TAL	6.98	TAP	221.23	RCA	147.16	APO	226.11
RC	301.167	GL	29.82	GP	-9.23	ZAL	73.89	ZAP	53.37	ETS	172.31	ZAE	80.09	ETE	177.51	ZAC	75.12	ETC	257.63

V1	30.236	V2	25.879	CLP	52.81														

PLANETOCENTRIC CONIC

C3	11.069	VHL	3.327	DLA	39.99	RAL	162.35	RAD	6567.4	VEL	11.509	PTH	2.00	VHP	3.680	DPA	-.24	RAP	161.33
ECC	1.1822																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.49	7 43 6	4027.70	-31.37	176.06	25.77	63.80	8 50 14	3427.7	-34.60	167.75
119.51	14 22 10	2781.47	-31.35	81.22	25.76	63.78	15 8 32	2181.5	-34.59	72.92
60.49	7 43 6	4027.70	-31.37	176.06	25.77	63.80	8 50 14	3427.7	-34.60	167.75
119.51	14 22 10	2781.47	-31.35	81.22	25.76	63.78	15 8 32	2181.5	-34.59	72.92
60.49	7 43 6	4027.70	-31.37	176.06	25.77	63.80	8 50 14	3427.7	-34.60	167.75
119.51	14 22 10	2781.47	-31.35	81.22	25.76	63.78	15 8 32	2181.5	-34.59	72.92

DIFFERENTIAL CORRECTIONS

TDE	2.9643	TRA	.0399	TC	-13.3631	BAU	1.9876
RDE	.4377	RRA	.1490	RC3	-1.3527	FAU	.34543
FDE	4.3189	FRA	1.4971	FC	-27.0177	BSP	35629
BDE	2.9964	BRA	.1543	BC	313.4314	FSP	5703

MID-COURSE EXECUTION ACCURACY

SGT	10253.4	SGR	1220.8	SG3	1705.9		
RRT	.9491	RRF	.9506	RTF	.9786		
SGB	10325.8	R23	.0650	R13	.9789		
SG1	10318.7	SG2	381.9	THA	6.46		

ORBIT DETERMINATION ACCURACY

ST	5112.0	SR	760.9	SS	2392.4		
CRT	.9918	CRS	-.9993	CST	-.9915		
LSA	5687.5	MSA	293.0	SSA	25.9		
EL1	5167.4	EL2	96.3	ALF	8.40		

LAUNCH DATE DEC 8 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 727.681 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.024	GAL	1.12	AZL	87.18	HCA	215.45	SMA	186.73	ECC	.21173
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.299	GAP	-9.53	AZP	92.30	TAL	6.43	TAP	221.88	RCA	147.19
RC	302.203	GL	29.44	GP	-8.85	ZAL	74.77	ZAP	52.26	ETS	172.33	ZAE	78.72	ETE	177.39	ZAC	75.52

INC	2.8189	V1	30.236	APO	226.26	V2	25.911	ETC	257.64	CLP	51.72						

PLANETOCENTRIC CONIC

C3	10.914	VHL	3.304	DLA	39.24	RAL	163.24	RAD	6567.4	VEL	11.502	PTH	2.00	VHP	3.728	DPA	.07
RAP	161.59	ECC	1.1796														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.62	7 51 55	4009.90	-30.90	174.30	26.14	64.51	8 58 45	3409.9	-34.05	166.00
118.38	14 20 28	2793.49	-30.89	81.97	26.13	64.49	15 7 1	2193.5	-34.04	73.67
61.62	7 51 55	4009.90	-30.90	174.30	26.14	64.51	8 58 45	3409.9	-34.05	166.00
118.38	14 20 28	2793.49	-30.89	81.97	26.13	64.49	15 7 1	2193.5	-34.04	73.67
61.62	7 51 55	4009.90	-30.90	174.30	26.14	64.51	8 58 45	3409.9	-34.05	166.00
118.38	14 20 28	2793.49	-30.89	81.97	26.13	64.49	15 7 1	2193.5	-34.04	73.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.9331	TRA	.1072	TC-13.8118	BAU	2.0238	SGT10450.7	SGR	1159.8	SG3	1658.4	ST	5094.8	SR	730.4	SS	2283.2
RDE	.4167	RRA	.1537	RC3-1.2703	FAU	.33434	RRT	.9420	RRF	.9422	RTF	.9786	CRT	.9917	CRS	-.9992	CST -.9905
FDE	4.0292	FRA	1.5813	FC-26.5210	BSP	36302	SGB10514.8	R23	.0568	R13	.9789	LSA	5622.8	MSA	296.0	SSA	26.7
BDE	2.9626	BRA	.1874	BC313.8701	FSP	5536	SG110507.7	SG2	387.1	THA	5.98	EL1	5146.1	EL2	93.1	ALF	8.09

LAUNCH DATE DEC 8 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 731.963 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.029	GAL	1.02	AZL	87.23	HCA	216.66	SMA	186.82	ECC	.21198
RP	211.47	LAP	-1.65	LOP	292.57	VP	23.341	GAP	-9.64	AZP	92.22	TAL	5.86	TAP	222.52	RCA	147.22
RC	303.228	GL	29.08	GP	-8.49	ZAL	75.68	ZAP	51.18	ETS	172.34	ZAE	77.38	ETE	177.28	ZAC	75.90

INC	2.7683	V1	30.236	APO	226.42	V2	25.941	ETC	257.64	CLP	50.67						

PLANETOCENTRIC CONIC

C3	10.770	VHL	3.282	DLA	38.49	RAL	164.17	RAD	6567.4	VEL	11.496	PTH	2.00	VHP	3.779	DPA	.33
RAP	161.88	ECC	1.1772														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.77	8 1 9	3991.31	-30.43	172.49	26.57	65.20	9 7 41	3391.3	-33.49	164.20
117.23	14 18 38	2806.64	-30.41	82.81	26.56	65.18	15 5 25	2206.6	-33.48	74.51
62.77	8 1 9	3991.31	-30.43	172.49	26.57	65.20	9 7 41	3391.3	-33.49	164.20
117.23	14 18 38	2806.64	-30.41	82.81	26.56	65.18	15 5 25	2206.6	-33.48	74.51
62.77	8 1 9	3991.31	-30.43	172.49	26.57	65.20	9 7 41	3391.3	-33.49	164.20
117.23	14 18 38	2806.64	-30.41	82.81	26.56	65.18	15 5 25	2206.6	-33.48	74.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.9158	TRA	.1952	TC-14.1877	BAU	2.0499	SGT10621.7	SGR	1102.4	SG3	1604.4	ST	5100.0	SR	706.8	SS	2198.0
RDE	.3999	RRA	.1602	RC3-1.1801	FAU	.32093	RRT	.9329	RRF	.9325	RTF	.9786	CRT	.9918	CRS	-.9989	CST -.9894
FDE	3.7899	FRA	1.6976	FC-25.7977	BSP	37376	SGB10678.7	R23	.0510	R13	.9787	LSA	5590.2	MSA	301.4	SSA	27.1
BDE	2.9431	BRA	.2525	BC314.2367	FSP	5451	SG110671.4	SG2	395.2	THA	5.54	EL1	5148.0	EL2	89.7	ALF	7.83

LAUNCH DATE DEC 8 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 736.255 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.035	GAL	.92	AZL	87.28	HCA	217.87	SMA	186.92	ECC	.21226
RP	211.20	LAP	-1.67	LOP	293.79	VP	23.382	GAP	-9.75	AZP	92.15	TAL	5.28	TAP	223.15	RCA	147.24
RC	304.242	GL	28.73	GP	-8.16	ZAL	76.64	ZAP	50.14	ETS	172.36	ZAE	76.07	ETE	177.19	ZAC	76.27

INC	2.7203	V1	30.236	APO	226.59	V2	25.971	ETC	257.63	CLP	49.65						

PLANETOCENTRIC CONIC

C3	10.657	VHL	3.261	DLA	37.73	RAL	165.14	RAD	6567.4	VEL	11.490	PTH	2.00	VHP	3.830	DPA	.57
RAP	162.18	ECC	1.1751														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.95	8 10 52	3971.75	-29.93	170.62	27.06	65.88	9 17 4	3371.7	-32.92	162.34
116.05	14 16 36	2821.13	-29.92	83.74	27.05	65.87	15 3 38	2221.1	-32.91	75.46
63.95	8 10 52	3971.75	-29.93	170.62	27.06	65.88	9 17 4	3371.7	-32.92	162.34
116.05	14 16 36	2821.13	-29.92	83.74	27.05	65.87	15 3 38	2221.1	-32.91	75.46
63.95	8 10 52	3971.75	-29.93	170.62	27.06	65.88	9 17 4	3371.7	-32.92	162.34
116.05	14 16 36	2821.13	-29.92	83.74	27.05	65.87	15 3 38	2221.1	-32.91	75.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.8710	TRA	.2648	TC-14.6449	BAU	2.0885	SGT10818.3	SGR	1050.3	SG3	1559.1	ST	5054.9	SR	679.9	SS	2081.5
RDE	.3818	RRA	.1632	RC3-1.1075	FAU	.31093	RRT	.9238	RRF	.9217	RTF	.9787	CRT	.9918	CRS	-.9985	CST -.9882
FDE	3.5065	FRA	1.7529	FC-25.3075	BSP	37821	SGB10869.1	R23	.0427	R13	.9788	LSA	5500.4	MSA	302.5	SSA	28.1
BDE	2.8963	BRA	.3110	BC314.6867	FSP	5237	SG110861.8	SG2	400.5	THA	5.13	EL1	5099.7	EL2	86.1	ALF	7.60

LAUNCH DATE DEC 8 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 740.551 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.041	GAL	.82	AZL	87.33	HCA	219.09	SMA	187.02	ECC	.21256
RP	210.95	LAP	-1.69	LOP	295.01	VP	23.423	GAP	-9.85	AZP	92.08	TAL	4.68	TAP	223.77	RCA	147.27
RC	305.247	GL	28.39	GP	-7.84	ZAL	77.64	ZAP	49.12	ETS	172.38	ZAE	74.78	ETE	177.10	ZAC	76.62

INC	2.6748	V1	30.236	APO	226.77	V2	26.001	ETC	257.62	CLP	48.65						

PLANETOCENTRIC CONIC

C3	10.513	VHL	3.242	DLA	36.96	RAL	166.14	RAD	6567.4	VEL	11.485	PTH	2.00	VHP	3.883	DPA	.77
RAP	162.50	ECC	1.1730														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.18	8 21 10	3950.89	-29.43	168.67	27.60	66.55	9 27 1	3350.9	-32.33	160.39
114.82	14 14 16	2837.26	-29.42	84.80	27.59	66.53	15 1 34	2237.3	-32.32	76.53
65.18	8 21 10	3950.89	-29.43	168.67	27.60	66.55	9 27 1	3350.9	-32.33	160.39
114.82	14 14 16	2837.26	-29.42	84.80	27.59	66.53	15 1 34	2237.3	-32.32	76.53
65.18	8 21 10	3950.89	-29.43	168.67	27.60	66.55	9 27 1	3350.9	-32.33	160.39
114.82	14 14 16	2837.26	-29.42	84.80	27.59	66.53	15 1 34	2237.3	-32.32	76.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.8251	TRA	.3433	TC-15.0779	BAU	2.1243	SGT11004.8	SGR	1001.7	SG3	1512.2	ST	5006.0	SR	655.6	SS	1967.7
RDE	.3655	RRA	.1665	RC3-1.0350	FAU	.30051	RRT	.9132	RRF	.9094	RTF	.9787	CRT	.9920	CRS	-.9980	CST -.9867
FDE	3.2367	FRA	1.8148	FC-24.7453	BSP	38376	SGB11050.3	R23	.0353	R13	.9788	LSA	5410.0	MSA	304.6	SSA	29.1
BDE	2.8487	BRA	.3815	BC315.1134	FSP	5058	SG111042.8	SG2	406.7	THA	4.76	EL1	5048.0	EL2	82.2	ALF	7.40

LAUNCH DATE DEC 8 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 744.853 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.047 GAL .71 AZL 87.37 HCA 220.31 SMA 187.12 ECC .21287 INC 2.6315 V1 30.236
RP 210.70 LAP -1.70 LOP 296.23 VP 23.463 GAP -9.96 AZP 92.01 TAL 4.07 TAP 224.38 RCA 147.29 APO 226.95 V2 26.029
RC 306.243 GL 28.06 GP -7.55 ZAL 78.68 ZAP 48.13 ETS 172.41 ZAE 73.52 ETE 177.03 ZAC 76.96 ETC 257.60 CLP 47.68

PLANETOCENTRIC CONIC

C3 10.400 VHL 3.225 DLA 36.19 RAL 167.17 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 3.938 DPA .94 RAP 162.85 ECC 1.1712

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.45	8 32 5	3028.61	-28.91	166.62	28.19	67.21	9 37 34	3328.6	-31.73	158.36
113.55	14 11 36	2055.18	-28.90	85.99	28.18	67.19	14 59 11	2255.2	-31.72	77.73
66.45	8 32 5	3028.61	-28.91	166.62	28.19	67.21	9 37 34	3328.6	-31.73	158.36
113.55	14 11 36	2055.18	-28.90	85.99	28.18	67.19	14 59 11	2255.2	-31.72	77.73
66.45	8 32 5	3028.61	-28.91	166.62	28.19	67.21	9 37 34	3328.6	-31.73	158.36
113.55	14 11 36	2055.18	-28.90	85.99	28.18	67.19	14 59 11	2255.2	-31.72	77.73

DIFFERENTIAL CORRECTIONS

TDE 2.7799 TRA .4284 TC-15.5041 BAU 2.1599
RDE .3516 RRA .1008 RC3 -.9666 FAU .29064
FDE 2.9935 FRA 1.8753 FC-24.1931 BSP 38902
BDE 2.8020 BRA .4608 BC315.5342 FSP 4864

MID-COURSE EXECUTION ACCURACY

SGT11193.0 SGR 958.5 SG3 1468.4
RRT .9016 RRF .8960 RTF .9789
SGB11233.9 R23 .0282 R13 .9790
SG111226.3 SG2 413.4 THA 4.42

ORBIT DETERMINATION ACCURACY

ST 4956.0 SR 634.9 SS 1864.6
CRT .9923 CRS -.9971 CST -.9851
LSA 5324.2 MSA 306.5 SSA 29.9
EL1 4995.9 EL2 78.1 ALF 7.25

LAUNCH DATE DEC 8 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 749.160 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.053 GAL .61 AZL 87.41 HCA 221.53 SMA 187.22 ECC .21321 INC 2.5902 V1 30.236
RP 210.46 LAP -1.72 LOP 297.45 VP 23.502 GAP -10.06 AZP 91.94 TAL 3.45 TAP 224.98 RCA 147.31 APO 227.14 V2 26.057
RC 307.229 GL 27.74 GP -7.27 ZAL 79.76 ZAP 47.17 ETS 172.43 ZAE 72.29 ETE 176.97 ZAC 77.29 ETC 257.58 CLP 46.74

PLANETOCENTRIC CONIC

C3 10.298 VHL 3.209 DLA 35.41 RAL 168.23 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 3.993 DPA 1.09 RAP 163.22 ECC 1.1695

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.79	8 43 43	3904.54	-28.37	164.44	28.83	67.86	9 48 48	3304.5	-31.11	156.20
112.21	14 8 27	2075.25	-28.36	87.33	28.82	67.84	14 56 22	2275.2	-31.10	79.09
67.79	8 43 43	3904.54	-28.37	164.44	28.83	67.86	9 48 48	3304.5	-31.11	156.20
112.21	14 8 27	2075.25	-28.36	87.33	28.82	67.84	14 56 22	2275.2	-31.10	79.09
67.79	8 43 43	3904.54	-28.37	164.44	28.83	67.86	9 48 48	3304.5	-31.11	156.20
112.21	14 8 27	2075.25	-28.36	87.33	28.82	67.84	14 56 22	2275.2	-31.10	79.09

DIFFERENTIAL CORRECTIONS

TDE 2.7303 TRA .5207 TC-15.9018 BAU 2.1927
RDE .3388 RRA .1734 RC3 -.8964 FAU .27995
FDE 2.7556 FRA 1.9411 FC-23.5360 BSP 39519
BDE 2.7513 BRA .5488 BC315.9270 FSP 4713

MID-COURSE EXECUTION ACCURACY

SGT11367.6 SGR 917.1 SG3 1420.9
RRT .8876 RRF .8806 RTF .9789
SGB11404.6 R23 .0229 R13 .9789
SG111396.8 SG2 421.4 THA 4.10

ORBIT DETERMINATION ACCURACY

ST 4896.5 SR 615.7 SS 1760.6
CRT .9927 CRS -.9959 CST -.9829
LSA 5230.5 MSA 310.1 SSA 30.7
EL1 4934.5 EL2 73.8 ALF 7.12

LAUNCH DATE DEC 8 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 753.471 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.059 GAL .49 AZL 87.45 HCA 222.76 SMA 187.33 ECC .21358 INC 2.5508 V1 30.236
RP 210.22 LAP -1.73 LOP 298.68 VP 23.541 GAP -10.17 AZP 91.87 TAL 2.81 TAP 225.57 RCA 147.32 APO 227.34 V2 26.085
RC 308.206 GL 27.42 GP -7.01 ZAL 80.88 ZAP 46.24 ETS 172.45 ZAE 71.08 ETE 176.91 ZAC 77.61 ETC 257.56 CLP 45.83

PLANETOCENTRIC CONIC

C3 10.205 VHL 3.195 DLA 34.62 RAL 169.32 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 4.050 DPA 1.21 RAP 163.60 ECC 1.1679

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.20	8 56 12	3878.24	-27.81	162.11	29.52	68.50	10 0 50	3278.2	-30.47	153.89
110.80	14 4 42	2097.91	-27.80	88.87	29.51	68.48	14 53 0	2297.9	-30.46	80.65
69.20	8 56 12	3878.24	-27.81	162.11	29.52	68.50	10 0 50	3278.2	-30.47	153.89
110.80	14 4 42	2097.91	-27.80	88.87	29.51	68.48	14 53 0	2297.9	-30.46	80.65
69.20	8 56 12	3878.24	-27.81	162.11	29.52	68.50	10 0 50	3278.2	-30.47	153.89
110.80	14 4 42	2097.91	-27.80	88.87	29.51	68.48	14 53 0	2297.9	-30.46	80.65

DIFFERENTIAL CORRECTIONS

TDE 2.6769 TRA .6187 TC-16.2912 BAU 2.2255
RDE .3271 RRA .1765 RC3 -.8304 FAU .26992
FDE 2.5269 FRA 2.0005 FC-22.8990 BSP 40078
BDE 2.6968 BRA .6434 BC316.3124 FSP 4538

MID-COURSE EXECUTION ACCURACY

SGT11541.5 SGR 879.6 SG3 1375.9
RRT .8725 RRF .8637 RTF .9789
SGB11575.0 R23 .0172 R13 .9790
SG111567.1 SG2 428.8 THA 3.81

ORBIT DETERMINATION ACCURACY

ST 4828.4 SR 598.2 SS 1657.8
CRT .9932 CRS -.9941 CST -.9804
LSA 5130.3 MSA 313.3 SSA 31.5
EL1 4864.8 EL2 69.0 ALF 7.02

LAUNCH DATE DEC 8 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 757.787 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.065 GAL .38 AZL 87.49 HCA 223.99 SMA 187.44 ECC .21396 INC 2.5131 V1 30.236
RP 209.99 LAP -1.75 LOP 299.90 VP 23.579 GAP -10.27 AZP 91.81 TAL 2.16 TAP 226.14 RCA 147.33 APO 227.54 V2 26.111
RC 309.174 GL 27.11 GP -6.76 ZAL 82.04 ZAP 45.33 ETS 172.47 ZAE 69.89 ETE 176.86 ZAC 77.92 ETC 257.53 CLP 44.93

PLANETOCENTRIC CONIC

C3 10.123 VHL 3.182 DLA 33.81 RAL 170.45 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 4.108 DPA 1.30 RAP 164.01 ECC 1.1666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.70	9 9 39	3849.26	-27.23	159.60	30.25	69.14	10 13 49	3249.3	-29.82	151.39
109.30	14 0 11	2023.64	-27.22	90.63	30.25	69.12	14 48 55	2323.6	-29.81	82.43
70.70	9 9 39	3849.26	-27.23	159.60	30.25	69.14	10 13 49	3249.3	-29.82	151.39
109.30	14 0 11	2023.64	-27.22	90.63	30.25	69.12	14 48 55	2323.6	-29.81	82.43
110.00	14 42 36	2794.09	-30.11	81.67	31.38	72.99	15 29 10	2194.1	-32.14	73.04
110.00	13 26 25	3026.81	-24.42	97.35	28.94	65.30	14 16 52	2426.8	-27.54	89.57

DIFFERENTIAL CORRECTIONS

TDE 2.6188 TRA .7216 TC-16.6703 BAU 2.2584
RDE .3164 RRA .1795 RC3 -.7668 FAU .26016
FDE 2.3036 FRA 2.0564 FC-22.2497 BSP 40676
BDE 2.6379 BRA .7436 BC316.6879 FSP 4394

MID-COURSE EXECUTION ACCURACY

SGT11713.6 SGR 845.1 SG3 1331.6
RRT .8558 RRF .8450 RTF .9789
SGB11744.1 R23 .0119 R13 .9789
SG111736.0 SG2 436.4 THA 3.54

ORBIT DETERMINATION ACCURACY

ST 4750.0 SR 581.9 SS 1554.3
CRT .9938 CRS -.9914 CST -.9772
LSA 5021.5 MSA 317.4 SSA 32.3
EL1 4785.1 EL2 64.0 ALF 6.94

LAUNCH DATE DEC 8 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 23 1965

DISTANCE 762.108

HELIOCENTRIC CONIC

RL 147.35 LAL .00 LOL 75.95 VL 33.071 GAL .26 AZL 87.52 HCA 225.22 SMA 187.55 ECC .21437 INC 2.4769 V1 30.236
RP 209.77 LAP -1.76 LOP 301.14 VP 23.616 GAP -10.37 AZP 91.75 TAL 1.49 TAP 226.71 RCA 147.34 APO 227.75 V2 26.137
RC 310.132 GL 26.80 GP -6.53 ZAL 83.24 ZAP 44.45 ETS 172.49 ZAE 68.73 ETE 176.82 ZAC 78.22 ETC 257.49 CLP 44.07

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 10.051 VHL 3.170 DLA 32.99 RAL 171.60 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 4.167 DPA 1.37 RAP 164.43 ECC 1.1654

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.32	9 24 19	3816.85	-26.64	156.84	31.04	69.77	10 27 56	3216.9	-28.14	148.66
107.68	13 54 42	2953.21	-26.62	92.66	31.03	69.76	14 43 55	2353.2	-29.13	84.48
72.32	9 24 19	3816.85	-26.64	156.84	31.04	69.77	10 27 56	3216.9	-29.14	148.66
107.68	13 54 42	2953.21	-26.62	92.66	31.03	69.76	14 43 55	2353.2	-29.13	84.48
110.00	15 17 12	2699.64	-31.79	74.82	32.81	76.71	16 2 11	2099.6	-33.29	65.91
110.00	13 0 59	3118.43	-21.70	103.07	28.66	62.91	13 52 58	2518.4	-25.15	95.62

DIFFERENTIAL CORRECTIONS

TDE 2.5592 TRA .8320 TC-17.0221 BAU 2.2892
RDE .3072 RRA .1826 RC3 -.7037 FAU .25019
FDE 2.0985 FRA 2.1139 FC-21.5503 BSP 41217
BDE 2.5776 BRA .8518 BC317.0367 FSP 4230

MID-COURSE EXECUTION ACCURACY

SGT11878.4 SGR 813.7 SG3 1286.9
RRT .8369 RRF .8246 RTF .9789
SGB11906.3 R23 .0078 R13 .9789
SG111898.0 SG2 444.7 THA 3.29

ORBIT DETERMINATION ACCURACY

ST 4667.5 SR 567.8 SS 1458.9
CRT .9946 CRS -.9877 CST -.9733
LSA 4912.4 MSA 322.2 SSA 32.9
EL1 4701.6 EL2 58.6 ALF 6.90

LAUNCH DATE DEC 8 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 25 1965

DISTANCE 766.433

HELIOCENTRIC CONIC

RL 147.35 LAL .00 LOL 75.95 VL 33.077 GAL .14 AZL 87.56 HCA 226.45 SMA 187.66 ECC .21481 INC 2.4422 V1 30.236
RP 209.55 LAP -1.77 LOP 302.37 VP 23.653 GAP -10.46 AZP 91.68 TAL .81 TAP 227.26 RCA 147.35 APO 227.97 V2 26.162
RC 311.080 GL 26.48 GP -6.31 ZAL 84.47 ZAP 43.59 ETS 172.51 ZAE 67.59 ETE 176.78 ZAC 78.51 ETC 257.46 CLP 43.23

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.990 VHL 3.161 DLA 32.16 RAL 172.77 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 4.227 DPA 1.42 RAP 164.88 ECC 1.1644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.08	9 40 33	3779.82	-26.02	153.75	31.86	70.40	10 43 33	3179.8	-28.45	145.59
105.92	13 47 50	2987.82	-26.01	95.06	31.86	70.38	14 37 38	2387.8	-28.44	86.91
74.08	9 40 33	3779.82	-26.02	153.75	31.86	70.40	10 43 33	3179.8	-28.45	145.59
105.92	13 47 50	2987.82	-26.01	95.06	31.86	70.38	14 37 38	2387.8	-28.44	86.91
110.00	15 42 25	2633.55	-32.72	69.89	33.93	79.49	16 26 19	2033.5	-33.82	60.83
110.00	12 45 8	3182.09	-19.67	106.90	28.79	61.46	13 38 10	2582.1	-23.33	99.67

DIFFERENTIAL CORRECTIONS

TDE 2.4946 TRA .9447 TC-17.3621 BAU 2.3204
RDE .2987 RRA .1847 RC3 -.6440 FAU .24078
FDE 1.8958 FRA 2.1510 FC-20.8660 BSP 41769
BDE 2.5124 BRA .9626 BC317.3741 FSP 4075

MID-COURSE EXECUTION ACCURACY

SGT12041.5 SGR 784.4 SG3 1243.1
RRT .8170 RRF .8021 RTF .9791
SGB12067.0 R23 .0019 R13 .9791
SG112058.6 SG2 451.7 THA 3.05

ORBIT DETERMINATION ACCURACY

ST 4574.4 SR 554.4 SS 1360.5
CRT .9954 CRS -.9827 CST -.9689
LSA 4793.4 MSA 325.1 SSA 33.6
EL1 4607.6 EL2 52.9 ALF 6.88

LAUNCH DATE DEC 8 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 27 1965

DISTANCE 770.760

HELIOCENTRIC CONIC

RL 147.35 LAL .00 LOL 75.95 VL 33.084 GAL .02 AZL 87.59 HCA 227.68 SMA 187.77 ECC .21526 INC 2.4088 V1 30.236
RP 209.34 LAP -1.78 LOP 303.61 VP 23.689 GAP -10.56 AZP 91.62 TAL .12 TAP 227.80 RCA 147.35 APO 228.19 V2 26.186
RC 312.019 GL 26.17 GP -6.10 ZAL 85.75 ZAP 42.76 ETS 172.53 ZAE 66.47 ETE 176.75 ZAC 78.80 ETC 257.42 CLP 42.41

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.940 VHL 3.153 DLA 31.31 RAL 173.97 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 4.288 DPA 1.44 RAP 165.34 ECC 1.1636

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.05	9 58 50	3736.57	-25.38	150.22	32.73	71.02	11 1 6	3136.6	-27.73	142.09
103.95	13 39 8	3029.09	-25.37	97.95	32.73	71.01	14 29 37	2429.1	-27.72	89.82
76.05	9 58 50	3736.57	-25.38	150.22	32.73	71.02	11 1 6	3136.6	-27.73	142.09
103.95	13 39 8	3029.09	-25.37	97.95	32.73	71.01	14 29 37	2429.1	-27.72	89.82
110.00	16 3 59	2578.55	-33.32	65.71	34.93	81.90	16 46 58	1978.5	-34.08	56.56
110.00	12 33 9	3235.10	-17.92	110.01	29.11	60.39	13 27 4	2635.1	-21.72	102.95

DIFFERENTIAL CORRECTIONS

TDE 2.4355 TRA 1.0427 TC-17.6221 BAU 2.3431
RDE .2908 RRA .1833 RC3 -.5861 FAU .23152
FDE 1.6961 FRA 2.1107 FC-20.1645 BSP 42097
BDE 2.4528 BRA 1.0587 BC317.6318 FSP 3736

MID-COURSE EXECUTION ACCURACY

SGT12164.7 SGR 753.6 SG3 1195.1
RRT .7974 RRF .7750 RTF .9799
SGB12188.0 R23 -.0125 R13 .9799
SG112179.6 SG2 454.2 THA 2.83

ORBIT DETERMINATION ACCURACY

ST 4488.1 SR 541.5 SS 1254.4
CRT .9962 CRS -.9771 CST -.9653
LSA 4680.6 MSA 317.2 SSA 34.2
EL1 4520.4 EL2 46.8 ALF 6.85

LAUNCH DATE DEC 8 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 29 1965

DISTANCE 775.090

HELIOCENTRIC CONIC

RL 147.35 LAL .00 LOL 75.95 VL 33.090 GAL -.10 AZL 87.62 HCA 228.92 SMA 187.89 ECC .21575 INC 2.3766 V1 30.236
RP 209.14 LAP -1.79 LOP 304.84 VP 23.724 GAP -10.66 AZP 91.56 TAL 359.41 TAP 228.34 RCA 147.35 APO 228.43 V2 26.209
RC 312.950 GL 25.85 GP -5.91 ZAL 87.06 ZAP 41.95 ETS 172.54 ZAE 65.37 ETE 176.72 ZAC 79.08 ETC 257.37 CLP 41.61

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.902 VHL 3.147 DLA 30.44 RAL 175.19 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 4.351 DPA 1.45 RAP 165.82 ECC 1.1630

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.33	10 20 6	3683.96	-24.72	146.02	33.65	71.64	11 21 30	3084.0	-26.99	137.92
101.67	13 27 36	3080.17	-24.71	101.54	33.64	71.63	14 18 56	2480.2	-26.98	93.43
78.33	10 20 6	3683.96	-24.72	146.02	33.65	71.64	11 21 30	3084.0	-26.99	137.92
101.67	13 27 36	3080.17	-24.71	101.54	33.64	71.63	14 18 56	2480.2	-26.98	93.43
110.00	16 23 28	2529.90	-33.73	61.97	35.87	84.08	17 5 37	1929.9	-34.18	52.76
110.00	12 23 25	3282.22	-16.31	112.72	29.58	59.54	13 18 7	2682.2	-20.23	105.79

DIFFERENTIAL CORRECTIONS

TDE 2.3924 TRA 1.2357 TC-17.8339 BAU 2.3619
RDE .2889 RRA .1944 RC3 -.5150 FAU .21852
FDE 1.6181 FRA 2.3517 FC-19.1051 BSP 43629
BDE 2.4098 BRA 1.2509 BC317.8414 FSP 3901

MID-COURSE EXECUTION ACCURACY

SGT12319.1 SGR 741.8 SG3 1152.5
RRT .7661 RRF .7566 RTF .9783
SGB12341.4 R23 .0093 R13 .9783
SG112332.2 SG2 476.3 THA 2.65

ORBIT DETERMINATION ACCURACY

ST 4438.6 SR 540.3 SS 1248.5
CRT .9970 CRS -.9678 CST -.9580
LSA 4629.3 MSA 346.0 SSA 34.3
EL1 4471.2 EL2 41.7 ALF 6.92

LAUNCH DATE DEC 8 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 779.429 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.097 GAL -.23 AZL 87.65 HCA 230.16 SMA 188.01 ECC .21627 INC 2.3456 V1 30.236
RP 208.94 LAP -1.80 LOP 306.09 VP 23.758 GAP -10.75 AZP 91.50 TAL 358.69 TAP 228.86 RCA 147.35 APO 228.67 V2 26.232
RC 313.871 GL 25.53 GP -5.72 ZAL 88.41 ZAP 41.16 ETS 172.56 ZAE 64.29 ETE 176.70 ZAC 79.36 ETC 257.33 CLP 40.83

PLANETOCENTRIC CONIC

C3 9.876 VHL 3.143 DLA 29.56 RAL 176.43 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 4.414 DPA 1.43 RAP 166.31 ECC 1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.15	10 46 23	3615.36	-24.03	140.67	34.60	72.26	11 46 38	3015.4	-26.23	132.59
98.85	13 11 12	3147.73	-24.03	106.32	34.60	72.24	14 3 40	2547.7	-26.23	98.24
100.00	13 57 42	2990.94	-26.57	96.09	35.40	75.77	14 47 41	2398.9	-28.26	87.70
100.00	12 42 34	3239.38	-21.54	112.16	33.64	68.76	13 36 33	2639.4	-24.24	104.40
110.00	16 41 33	2485.47	-33.90	58.53	36.77	86.10	17 22 59	1885.5	-34.15	49.29
110.00	12 15 12	3325.61	-14.80	115.17	30.15	58.83	13 10 38	2725.6	-18.82	108.36

DIFFERENTIAL CORRECTIONS
TDE 2.2826 TRA 1.3363 TC-18.2281 BAU 2.4076
RDE .2803 RRA .1936 RC3 -.4714 FAU .21250
FDE 1.3806 FRA 2.3258 FC-18.6274 BSP 43517
BDE 2.2998 BRA 1.3503 BC318.2342 FSP 3685

MID-COURSE EXECUTION ACCURACY
SGT12506.9 SGR 716.6 SG3 1117.1
RRT .7428 RRF .7267 RTF .9787
SGB12527.5 R23 -.0021 R13 .9787
SG112318.3 SG2 479.3 THA 2.44

ORBIT DETERMINATION ACCURACY
ST 4259.5 SR 525.4 SS 1118.3
CRT .9974 CRS -.9525 CST -.9468
LSA 4421.2 MSA 349.4 SSA 35.4
EL1 4291.6 EL2 37.8 ALF 7.01

LAUNCH DATE DEC 8 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 783.768 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.104 GAL -.36 AZL 87.68 HCA 231.41 SMA 188.12 ECC .21682 INC 2.3156 V1 30.236
RP 208.76 LAP -1.81 LOP 307.33 VP 23.791 GAP -10.85 AZP 91.44 TAL 357.96 TAP 229.37 RCA 147.34 APO 228.91 V2 26.254
RC 314.784 GL 25.21 GP -5.55 ZAL 89.78 ZAP 40.39 ETS 172.57 ZAE 63.23 ETE 176.67 ZAC 79.63 ETC 257.28 CLP 40.07

PLANETOCENTRIC CONIC

C3 9.863 VHL 3.140 DLA 28.66 RAL 177.69 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 4.479 DPA 1.40 RAP 166.83 ECC 1.1623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.41	11 25 35	3505.10	-23.33	132.31	35.60	72.87	12 24 0	2905.1	-25.46	124.25
94.59	12 42 3	3257.44	-23.32	114.17	35.59	72.86	13 36 21	2657.4	-25.45	106.11
100.00	14 37 15	2886.85	-28.20	88.16	36.92	79.64	15 25 22	2286.9	-29.34	79.54
100.00	12 13 4	3350.92	-18.63	119.17	33.72	66.19	13 8 55	2750.9	-21.69	111.71
110.00	16 58 42	2444.02	-34.13	55.30	37.67	88.00	17 39 26	1844.0	-34.03	46.06
110.00	12 8 6	3366.52	-13.34	117.45	30.82	58.23	13 4 13	2766.5	-17.45	110.74

DIFFERENTIAL CORRECTIONS
TDE 2.2008 TRA 1.4766 TC-18.4746 BAU 2.4366
RDE .2753 RRA .1957 RC3 -.4187 FAU .20377
FDE 1.2130 FRA 2.3683 FC-17.8867 BSP 44070
BDE 2.2179 BRA 1.4895 BC318.4793 FSP 3563

MID-COURSE EXECUTION ACCURACY
SGT12656.8 SGR 697.8 SG3 1076.9
RRT .7153 RRF .6978 RTF .9785
SGB12676.0 R23 -.0044 R13 .9785
SG112666.7 SG2 487.3 THA 2.26

ORBIT DETERMINATION ACCURACY
ST 4134.1 SR 516.9 SS 1037.8
CRT .9975 CRS -.9337 CST -.9347
LSA 4278.4 MSA 359.2 SSA 36.0
EL1 4166.1 EL2 36.0 ALF 7.11

LAUNCH DATE DEC 8 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 788.110 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.111 GAL -.50 AZL 87.71 HCA 232.65 SMA 188.24 ECC .21739 INC 2.2866 V1 30.236
RP 208.58 LAP -1.82 LOP 308.58 VP 23.824 GAP -10.94 AZP 91.39 TAL 357.21 TAP 229.86 RCA 147.32 APO 229.17 V2 26.274
RC 315.690 GL 24.88 GP -5.38 ZAL 91.21 ZAP 39.64 ETS 172.59 ZAE 62.20 ETE 176.65 ZAC 79.89 ETC 257.23 CLP 39.34

PLANETOCENTRIC CONIC

C3 9.862 VHL 3.140 DLA 27.74 RAL 178.97 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 4.544 DPA 1.35 RAP 167.36 ECC 1.1623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 59 11	3217.68	-25.85	111.98	37.54	78.01	13 52 49	2617.7	-27.24	103.59
90.00	11 18 38	3544.84	-19.43	133.76	35.48	68.98	12 17 43	2944.8	-22.11	126.12
100.00	15 5 19	2811.10	-29.00	82.67	38.15	82.42	15 52 10	2211.1	-29.75	73.95
100.00	11 55 11	3426.66	-16.48	123.77	34.16	64.71	12 52 18	2826.7	-19.76	116.50
110.00	17 15 7	2404.85	-34.18	52.24	38.56	89.81	17 55 12	1804.8	-33.83	43.02
110.00	12 1 52	3405.67	-11.93	119.60	31.58	57.73	12 58 38	2805.7	-16.11	112.98

DIFFERENTIAL CORRECTIONS
TDE 2.1180 TRA 1.6216 TC-18.6981 BAU 2.4658
RDE .2714 RRA .1972 RC3 -.3693 FAU .19565
FDE 1.0623 FRA 2.3968 FC-17.1750 BSP 44555
BDE 2.1353 BRA 1.6335 BC318.7017 FSP 3414

MID-COURSE EXECUTION ACCURACY
SGT12807.2 SGR 681.3 SG3 1038.7
RRT .6872 RRF .6678 RTF .9787
SGB12825.3 R23 -.0078 R13 .9787
SG112815.8 SG2 494.6 THA 2.10

ORBIT DETERMINATION ACCURACY
ST 4007.8 SR 509.9 SS 966.3
CRT .9972 CRS -.9103 CST -.9215
LSA 4137.6 MSA 366.9 SSA 36.4
EL1 4039.9 EL2 38.1 ALF 7.23

LAUNCH DATE DEC 8 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 792.454 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.117 GAL -.63 AZL 87.74 HCA 233.90 SMA 188.37 ECC .21800 INC 2.2585 V1 30.236
RP 208.40 LAP -1.82 LOP 309.82 VP 23.855 GAP -11.03 AZP 91.33 TAL 356.45 TAP 230.35 RCA 147.30 APO 229.43 V2 26.294
RC 316.588 GL 24.54 GP -5.22 ZAL 92.65 ZAP 38.92 ETS 172.60 ZAE 61.18 ETE 176.64 ZAC 80.16 ETC 257.18 CLP 38.62

PLANETOCENTRIC CONIC

C3 9.875 VHL 3.143 DLA 26.80 RAL 180.26 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 4.610 DPA 1.28 RAP 167.91 ECC 1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 35 17	3115.75	-27.09	104.78	38.96	81.42	14 27 13	2515.8	-28.00	96.23
90.00	10 52 50	3647.30	-16.80	140.14	35.81	66.87	11 53 38	3047.3	-19.79	132.74
100.00	15 29 7	2748.79	-29.47	78.10	39.29	84.78	16 14 56	2148.8	-29.89	69.32
100.00	11 41 42	3489.50	-14.62	127.50	34.77	63.63	12 39 51	2889.5	-18.04	120.38
110.00	17 30 58	2367.50	-34.15	49.33	39.47	91.54	18 10 26	1767.5	-33.56	40.13
110.00	11 56 20	3443.55	-10.55	121.66	32.41	57.29	12 53 43	2843.5	-14.78	115.12

DIFFERENTIAL CORRECTIONS
TDE 2.0286 TRA 1.7730 TC-18.8866 BAU 2.4938
RDE .2679 RRA .1988 RC3 -.3204 FAU .18738
FDE .9112 FRA 2.4281 FC-16.4267 BSP 45058
BDE 2.0462 BRA 1.7841 BC318.8893 FSP 3281

MID-COURSE EXECUTION ACCURACY
SGT12949.9 SGR 666.3 SG3 1000.0
RRT .6568 RRF .6360 RTF .9785
SGB12967.0 R23 -.0102 R13 .9785
SG112957.3 SG2 502.1 THA 1.94

ORBIT DETERMINATION ACCURACY
ST 3871.4 SR 503.4 SS 896.9
CRT .9959 CRS -.8774 CST -.9030
LSA 3987.6 MSA 378.8 SSA 36.8
EL1 3903.7 EL2 44.9 ALF 7.38

LAUNCH DATE DEC 8 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 796.800 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.124 GAL -.78 AZL 87.77 HCA 235.15 SMA 188.49 ECC .21864 INC 2.2312 V1 30.236
RP 208.24 LAP -1.83 LOP 311.07 VP 23.886 GAP -11.13 AZP 91.28 TAL 355.68 TAP 230.82 RCA 147.28 APO 229.70 V2 26.314
RC 317.480 GL 24.19 GP -5.07 ZAL 94.13 ZAP 38.21 ETS 172.61 ZAE 60.17 ETE 176.62 ZAC 80.42 ETC 257.13 CLP 37.92

PLANETOCENTRIC CONIC

C3 9.903 VHL 3.147 DLA 25.85 RAL 181.57 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 4.678 DPA 1.19 RAP 168.47 ECC 1.1630

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 2 51	3041.24	-27.75	99.42	40.20	84.03	14 53 32	2441.2	-28.27	90.80
90.00	10 35 42	3722.91	-14.72	144.71	36.41	65.54	11 37 45	3122.9	-17.90	137.48
100.00	15 50 32	2694.04	-29.75	74.06	40.38	86.89	16 35 26	2094.0	-29.86	65.25
100.00	11 30 42	3545.35	-12.90	130.76	35.51	62.80	12 29 47	2945.3	-16.45	123.77
110.00	17 46 22	2331.66	-34.05	46.53	40.38	93.19	18 25 13	1731.7	-33.24	37.39
110.00	11 51 22	3480.49	-9.18	123.65	33.30	56.93	12 49 22	2880.5	-13.47	117.18

DIFFERENTIAL CORRECTIONS

TDE 1.9363 TRA 1.9319 TC-19.0488 BAU 2.5221
RDE .2653 RRA .2001 RC3 -.2736 FAU .17935
FDE .7729 FRA 2.4566 FC-15.6795 BSP 45588
BDE 1.9544 BRA 1.9423 BC319.0507 FSP 3172

MID-COURSE EXECUTION ACCURACY

SGT13093.4 SGR 653.4 SG3 962.4
RRT .6253 RRF .6034 RTF .9784
SGB13109.7 R23 -.0120 R13 .9784
SG113099.8 SG2 509.7 THA 1.79

ORBIT DETERMINATION ACCURACY

ST 3732.8 SR 498.1 SS 837.2
CRT .9935 CRS -.8358 CST -.8815
LSA 3837.7 MSA 391.2 SSA 37.2
EL1 3765.4 EL2 56.1 ALF 7.55

LAUNCH DATE DEC 8 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 801.147 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.131 GAL -.92 AZL 87.80 HCA 236.40 SMA 188.61 ECC .21932 INC 2.2047 V1 30.236
RP 208.08 LAP -1.84 LOP 312.32 VP 23.916 GAP -11.22 AZP 91.22 TAL 354.89 TAP 231.29 RCA 147.25 APO 229.98 V2 26.332
RC 318.367 GL 23.84 GP -4.93 ZAL 95.64 ZAP 37.52 ETS 172.62 ZAE 59.19 ETE 176.61 ZAC 80.67 ETC 257.08 CLP 37.24

PLANETOCENTRIC CONIC

C3 9.945 VHL 3.154 DLA 24.88 RAL 182.88 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 4.746 DPA 1.09 RAP 169.04 ECC 1.1637

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 26 40	2978.72	-28.09	94.88	41.37	86.28	15 16 18	2378.7	-28.31	86.22
90.00	10 22 24	3787.13	-12.88	148.53	37.16	64.56	11 25 31	3187.1	-16.20	141.42
100.00	16 10 23	2644.29	-29.87	70.38	41.46	88.83	16 54 28	2044.3	-29.71	61.56
100.00	11 21 21	3596.80	-11.29	133.73	36.34	62.14	12 21 18	2996.8	-14.93	126.83
110.00	18 1 22	2297.09	-33.89	43.85	41.31	94.77	18 39 39	1697.1	-32.86	34.76
110.00	11 46 52	3516.76	-7.83	125.59	34.27	56.62	12 45 29	2916.8	-12.16	119.18

DIFFERENTIAL CORRECTIONS

TDE 1.8409 TRA 2.0971 TC-19.1760 BAU 2.5498
RDE .2635 RRA .2013 RC3 -.2288 FAU .17158
FDE .6421 FRA 2.4812 FC-14.9362 BSP 46090
BDE 1.8596 BRA 2.1067 BC319.1774 FSP 3048

MID-COURSE EXECUTION ACCURACY

SGT13232.7 SGR 642.2 SG3 925.7
RRT .5930 RRF .5698 RTF .9783
SGB13248.3 R23 -.0139 R13 .9783
SG113238.2 SG2 516.9 THA 1.65

ORBIT DETERMINATION ACCURACY

ST 3592.4 SR 493.8 SS 784.8
CRT .9894 CRS -.7830 CST -.8555
LSA 3687.7 MSA 405.5 SSA 37.4
EL1 3625.5 EL2 71.0 ALF 7.75

LAUNCH DATE DEC 8 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 805.496 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.139 GAL -1.07 AZL 87.82 HCA 237.65 SMA 188.74 ECC .22003 INC 2.1789 V1 30.236
RP 207.93 LAP -1.84 LOP 313.58 VP 23.945 GAP -11.31 AZP 91.17 TAL 354.09 TAP 231.74 RCA 147.21 APO 230.27 V2 26.349
RC 319.247 GL 23.47 GP -4.79 ZAL 97.17 ZAP 36.84 ETS 172.62 ZAE 58.22 ETE 176.60 ZAC 80.93 ETC 257.02 CLP 36.57

PLANETOCENTRIC CONIC

C3 10.003 VHL 3.163 DLA 23.89 RAL 184.21 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 4.816 DPA .98 RAP 169.64 ECC 1.1646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 48 16	2923.32	-28.27	90.84	42.51	88.29	15 36 59	2323.3	-28.21	82.17
90.00	10 11 24	3844.86	-11.17	151.90	38.02	63.81	11 15 28	3244.9	-14.60	144.91
100.00	16 29 6	2598.16	-29.89	66.93	42.53	90.64	17 12 25	1998.2	-29.48	58.15
100.00	11 13 14	3645.24	-9.73	136.48	37.26	61.60	12 13 59	3045.2	-13.45	129.67
110.00	18 16 2	2263.63	-33.67	41.26	42.26	96.29	18 53 46	1663.6	-32.43	32.24
110.00	11 42 48	3552.54	-6.48	127.48	35.29	56.36	12 42 0	2952.5	-10.86	121.13

DIFFERENTIAL CORRECTIONS

TDE 1.7410 TRA 2.2679 TC-19.2717 BAU 2.5774
RDE .2623 RRA .2021 RC3 -.1856 FAU .16390
FDE .5182 FRA 2.4999 FC-14.1849 BSP 46565
BDE 1.7606 BRA 2.2769 BC319.2726 FSP 2929

MID-COURSE EXECUTION ACCURACY

SGT13369.6 SGR 632.4 SG3 889.2
RRT .5594 RRF .5351 RTF .9782
SGB13384.5 R23 -.0155 R13 .9782
SG113374.3 SG2 524.1 THA 1.52

ORBIT DETERMINATION ACCURACY

ST 3449.3 SR 490.2 SS 739.9
CRT .9830 CRS -.7177 CST -.8254
LSA 3536.5 MSA 421.2 SSA 37.6
EL1 3482.8 EL2 89.2 ALF 7.96

LAUNCH DATE DEC 8 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 809.846 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.146 GAL -1.22 AZL 87.85 HCA 238.91 SMA 188.87 ECC .22078 INC 2.1538 V1 30.236
RP 207.79 LAP -1.84 LOP 314.83 VP 23.973 GAP -11.40 AZP 91.11 TAL 353.27 TAP 232.18 RCA 147.17 APO 230.56 V2 26.366
RC 320.122 GL 23.10 GP -4.66 ZAL 98.73 ZAP 36.19 ETS 172.63 ZAE 57.27 ETE 176.59 ZAC 81.18 ETC 256.97 CLP 35.93

PLANETOCENTRIC CONIC

C3 10.078 VHL 3.175 DLA 22.89 RAL 185.55 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 4.886 DPA .85 RAP 170.24 ECC 1.1659

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 21	2872.78	-28.32	87.14	43.64	90.15	15 56 14	2272.8	-28.00	78.49
90.00	10 1 57	3898.36	-9.54	154.99	38.97	63.21	11 6 56	3298.4	-13.06	148.08
100.00	16 46 58	2554.85	-29.81	63.72	43.60	92.33	17 29 32	1954.8	-29.17	54.97
100.00	11 6 2	3691.52	-8.22	139.09	38.26	61.16	12 7 34	3091.5	-12.01	132.35
110.00	18 30 25	2231.18	-33.40	38.76	43.23	97.74	19 7 36	1631.2	-31.97	29.83
110.00	11 39 4	3587.95	-5.14	129.35	36.37	56.16	12 38 52	2988.0	-9.55	123.04

DIFFERENTIAL CORRECTIONS

TDE 1.6381 TRA 2.4466 TC-19.3257 BAU 2.6039
RDE .2619 RRA .2028 RC3 -.1446 FAU .15644
FDE .4032 FRA 2.5169 FC-13.4393 BSP 47071
BDE 1.6589 BRA 2.4550 BC319.3263 FSP 2817

MID-COURSE EXECUTION ACCURACY

SGT13500.8 SGR 624.3 SG3 853.8
RRT .5254 RRF .5002 RTF .9780
SGB13515.3 R23 -.0169 R13 .9780
SG113504.8 SG2 531.0 THA 1.39

ORBIT DETERMINATION ACCURACY

ST 3308.1 SR 487.5 SS 704.3
CRT .9734 CRS -.6406 CST -.7923
LSA 3388.8 MSA 438.7 SSA 37.6
EL1 3342.0 EL2 110.5 ALF 8.17

LAUNCH DATE DEC 8 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 814.197 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.153 GAL -1.37 AZL 87.87 HCA 240.16 SMA 188.99 ECC .22156 INC 2.1293 V1 30.236
RP 207.66 LAP -1.85 LOP 316.09 VP 23.999 GAP -11.50 AZP 91.06 TAL 352.44 TAP 232.60 RCA 147.12 APO 230.87 V2 26.381
RC 320.992 GL 22.72 GP -4.54 ZAL 100.31 ZAP 35.55 ETS 172.63 ZAE 56.33 ETE 176.58 ZAC 81.43 ETC 256.91 CLP 35.30

PLANETOCENTRIC CONIC

C3 10.170 VHL 3.189 DLA 21.88 RAL 186.89 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 4.958 DPA .71 RAP 170.86 ECC 1.1674

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 27 21	2825.85	-28.26	83.71	44.77	91.87	16 14 26	2225.9	-27.70	75.09
90.00	9 53 41	3948.92	-7.98	157.88	39.99	62.74	10 59 30	3348.9	-11.57	151.05
100.00	17 4 7	2513.79	-29.66	60.67	44.69	93.92	17 46 1	1913.8	-28.80	51.98
100.00	10 59 35	3736.21	-6.74	141.58	39.33	60.81	12 1 51	3136.2	-10.59	134.90
110.00	18 44 32	2199.65	-33.08	36.36	44.23	99.13	19 21 12	1599.6	-31.47	27.50
110.00	11 35 40	3623.12	-3.81	131.20	37.51	56.00	12 36 3	3023.1	-8.24	124.92

DIFFERENTIAL CORRECTIONS

TDE 1.5309 TRA 2.6309 TC-19.3501 BAU 2.6309
RDE .2621 RRA .2031 RC3 -.1057 FAU .14924
FDE .2919 FRA 2.5287 FC-12.7047 BSP 47538
BDE 1.5532 BRA 2.6387 BC319.3504 FSP 2702

MID-COURSE EXECUTION ACCURACY

SGT13631.8 SGR 617.2 SG3 819.2
RRT .4909 RRF .4645 RTF .9778
SGB13645.7 R23 -.0186 R13 .9778
SG113635.1 SG2 537.6 THA 1.28

ORBIT DETERMINATION ACCURACY

ST 3168.2 SR 485.4 SS 676.1
CRT .9598 CRS -.5491 CST -.7553
LSA 3243.2 MSA 459.1 SSA 37.6
EL1 3202.4 EL2 134.8 ALF 8.38

LAUNCH DATE DEC 8 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 818.548 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.160 GAL -1.53 AZL 87.89 HCA 241.42 SMA 189.12 ECC .22239 INC 2.1053 V1 30.236
RP 207.54 LAP -1.85 LOP 317.35 VP 24.026 GAP -11.59 AZP 91.01 TAL 351.60 TAP 233.02 RCA 147.06 APO 231.18 V2 26.396
RC 321.856 GL 22.32 GP -4.42 ZAL 101.91 ZAP 34.93 ETS 172.64 ZAE 55.41 ETE 176.57 ZAC 81.68 ETC 256.85 CLP 34.68

PLANETOCENTRIC CONIC

C3 10.280 VHL 3.206 DLA 20.85 RAL 188.24 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 5.030 DPA .55 RAP 171.49 ECC 1.1692

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 45 28	2781.76	-28.12	80.49	45.91	93.47	16 31 50	2181.8	-27.34	71.91
90.00	9 46 18	3997.34	-6.46	160.63	41.09	62.37	10 52 55	3397.3	-10.11	153.85
100.00	17 20 43	2474.65	-29.44	57.78	45.60	95.43	18 1 57	1874.6	-28.38	49.14
100.00	10 53 45	3779.68	-5.29	144.00	40.46	60.54	11 56 44	3179.7	-9.18	137.36
110.00	18 58 25	2168.97	-32.73	34.03	45.26	100.47	19 34 34	1569.0	-30.94	25.27
110.00	11 32 32	3658.12	-2.47	133.03	38.70	55.90	12 33 30	3058.1	-6.93	126.78

DIFFERENTIAL CORRECTIONS

TDE 1.4223 TRA 2.8237 TC-19.3367 BAU 2.6576
RDE .2631 RRA .2033 RC3 -.0689 FAU .14225
FDE .1911 FRA 2.5404 FC-11.9795 BSP 48043
BDE 1.4464 BRA 2.8310 BC319.3368 FSP 2600

MID-COURSE EXECUTION ACCURACY

SGT13761.1 SGR 611.7 SG3 785.8
RRT .4565 RRF .4294 RTF .9775
SGB13774.7 R23 -.0197 R13 .9775
SG113763.9 SG2 544.1 THA 1.16

ORBIT DETERMINATION ACCURACY

ST 3036.9 SR 484.4 SS 658.2
CRT .9411 CRS -.4511 CST -.7207
LSA 3107.7 MSA 481.1 SSA 37.4
EL1 3071.0 EL2 161.9 ALF 8.56

LAUNCH DATE DEC 8 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 822.898 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.167 GAL -1.69 AZL 87.92 HCA 242.68 SMA 189.25 ECC .22326 INC 2.0820 V1 30.236
RP 207.42 LAP -1.85 LOP 318.61 VP 24.051 GAP -11.68 AZP 90.96 TAL 350.74 TAP 233.42 RCA 147.00 APO 231.51 V2 26.409
RC 322.714 GL 21.92 GP -4.31 ZAL 103.53 ZAP 34.32 ETS 172.64 ZAE 54.50 ETE 176.56 ZAC 81.93 ETC 256.80 CLP 34.08

PLANETOCENTRIC CONIC

C3 10.409 VHL 3.226 DLA 19.81 RAL 189.59 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 5.104 DPA .38 RAP 172.14 ECC 1.1713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 2 54	2740.01	-27.91	77.46	47.07	94.98	16 48 34	2140.0	-26.93	68.93
90.00	9 39 39	4044.13	-4.97	163.27	42.26	62.09	10 47 3	3444.1	-8.67	156.54
100.00	17 36 49	2437.16	-29.17	55.03	46.92	96.85	18 17 26	1831.2	-27.91	46.45
100.00	10 48 25	3822.21	-3.87	146.35	41.65	60.34	11 52 7	3222.2	-7.79	139.75
110.00	19 12 4	2139.12	-32.34	31.79	46.32	101.74	19 47 44	1539.1	-30.38	23.12
110.00	11 29 39	3693.01	-1.14	134.85	39.95	55.83	12 31 12	3093.0	-5.61	128.62

DIFFERENTIAL CORRECTIONS

TDE 1.3095 TRA 3.0225 TC-19.2831 BAU 2.6835
RDE .2646 RRA .2032 RC3 -.0340 FAU .13538
FDE .0948 FRA 2.5446 FC-11.2591 BSP 48527
BDE 1.3359 BRA 3.0291 BC319.2832 FSP 2496

MID-COURSE EXECUTION ACCURACY

SGT13884.5 SGR 607.0 SG3 752.6
RRT .4217 RRF .3935 RTF .9772
SGB13897.8 R23 -.0212 R13 .9772
SG113886.9 SG2 550.3 THA 1.06

ORBIT DETERMINATION ACCURACY

ST 2911.4 SR 483.8 SS 646.9
CRT .9158 CRS -.3452 CST -.6881
LSA 2978.7 MSA 504.9 SSA 37.1
EL1 2945.0 EL2 192.1 ALF 8.69

LAUNCH DATE DEC 8 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 827.248 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.175 GAL -1.85 AZL 87.94 HCA 243.94 SMA 189.39 ECC .22417 INC 2.0591 V1 30.236
RP 207.31 LAP -1.85 LOP 319.87 VP 24.075 GAP -11.78 AZP 90.90 TAL 349.87 TAP 233.81 RCA 146.93 APO 231.84 V2 26.422
RC 323.566 GL 21.51 GP -4.21 ZAL 105.16 ZAP 33.73 ETS 172.64 ZAE 53.81 ETE 176.55 ZAC 82.18 ETC 256.74 CLP 33.49

PLANETOCENTRIC CONIC

C3 10.559 VHL 3.249 DLA 18.77 RAL 190.94 RAD 6567.4 VEL 11.487 PTH 2.00 VHP 5.179 DPA .20 RAP 172.79 ECC 1.1738

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 44	2700.24	-27.64	74.58	48.25	96.40	17 4 44	2100.2	-26.47	66.11
90.00	9 33 36	4089.67	-3.52	165.82	43.48	61.88	10 41 45	3489.7	-7.25	159.13
100.00	17 52 29	2401.14	-28.85	52.40	48.07	98.20	18 32 30	1801.1	-27.41	43.89
100.00	10 43 32	3864.00	-2.45	148.64	42.90	60.20	11 47 56	3264.0	-6.40	142.08
110.00	19 25 31	2110.07	-31.91	29.63	47.41	102.95	20 0 41	1510.1	-29.80	21.06
110.00	11 26 59	3727.84	.19	136.67	41.24	55.82	12 29 7	3127.8	-4.29	130.45

DIFFERENTIAL CORRECTIONS

TDE 1.1944 TRA 3.2279 TC-19.1961 BAU 2.7098
RDE .2669 RRA .2027 RC3 -.0014 FAU .12874
FDE .0064 FRA 2.5454 FC-10.5555 BSP 49013
BDE 1.2239 BRA 3.2343 BC319.1961 FSP 2394

MID-COURSE EXECUTION ACCURACY

SGT14007.4 SGR 603.3 SG3 720.4
RRT .3872 RRF .3580 RTF .9769
SGB14020.4 R23 -.0226 R13 .9769
SG114009.3 SG2 556.2 THA .96

ORBIT DETERMINATION ACCURACY

ST 2797.8 SR 484.0 SS 642.9
CRT .8827 CRS -.2392 CST -.6629
LSA 2862.4 MSA 529.7 SSA 36.7
EL1 2830.4 EL2 224.9 ALF 8.74

LAUNCH DATE DEC 8 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 831.596 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.182 GAL -2.02 AZL 87.96 HCA 245.20 SMA 189.52 ECC .22513 INC 2.0367 V1 30.236
RP 207.21 LAP -1.85 LOP 321.13 VP 24.098 GAP -11.87 AZP 90.85 TAL 348.98 TAP 234.19 RCA 146.85 APO 232.19 V2 26.434
RC 324.413 GL 21.09 GP -4.10 ZAL 106.80 ZAP 33.15 ETS 172.64 ZAE 52.73 ETE 176.55 ZAC 82.42 ETC 256.68 CLP 32.92

PLANETOCENTRIC CONIC

C3 10.730 VHL 3.276 DLA 17.71 RAL 192.29 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 5.255 DPA .01 RAP 173.46 ECC 1.1766

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 4	2662.22	-27.32	71.84	49.45	97.74	17 20 26	2062.2	-25.97	63.44
90.00	9 28 3	4134.22	-2.08	168.31	44.77	61.75	10 36 57	3534.2	-5.84	161.65
100.00	18 7 47	2366.47	-28.48	49.89	49.25	99.48	18 47 13	1766.5	-26.88	41.45
100.00	10 39 1	3905.21	-1.06	150.91	44.20	60.12	11 44 6	3305.2	-5.03	144.37
110.00	19 38 46	2081.80	-31.46	27.55	48.53	104.11	20 13 28	1481.8	-29.21	19.07
110.00	11 24 31	3762.64	1.52	138.48	42.58	55.85	12 27 14	3162.6	-2.97	132.28

DIFFERENTIAL CORRECTIONS
TDE 1.0765 TRA 3.4408 TC-19.0702 BAU 2.7356
RDE .2698 RRA .2020 RC3 .0293 FAU .12219
FDE -.0764 FRA 2.5421 FC3-9.8583 BSP 49483
BDE 1.1098 BRA 3.4467 BC319.0702 FSP 2297

MID-COURSE EXECUTION ACCURACY
SGT14126.2 SGR 600.6 SG3 688.6
RRT .3527 RRF .3226 RTF .9764
SGB14139.0 R23 -.0238 R13 .9764
SG114127.8 SG2 561.9 THA .86

ORBIT DETERMINATION ACCURACY
ST 2697.8 SR 484.9 SS 644.7
CRT .8404 CRS -.1346 CST -.6461
LSA 2760.3 MSA 555.4 SSA 36.2
EL1 2728.7 EL2 259.8 ALF 8.67

LAUNCH DATE DEC 8 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 835.943 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.190 GAL -2.19 AZL 87.99 HCA 246.46 SMA 189.65 ECC .22613 INC 2.0147 V1 30.236
RP 207.12 LAP -1.85 LOP 322.40 VP 24.120 GAP -11.97 AZP 90.80 TAL 348.09 TAP 234.55 RCA 146.77 APO 232.54 V2 26.444
RC 325.253 GL 20.66 GP -4.01 ZAL 108.46 ZAP 32.59 ETS 172.63 ZAE 51.87 ETE 176.54 ZAC 82.67 ETC 256.63 CLP 32.37

PLANETOCENTRIC CONIC

C3 10.923 VHL 3.305 DLA 16.65 RAL 193.64 RAD 6567.4 VEL 11.503 PTH 2.00 VHP 5.332 DPA -.19 RAP 174.15 ECC 1.1798

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 51 57	2625.78	-26.96	69.24	50.67	99.00	17 35 43	2025.8	-25.44	60.90
90.00	9 22 56	4177.96	-.67	170.75	46.11	61.69	10 32 33	3578.0	-4.45	164.11
100.00	18 22 44	2333.05	-28.09	47.48	50.45	100.68	19 1 37	1733.0	-26.32	39.13
100.00	10 34 50	3945.93	.32	153.14	45.55	60.11	11 40 36	3345.9	-3.66	146.61
110.00	19 51 49	2054.32	-30.99	25.55	49.68	105.20	20 26 3	1454.3	-28.59	17.17
110.00	11 22 14	3797.42	2.85	140.30	43.97	55.92	12 25 32	3197.4	-1.64	134.09

DIFFERENTIAL CORRECTIONS
TDE .9563 TRA 3.6611 TC-18.9110 BAU 2.7617
RDE .2735 RRA .2010 RC3 .0576 FAU .11591
FDE -.1512 FRA 2.5361 FC3-9.1863 BSP 49953
BDE .9946 BRA 3.6666 BC318.9111 FSP 2200

MID-COURSE EXECUTION ACCURACY
SGT14244.1 SGR 598.7 SG3 658.0
RRT .3189 RRF .2881 RTF .9760
SGB14256.6 R23 -.0249 R13 .9759
SG114245.4 SG2 567.4 THA .77

ORBIT DETERMINATION ACCURACY
ST 2615.1 SR 486.4 SS 651.0
CRT .7879 CRS -.0374 CST -.6412
LSA 2676.0 MSA 580.2 SSA 35.6
EL1 2643.4 EL2 296.3 ALF 8.45

LAUNCH DATE DEC 8 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 840.288 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.197 GAL -2.36 AZL 88.01 HCA 247.73 SMA 189.79 ECC .22718 INC 1.9931 V1 30.236
RP 207.04 LAP -1.84 LOP 323.66 VP 24.141 GAP -12.07 AZP 90.76 TAL 347.18 TAP 234.90 RCA 146.67 APO 232.91 V2 26.454
RC 326.088 GL 20.22 GP -3.91 ZAL 110.11 ZAP 32.04 ETS 172.63 ZAE 51.01 ETE 176.53 ZAC 82.91 ETC 256.57 CLP 31.82

PLANETOCENTRIC CONIC

C3 11.140 VHL 3.338 DLA 15.59 RAL 194.99 RAD 6567.4 VEL 11.512 PTH 2.01 VHP 5.410 DPA -.40 RAP 174.84 ECC 1.1833

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 26	2590.78	-26.57	66.75	51.92	100.18	17 50 37	1990.8	-24.89	58.48
90.00	9 18 11	4221.05	.72	173.15	47.50	61.69	10 28 32	3621.0	-3.07	166.52
100.00	18 37 21	2300.81	-27.66	45.18	51.68	101.82	19 15 42	1700.8	-25.75	36.90
100.00	10 30 57	3986.25	1.69	155.35	46.96	60.15	11 37 23	3386.2	-2.29	148.83
110.00	20 4 40	2027.62	-30.50	23.63	50.87	106.24	20 38 28	1427.6	-27.97	15.34
110.00	11 20 8	3832.20	4.18	142.12	45.41	56.04	12 24 0	3232.2	-.31	135.91

DIFFERENTIAL CORRECTIONS
TDE .8335 TRA 3.8893 TC-18.7164 BAU 2.7876
RDE .2777 RRA .1997 RC3 .0838 FAU .10976
FDE -.2214 FRA 2.5261 FC3-8.5299 BSP 50440
BDE .8785 BRA 3.8944 BC318.7165 FSP 2111

MID-COURSE EXECUTION ACCURACY
SGT14359.4 SGR 597.5 SG3 628.0
RRT .2856 RRF .2539 RTF .9754
SGB14371.8 R23 -.0262 R13 .9753
SG114360.4 SG2 572.6 THA .68

ORBIT DETERMINATION ACCURACY
ST 2551.7 SR 488.5 SS 660.6
CRT .7247 CRS .0539 CST -.6457
LSA 2611.5 MSA 604.2 SSA 34.9
EL1 2576.6 EL2 333.3 ALF 8.03

LAUNCH DATE DEC 8 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 844.630 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.205 GAL -2.54 AZL 88.03 HCA 248.99 SMA 189.93 ECC .22829 INC 1.9719 V1 30.236
RP 206.96 LAP -1.84 LOP 324.93 VP 24.161 GAP -12.17 AZP 90.71 TAL 346.25 TAP 235.25 RCA 146.57 APO 233.28 V2 26.463
RC 326.917 GL 19.78 GP -3.83 ZAL 111.78 ZAP 31.50 ETS 172.62 ZAE 50.18 ETE 176.52 ZAC 83.15 ETC 256.52 CLP 31.29

PLANETOCENTRIC CONIC

C3 11.382 VHL 3.374 DLA 14.52 RAL 196.33 RAD 6567.4 VEL 11.523 PTH 2.01 VHP 5.489 DPA -.63 RAP 175.54 ECC 1.1873

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 33	2557.13	-26.14	64.38	53.20	101.30	18 5 11	1957.1	-24.32	56.18
90.00	9 13 46	4263.59	2.09	175.53	48.95	61.75	10 24 50	3663.6	-1.70	168.90
100.00	18 51 41	2269.70	-27.20	42.98	52.94	102.89	19 29 31	1669.7	-25.16	34.78
100.00	10 27 20	4026.24	3.04	157.55	48.42	60.25	11 34 26	3426.2	-.94	151.03
110.00	20 17 20	2001.72	-29.99	21.78	52.09	107.23	20 50 41	1401.7	-27.34	13.59
110.00	11 18 10	3866.99	5.50	143.95	46.89	56.21	12 22 37	3267.0	1.02	137.72

DIFFERENTIAL CORRECTIONS
TDE .7087 TRA 4.1244 TC-18.4863 BAU 2.8132
RDE .2826 RRA .1981 RC3 .1080 FAU .10371
FDE -.2856 FRA 2.5121 FC3-7.8884 BSP 50913
BDE .7629 BRA 4.1292 BC318.4866 FSP 2021

MID-COURSE EXECUTION ACCURACY
SGT14470.5 SGR 597.0 SG3 598.5
RRT .2528 RRF .2203 RTF .9746
SGB14482.8 R23 -.0273 R13 .9746
SG114471.3 SG2 577.6 THA .60

ORBIT DETERMINATION ACCURACY
ST 2510.0 SR 491.1 SS 672.1
CRT .6515 CRS .1369 CST -.6594
LSA 2569.2 MSA 625.4 SSA 34.2
EL1 2530.8 EL2 369.5 ALF 7.42

LAUNCH DATE DEC 8 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 848.969 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.212 GAL -2.73 AZL 88.05 HCA 250.26 SMA 190.06 ECC .22944 INC 1.9511 V1 30.236
RP 206.89 LAP -1.84 LOP 326.20 VP 24.180 GAP -12.27 AZP 90.66 TAL 345.31 TAP 235.57 RCA 146.45 APO 233.67 V2 26.471
RC 327.742 GL 19.32 GP -3.74 ZAL 113.44 ZAP 30.98 ETS 172.62 ZAE 49.35 ETE 176.51 ZAC 83.40 ETC 256.46 CLP 30.77

PLANETOCENTRIC CONIC

C3 11.651 VHL 3.413 DLA 13.46 RAL 197.66 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 5.569 DPA -.86 RAP 176.26 ECC 1.1917

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 20	2524.76	-25.69	62.12	54.51	102.35	18 19 25	1924.8	-23.73	53.99
90.00	9 9 39	4305.65	3.44	177.88	50.44	61.88	10 21 24	3705.6	-.34	171.25
100.00	19 5 43	2239.70	-26.73	40.88	54.24	103.90	19 43 3	1639.7	-24.55	32.76
100.00	10 23 56	4065.94	4.38	159.74	49.92	60.40	11 31 42	3465.9	.41	153.20
110.00	20 29 48	1976.62	-29.47	20.01	53.34	108.16	21 2 45	1376.6	-26.71	11.91
110.00	11 16 21	3901.78	6.81	145.78	48.42	56.42	12 21 23	3301.8	2.35	139.54

DIFFERENTIAL CORRECTIONS

TDE .5820 TRA 4.3669 TC-18.2272 BAU 2.8391
RDE .2982 RRA .1962 RC3 .1298 FAU .09792
FDE -.3434 FRA 2.4938 FC3-7.2761 BSP 51366
BDE .6494 BRA 4.3713 BC318.2277 FSP 1932

MID-COURSE EXECUTION ACCURACY

SGT14580.6 SGR 597.0 SG3 570.0
RRT .2200 RRF .1875 RTF .9739
SGB14592.8 R23 -.0286 R13 .9738
SG114581.2 SG2 582.3 THA .52

ORBIT DETERMINATION ACCURACY

ST 2491.3 SR 494.2 SS 684.2
CRT .5695 CRS .2107 CST -.6810
LSA 2550.6 NSA 642.4 SSA 33.4
EL1 2507.6 EL2 403.6 ALF 6.62

LAUNCH DATE DEC 8 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 853.304 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.220 GAL -2.91 AZL 88.07 HCA 251.53 SMA 190.20 ECC .23065 INC 1.9305 V1 30.236
RP 206.84 LAP -1.83 LOP 327.46 VP 24.198 GAP -12.37 AZP 90.61 TAL 344.36 TAP 235.89 RCA 146.33 APO 234.07 V2 26.477
RC 328.562 GL 18.87 GP -3.66 ZAL 115.11 ZAP 30.47 ETS 172.61 ZAE 48.54 ETE 176.50 ZAC 83.64 ETC 256.41 CLP 30.27

PLANETOCENTRIC CONIC

C3 11.947 VHL 3.456 DLA 12.39 RAL 198.99 RAD 6567.5 VEL 11.547 PTH 2.02 VHP 5.651 DPA -1.10 RAP 176.98 ECC 1.1966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 47	2493.62	-25.22	59.96	55.84	103.33	18 33 21	1893.6	-23.13	51.91
90.00	9 5 47	4347.30	4.78	180.21	51.98	62.06	10 18 14	3747.3	1.00	173.57
100.00	19 19 29	2210.78	-26.24	38.87	55.56	104.86	19 56 20	1610.8	-23.94	30.82
100.00	10 20 46	4105.38	5.70	161.92	51.47	60.61	11 29 11	3505.4	1.74	155.37
110.00	20 42 5	1952.34	-28.94	18.32	54.63	109.03	21 14 37	1352.3	-26.07	10.31
110.00	11 14 40	3936.58	8.12	147.63	49.99	56.68	12 20 16	3336.6	3.68	141.36

DIFFERENTIAL CORRECTIONS

TDE .4535 TRA 4.6168 TC-17.9383 BAU 2.8651
RDE .2943 RRA .1939 RC3 .1496 FAU .09225
FDE -.3967 FRA 2.4720 FC3-6.6848 BSP 51816
BDE .5407 BRA 4.6209 BC317.9390 FSP 1847

MID-COURSE EXECUTION ACCURACY

SGT14687.9 SGR 597.6 SG3 542.3
RRT .1896 RRF .1553 RTF .9729
SGB14700.0 R23 -.0300 R13 .9729
SG114688.3 SG2 586.7 THA .44

ORBIT DETERMINATION ACCURACY

ST 2495.9 SR 497.8 SS 696.6
CRT .4811 CRS .2773 CST -.7065
LSA 2555.8 NSA 655.2 SSA 32.5
EL1 2507.7 EL2 434.3 ALF 5.65

LAUNCH DATE DEC 8 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 857.635 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.228 GAL -3.10 AZL 88.09 HCA 252.79 SMA 190.34 ECC .23192 INC 1.9103 V1 30.236
RP 206.79 LAP -1.82 LOP 328.73 VP 24.214 GAP -12.48 AZP 90.57 TAL 343.40 TAP 236.19 RCA 146.20 APO 234.48 V2 26.483
RC 329.378 GL 18.40 GP -3.58 ZAL 116.76 ZAP 29.97 ETS 172.60 ZAE 47.73 ETE 176.50 ZAC 83.88 ETC 256.36 CLP 29.78

PLANETOCENTRIC CONIC

C3 12.272 VHL 3.503 DLA 11.33 RAL 200.31 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 5.734 DPA -1.35 RAP 177.72 ECC 1.2020

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 57	2463.68	-24.73	57.90	57.21	104.25	18 47 0	1863.7	-22.53	49.92
90.00	9 2 9	4388.59	6.09	182.54	53.57	62.29	10 15 18	3788.6	2.33	175.87
100.00	19 33 0	2182.92	-25.74	36.95	56.91	105.75	20 9 23	1582.9	-23.33	28.98
100.00	10 17 47	4144.59	7.01	164.10	53.07	60.87	11 26 52	3544.6	3.07	157.52
110.00	20 54 11	1928.90	-28.41	16.70	55.94	109.86	21 26 19	1328.9	-25.44	8.78
110.00	11 13 6	3971.37	9.41	149.49	51.60	56.99	12 19 17	3371.4	5.00	143.18

DIFFERENTIAL CORRECTIONS

TDE .3227 TRA 4.8742 TC-17.6243 BAU 2.8916
RDE .3011 RRA .1913 RC3 .1672 FAU .08675
FDE -.4443 FRA 2.4456 FC3-6.1201 BSP 52262
BDE .4414 BRA 4.8779 BC317.6251 FSP 1763

MID-COURSE EXECUTION ACCURACY

SGT14793.9 SGR 598.5 SG3 515.2
RRT .1590 RRF .1237 RTF .9719
SGB14806.0 R23 -.0315 R13 .9719
SG114794.2 SG2 590.9 THA .37

ORBIT DETERMINATION ACCURACY

ST 2523.0 SR 501.8 SS 707.9
CRT .3888 CRS .3363 CST -.7348
LSA 2584.2 NSA 662.7 SSA 31.7
EL1 2530.8 EL2 460.9 ALF 4.57

LAUNCH DATE DEC 8 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 861.961 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.235 GAL -3.30 AZL 88.11 HCA 254.06 SMA 190.48 ECC .23325 INC 1.8903 V1 30.236
RP 206.75 LAP -1.82 LOP 330.00 VP 24.230 GAP -12.58 AZP 90.52 TAL 342.42 TAP 236.48 RCA 146.05 APO 234.91 V2 26.488
RC 330.190 GL 17.94 GP -3.51 ZAL 118.42 ZAP 29.49 ETS 172.59 ZAE 46.94 ETE 176.49 ZAC 84.12 ETC 256.31 CLP 29.30

PLANETOCENTRIC CONIC

C3 12.628 VHL 3.554 DLA 10.28 RAL 201.62 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 5.818 DPA -1.61 RAP 178.46 ECC 1.2078

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 48	2434.91	-24.23	55.94	58.60	105.11	19 0 23	1834.9	-21.92	48.03
90.00	8 58 44	4429.54	7.38	184.86	55.20	62.58	10 12 34	3829.5	3.65	178.16
100.00	19 46 15	2156.11	-25.23	35.12	58.29	106.58	20 22 11	1556.1	-22.72	27.22
100.00	10 14 59	4183.57	8.29	166.28	54.71	61.18	11 24 42	3583.6	4.39	159.67
110.00	21 6 5	1906.31	-27.88	15.16	57.29	110.63	21 37 51	1306.3	-24.82	7.32
110.00	11 11 39	4006.14	10.70	151.37	53.26	57.34	12 18 25	3406.1	6.31	145.01

DIFFERENTIAL CORRECTIONS

TDE .1906 TRA 5.1396 TC-17.2866 BAU 2.9185
RDE .3086 RRA .1884 RC3 .1829 FAU .08139
FDE -.4869 FRA 2.4152 FC3-5.5798 BSP 52686
BDE .3627 BRA 5.1431 BC317.2875 FSP 1680

MID-COURSE EXECUTION ACCURACY

SGT14898.6 SGR 599.8 SG3 488.8
RRT .1293 RRF .0929 RTF .9706
SGB14910.6 R23 -.0330 R13 .9706
SG114898.8 SG2 594.7 THA .30

ORBIT DETERMINATION ACCURACY

ST 2571.8 SR 506.1 SS 718.0
CRT .2961 CRS .3889 CST -.7629
LSA 2634.7 NSA 665.6 SSA 30.8
EL1 2576.3 EL2 482.6 ALF 3.46

LAUNCH DATE DEC 8 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 866.281 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.243 GAL -3.50 AZL 88.13 HCA 255.33 SMA 190.62 ECC .23464 INC 1.8705 V1 30.236
RP 206.71 LAP -1.81 LOP 331.27 VP 24.245 GAP -12.69 AZP 90.47 TAL 341.43 TAP 236.76 RCA 145.89 APO 235.35 V2 26.492
RC 331.000 GL 17.47 GP -3.44 ZAL 120.06 ZAP 29.01 ETS 172.57 ZAE 46.16 ETE 176.47 ZAC 84.37 ETC 256.26 CLP 28.83

PLANETOCENTRIC CONIC

C3 13.016 VHL 3.608 DLA 9.24 RAL 202.92 RAD 6567.5 VEL 11.593 PTH 2.03 VHP 5.903 DPA -1.88 RAP 179.22 ECC 1.2142

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 24	2407.28	-23.73	54.07	60.02	105.92	19 13 31	1807.3	-21.32	46.23
90.00	8 55 31	4470.18	8.65	187.17	56.88	62.93	10 10 1	3870.2	4.95	180.44
100.00	19 59 15	2130.35	-24.72	33.38	59.70	107.36	20 34 46	1530.3	-22.11	25.55
100.00	10 12 20	4222.35	9.56	168.46	56.39	61.54	11 22 43	3622.3	5.69	161.82
110.00	21 17 47	1884.59	-27.35	13.69	58.67	111.35	21 49 12	1284.6	-24.20	5.94
110.00	11 10 18	4040.87	11.97	153.26	54.96	57.74	12 17 39	3440.9	7.62	146.85

DIFFERENTIAL CORRECTIONS
TDE .0586 TRA 5.4129 TC-16.9231 BAU 2.9451
RDE .3167 RRA .1851 RC3 .1966 FAU .07617
FDE -.5234 FRA 2.3815 FC3-5.0659 BSP 53117
BDE .3221 BRA 5.4160 BC316.9243 FSP 1599

MID-COURSE EXECUTION ACCURACY
SGT14999.0 SGR 601.5 SG3 463.2
RRT .1006 RRF .0633 RTF .9693
SGB15011.0 R23 -.0345 R13 .9692
SG114999.1 SG2 598.4 THA .23

ORBIT DETERMINATION ACCURACY
ST 2639.9 SR 510.8 SS 725.7
CRT .2066 CRS .4346 CST -.7897
LSA 2704.6 MSA 664.2 SSA 30.0
EL1 2642.1 EL2 499.4 ALF 2.37

LAUNCH DATE DEC 8 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 870.596 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.251 GAL -3.70 AZL 88.15 HCA 256.60 SMA 190.76 ECC .23609 INC 1.8510 V1 30.236
RP 206.69 LAP -1.80 LOP 332.54 VP 24.259 GAP -12.80 AZP 90.43 TAL 340.42 TAP 237.02 RCA 145.73 APO 235.80 V2 26.494
RC 331.806 GL 17.00 GP -3.37 ZAL 121.69 ZAP 28.55 ETS 172.56 ZAE 45.40 ETE 176.46 ZAC 84.61 ETC 256.22 CLP 28.37

PLANETOCENTRIC CONIC

C3 13.439 VHL 3.666 DLA 8.20 RAL 204.21 RAD 6567.5 VEL 11.611 PTH 2.03 VHP 5.990 DPA -2.16 RAP 179.99 ECC 1.2212

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 42	2380.78	-23.22	52.29	61.47	106.67	19 26 23	1780.8	-20.72	44.52
90.00	8 52 28	4510.53	9.89	189.48	58.60	63.33	10 7 39	3910.5	6.23	182.72
100.00	20 12 1	2105.63	-24.21	31.72	61.14	108.09	20 47 7	1505.6	-21.51	23.96
100.00	10 9 51	4260.92	10.80	170.65	58.12	61.96	11 20 52	3660.9	6.97	163.96
110.00	21 29 19	1863.74	-26.83	12.29	60.08	112.03	22 0 22	1263.7	-23.60	4.62
110.00	11 9 3	4075.57	13.22	155.16	56.69	58.19	12 16 58	3475.6	8.92	148.71

DIFFERENTIAL CORRECTIONS
TDE -.0748 TRA 5.6954 TC-16.5387 BAU 2.9718
RDE .3254 RRA .1814 RC3 .2085 FAU .07106
FDE -.5560 FRA 2.3434 FC3-4.5775 BSP 53546
BDE .3339 BRA 5.6983 BC316.5401 FSP 1521

MID-COURSE EXECUTION ACCURACY
SGT15097.6 SGR 603.3 SG3 438.1
RRT .0727 RRF .0343 RTF .9676
SGB15109.6 R23 -.0363 R13 .9676
SG115097.6 SG2 601.7 THA .17

ORBIT DETERMINATION ACCURACY
ST 2724.9 SR 515.8 SS 731.5
CRT .1214 CRS .4760 CST -.8136
LSA 2791.1 MSA 659.9 SSA 29.1
EL1 2725.7 EL2 511.8 ALF 1.36

LAUNCH DATE DEC 8 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 874.903 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.259 GAL -3.91 AZL 88.17 HCA 257.87 SMA 190.91 ECC .23761 INC 1.8317 V1 30.236
RP 206.68 LAP -1.79 LOP 333.81 VP 24.271 GAP -12.92 AZP 90.38 TAL 339.41 TAP 237.27 RCA 145.54 APO 236.27 V2 26.496
RC 332.609 GL 16.53 GP -3.30 ZAL 123.31 ZAP 28.10 ETS 172.55 ZAE 44.64 ETE 176.45 ZAC 84.85 ETC 256.17 CLP 27.92

PLANETOCENTRIC CONIC

C3 13.898 VHL 3.728 DLA 7.18 RAL 205.48 RAD 6567.5 VEL 11.631 PTH 2.04 VHP 6.078 DPA -2.44 RAP 180.76 ECC 1.2287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 46	2355.39	-22.72	50.60	62.95	107.37	19 39 1	1755.4	-20.13	42.89
90.00	8 49 36	4550.59	11.10	191.80	60.36	63.78	10 5 26	3950.6	7.49	184.98
100.00	20 24 32	2081.95	-23.70	30.15	62.60	108.77	20 59 14	1481.9	-20.92	22.45
100.00	10 7 30	4299.27	12.02	172.85	59.88	62.42	11 19 9	3699.3	8.23	166.10
110.00	21 40 38	1843.79	-26.31	10.97	61.51	112.66	22 11 22	1243.8	-23.01	3.37
110.00	11 7 53	4110.19	14.45	157.09	58.47	58.68	12 16 23	3510.2	10.20	150.57

DIFFERENTIAL CORRECTIONS
TDE -.2114 TRA 5.9837 TC-16.1464 BAU 3.0004
RDE .3347 RRA .1773 RC3 .2185 FAU .06616
FDE -.5848 FRA 2.3012 FC3-4.1213 BSP 53915
BDE .3958 BRA 5.9864 BC316.1479 FSP 1442

MID-COURSE EXECUTION ACCURACY
SGT15197.2 SGR 605.4 SG3 414.0
RRT .0454 RRF .0056 RTF .9658
SGB15209.3 R23 -.0384 R13 .9658
SG115197.2 SG2 604.8 THA .10

ORBIT DETERMINATION ACCURACY
ST 2822.8 SR 520.9 SS 735.2
CRT .0410 CRS .5137 CST -.8348
LSA 2890.1 MSA 653.4 SSA 28.3
EL1 2822.9 EL2 520.5 ALF .45

LAUNCH DATE DEC 8 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 879.202 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.267 GAL -4.12 AZL 88.19 HCA 259.14 SMA 191.05 ECC .23920 INC 1.8125 V1 30.236
RP 206.67 LAP -1.78 LOP 335.08 VP 24.283 GAP -13.04 AZP 90.34 TAL 338.38 TAP 237.51 RCA 145.35 APO 236.75 V2 26.497
RC 333.409 GL 16.06 GP -3.24 ZAL 124.91 ZAP 27.66 ETS 172.53 ZAE 43.89 ETE 176.44 ZAC 85.09 ETC 256.13 CLP 27.49

PLANETOCENTRIC CONIC

C3 14.396 VHL 3.794 DLA 6.17 RAL 206.74 RAD 6567.6 VEL 11.653 PTH 2.05 VHP 6.168 DPA -2.73 RAP 181.54 ECC 1.2369

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 33	2331.11	-22.22	49.00	64.45	108.02	19 51 24	1731.1	-19.54	41.35
90.00	8 46 52	4590.38	12.29	194.12	62.16	64.29	10 3 22	3990.4	8.73	187.25
100.00	20 36 50	2059.30	-23.19	28.65	64.09	109.41	21 11 9	1459.3	-20.33	21.02
100.00	10 5 17	4337.42	13.21	175.05	61.69	62.94	11 17 34	3737.4	9.48	168.25
110.00	21 51 47	1824.74	-25.80	9.72	62.97	113.24	22 22 11	1224.7	-22.43	2.19
110.00	11 6 49	4144.74	15.67	159.03	60.29	59.22	12 15 54	3544.7	11.47	152.44

DIFFERENTIAL CORRECTIONS
TDE -.3466 TRA 6.2808 TC-15.7330 BAU 3.0282
RDE .3446 RRA .1729 RC3 .2268 FAU .06132
FDE -.6084 FRA 2.2552 FC3-3.6880 BSP 54315
BDE .4088 BRA 6.2832 BC315.7346 FSP 1368

MID-COURSE EXECUTION ACCURACY
SGT15291.1 SGR 607.7 SG3 390.3
RRT .0192 RRF -.0219 RTF .9637
SGB15303.2 R23 -.0404 R13 .9637
SG115291.1 SG2 607.6 THA .04

ORBIT DETERMINATION ACCURACY
ST 2931.4 SR 526.3 SS 735.9
CRT -.0316 CRS .5470 CST -.8527
LSA 2999.1 MSA 645.3 SSA 27.5
EL1 2931.5 EL2 526.0 ALF 179.66

LAUNCH DATE DEC 8 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 883.493 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.274	GAL	-4.34	AZL	88.21	HCA	260.41	SMA	191.19	ECC	.24086	INC	1.7935
RP	206.67	LAP	-1.77	LOP	336.35	VP	24.293	GAP	-13.16	AZP	90.30	TAL	337.33	TAP	237.74	RCA	145.14	APO	237.25
RC	334.204	GL	15.59	GP	-3.18	ZAL	126.49	ZAP	27.24	ETS	172.51	ZAE	43.16	ETE	176.42	ZAC	85.34	ETC	256.09

V1	30.236	V2	26.497	CLP	27.06														

PLANETOCENTRIC CONIC

C3	14.933	VHL	3.864	DLA	5.18	RAL	207.99	RAD	6567.6	VEL	11.676	PTH	2.05	VHP	6.259	DPA	-3.03	RAP	182.34
ECC	1.2458																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 6	2307.92	-21.72	47.48	65.98	108.63	20 3 34	1707.9	-18.97	39.88
90.00	8 44 17	4629.88	13.44	196.45	64.00	64.84	10 1 26	4029.9	9.94	189.52
100.00	20 48 53	2037.68	-22.70	27.24	65.61	109.99	21 22 51	1437.7	-19.77	19.67
100.00	10 3 11	4375.35	14.38	177.27	63.54	63.51	11 16 6	3775.4	10.70	170.40
110.00	22 2 43	1806.60	-25.31	8.54	64.46	113.78	22 32 50	1206.6	-21.88	1.07
110.00	11 5 50	4179.20	16.86	160.99	62.15	59.81	12 15 29	3579.2	12.72	154.32

DIFFERENTIAL CORRECTIONS

TDE	-.4837	TRA	6.5872	TC-15.3116	BAU	3.0573	
RDE	.3551	RRA	.1681	RC3 .2335	FAU	.05666	
FDE	-.6278	FRA	2.2049	FC3-3.2847	BSP	54694	
BDE	.6000	BRA	6.5894	BC315.3133	FSP	1294	

MID-COURSE EXECUTION ACCURACY

SGT15385.9	SGR	610.2	SG3	367.4			
RRT -.0063	RRF	-.0489	RTF	.9613			
SGB15398.0	R23	.0428	R13	-.9613			
SG115385.9	SG2	610.2	THA	179.99			

ORBIT DETERMINATION ACCURACY

ST	3048.9	SR	531.8	SS	733.9
CRT	-.0978	CRS	.5771	CST	-.8680
LSA	3116.3	MSA	636.4	SSA	26.7
EL1	3049.3	EL2	529.2	ALF	178.99

LAUNCH DATE DEC 8 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 887.775 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.282	GAL	-4.57	AZL	88.23	HCA	261.68	SMA	191.34	ECC	.24259	INC	1.7747
RP	206.68	LAP	-1.76	LOP	337.62	VP	24.303	GAP	-13.28	AZP	90.26	TAL	336.28	TAP	237.95	RCA	144.92	APO	237.76
RC	334.996	GL	15.12	GP	-3.12	ZAL	128.06	ZAP	26.82	ETS	172.50	ZAE	42.43	ETE	176.41	ZAC	85.58	ETC	256.05

V1	30.236	V2	26.495	CLP	26.65														

PLANETOCENTRIC CONIC

C3	15.514	VHL	3.939	DLA	4.20	RAL	209.23	RAD	6567.6	VEL	11.700	PTH	2.06	VHP	6.351	DPA	-3.34	RAP	183.14
ECC	1.2553																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 24	2285.81	-21.23	46.04	67.54	109.19	20 15 30	1685.8	-18.42	38.50
90.00	8 41 49	4609.11	14.57	198.78	65.88	65.45	9 59 38	4069.1	11.13	191.79
100.00	21 0 43	2017.10	-22.21	25.90	67.15	110.54	21 34 20	1417.1	-19.22	18.39
100.00	10 1 11	4413.06	15.51	179.49	65.42	64.12	11 14 44	3813.1	11.90	172.56
110.00	22 13 28	1789.38	-24.83	7.43	65.98	114.28	22 43 18	1189.4	-21.34	.02
110.00	11 4 55	4213.54	18.02	162.97	64.05	60.45	12 15 9	3613.5	13.95	156.22

DIFFERENTIAL CORRECTIONS

TDE	-.6212	TRA	6.8998	TC-14.8829	BAU	3.0872	
RDE	.3661	RRA	.1629	RC3 .2387	FAU	.05212	
FDE	-.6435	FRA	2.1504	FC3-2.9083	BSP	55024	
BDE	.7210	BRA	6.9017	BC314.8848	FSP	1220	

MID-COURSE EXECUTION ACCURACY

SGT15477.4	SGR	612.7	SG3	345.2			
RRT -.0311	RRF	-.0753	RTF	.9585			
SGB15489.6	R23	.0454	R13	-.9585			
SG115477.4	SG2	612.4	THA	179.93			

ORBIT DETERMINATION ACCURACY

ST	3171.0	SR	537.4	SS	729.3
CRT	-.1573	CRS	.6047	CST	-.8805
LSA	3237.6	MSA	627.2	SSA	25.9
EL1	3172.2	EL2	530.5	ALF	178.43

LAUNCH DATE DEC 8 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 892.047 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.290	GAL	-4.79	AZL	88.24	HCA	262.95	SMA	191.49	ECC	.24441	INC	1.7560
RP	206.70	LAP	-1.74	LOP	338.89	VP	24.311	GAP	-13.41	AZP	90.22	TAL	335.21	TAP	238.15	RCA	144.69	APO	238.29
RC	335.784	GL	14.66	GP	-3.07	ZAL	129.60	ZAP	26.41	ETS	172.48	ZAE	41.72	ETE	176.39	ZAC	85.82	ETC	256.01

V1	30.236	V2	26.493	CLP	26.25														

PLANETOCENTRIC CONIC

C3	16.139	VHL	4.017	DLA	3.23	RAL	210.44	RAD	6567.6	VEL	11.727	PTH	2.07	VHP	6.446	DPA	-3.65	RAP	183.95
ECC	1.2656																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 28	2264.77	-20.75	44.69	69.11	109.71	20 27 13	1664.8	-17.88	37.19
90.00	8 39 29	4708.07	15.65	201.12	67.80	66.10	9 57 57	4108.1	12.29	194.06
100.00	21 12 20	1997.53	-21.74	24.64	68.72	111.04	21 45 37	1397.5	-18.69	17.18
100.00	9 59 19	4450.54	16.61	181.73	67.35	64.78	11 13 29	3850.5	13.08	174.72
110.00	22 24 2	1773.08	-24.37	6.39	67.51	114.74	22 53 35	1173.1	-20.83	359.04
110.00	11 4 5	4247.75	19.16	164.97	65.98	61.13	12 14 53	3647.7	15.16	158.14

DIFFERENTIAL CORRECTIONS

TDE	-.7594	TRA	7.2217	TC-14.4466	BAU	3.1175	
RDE	.3778	RRA	.1572	RC3 .2426	FAU	.04765	
FDE	-.6556	FRA	2.0923	FC3-2.5561	BSP	55362	
BDE	.8482	BRA	7.2234	BC314.4487	FSP	1149	

MID-COURSE EXECUTION ACCURACY

SGT15566.9	SGR	615.4	SG3	323.6			
RRT -.0552	RRF	-.1010	RTF	.9552			
SGB15579.0	R23	.0483	R13	-.9552			
SG115566.9	SG2	614.5	THA	179.87			

ORBIT DETERMINATION ACCURACY

ST	3297.3	SR	543.0	SS	722.3
CRT	-.2106	CRS	.6301	CST	-.8907
LSA	3362.4	MSA	618.2	SSA	25.2
EL1	3299.3	EL2	530.5	ALF	177.96

LAUNCH DATE DEC 8 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 896.308 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.298	GAL	-5.03	AZL	88.26	HCA	264.21	SMA	191.63	ECC	.24630	INC	1.7374
RP	206.73	LAP	-1.73	LOP	340.16	VP	24.318	GAP	-13.54	AZP	90.18	TAL	334.13	TAP	238.34	RCA	144.43	APO	238.83
RC	336.567	GL	14.20	GP	-3.01	ZAL	131.13	ZAP	26.02	ETS	172.46	ZAE	41.01	ETE	176.37	ZAC	86.07	ETC	255.98

V1	30.236	V2	26.490	CLP	25.85														

PLANETOCENTRIC CONIC

C3	16.812	VHL	4.100	DLA	2.29	RAL	211.65	RAD	6567.7	VEL	11.756	PTH	2.07	VHP	6.541	DPA	-3.96	RAP	184.77
ECC	1.2767																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 18	2244.79	-20.29	43.40	70.71	110.19	20 38 43	1644.8	-17.36	35.96
90.00	8 37 15	4746.74	16.71	203.47	69.76	66.80	9 56 22	4146.7	13.42	196.34
100.00	21 23 43	1978.97	-21.28	23.45	70.31	111.50	21 56 42	1379.0	-18.17	16.04
100.00	9 57 32	4487.79	17.68	183.98	69.31	65.49	11 12 19	3887.8	14.22	176.89
110.00	22 34 24	1757.70	-23.93	5.42	69.07	115.17	23 3 42	1157.7	-20.34	358.11
110.00	11 3 19	4281.82	20.26	167.00	67.96	61.86	12 14 41	3681.8	16.34	160.07

DIFFERENTIAL CORRECTIONS

TDE	-.8982	TRA	7.5514	TC-14.0077	BAU	3.1489	
RDE	.3900	RRA	.1512	RC3 .2451	FAU	.04334	
FDE	-.6638	FRA	2.0296	FC3-2.2318	BSP	55665	
BDE	.9792	BRA	7.5529	BC314.0098	FSP	1078	

MID-COURSE EXECUTION ACCURACY

SGT15654.2	SGR	618.1	SG3	302.6			
RRT -.0785	RRF	-.1261	RTF	.9514			
SGB15666.4	R23	.0515	R13	-.9514			
SG115654.3	SG2	616.2	THA	179.82			

ORBIT DETERMINATION ACCURACY

ST	3425.1	SR	548.6	SS	712.3
CRT	-.2581	CRS	.6533	CST	-.8990
LSA	3488.3	MSA	609.3	SSA	24.5
EL1	3428.1	EL2	529.6	ALF	177.57

LAUNCH DATE DEC 8 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 900.557 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.306 GAL -5.27 AZL 88.28 HCA 265.48 SMA 191.78 ECC .24827 INC 1.7189 V1 30.236
RP 206.77 LAP -1.71 LOP 341.43 VP 24.325 GAP -13.67 AZP 90.14 TAL 333.03 TAP 238.52 RCA 144.17 APO 239.39 V2 26.485
RC 337.346 GL 13.74 GP -2.96 ZAL 132.63 ZAP 25.63 ETS 172.44 ZAE 40.32 ETE 176.35 ZAC 86.31 ETC 255.95 CLP 25.47

PLANETOCENTRIC CONIC

C3 17.535 VHL 4.188 DLA 1.37 RAL 212.84 RAD 6567.7 VEL 11.786 PTH 2.08 VHP 6.639 DPA -4.29 RAP 185.59 ECC 1.2886

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 54	2225.84	-19.84	42.20	72.34	110.63	20 50 0	1625.8	-16.86	34.79
90.00	8 35 8	4785.13	17.72	205.84	71.75	67.55	9 54 53	4185.1	14.52	198.62
100.00	21 34 53	1961.42	-20.84	22.34	71.92	111.93	22 7 34	1361.4	-17.68	14.97
100.00	9 55 50	4524.79	18.71	186.25	71.31	66.25	11 11 15	3924.8	15.34	179.08
110.00	22 44 35	1743.24	-23.51	4.50	70.65	115.56	23 13 38	1143.2	-19.87	357.25
110.00	11 2 38	4315.73	21.34	169.04	69.97	62.64	12 14 33	3715.7	17.50	162.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.0355 TRA 7.8918 TC-13.5671 BAU 3.1811 SGT15741.0 SGR 620.8 SG3 282.2 ST 3552.9 SR 554.2 SS 699.6
RDE .4027 RRA .1448 RC3 .2464 FAU .03911 RRT -.1009 RRF -.1504 RTF .9470 CRT -.2997 CRS .6746 CST -.9054
FDE -.6680 FRA 1.9633 FC3-1.9311 BSP 55972 SGB15753.2 R23 .0550 R13 -.9470 LSA 3613.6 MSA 601.0 SSA 23.9
BDE 1.1111 BRA 7.8932 BC313.5694 FSP 1010 SG115741.1 SG2 617.7 THA 179.77 EL1 3556.9 EL2 528.1 ALF 177.26

LAUNCH DATE DEC 8 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 904.793 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.314 GAL -5.51 AZL 88.30 HCA 266.75 SMA 191.93 ECC .25034 INC 1.7004 V1 30.236
RP 206.81 LAP -1.70 LOP 342.69 VP 24.330 GAP -13.81 AZP 90.10 TAL 331.93 TAP 238.68 RCA 143.88 APO 239.98 V2 26.480
RC 338.120 GL 13.29 GP -2.91 ZAL 134.10 ZAP 25.26 ETS 172.42 ZAE 39.63 ETE 176.33 ZAC 86.55 ETC 255.92 CLP 25.10

PLANETOCENTRIC CONIC

C3 18.312 VHL 4.279 DLA .46 RAL 214.01 RAD 6567.7 VEL 11.819 PTH 2.09 VHP 6.738 DPA -4.62 RAP 186.43 ECC 1.3014

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 24 17	2207.93	-19.41	41.06	73.98	111.03	21 1 5	1607.9	-16.37	33.70
90.00	8 33 7	4823.23	18.69	208.21	73.77	68.34	9 53 30	4223.2	15.59	200.91
100.00	21 45 50	1944.85	-20.41	21.29	73.55	112.32	22 18 15	1344.9	-17.21	13.96
100.00	9 54 14	4561.54	19.70	188.53	73.34	67.05	11 10 16	3961.5	16.42	181.27
110.00	22 54 35	1729.69	-23.11	3.66	72.25	115.92	23 23 24	1129.7	-19.43	356.45
110.00	11 1 59	4349.47	22.38	171.11	72.01	63.46	12 14 29	3749.5	18.64	163.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.1744 TRA 8.2389 TC-13.1294 BAU 3.2148 SGT15825.1 SGR 623.6 SG3 262.5 ST 3679.6 SR 559.7 SS 684.7
RDE .4160 RRA .1379 RC3 .2468 FAU .03499 RRT -.1228 RRF -.1743 RTF .9417 CRT -.3372 CRS .6947 CST -.9104
FDE -.6694 FRA 1.8928 FC3-1.6544 BSP 56225 SGB15837.4 R23 .0589 R13 -.9417 LSA 3737.5 MSA 593.1 SSA 23.3
BDE 1.2459 BRA 8.2401 BC313.1317 FSP 942 SG115825.3 SG2 618.9 THA 179.72 EL1 3684.5 EL2 526.2 ALF 177.00

LAUNCH DATE DEC 8 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 909.016 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.322 GAL -5.76 AZL 88.32 HCA 268.02 SMA 192.08 ECC .25249 INC 1.6820 V1 30.236
RP 206.87 LAP -1.68 LOP 343.96 VP 24.334 GAP -13.96 AZP 90.06 TAL 330.81 TAP 238.83 RCA 143.58 APO 240.58 V2 26.474
RC 338.890 GL 12.85 GP -2.87 ZAL 135.56 ZAP 24.89 ETS 172.40 ZAE 38.95 ETE 176.31 ZAC 86.80 ETC 255.90 CLP 24.74

PLANETOCENTRIC CONIC

C3 19.144 VHL 4.375 DLA -.42 RAL 215.17 RAD 6567.8 VEL 11.854 PTH 2.10 VHP 6.839 DPA -4.95 RAP 187.27 ECC 1.3151

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 35 26	2191.02	-18.99	39.99	75.64	111.41	21 11 57	1591.0	-15.91	32.67
90.00	8 31 11	4861.04	19.63	210.59	75.83	69.17	9 52 12	4261.0	16.62	203.21
100.00	21 56 35	1929.26	-20.01	20.31	75.20	112.68	22 28 45	1329.3	-16.76	13.02
100.00	9 52 44	4598.03	20.65	190.82	75.40	67.89	11 9 22	3998.0	17.47	183.47
110.00	23 4 23	1717.04	-22.73	2.87	73.87	116.25	23 33 0	1117.0	-19.02	355.70
110.00	11 1 25	4383.02	23.38	173.19	74.10	64.33	12 14 28	3783.0	19.74	165.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.3133 TRA 8.5957 TC-12.6924 BAU 3.2491 SGT15906.8 SGR 626.4 SG3 243.4 ST 3804.3 SR 565.1 SS 667.4
RDE .4297 RRA .1306 RC3 .2461 FAU .03098 RRT -.1440 RRF -.1977 RTF .9355 CRT -.3706 CRS .7137 CST -.9141
FDE -.6676 FRA 1.8180 FC3-1.4009 BSP 56474 SGB15919.1 R23 .0635 R13 -.9355 LSA 3859.2 MSA 585.7 SSA 22.7
BDE 1.3819 BRA 8.5967 BC312.6948 FSP 875 SG115907.1 SG2 619.8 THA 179.67 EL1 3810.1 EL2 524.1 ALF 176.79

LAUNCH DATE DEC 8 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 913.224 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.331 GAL -6.02 AZL 88.34 HCA 269.28 SMA 192.23 ECC .25473 INC 1.6637 V1 30.236
RP 206.93 LAP -1.66 LOP 345.23 VP 24.337 GAP -14.10 AZP 90.02 TAL 329.68 TAP 238.96 RCA 143.26 APO 241.20 V2 26.466
RC 339.657 GL 12.42 GP -2.82 ZAL 136.98 ZAP 24.54 ETS 172.38 ZAE 38.29 ETE 176.28 ZAC 87.04 ETC 255.88 CLP 24.38

PLANETOCENTRIC CONIC

C3 20.036 VHL 4.476 DLA -1.28 RAL 216.31 RAD 6567.8 VEL 11.892 PTH 2.11 VHP 6.942 DPA -5.29 RAP 188.12 ECC 1.3297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 46 23	2175.10	-18.59	39.00	77.32	111.75	21 22 38	1575.1	-15.48	31.71
90.00	8 29 21	4898.56	20.52	212.98	77.92	70.05	9 51 0	4298.6	17.61	205.51
100.00	22 7 8	1914.63	-19.62	19.39	76.87	113.01	22 39 2	1314.6	-16.34	12.14
100.00	9 51 18	4634.26	21.56	193.13	77.50	68.78	11 8 32	4034.3	18.48	185.68
110.00	23 14 0	1705.29	-22.37	2.14	75.51	116.54	23 42 26	1105.3	-18.63	355.01
110.00	11 0 54	4416.37	24.35	175.30	76.21	65.24	12 14 31	3816.4	20.81	167.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.4522 TRA 8.9614 TC-12.2608 BAU 3.2849 SGT15986.8 SGR 629.1 SG3 224.8 ST 3925.8 SR 570.4 SS 647.9
RDE .4440 RRA .1229 RC3 .2446 FAU .02706 RRT -.1646 RRF -.2206 RTF .9281 CRT -.4003 CRS .7318 CST -.9165
FDE -.6627 FRA 1.7390 FC3-1.1692 BSP 56683 SGB15999.2 R23 .0686 R13 -.9281 LSA 3977.6 MSA 578.9 SSA 22.2
BDE 1.5185 BRA 8.9623 BC312.2632 FSP 809 SG115987.2 SG2 620.5 THA 179.63 EL1 3932.5 EL2 521.8 ALF 176.61

LAUNCH DATE DEC 8 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 917.416 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.339 GAL -6.28 AZL 88.35 HCA 270.55 SMA 192.38 ECC .25708 INC 1.6453 V1 30.236
RP 207.00 LAP -1.65 LOP 346.50 VP 24.339 GAP -14.26 AZP 89.98 TAL 328.54 TAP 239.09 RCA 142.92 APO 241.84 V2 26.458
RC 340.420 GL 11.99 GP -2.78 ZAL 138.38 ZAP 24.19 ETS 172.36 ZAE 37.63 ETE 176.26 ZAC 87.29 ETC 255.86 CLP 24.04

PLANETOCENTRIC CONIC

C3 20.991 VHL 4.582 DLA -2.12 RAL 217.44 RAD 6567.9 VEL 11.932 PTH 2.12 VHP 7.047 DPA -5.63 RAP 188.98 ECC 1.3455

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 57 7	2160.15	-18.21	38.06	79.01	112.07	21 33 7	1560.1	-15.06	30.81
90.00	8 27 36	4935.77	21.36	215.38	80.04	70.96	9 49 52	4335.8	18.57	207.82
100.00	22 17 28	1900.94	-19.25	18.54	78.55	113.32	22 49 9	1300.9	-15.94	11.32
100.00	9 49 56	4670.21	22.43	195.44	79.63	69.70	11 7 46	4070.2	19.46	187.90
110.00	23 23 27	1694.41	-22.04	1.47	77.16	116.81	23 51 41	1094.4	-18.27	354.38
110.00	11 0 27	4449.50	25.28	177.43	78.36	68.19	12 14 36	3849.5	21.84	169.96

DIFFERENTIAL CORRECTIONS
TDE-1.5907 TRA 9.3372 TC-11.8353 BAU 3.3220
RDE .4588 RRA .1147 RC3 .2423 FAU .02320
FDE -.6547 FRA 1.6563 FC3 -.9570 BSP 56877
BDE 1.6555 BRA 9.3379 BC311.8378 FSP 746

MID-COURSE EXECUTION ACCURACY
SGT16065.6 SGR 631.8 SG3 206.9
RRT -.1845 RRF -.2426 RTF .9190
SGB16078.1 R23 .0741 R13 -.9190
SG116066.1 SG2 620.9 THA 179.58

ORBIT DETERMINATION ACCURACY
ST 4043.7 SR 575.5 SS 626.2
CRT -.4266 CRS .7489 CST -.9178
LSA 4092.2 MSA 572.5 SSA 21.6
EL1 4051.3 EL2 519.5 ALF 176.47

LAUNCH DATE DEC 8 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 921.590 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.347 GAL -6.55 AZL 88.37 HCA 271.81 SMA 192.53 ECC .25952 INC 1.6270 V1 30.236
RP 207.08 LAP -1.63 LOP 347.76 VP 24.340 GAP -14.42 AZP 89.95 TAL 327.39 TAP 239.20 RCA 142.57 APO 242.50 V2 26.449
RC 341.179 GL 11.57 GP -2.74 ZAL 139.76 ZAP 23.86 ETS 172.34 ZAE 36.98 ETE 176.23 ZAC 87.53 ETC 255.85 CLP 23.71

PLANETOCENTRIC CONIC

C3 22.012 VHL 4.692 DLA -2.94 RAL 218.55 RAD 6567.9 VEL 11.975 PTH 2.13 VHP 7.154 DPA -5.98 RAP 189.85 ECC 1.3623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 7 39	2146.14	-17.85	37.19	80.72	112.35	21 43 25	1546.1	-14.67	29.97
90.00	8 25 56	4972.67	22.16	217.79	82.18	71.91	9 48 49	4372.7	19.48	210.14
100.00	22 27 37	1888.17	-18.91	17.75	80.25	113.59	22 59 5	1288.2	-15.56	10.56
100.00	9 48 38	4705.87	23.25	197.77	81.78	70.67	11 7 5	4105.9	20.40	190.14
110.00	23 32 43	1684.39	-21.73	.86	78.83	117.06	24 0 47	1084.4	-17.93	353.79
110.00	11 0 3	4482.42	26.17	179.57	80.55	67.18	12 14 45	3882.4	22.85	171.99

DIFFERENTIAL CORRECTIONS
TDE-1.7290 TRA 9.7213 TC-11.4169 BAU 3.3605
RDE .4741 RRA .1061 RC3 .2394 FAU .01945
FDE -.6440 FRA 1.5690 FC3 -.7650 BSP 57039
BDE 1.7929 BRA 9.7219 BC311.4194 FSP 683

MID-COURSE EXECUTION ACCURACY
SGT16141.2 SGR 634.4 SG3 189.6
RRT -.2038 RRF -.2642 RTF .9079
SGB16153.6 R23 .0805 R13 -.9080
SG116141.7 SG2 621.1 THA 179.54

ORBIT DETERMINATION ACCURACY
ST 4156.9 SR 580.3 SS 602.6
CRT -.4502 CRS .7656 CST -.9181
LSA 4202.2 MSA 566.6 SSA 21.1
EL1 4165.3 EL2 517.2 ALF 176.35

LAUNCH DATE DEC 8 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 7 1966

HELIOCENTRIC CONIC DISTANCE 925.747 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.355 GAL -6.82 AZL 88.39 HCA 273.08 SMA 192.68 ECC .26207 INC 1.6087 V1 30.236
RP 207.17 LAP -1.61 LOP 349.02 VP 24.340 GAP -14.58 AZP 89.91 TAL 326.22 TAP 239.30 RCA 142.19 APO 243.18 V2 26.438
RC 341.936 GL 11.15 GP -2.70 ZAL 141.11 ZAP 23.53 ETS 172.31 ZAE 36.35 ETE 176.20 ZAC 87.78 ETC 255.84 CLP 23.38

PLANETOCENTRIC CONIC

C3 23.103 VHL 4.807 DLA -3.74 RAL 219.64 RAD 6567.9 VEL 12.020 PTH 2.15 VHP 7.263 DPA -6.34 RAP 190.73 ECC 1.3802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 17 58	2133.05	-17.51	36.38	82.45	112.61	21 53 31	1533.1	-14.29	29.18
90.00	8 24 21	5009.26	22.92	220.21	84.36	72.90	9 47 50	4409.3	20.36	212.47
100.00	22 37 34	1876.30	-18.58	17.02	81.96	113.84	23 8 50	1276.3	-15.20	9.86
100.00	9 47 26	4741.25	24.03	200.11	83.97	71.66	11 6 28	4141.2	21.30	192.38
110.00	23 41 48	1675.22	-21.45	.30	80.51	117.28	24 9 43	1075.2	-17.62	353.26
110.00	10 59 42	4515.09	27.01	181.74	82.76	66.21	12 14 57	3915.1	23.81	174.03

DIFFERENTIAL CORRECTIONS
TDE-1.8676 TRA10.1151 TC-11.0064 BAU 3.4003
RDE .4898 RRA .0970 RC3 .2359 FAU .01577
FDE -.6310 FRA 1.4776 FC3 -.5911 BSP 57171
BDE 1.9308 BRA10.1156 BC311.0090 FSP 621

MID-COURSE EXECUTION ACCURACY
SGT16214.5 SGR 637.0 SG3 172.9
RRT -.2226 RRF -.2852 RTF .8942
SGB16227.0 R23 .0881 R13 -.8943
SG116215.1 SG2 621.0 THA 179.50

ORBIT DETERMINATION ACCURACY
ST 4265.8 SR 585.0 SS 577.3
CRT -.4713 CRS .7821 CST -.9171
LSA 4307.9 MSA 561.2 SSA 20.7
EL1 4274.9 EL2 514.8 ALF 176.25

LAUNCH DATE DEC 8 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 9 1966

HELIOCENTRIC CONIC DISTANCE 929.883 EARTH TO MARS

RL 147.35 LAL .00 LOL 75.95 VL 33.363 GAL -7.10 AZL 88.41 HCA 274.34 SMA 192.84 ECC .26472 INC 1.5903 V1 30.236
RP 207.27 LAP -1.59 LOP 350.29 VP 24.339 GAP -14.75 AZP 89.88 TAL 325.04 TAP 239.38 RCA 141.79 APO 243.88 V2 26.427
RC 342.690 GL 10.75 GP -2.66 ZAL 142.43 ZAP 23.21 ETS 172.29 ZAE 35.72 ETE 176.17 ZAC 88.03 ETC 255.83 CLP 23.07

PLANETOCENTRIC CONIC

C3 24.269 VHL 4.926 DLA -4.52 RAL 220.72 RAD 6568.0 VEL 12.068 PTH 2.16 VHP 7.374 DPA -6.69 RAP 191.61 ECC 1.3994

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 28 6	2120.86	-17.19	35.63	84.19	112.85	22 3 27	1520.9	-13.95	28.46
90.00	8 22 50	5045.54	23.62	222.64	86.55	73.91	9 46 55	4445.5	21.19	214.81
100.00	22 47 19	1865.30	-18.28	16.35	83.69	114.07	23 18 25	1265.3	-14.87	9.21
100.00	9 46 18	4776.33	24.76	202.46	86.18	72.69	11 5 54	4176.3	22.16	194.63
110.00	23 50 42	1666.87	-21.19	359.79	82.20	117.47	24 18 29	1066.9	-17.34	352.78
110.00	10 59 24	4547.52	27.81	183.92	85.00	69.28	12 15 11	3947.5	24.74	176.10

DIFFERENTIAL CORRECTIONS
TDE-2.0050 TRA10.5196 TC-10.6052 BAU 3.4418
RDE .5060 RRA .0875 RC3 .2319 FAU .01215
FDE -.6151 FRA 1.3820 FC3 -.4335 BSP 57288
BDE 2.0678 BRA10.5200 BC310.6078 FSP 561

MID-COURSE EXECUTION ACCURACY
SGT16286.3 SGR 639.5 SG3 156.8
RRT -.2408 RRF -.3051 RTF .8769
SGB16298.8 R23 .0965 R13 -.8769
SG116287.0 SG2 620.7 THA 179.46

ORBIT DETERMINATION ACCURACY
ST 4369.4 SR 589.3 SS 550.2
CRT -.4900 CRS .7982 CST -.9151
LSA 4408.2 MSA 556.1 SSA 20.2
EL1 4379.1 EL2 512.6 ALF 176.17

LAUNCH DATE DEC 8 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 11 1966

HELIOCENTRIC CONIC DISTANCE 933.999 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.371	GAL	-7.39	AZL	88.43	HCA	275.60	SMA	192.99	ECC	.26749	INC	1.5719
RP	207.37	LAP	-1.56	LOP	351.55	VP	24.337	GAP	-14.93	AZP	89.85	TAL	323.85	TAP	239.45	RCA	141.37	APO	244.61
RC	343.441	GL	10.35	GP	-2.62	ZAL	143.73	ZAP	22.91	ETS	172.27	ZAE	35.10	ETE	176.14	ZAC	88.27	ETC	255.83

V1 30.236 V2 26.415 CLP 22.76

PLANETOCENTRIC CONIC

C3 25.514 VHL 5.051 DLA -5.27 RAL 221.78 RAD 6568.0 VEL 12.120 PTH 2.17 VHP 7.488 DPA -7.05 RAP 192.50 ECC 1.4199

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 2	2109.53	-16.89	34.94	85.93	113.07	22 13 12	1509.5	-13.62	27.79
90.00	8 21 23	5081.49	24.28	225.07	88.77	74.96	9 46 4	4481.5	21.98	217.15
100.00	22 56 54	1855.15	-18.00	15.72	85.43	114.28	23 27 49	1255.1	-14.57	8.61
100.00	9 45 13	4811.11	25.44	204.82	88.41	73.76	11 5 24	4211.1	22.97	196.89
110.00	0 3 23	1659.32	-20.95	359.34	83.90	117.65	0 31 2	1059.3	-17.08	352.34
110.00	10 59 9	4579.70	28.57	186.12	87.27	70.38	12 15 29	3979.7	25.63	178.18

DIFFERENTIAL CORRECTIONS				MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-2.1425	TRA	10.9329	TC	-10.2150	BAU	3.4852	SGT	16355.4	SGR	641.9
RDE	.5226	RRA	.0775	RC3	.2275	FAU	.00860	RRT	-.2584	RRF	-.3240
FDE	-.5970	FRA	1.2820	FC3	-.2919	BSP	57367	SGB	16368.0	R23	.1064
BDE	2.2053	BRA	10.9332	BC3	10.2176	FSP	502	SG1	16356.3	SG2	620.1

SG3	141.4	ST	4467.8	SR	593.4	SS	521.8
RTF	.8547	CRT	-.5069	CRS	.8146	CST	-.9117
R13	-.8547	LSA	4503.4	MSA	551.4	SSA	19.8
THA	179.42	EL1	4478.0	EL2	510.4	ALF	176.10

LAUNCH DATE DEC 8 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 13 1966

HELIOCENTRIC CONIC DISTANCE 938.092 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.380	GAL	-7.69	AZL	88.45	HCA	276.86	SMA	193.14	ECC	.27037	INC	1.5534
RP	207.48	LAP	-1.54	LOP	352.81	VP	24.334	GAP	-15.11	AZP	89.81	TAL	322.65	TAP	239.51	RCA	140.92	APO	245.36
RC	344.188	GL	9.97	GP	-2.58	ZAL	145.01	ZAP	22.61	ETS	172.25	ZAE	34.49	ETE	176.10	ZAC	88.52	ETC	255.83

V1 30.236 V2 26.402 CLP 22.47

PLANETOCENTRIC CONIC

C3 26.842 VHL 5.181 DLA -6.00 RAL 222.83 RAD 6568.1 VEL 12.174 PTH 2.18 VHP 7.603 DPA -7.42 RAP 193.40 ECC 1.4418

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 48	2099.04	-16.61	34.30	87.69	113.27	22 22 47	1499.0	-13.32	27.16
90.00	8 20 0	5117.12	24.89	227.50	91.01	76.04	9 45 17	4517.1	22.72	219.50
100.00	23 6 17	1845.81	-17.73	15.15	87.17	114.46	23 37 3	1245.8	-14.28	8.06
100.00	9 44 11	4845.58	26.08	207.19	90.66	74.85	11 4 57	4245.6	23.74	199.16
110.00	0 11 57	1652.54	-20.73	358.93	85.61	117.81	0 39 30	1052.5	-16.85	351.96
110.00	10 58 57	4611.61	29.28	188.33	89.57	71.51	12 15 49	4011.6	26.47	180.27

DIFFERENTIAL CORRECTIONS				MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-2.2785	TRA	11.3578	TC3	-9.8348	BAU	3.5302	SGT	16422.8	SGR	644.2
RDE	.5396	RRA	.0670	RC3	.2227	FAU	.00511	RRT	-.2755	RRF	-.3412
FDE	-.5765	FRA	1.1779	FC3	-.1650	BSP	57420	SGB	16435.5	R23	.1179
BDE	2.3415	BRA	11.3580	BC3	9.8373	FSP	445	SG1	16423.8	SG2	619.2

SG3	126.7	ST	4560.5	SR	597.2	SS	492.0
RTF	.8258	CRT	-.5218	CRS	.8311	CST	-.9067
R13	-.8258	LSA	4593.2	MSA	547.0	SSA	19.4
THA	179.38	EL1	4571.3	EL2	508.3	ALF	176.04

LAUNCH DATE DEC 8 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 15 1966

HELIOCENTRIC CONIC DISTANCE 942.161 EARTH TO MARS

RL	147.35	LAL	.00	LOL	75.95	VL	33.388	GAL	-7.99	AZL	88.47	HCA	278.12	SMA	193.30	ECC	.27338	INC	1.5349
RP	207.61	LAP	-1.52	LOP	354.07	VP	24.330	GAP	-15.30	AZP	89.78	TAL	321.44	TAP	239.56	RCA	140.46	APO	246.14
RC	344.932	GL	9.59	GP	-2.55	ZAL	146.26	ZAP	22.32	ETS	172.23	ZAE	33.89	ETE	176.07	ZAC	88.77	ETC	255.83

V1 30.236 V2 26.387 CLP 22.18

PLANETOCENTRIC CONIC

C3 28.259 VHL 5.316 DLA -6.71 RAL 223.87 RAD 6568.1 VEL 12.233 PTH 2.20 VHP 7.722 DPA -7.78 RAP 194.31 ECC 1.4651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 22	2089.35	-16.35	35.71	89.46	113.45	22 32 11	1489.4	-13.04	26.59
90.00	8 18 41	5152.41	25.44	229.93	93.26	77.13	9 44 34	4552.4	23.42	221.85
100.00	23 15 31	1837.27	-17.49	14.64	88.93	114.63	23 46 8	1237.3	-14.02	7.56
100.00	9 43 14	4879.73	26.66	209.55	92.93	75.96	11 4 34	4279.7	24.47	201.44
110.00	0 20 22	1646.51	-20.54	358.57	87.33	117.94	0 47 49	1046.5	-16.64	351.61
110.00	10 58 48	4643.25	29.94	190.56	91.89	72.68	12 16 11	4043.3	27.28	182.38

DIFFERENTIAL CORRECTIONS				MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-2.4143	TRA	11.7928	TC3	-9.4652	BAU	3.5769	SGT	16487.4	SGR	646.3
RDE	.5571	RRA	.0561	RC3	.2176	FAU	.00167	RRT	-.2920	RRF	-.3559
FDE	-.5540	FRA	1.0694	FC3	-.0513	BSP	57442	SGB	16500.0	R23	.1314
BDE	2.4777	BRA	11.7929	BC3	9.4677	FSP	389	SG1	16488.4	SG2	618.1

SG3	112.9	ST	4648.0	SR	600.7	SS	461.1
RTF	.7872	CRT	-.5352	CRS	.8481	CST	-.8999
R13	-.7873	LSA	4677.8	MSA	543.0	SSA	19.0
THA	179.34	EL1	4659.2	EL2	506.2	ALF	176.00

LAUNCH DATE DEC 9 1964 FLIGHT TIME 140.00 ARRIVAL DATE APR 28 1965

HELIOCENTRIC CONIC DISTANCE 370.498 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 35.746 GAL -1.01 AZL 88.74 HCA 113.78 SMA 253.37 ECC .41882 INC 1.2598 V1 30.239
RP 244.57 LAP 1.15 LOP 190.75 VP 23.696 GAP 24.68 AZP 90.51 TAL 356.58 TAP 110.36 RCA 147.26 APO 359.49 V2 22.429
RC 129.306 GL 8.12 GP 1.80 ZAL 94.29 ZAP 175.24 ETS 156.49 ZAE 152.74 ETE 1.17 ZAC 90.83 ETC 256.00 CLP 175.60

PLANETOCENTRIC CONIC

C3 30.964 VHL 5.565 DLA 10.90 RAL 175.25 RAD 6568.2 VEL 12.342 PTH 2.23 VHP 11.243 DPA .27 RAP 187.08 ECC 1.5096

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 25 37	2666.98	-27.37	72.18	48.18	97.57	17 10 4	2067.0	-26.04	63.77
90.00	7 14 43	4620.57	13.17	195.90	41.95	64.71	8 31 43	4020.6	9.66	188.98
100.00	17 52 25	2387.03	-28.70	51.38	47.96	98.72	18 32 12	1787.0	-27.20	42.90
100.00	8 30 36	4375.75	14.39	177.29	41.34	63.51	9 43 31	3775.7	10.72	170.42
110.00	19 13 2	2134.76	-32.28	31.47	47.20	101.92	19 48 37	1534.8	-30.30	22.81
110.00	9 26 28	4200.78	17.59	162.23	39.56	60.21	10 36 29	3600.8	13.49	155.52

DIFFERENTIAL CORRECTIONS

TDE .4997 TRA-1.4036 TC3 .9180 BAU .3802
RDE -.5549 RRA -.2473 RC3 -.0237 FAU .05072
FDE -.0653 FRA .6093 FC3-1.5857 BSP 5917
BDE .7467 BRA 1.4252 BC3 .9183 FSP 432

MID-COURSE EXECUTION ACCURACY

SGT 1964.0 SGR 628.0 SG3 162.3
RRT .0519 RRF -.0684 RTF -.7935
SGB 1967.0 RZS -.0220 R13 -.7937
SG1 1964.4 SG2 627.0 THA 1.13

ORBIT DETERMINATION ACCURACY

ST 678.7 SR 576.6 SS 203.9
CRT -.6634 CRS -.1945 CST .8483
LSA 825.7 NSA 389.2 SSA 36.3
EL1 814.8 EL2 359.3 ALF 141.93

LAUNCH DATE DEC 9 1964 FLIGHT TIME 142.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 372.262 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 35.610 GAL -.85 AZL 88.76 HCA 114.69 SMA 248.77 ECC .40798 INC 1.2434 V1 30.239
RP 244.34 LAP 1.13 LOP 191.66 VP 23.512 GAP 24.06 AZP 90.52 TAL 357.08 TAP 111.77 RCA 147.28 APO 350.27 V2 22.451
RC 131.411 GL 8.19 GP 1.85 ZAL 93.30 ZAP 174.72 ETS 158.16 ZAE 152.57 ETE 1.42 ZAC 90.97 ETC 255.98 CLP 175.06

PLANETOCENTRIC CONIC

C3 29.416 VHL 5.424 DLA 11.37 RAL 174.36 RAD 6568.2 VEL 12.280 PTH 2.21 VHP 10.969 DPA .17 RAP 187.43 ECC 1.4841

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 18 12	2669.56	-27.39	72.37	46.51	97.48	17 2 42	2069.6	-26.07	63.95
90.00	7 14 58	4592.26	12.34	194.23	40.23	64.31	8 31 30	3992.3	8.79	187.36
100.00	17 45 17	2388.73	-28.72	51.50	46.30	98.66	18 25 5	1788.7	-27.23	43.02
100.00	8 30 34	4348.32	13.55	175.68	39.61	63.10	9 43 3	3748.3	9.83	168.87
110.00	19 6 30	2134.58	-32.27	31.45	45.55	101.93	19 42 4	1534.6	-30.29	22.80
110.00	9 25 50	4175.24	16.72	160.76	37.82	59.74	10 35 26	3575.2	12.58	154.11

DIFFERENTIAL CORRECTIONS

TDE .4770 TRA-1.3782 TC3 .9963 BAU .3919
RDE -.5309 RRA -.2305 RC3 -.0218 FAU .05861
FDE -.0541 FRA .6032 FC3-1.7251 BSP 6144
BDE .7196 BRA 1.3968 BC3 .9966 FSP 459

MID-COURSE EXECUTION ACCURACY

SGT 1902.8 SGR 625.5 SG3 171.2
RRT .0590 RRF -.0733 RTF -.7995
SGB 2003.0 RZS -.0205 R13 -.7997
SG1 1903.2 SG2 624.2 THA 1.25

ORBIT DETERMINATION ACCURACY

ST 672.9 SR 574.5 SS 199.8
CRT -.6529 CRS -.1444 CST .8274
LSA 816.4 NSA 393.5 SSA 37.5
EL1 807.0 EL2 362.9 ALF 141.83

LAUNCH DATE DEC 9 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 374.188 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 35.481 GAL -.68 AZL 88.77 HCA 115.60 SMA 244.55 ECC .39768 INC 1.2268 V1 30.239
RP 244.11 LAP 1.11 LOP 192.57 VP 23.338 GAP 23.43 AZP 90.53 TAL 357.60 TAP 113.20 RCA 147.30 APO 341.80 V2 22.475
RC 133.550 GL 8.26 GP 1.91 ZAL 92.28 ZAP 174.19 ETS 159.54 ZAE 152.46 ETE 1.66 ZAC 91.10 ETC 255.97 CLP 174.51

PLANETOCENTRIC CONIC

C3 27.987 VHL 5.290 DLA 11.83 RAL 173.43 RAD 6568.1 VEL 12.221 PTH 2.20 VHP 10.702 DPA .06 RAP 187.79 ECC 1.4606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 10 37	2672.75	-27.42	72.60	44.85	97.37	16 55 9	2072.7	-26.11	64.17
90.00	7 15 9	4564.19	11.51	192.59	38.52	63.95	8 31 14	3964.2	7.91	185.76
100.00	17 37 58	2391.02	-28.75	51.67	44.64	98.58	18 17 49	1791.0	-27.26	43.18
100.00	8 30 29	4321.15	12.71	174.11	37.90	62.71	9 42 30	3721.2	8.95	167.33
110.00	18 59 48	2134.94	-32.28	31.48	43.90	101.91	19 35 23	1534.9	-30.30	22.82
110.00	9 25 8	4149.99	15.85	159.33	36.11	59.31	10 34 18	3550.0	11.66	152.72

DIFFERENTIAL CORRECTIONS

TDE .4547 TRA-1.3472 TC3 1.0766 BAU .4029
RDE -.5236 RRA -.2319 RC3 -.0195 FAU .06048
FDE -.0401 FRA .5956 FC3-1.8708 BSP 6325
BDE .6935 BRA 1.3670 BC3 1.0768 FSP 487

MID-COURSE EXECUTION ACCURACY

SGT 1939.7 SGR 622.8 SG3 180.3
RRT .0860 RRF -.0797 RTF -.8051
SGB 2037.2 RZS -.0206 R13 -.8052
SG1 1940.2 SG2 621.3 THA 1.35

ORBIT DETERMINATION ACCURACY

ST 666.1 SR 572.3 SS 195.1
CRT -.6424 CRS -.0783 CST .7959
LSA 806.0 NSA 397.6 SSA 38.7
EL1 798.3 EL2 366.0 ALF 141.67

LAUNCH DATE DEC 9 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 376.262 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 35.357 GAL -.53 AZL 88.79 HCA 116.51 SMA 240.66 ECC .38789 INC 1.2099 V1 30.239
RP 243.87 LAP 1.08 LOP 193.48 VP 23.172 GAP 22.81 AZP 90.54 TAL 358.12 TAP 114.63 RCA 147.31 APO 334.01 V2 22.498
RC 135.719 GL 8.31 GP 1.96 ZAL 91.23 ZAP 173.65 ETS 160.68 ZAE 152.39 ETE 1.92 ZAC 91.23 ETC 255.96 CLP 173.96

PLANETOCENTRIC CONIC

C3 26.668 VHL 5.164 DLA 12.30 RAL 172.47 RAD 6568.1 VEL 12.167 PTH 2.18 VHP 10.442 DPA -.03 RAP 188.14 ECC 1.4389

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 2 51	2676.53	-27.45	72.87	43.20	97.24	16 47 28	2076.5	-26.16	64.44
90.00	7 15 18	4536.40	10.67	190.98	36.82	63.62	8 30 54	3936.4	7.04	184.18
100.00	17 30 30	2393.87	-28.77	51.87	42.99	98.47	18 10 24	1793.9	-27.30	43.38
100.00	8 30 20	4294.29	11.86	172.56	36.20	62.36	9 41 54	3694.3	8.07	165.82
110.00	18 52 58	2135.82	-32.29	31.55	42.26	101.88	19 28 34	1535.8	-30.32	22.89
110.00	9 24 21	4125.10	14.98	157.92	34.40	58.91	10 33 7	3525.1	10.75	151.37

DIFFERENTIAL CORRECTIONS

TDE .4338 TRA-1.3174 TC3 1.1643 BAU .4151
RDE -.5090 RRA -.2245 RC3 -.0166 FAU .06254
FDE -.0272 FRA .5876 FC3-2.0304 BSP 6455
BDE .6688 BRA 1.3364 BC3 1.1644 FSP 516

MID-COURSE EXECUTION ACCURACY

SGT 1978.8 SGR 619.8 SG3 190.2
RRT .0725 RRF -.0859 RTF -.8116
SGB 2073.6 RZS -.0207 R13 -.8118
SG1 1979.4 SG2 618.0 THA 1.44

ORBIT DETERMINATION ACCURACY

ST 659.1 SR 569.9 SS 191.3
CRT -.6324 CRS -.0144 CST .7630
LSA 795.7 NSA 401.2 SSA 40.0
EL1 789.5 EL2 368.5 ALF 141.50

LAUNCH DATE DEC 9 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 378.468 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	35.238	GAL	-.37	AZL	88.81	HCA	117.42	SMA	237.07	ECC	.37857	INC	1.1927	V1	30.239
RP	243.63	LAP	1.06	LOP	194.39	VP	23.015	GAP	22.19	AZP	90.55	TAL	358.65	TAP	116.07	RCA	147.32	APO	326.82	V2	22.522
RC	137.915	GL	8.36	GP	2.02	ZAL	90.17	ZAP	173.10	ETS	161.64	ZAE	152.37	ETE	2.18	ZAC	91.37	ETC	255.94	CLP	173.40

PLANETOCENTRIC CONIC

C3	25.452	VHL	5.045	DLA	12.77	RAL	171.49	RAD	6568.0	VEL	12.117	PTH	2.17	VHP	10.189	DPA	-.12	RAP	188.48	ECC	1.4189

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 54 57	2680.87	-27.49	73.18	41.55	97.09	16 39 38	2080.9	-26.22	64.74
90.00	7 15 22	4508.96	9.84	189.39	35.14	63.31	8 30 31	3909.0	6.18	182.63
100.00	17 22 54	2397.26	-28.81	52.12	41.34	98.34	18 2 51	1797.3	-27.35	43.62
100.00	8 30 7	4267.80	11.02	171.04	34.52	62.04	9 41 15	3667.8	7.20	164.34
110.00	18 46 0	2137.20	-32.31	31.65	40.62	101.82	19 21 37	1537.2	-30.35	22.98
110.00	9 23 30	4100.62	14.11	156.55	32.71	58.54	10 31 50	3500.6	9.85	150.05

DIFFERENTIAL CORRECTIONS

TDE	.4134	TRA	-1.2877	TC3	1.2538	BAU	.4267
RDE	-.4950	RRA	-.2173	RC3	-.0132	FAU	.06462
FDE	-.0117	FRA	.5786	FC3	-2.1981	BSP	6643
BDE	.6449	BRA	1.3059	BC3	1.2539	FSP	550

MID-COURSE EXECUTION ACCURACY

SGT	2017.3	SGR	616.7	SG3	200.3		
RRT	.0794	RRF	-.0934	RTF	-.8174		
SGB	2109.5	R23	-.0220	R13	-.8176		
SG1	2018.0	SG2	614.5	THA	1.53		

ORBIT DETERMINATION ACCURACY

ST	651.3	SR	567.3	SS	187.7
CRT	-.6219	CRS	.0649	CST	.7179
LSA	784.6	MSA	404.9	SSA	41.2
EL1	780.0	EL2	370.9	ALF	141.28

LAUNCH DATE DEC 9 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 380.795 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	35.125	GAL	-.22	AZL	88.82	HCA	118.34	SMA	233.75	ECC	.36971	INC	1.1752	V1	30.239
RP	243.38	LAP	1.03	LOP	195.30	VP	22.866	GAP	21.58	AZP	90.56	TAL	359.19	TAP	117.52	RCA	147.33	APO	320.17	V2	22.547
RC	140.134	GL	8.40	GP	2.09	ZAL	89.09	ZAP	172.54	ETS	162.45	ZAE	152.39	ETE	2.44	ZAC	91.51	ETC	255.93	CLP	172.83

PLANETOCENTRIC CONIC

C3	24.331	VHL	4.933	DLA	13.24	RAL	170.49	RAD	6568.0	VEL	12.071	PTH	2.16	VHP	9.943	DPA	-.21	RAP	188.82	ECC	1.4004

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 46 56	2685.72	-27.53	73.53	39.90	96.92	16 31 42	2085.7	-26.28	65.09
90.00	7 15 23	4481.92	9.01	187.84	33.48	63.04	8 30 5	3881.9	5.32	181.10
100.00	17 15 10	2401.14	-28.85	52.40	39.71	98.20	17 55 12	1801.1	-27.41	43.89
100.00	8 29 49	4241.73	10.19	169.56	32.85	61.74	9 40 31	3641.7	6.33	162.89
110.00	18 38 56	2139.05	-32.34	31.79	38.99	101.74	19 14 35	1539.0	-30.38	23.12
110.00	9 22 33	4076.59	13.25	155.22	31.04	58.20	10 30 29	3476.6	8.96	148.76

DIFFERENTIAL CORRECTIONS

TDE	.3899	TRA	-1.2558	TC3	1.3496	BAU	.4390
RDE	-.4818	RRA	-.2103	RC3	-.0090	FAU	.06690
FDE	.0072	FRA	.5661	FC3	-2.3804	BSP	6844
BDE	.6198	BRA	1.2733	BC3	1.3496	FSP	586

MID-COURSE EXECUTION ACCURACY

SGT	2055.1	SGR	613.4	SG3	211.1		
RRT	.0879	RRF	-.1023	RTF	-.8234		
SGB	2144.7	R23	-.0230	R13	-.8236		
SG1	2055.9	SG2	610.8	THA	1.65		

ORBIT DETERMINATION ACCURACY

ST	639.4	SR	564.7	SS	184.4
CRT	-.6083	CRS	.1640	CST	.6567
LSA	769.7	MSA	409.2	SSA	42.7
EL1	766.8	EL2	373.7	ALF	140.79

LAUNCH DATE DEC 9 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 383.231 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	35.017	GAL	-.07	AZL	88.84	HCA	119.25	SMA	230.67	ECC	.36129	INC	1.1572	V1	30.239
RP	243.12	LAP	1.01	LOP	196.22	VP	22.725	GAP	20.96	AZP	90.57	TAL	359.73	TAP	118.98	RCA	147.33	APO	314.01	V2	22.572
RC	142.373	GL	8.43	GP	2.15	ZAL	87.99	ZAP	171.96	ETS	163.15	ZAE	152.45	ETE	2.72	ZAC	91.65	ETC	255.92	CLP	172.26

PLANETOCENTRIC CONIC

C3	23.297	VHL	4.827	DLA	13.70	RAL	169.46	RAD	6567.9	VEL	12.028	PTH	2.15	VHP	9.703	DPA	-.29	RAP	189.16	ECC	1.3834

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 38 48	2691.05	-27.57	73.92	38.27	96.73	16 23 39	2091.1	-26.35	65.46
90.00	7 15 19	4455.34	8.18	186.32	31.83	62.80	8 29 34	3855.3	4.47	179.61
100.00	17 7 21	2405.48	-28.89	52.72	38.08	98.04	17 47 26	1805.5	-27.47	44.20
100.00	8 29 27	4216.15	9.36	168.11	31.21	61.48	9 39 43	3616.1	5.48	161.47
110.00	18 31 46	2141.32	-32.37	31.96	37.38	101.65	19 7 28	1541.3	-30.43	23.28
110.00	9 21 31	4053.07	12.41	153.92	29.39	57.89	10 29 4	3453.1	8.08	147.50

DIFFERENTIAL CORRECTIONS

TDE	.3592	TRA	-1.2296	TC3	1.4135	BAU	.4402
RDE	-.4692	RRA	-.2036	RC3	-.0048	FAU	.06858
FDE	.0311	FRA	.5567	FC3	-2.5485	BSP	7158
BDE	.5909	BRA	1.2463	BC3	1.4135	FSP	636

MID-COURSE EXECUTION ACCURACY

SGT	2073.8	SGR	610.0	SG3	220.6		
RRT	.1027	RRF	-.1146	RTF	-.8242		
SGB	2161.7	R23	-.0221	R13	-.8244		
SG1	2074.8	SG2	606.5	THA	1.89		

ORBIT DETERMINATION ACCURACY

ST	621.8	SR	562.0	SS	184.5
CRT	-.5834	CRS	.2892	CST	.5791
LSA	748.4	MSA	417.7	SSA	43.8
EL1	747.1	EL2	379.9	ALF	139.92

LAUNCH DATE DEC 9 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 385.766 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	34.914	GAL	.07	AZL	88.86	HCA	120.17	SMA	227.82	ECC	.35328	INC	1.1390	V1	30.239
RP	242.87	LAP	.98	LOP	197.14	VP	22.591	GAP	20.35	AZP	90.57	TAL	.28	TAP	120.45	RCA	147.33	APO	308.30	V2	22.598
RC	144.629	GL	8.44	GP	2.22	ZAL	86.87	ZAP	171.38	ETS	163.75	ZAE	152.55	ETE	3.01	ZAC	91.79	ETC	255.91	CLP	171.67

PLANETOCENTRIC CONIC

C3	22.345	VHL	4.727	DLA	14.15	RAL	168.41	RAD	6567.9	VEL	11.988	PTH	2.14	VHP	9.470	DPA	-.37	RAP	189.49	ECC	1.3677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 30 35	2696.80	-27.62	74.33	36.65	96.52	16 15 32	2096.8	-26.42	65.87
90.00	7 15 10	4429.28	7.37	184.84	30.21	62.58	8 28 59	3829.3	3.64	178.15
100.00	16 59 27	2410.22	-28.93	53.06	36.46	97.86	17 39 37	1810.2	-27.54	44.54
100.00	8 28 59	4191.10	8.54	166.70	29.57	61.25	9 38 50	3591.1	4.64	160.09
110.00	18 24 32	2143.97	-32.40	32.15	35.77	101.53	19 0 16	1544.0	-30.48	23.47
110.00	9 20 23	4030.12	11.57	152.67	27.76	57.61	10 27 33	3430.1	7.22	146.28

DIFFERENTIAL CORRECTIONS

TDE	.3599	TRA	-1.1704	TC3	1.5437	BAU	.4611
RDE	-.4570	RRA	-.1963	RC3	.0012	FAU	.07158
FDE	.0400	FRA	.5188	FC3	-2.7732	BSP	7021
BDE	.5817	BRA	1.1867	BC3	1.5437	FSP	658

MID-COURSE EXECUTION ACCURACY

SGT	2112.0	SGR	605.9	SG3	233.4		
RRT	.0931	RRF	-.1155	RTF	-.8333		
SGB	2197.2	R23	-.0312	R13	-.8336		
SG1	2112.8	SG2	603.0	THA	1.67		

ORBIT DETERMINATION ACCURACY

ST	620.4	SR	558.8	SS	176.2
CRT	-.6039	CRS	.3421	CST	.5066
LSA	749.6	MSA	405.2	SSA	46.0
EL1	749.0	EL2	368.9	ALF	139.92

LAUNCH DATE DEC 9 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 388.392 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	34.816	GAL	.21	AZL	88.88	HCA	121.09	SMA	225.16	ECC	.34566	INC	1.1204	V1	30.239
RP	242.60	LAP	.96	LOP	198.06	VP	22.465	GAP	19.75	AZP	90.58	TAL	.84	TAP	121.93	RCA	147.33	APO	302.99	V2	22.624
RC	146.900	GL	8.45	GP	2.29	ZAL	85.74	ZAP	170.79	ETS	164.27	ZAE	152.70	ETE	3.31	ZAC	91.93	ETC	255.90	CLP	171.08

PLANETOCENTRIC CONIC

C3	21.468	VHL	4.633	DLA	14.60	RAL	167.34	RAD	6567.9	VEL	11.952	PTH	2.13	VHP	9.242	DPA	-.44	RAP	189.82	ECC	1.3533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 22 18	2702.92	-27.66	74.77	35.04	96.31	16 7 21	2102.9	-26.50	66.30
90.00	7 14 56	4403.81	6.57	183.40	28.60	62.39	8 28 20	3803.8	2.82	176.72
100.00	16 51 29	2415.32	-28.98	53.43	34.86	97.67	17 31 44	1815.3	-27.61	44.90
100.00	8 28 26	4166.64	7.74	165.33	27.96	61.04	9 37 53	3566.6	3.82	158.74
110.00	18 17 15	2146.96	-32.44	32.38	34.18	101.41	18 53 2	1547.0	-30.53	23.68
110.00	9 19 9	4007.77	10.76	151.45	26.14	57.36	10 25 57	3407.8	6.38	145.10

DIFFERENTIAL CORRECTIONS

TDE	.3328	TRA	-1.1476	TC3	1.6512	BAU	.4739
RDE	-.4454	RRA	-.1900	RC3	.0077	FAU	.07421
FDE	.0570	FRA	.5097	FC3	-2.9929	BSP	7178
BDE	.5560	BRA	1.1632	BC3	1.6513	FSP	697

MID-COURSE EXECUTION ACCURACY

SGT	2159.0	SGR	601.9	SG3	246.2		
RRT	.1080	RRF	-.1263	RTF	-.8403		
SGB	2241.3	R23	-.0282	R13	-.8406		
SG1	2160.0	SG2	598.1	THA	1.87		

ORBIT DETERMINATION ACCURACY

ST	604.2	SR	555.5	SS	178.7
CRT	-.5798	CRS	.4269	CST	.4495
LSA	730.5	MSA	411.9	SSA	47.6
EL1	730.4	EL2	374.4	ALF	139.12

LAUNCH DATE DEC 9 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 391.101 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	34.722	GAL	.35	AZL	88.90	HCA	122.01	SMA	222.68	ECC	.33842	INC	1.1013	V1	30.239
RP	242.34	LAP	.93	LOP	198.98	VP	22.345	GAP	19.15	AZP	90.58	TAL	1.39	TAP	123.41	RCA	147.32	APO	298.05	V2	22.651
RC	149.184	GL	8.44	GP	2.37	ZAL	84.61	ZAP	170.19	ETS	164.73	ZAE	152.88	ETE	3.62	ZAC	92.08	ETC	255.89	CLP	170.48

PLANETOCENTRIC CONIC

C3	20.660	VHL	4.545	DLA	15.04	RAL	166.26	RAD	6567.8	VEL	11.918	PTH	2.12	VHP	9.020	DPA	-.50	RAP	190.14	ECC	1.3400

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 13 58	2709.35	-27.71	75.24	33.44	96.08	15 59 8	2109.3	-26.58	66.75
90.00	7 14 36	4378.96	5.78	182.00	27.01	62.23	8 27 35	3779.0	2.02	175.34
100.00	16 43 28	2420.71	-29.03	53.83	33.27	97.47	17 23 49	1820.7	-27.69	45.28
100.00	8 27 47	4142.83	6.95	164.00	26.37	60.85	9 36 50	3542.8	3.01	157.43
110.00	18 9 55	2150.24	-32.49	32.62	32.60	101.27	18 45 45	1550.2	-30.59	23.92
110.00	9 17 50	3986.07	9.96	150.28	24.55	57.13	10 24 16	3386.1	5.56	143.96

DIFFERENTIAL CORRECTIONS

TDE	.3135	TRA	-1.1190	TC3	1.7579	BAU	.4056
RDE	-.4344	RRA	-.1837	RC3	.0151	FAU	.07701
FDE	.0777	FRA	.4949	FC3	-3.2269	BSP	7270
BDE	.5357	BRA	1.1349	BC3	1.7580	FSP	734

MID-COURSE EXECUTION ACCURACY

SGT	2201.6	SGR	598.0	SG3	259.7		
RRT	.1185	RRF	-.1384	RTF	-.8454		
SGB	2281.3	R23	-.0305	R13	-.8457		
SG1	2202.8	SG2	593.4	THA	1.99		

ORBIT DETERMINATION ACCURACY

ST	592.3	SR	552.3	SS	182.6
CRT	-.5651	CRS	.5223	CST	.3641
LSA	717.1	MSA	415.3	SSA	49.3
EL1	717.1	EL2	376.4	ALF	138.53

LAUNCH DATE DEC 9 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 393.887 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	34.631	GAL	.49	AZL	88.92	HCA	122.94	SMA	220.37	ECC	.33154	INC	1.0818	V1	30.239
RP	242.06	LAP	.91	LOP	199.90	VP	22.233	GAP	18.55	AZP	90.59	TAL	1.96	TAP	124.90	RCA	147.31	APO	293.44	V2	22.678
RC	151.478	GL	8.43	GP	2.45	ZAL	83.46	ZAP	169.57	ETS	165.12	ZAE	153.11	ETE	3.95	ZAC	92.22	ETC	255.88	CLP	169.86

PLANETOCENTRIC CONIC

C3	19.917	VHL	4.463	DLA	15.47	RAL	165.16	RAD	6567.8	VEL	11.887	PTH	2.11	VHP	8.804	DPA	-.56	RAP	190.46	ECC	1.3278

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 5 36	2716.07	-27.76	75.72	31.86	95.84	15 50 52	2116.1	-26.66	67.23
90.00	7 14 11	4354.75	5.01	180.63	25.44	62.09	8 26 45	3754.8	1.24	173.98
100.00	16 35 26	2426.39	-29.08	54.24	31.69	97.26	17 15 52	1826.4	-27.77	45.68
100.00	8 27 2	4119.67	6.18	162.71	24.80	60.70	9 35 42	3519.7	2.23	156.15
110.00	18 2 33	2153.78	-32.54	32.89	31.04	101.12	18 38 27	1553.8	-30.66	24.17
110.00	9 16 24	3965.03	9.18	149.15	22.97	56.93	10 22 29	3365.0	4.76	142.85

DIFFERENTIAL CORRECTIONS

TDE	.3055	TRA	-1.0716	TC3	1.8924	BAU	.5039
RDE	-.4243	RRA	-.1777	RC3	.0229	FAU	.07975
FDE	.1043	FRA	.4758	FC3	-3.4663	BSP	7118
BDE	.5228	BRA	1.0862	BC3	1.8926	FSP	787

MID-COURSE EXECUTION ACCURACY

SGT	2246.1	SGR	594.3	SG3	273.1		
RRT	.1189	RRF	-.1524	RTF	-.8561		
SGB	2323.3	R23	-.0433	R13	-.8565		
SG1	2247.2	SG2	589.7	THA	1.94		

ORBIT DETERMINATION ACCURACY

ST	582.9	SR	549.3	SS	190.5
CRT	-.5722	CRS	.6290	CST	.2300
LSA	711.6	MSA	411.0	SSA	50.4
EL1	710.6	EL2	369.6	ALF	137.97

LAUNCH DATE DEC 9 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 396.742 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	34.546	GAL	.62	AZL	88.94	HCA	123.86	SMA	218.22	ECC	.32500	INC	1.0619	V1	30.239
RP	241.79	LAP	.88	LOP	200.83	VP	22.127	GAP	17.96	AZP	90.59	TAL	2.52	TAP	126.39	RCA	147.30	APO	289.14	V2	22.706
RC	153.781	GL	8.39	GP	2.53	ZAL	82.31	ZAP	168.95	ETS	165.47	ZAE	153.36	ETE	4.30	ZAC	92.37	ETC	255.87	CLP	169.24

PLANETOCENTRIC CONIC

C3	19.234	VHL	4.386	DLA	15.89	RAL	164.05	RAD	6567.8	VEL	11.858	PTH	2.10	VHP	8.593	DPA	-.61	RAP	190.77	ECC	1.3165

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 57 17	2722.89	-27.80	76.22	30.30	95.60	15 42 40	2122.9	-26.74	67.71
90.00	7 13 38	4331.39	4.27	179.32	23.89	61.98	8 25 50	3731.4	.49	172.68
100.00	16 27 26	2432.17	-29.13	54.67	30.13	97.04	17 7 58	1832.2	-27.85	46.10
100.00	8 26 11	4097.34	5.43	161.47	23.25	60.56	9 34 28	3497.3	1.47	154.93
110.00	17 55 14	2157.46	-32.58	33.17	29.49	100.96	18 31 11	1557.5	-30.73	24.44
110.00	9 14 52	3944.82	8.42	148.07	21.42	56.75	10 20 37	3344.8	3.99	141.79

DIFFERENTIAL CORRECTIONS

TDE	.2790	TRA	-1.0466	TC3	1.9649	BAU	.5105
RDE	-.4143	RRA	-.1714	RC3	.0324	FAU	.08281
FDE	.1244	FRA	.4497	FC3	-3.7275	BSP	7423
BDE	.4994	BRA	1.0605	BC3	1.9852	FSP	830

MID-COURSE EXECUTION ACCURACY

SGT	2277.0	SGR	589.8	SG3	287.7		
RRT	.1364	RRF	-.1645	RTF	-.8574		
SGB	2352.2	R23	-.0397	R13	-.8578		
SG1	2278.6	SG2	585.9	THA	2.17		

ORBIT DETERMINATION ACCURACY

ST	563.4	SR	545.7	SS	195.9
CRT	-.5446	CRS	.7003	CST	.1618
LSA	691.9	MSA	414.8	SSA	52.9
EL1	689.4	EL2	374.0	ALF	136.88

LAUNCH DATE DEC 9 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 399.662 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	34.463	GAL	.75	AZL	88.96	HCA	124.79	SMA	216.20	ECC	.31878	INC	1.0415	V1	30.239
RP	241.51	LAP	.86	LOP	201.76	VP	22.028	GAP	17.37	AZP	90.59	TAL	3.09	TAP	127.88	RCA	147.28	APO	285.13	V2	22.734
RC	156.092	GL	8.35	GP	2.62	ZAL	81.16	ZAP	168.31	ETS	165.77	ZAE	153.66	ETE	4.67	ZAC	92.52	ETC	255.86	CLP	168.60

PLANETOCENTRIC CONIC

C3	18.606	VHL	4.314	DLA	16.29	RAL	162.93	RAD	6567.8	VEL	11.832	PTH	2.10	VHP	8.388	DPA	-.65	RAP	191.07	ECC	1.3062

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 48 59	2729.83	-27.85	76.72	28.75	95.35	15 34 29	2129.8	-26.82	68.21
90.00	7 12 59	4308.82	3.54	178.06	22.37	61.89	8 24 48	3708.8	-.24	171.42
100.00	16 19 27	2438.07	-29.17	55.10	28.59	96.82	17 0 6	1838.1	-27.92	46.52
100.00	8 25 12	4075.81	4.71	160.28	21.73	60.45	9 33 8	3475.8	.74	153.75
110.00	17 47 56	2161.27	-32.63	33.45	27.96	100.80	18 23 57	1561.3	-30.80	24.71
110.00	9 13 13	3925.38	7.78	147.04	19.89	56.59	10 18 39	3325.4	3.25	140.77

DIFFERENTIAL CORRECTIONS

TDE	.2543	TRA	-1.0176	TC3	2.0835	BAU	.5184
RDE	-.4048	RRA	-.1653	RC3	.0429	FAU	.08599
FDE	.1477	FRA	.4226	FC3	-4.0012	BSP	7647
BDE	.4781	BRA	1.0310	BC3	2.0839	FSP	878

MID-COURSE EXECUTION ACCURACY

SGT	2308.2	SGR	585.5	SG3	303.0		
RRT	.1531	RRF	-.1787	RTF	-.8601		
SGB	2381.3	R23	-.0387	R13	-.8606		
SG1	2310.1	SG2	578.1	THA	2.37		

ORBIT DETERMINATION ACCURACY

ST	543.6	SR	542.1	SS	205.0
CRT	-.5179	CRS	.7673	CST	.0874
LSA	674.1	MSA	417.0	SSA	55.2
EL1	668.8	EL2	376.9	ALF	135.16

LAUNCH DATE DEC 9 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 402.643 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	34.385	GAL	.87	AZL	88.98	HCA	125.72	SMA	214.32	ECC	.31288	INC	1.0206	V1	30.239
RP	241.22	LAP	.83	LOP	202.69	VP	21.934	GAP	16.79	AZP	90.60	TAL	3.66	TAP	129.38	RCA	147.26	APO	281.37	V2	22.762
RC	158.408	GL	8.29	GP	2.71	ZAL	80.01	ZAP	167.66	ETS	166.04	ZAE	153.99	ETE	5.06	ZAC	92.67	ETC	255.86	CLP	167.96

PLANETOCENTRIC CONIC

C3	18.030	VHL	4.246	DLA	16.68	RAL	161.80	RAD	6567.7	VEL	11.807	PTH	2.09	VHP	8.187	DPA	-.68	RAP	191.37	ECC	1.2967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 45	2736.80	-27.89	77.23	27.22	95.10	15 26 22	2136.8	-26.89	68.70
90.00	7 12 13	4287.10	2.85	176.84	20.87	61.81	8 23 40	3687.1	-.94	170.21
100.00	16 11 33	2444.00	-29.22	55.53	27.06	96.59	16 52 17	1844.0	-28.00	46.94
100.00	8 24 6	4055.14	4.02	159.14	20.22	60.35	9 31 41	3455.1	.04	152.61
110.00	17 40 40	2165.14	-32.68	33.74	26.45	100.63	18 16 46	1565.1	-30.87	24.99
110.00	9 11 28	3906.77	7.00	146.05	18.38	56.46	10 16 35	3306.8	2.54	139.80

DIFFERENTIAL CORRECTIONS

TDE	.2319	TRA	-.9861	TC3	2.1889	BAU	.5278
RDE	-.3959	RRA	-.1593	RC3	.0545	FAU	.08937
FDE	.1730	FRA	.3934	FC3	-4.2911	BSP	7836
BDE	.4588	BRA	.9980	BC3	2.1896	FSP	930

MID-COURSE EXECUTION ACCURACY

SGT	2341.6	SGR	581.3	SG3	319.1		
RRT	.1693	RRF	-.1946	RTF	-.8638		
SGB	2412.6	R23	-.0396	R13	-.8643		
SG1	2343.8	SG2	572.3	THA	2.56		

ORBIT DETERMINATION ACCURACY

ST	524.1	SR	538.4	SS	217.0
CRT	-.4927	CRS	.8238	CST	.0144
LSA	659.0	MSA	417.3	SSA	57.5
EL1	649.3	EL2	378.2	ALF	133.43

LAUNCH DATE DEC 9 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 405.678 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	34.310	GAL	.99	AZL	89.00	HCA	126.66	SMA	212.55	ECC	.30727	INC	.9991	V1	30.239
RP	240.93	LAP	.80	LOP	203.62	VP	21.847	GAP	16.21	AZP	90.60	TAL	4.22	TAP	130.88	RCA	147.24	APO	277.86	V2	22.791
RC	160.729	GL	8.22	GP	2.81	ZAL	78.87	ZAP	167.00	ETS	166.27	ZAE	154.36	ETE	5.49	ZAC	92.83	ETC	255.85	CLP	167.30

PLANETOCENTRIC CONIC

C3	17.500	VHL	4.183	DLA	17.05	RAL	160.66	RAD	6567.7	VEL	11.785	PTH	2.08	VHP	7.992	DPA	-.71	RAP	191.66	ECC	1.2880

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 32 36	2743.73	-27.93	77.73	25.71	94.85	15 18 20	2143.7	-26.97	69.19
90.00	7 11 18	4266.31	2.18	175.68	19.40	61.76	8 22 25	3666.3	-1.61	169.05
100.00	16 3 43	2449.91	-29.27	55.97	25.56	96.37	16 44 33	1849.9	-28.08	47.36
100.00	8 22 52	4035.37	3.35	158.05	18.74	60.28	9 30 8	3435.4	-.63	151.53
110.00	17 33 30	2169.02	-32.73	34.04	24.96	100.46	18 9 39	1569.0	-30.94	25.27
110.00	9 9 35	3889.02	6.33	145.11	16.90	56.34	10 14 24	3289.0	1.86	138.87

DIFFERENTIAL CORRECTIONS

TDE	.2120	TRA	-.9542	TC3	2.2916	BAU	.5364
RDE	-.3874	RRA	-.1533	RC3	.0672	FA'	.09281
FDE	.1983	FRA	.3615	FC3	-4.5912	BSP	7966
BDE	.4416	BRA	.9664	BC3	2.2925	FSP	984

MID-COURSE EXECUTION ACCURACY

SGT	2372.5	SGR	577.0	SG3	335.7		
RRT	.1855	RRF	-.2113	RTF	-.8672		
SGB	2441.7	R23	-.0415	R13	-.8677		
SG1	2375.1	SG2	566.4	THA	2.74		

ORBIT DETERMINATION ACCURACY

ST	505.7	SR	534.7	SS	230.2
CRT	-.4694	CRS	.8668	CST	-.0504
LSA	647.1	MSA	415.2	SSA	59.9
EL1	631.4	EL2	378.2	ALF	131.62

LAUNCH DATE DEC 9 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 408.766 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	34.238	GAL	1.11	AZL	89.02	HCA	127.59	SMA	210.89	ECC	.30193	INC	.9770	V1	30.239
RP	240.64	LAP	.77	LOP	204.56	VP	21.765	GAP	15.64	AZP	90.60	TAL	4.79	TAP	132.38	RCA	147.21	APO	274.56	V2	22.821
RC	163.052	GL	8.14	GP	2.91	ZAL	77.72	ZAP	166.32	ETS	166.47	ZAE	154.76	ETE	5.94	ZAC	92.98	ETC	255.84	CLP	166.63

PLANETOCENTRIC CONIC

C3	17.014	VHL	4.125	DLA	17.40	RAL	159.52	RAD	6567.7	VEL	11.764	PTH	2.08	VHP	7.801	DPA	-.73	RAP	191.94	ECC	1.2800

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 24 35	2750.53	-27.97	78.22	24.22	94.60	15 10 25	2150.5	-27.04	69.68
90.00	7 10 15	4246.49	1.54	174.57	17.94	61.72	8 21 2	3646.5	-2.25	167.95
100.00	15 56 0	2455.70	-29.31	56.39	24.08	96.15	16 36 56	1855.7	-28.15	47.78
100.00	8 21 31	4016.56	2.72	157.02	17.29	60.22	9 28 27	3416.6	-1.27	150.50
110.00	17 26 25	2172.84	-32.78	34.32	23.49	100.30	18 2 38	1572.8	-31.01	25.55
110.00	9 7 35	3872.19	5.69	144.22	15.44	56.24	10 12 8	3272.2	1.22	137.99

DIFFERENTIAL CORRECTIONS

TDE	.1931	TRA	-.9196	TC3	2.3971	BAU	.5456
RDE	-.3794	RRA	-.1474	RC3	.0813	FAU	.09649
FDE	.2251	FRA	.3251	FC3	-4.9098	BSP	8095
BDE	.4257	BRA	.9314	BC3	2.3985	FSP	1042

MID-COURSE EXECUTION ACCURACY

SGT	2403.0	SGR	572.9	SG3	353.4		
RRT	.2022	RRF	-.2296	RTF	-.8709		
SGB	2470.4	R23	-.0442	R13	-.8715		
SG1	2406.0	SG2	560.4	THA	2.92		

ORBIT DETERMINATION ACCURACY

ST	486.6	SR	530.9	SS	245.5
CRT	-.4467	CRS	.9005	CST	-.1107
LSA	637.6	MSA	410.4	SSA	62.4
EL1	613.9	EL2	376.5	ALF	129.47

LAUNCH DATE DEC 9 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 411.901 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 34.170 GAL 1.22 AZL 89.05 HCA 128.53 SMA 209.33 ECC .29687 INC .9544 V1 30.239
RP 240.34 LAP .75 LOP 205.49 VP 21.689 GAP 15.08 AZP 90.59 TAL 5.35 TAP 133.88 RCA 147.19 APO 271.48 V2 22.851
RC 165.375 GL 8.04 GP 3.02 ZAL 76.59 ZAP 165.63 ETS 166.65 ZAE 155.19 ETE 6.42 ZAC 93.14 ETC 255.84 CLP 165.95

PLANETOCENTRIC CONIC

C3 16.569 VHL 4.070 DLA 17.73 RAL 158.38 RAD 6567.7 VEL 11.745 PTH 2.07 VHP 7.615 DPA -.73 RAP 192.22 ECC 1.2727

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 16 42	2757.13	-28.01	78.70	22.75	94.37	15 2 39	2157.1	-27.11	70.15
90.00	7 9 3	4227.71	.93	173.53	16.51	61.70	8 19 31	3627.7	-2.86	166.90
100.00	15 48 26	2461.32	-29.35	56.80	22.61	95.94	16 29 27	1861.3	-28.22	48.18
100.00	8 20 0	3990.76	2.11	156.04	15.86	60.18	9 26 39	3398.8	-1.87	149.52
110.00	17 19 27	2176.54	-32.82	34.60	22.04	100.14	17 55 43	1576.5	-31.07	25.82
110.00	9 5 28	3856.29	5.09	143.38	14.01	56.15	10 9 45	3256.3	.61	137.16

DIFFERENTIAL CORRECTIONS

TDE .1752 TRA -.8869 TC3 2.4995 BAU .5541
RDE -.3717 RRA -.1415 RC3 .0967 FAU .10031
FDE .2518 FRA .2869 FC3-5.2413 BSP 8224
BDE .4109 BRA .8981 BC3 2.5014 FSP 1104

MID-COURSE EXECUTION ACCURACY

SGT 2432.9 SGR 568.9 SG3 371.7
RRT .2204 RRF -.2491 RTF -.8742
SGB 2498.6 R23 -.0470 R13 -.8748
SG1 2436.3 SG2 554.2 THA 3.11

ORBIT DETERMINATION ACCURACY

ST 468.1 SR 527.0 SS 261.7
CRT -.4225 CRS .9243 CST -.1588
LSA 630.5 MSA 404.4 SSA 65.0
EL1 597.2 EL2 374.4 ALF 127.15

LAUNCH DATE DEC 9 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 415.081 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 34.104 GAL 1.34 AZL 89.07 HCA 129.47 SMA 207.87 ECC .29206 INC .9311 V1 30.239
RP 240.04 LAP .72 LOP 206.43 VP 21.618 GAP 14.52 AZP 90.59 TAL 5.91 TAP 135.38 RCA 147.16 APO 268.58 V2 22.881
RC 167.697 GL 7.92 GP 3.13 ZAL 75.47 ZAP 164.93 ETS 166.80 ZAE 155.66 ETE 6.95 ZAC 93.31 ETC 255.83 CLP 165.25

PLANETOCENTRIC CONIC

C3 16.161 VHL 4.020 DLA 18.04 RAL 157.25 RAD 6567.6 VEL 11.728 PTH 2.07 VHP 7.434 DPA -.73 RAP 192.48 ECC 1.2660

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 9 0	2763.43	-28.04	79.16	21.31	94.14	14 55 3	2163.4	-27.17	70.60
90.00	7 7 41	4210.01	.36	172.54	15.11	61.69	8 17 51	3610.0	-3.43	165.91
100.00	15 41 1	2466.67	-29.39	57.20	21.17	95.73	16 22 8	1866.7	-28.28	48.57
100.00	8 18 20	3982.00	1.55	155.12	14.45	60.14	9 24 42	3382.0	-2.44	148.60
110.00	17 12 38	2180.07	-32.86	34.87	20.61	99.99	17 48 58	1580.1	-31.14	26.07
110.00	9 3 14	3841.37	4.52	142.60	12.60	56.08	10 7 15	3241.4	.04	136.39

DIFFERENTIAL CORRECTIONS

TDE .1588 TRA -.8532 TC3 2.6014 BAU .5626
RDE -.3644 RRA -.1356 RC3 .1135 FAU .10436
FDE .2790 FRA .2455 FC3-5.5904 BSP 8354
BDE .3975 BRA .8639 BC3 2.6039 FSP 1170

MID-COURSE EXECUTION ACCURACY

SGT 2462.0 SGR 565.2 SG3 391.2
RRT .2395 RRF -.2703 RTF -.8776
SGB 2526.0 R23 -.0506 R13 -.8783
SG1 2465.9 SG2 547.9 THA 3.31

ORBIT DETERMINATION ACCURACY

ST 449.9 SR 523.0 SS 278.9
CRT -.3996 CRS .9409 CST -.2007
LSA 626.2 MSA 396.1 SSA 67.8
EL1 581.8 EL2 370.7 ALF 124.64

LAUNCH DATE DEC 9 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 418.303 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 34.042 GAL 1.44 AZL 89.09 HCA 130.41 SMA 206.49 ECC .28750 INC .9070 V1 30.239
RP 239.73 LAP .69 LOP 207.38 VP 21.552 GAP 13.97 AZP 90.59 TAL 6.47 TAP 136.88 RCA 147.12 APO 265.85 V2 22.912
RC 170.016 GL 7.79 GP 3.25 ZAL 74.36 ZAP 164.20 ETS 166.94 ZAE 156.16 ETE 7.52 ZAC 93.47 ETC 255.83 CLP 164.53

PLANETOCENTRIC CONIC

C3 15.787 VHL 3.973 DLA 18.33 RAL 156.11 RAD 6567.6 VEL 11.712 PTH 2.06 VHP 7.257 DPA -.72 RAP 192.74 ECC 1.2598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 1 29	2769.38	-28.07	79.59	19.88	93.92	14 47 39	2169.4	-27.23	71.03
90.00	7 6 9	4193.43	-.17	171.61	13.73	61.68	8 16 2	3593.4	-3.96	164.98
100.00	15 33 48	2471.72	-29.42	57.57	19.75	95.54	16 15 0	1871.7	-28.34	48.93
100.00	8 16 31	3966.33	1.01	154.26	13.07	60.12	9 22 38	3366.3	-2.97	147.74
110.00	17 5 58	2183.37	-32.90	35.12	19.20	99.84	17 42 21	1583.4	-31.19	26.31
110.00	9 0 51	3827.44	4.00	141.87	11.21	56.02	10 4 38	3227.4	-.49	135.66

DIFFERENTIAL CORRECTIONS

TDE .1485 TRA -.8138 TC3 2.7182 BAU .5744
RDE -.3576 RRA -.1298 RC3 .1319 FAU .10863
FDE .3076 FRA .2007 FC3-5.9571 BSP 8302
BDE .3872 BRA .8241 BC3 2.7214 FSP 1237

MID-COURSE EXECUTION ACCURACY

SGT 2498.0 SGR 561.9 SG3 411.6
RRT .2563 RRF -.2932 RTF -.8829
SGB 2560.4 R23 -.0577 R13 -.8837
SG1 2502.3 SG2 542.2 THA 3.46

ORBIT DETERMINATION ACCURACY

ST 433.1 SR 519.0 SS 297.6
CRT -.3925 CRS .9522 CST -.2521
LSA 627.4 MSA 383.4 SSA 70.4
EL1 570.7 EL2 362.2 ALF 122.57

LAUNCH DATE DEC 9 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 421.564 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.982 GAL 1.55 AZL 89.12 HCA 131.35 SMA 205.19 ECC .28317 INC .8823 V1 30.239
RP 239.42 LAP .66 LOP 208.32 VP 21.491 GAP 13.42 AZP 90.58 TAL 7.02 TAP 138.38 RCA 147.09 APO 263.30 V2 22.943
RC 172.331 GL 7.65 GP 3.38 ZAL 73.26 ZAP 163.47 ETS 167.05 ZAE 156.69 ETE 8.15 ZAC 93.64 ETC 255.82 CLP 163.81

PLANETOCENTRIC CONIC

C3 15.445 VHL 3.930 DLA 18.59 RAL 154.99 RAD 6567.6 VEL 11.697 PTH 2.06 VHP 7.085 DPA -.69 RAP 192.99 ECC 1.2542

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 54 15	2774.84	-28.09	79.99	18.49	93.73	14 40 29	2174.8	-27.28	71.42
90.00	7 4 26	4178.07	-.67	170.76	12.38	61.69	8 14 4	3578.1	-4.45	164.12
100.00	15 26 49	2476.32	-29.45	57.91	18.36	95.36	16 8 5	1876.3	-28.40	49.26
100.00	8 14 32	3951.83	.52	153.46	11.72	60.11	9 20 24	3351.8	-3.46	146.94
110.00	16 59 30	2186.34	-32.94	35.35	17.82	99.71	17 35 56	1586.3	-31.24	26.53
110.00	8 58 21	3814.57	3.51	141.19	9.86	55.98	10 1 55	3214.6	-.98	134.99

DIFFERENTIAL CORRECTIONS

TDE .1266 TRA -.7871 TC3 2.7981 BAU .5786
RDE -.3509 RRA -.1238 RC3 .1520 FAU .11309
FDE .3364 FRA .1526 FC3-6.3390 BSP 8563
BDE .3731 BRA .7968 BC3 2.8023 FSP 1310

MID-COURSE EXECUTION ACCURACY

SGT 2517.3 SGR 558.8 SG3 433.0
RRT .2836 RRF -.3181 RTF -.8839
SGB 2578.6 R23 -.0580 R13 -.8848
SG1 2522.6 SG2 534.8 THA 3.77

ORBIT DETERMINATION ACCURACY

ST 412.8 SR 514.8 SS 316.8
CRT -.3457 CRS .9589 CST -.2580
LSA 623.7 MSA 376.0 SSA 73.5
EL1 552.3 EL2 361.0 ALF 118.60

LAUNCH DATE DEC 9 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 424.861 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.925 GAL 1.65 AZL 89.14 HCA 132.30 SMA 203.97 ECC .27906 INC .8566 V1 30.239
RP 239.11 LAP .63 LOP 209.27 VP 21.435 GAP 12.88 AZP 90.58 TAL 7.57 TAP 139.87 RCA 147.05 APO 260.89 V2 22.975
RC 174.639 GL 7.49 GP 3.51 ZAL 72.19 ZAP 162.71 ETS 167.15 ZAE 157.25 ETE 8.83 ZAC 93.82 ETC 255.81 CLP 163.06

PLANETOCENTRIC CONIC

C3 15.132 VHL 3.890 DLA 18.83 RAL 153.88 RAD 6567.6 VEL 11.684 PTH 2.05 VHP 6.917 DPA -.65 RAP 193.23 ECC 1.2490

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 47 15	2779.79	-28.11	80.35	17.11	93.55	14 33 35	2179.8	-27.32	71.77
90.00	7 2 31	4163.92	-1.13	169.97	11.06	61.70	8 11 55	3563.9	-4.90	163.32
100.00	15 20 4	2480.47	-29.48	58.21	16.99	95.21	16 1 25	1880.5	-28.44	49.56
100.00	8 12 23	3938.48	.07	152.73	10.39	60.11	9 18 2	3338.5	-3.91	146.20
110.00	16 53 14	2188.97	-32.97	35.55	16.46	99.60	17 29 43	1589.0	-31.29	26.72
110.00	8 55 42	3802.74	3.05	140.58	8.53	55.94	9 59 5	3202.7	-1.44	134.37

DIFFERENTIAL CORRECTIONS
TDE .1120 TRA -.7547 TC3 2.8882 BAU .5853
RDE -.3446 RRA -.1178 RC3 .1738 FAU .11775
FDE .3655 FRA .1001 FC3-6.7368 BSP 8686
BDE .3624 BRA .7639 BC3 2.8934 FSP 1387

MID-COURSE EXECUTION ACCURACY
SGT 2540.8 SGR 556.4 SG3 455.4
RRT .3080 RRF -.3445 RTF -.8864
SGB 2601.0 R23 -.0622 R13 -.8874
SG1 2546.8 SG2 528.1 THA 4.03

ORBIT DETERMINATION ACCURACY
ST 394.9 SR 510.6 SS 336.4
CRT -.3179 CRS .9622 CST -.2779
LSA 625.4 MSA 364.5 SSA 76.4
EL1 539.5 EL2 354.3 ALF 115.37

LAUNCH DATE DEC 9 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 428.193 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.871 GAL 1.75 AZL 89.17 HCA 133.25 SMA 202.82 ECC .27516 INC .8303 V1 30.239
RP 238.79 LAP .60 LOP 210.22 VP 21.383 GAP 12.34 AZP 90.57 TAL 8.11 TAP 141.36 RCA 147.02 APO 258.63 V2 23.007
RC 176.939 GL 7.32 GP 3.65 ZAL 71.13 ZAP 161.94 ETS 167.23 ZAE 157.84 ETE 9.58 ZAC 94.00 ETC 255.81 CLP 162.30

PLANETOCENTRIC CONIC

C3 14.846 VHL 3.853 DLA 19.05 RAL 152.77 RAD 6567.6 VEL 11.672 PTH 2.05 VHP 6.753 DPA -.60 RAP 193.46 ECC 1.2443

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 40 32	2784.14	-28.13	80.67	15.77	93.39	14 26 56	2184.1	-27.36	72.09
90.00	7 0 25	4151.04	-1.54	169.25	9.76	61.72	8 9 36	3551.0	-5.31	162.60
100.00	15 13 35	2484.08	-29.50	58.48	15.65	95.07	15 54 59	1884.1	-28.48	49.82
100.00	8 10 3	3926.34	-.34	152.07	9.09	60.11	9 15 29	3326.3	-4.32	145.53
110.00	16 47 12	2191.20	-32.99	35.71	15.13	99.50	17 23 43	1591.2	-31.33	26.88
110.00	8 52 56	3791.98	2.64	140.01	7.22	55.91	9 56 8	3192.0	-1.85	133.81

DIFFERENTIAL CORRECTIONS
TDE .0983 TRA -.7217 TC3 2.9772 BAU .5922
RDE -.3386 RRA -.1117 RC3 .1973 FAU .12267
FDE .3952 FRA .0433 FC3-7.1533 BSP 8761
BDE .3526 BRA .7303 BC3 2.9837 FSP 1466

MID-COURSE EXECUTION ACCURACY
SGT 2564.0 SGR 554.6 SG3 479.0
RRT .3339 RRF -.3728 RTF -.8891
SGB 2623.3 R23 -.0669 R13 -.8902
SG1 2571.0 SG2 521.3 THA 4.31

ORBIT DETERMINATION ACCURACY
ST 377.0 SR 506.3 SS 356.4
CRT -.2897 CRS .9627 CST -.2933
LSA 628.7 MSA 352.0 SSA 79.4
EL1 528.0 EL2 346.0 ALF 112.04

LAUNCH DATE DEC 9 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 431.558 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.819 GAL 1.84 AZL 89.20 HCA 134.20 SMA 201.74 ECC .27146 INC .8030 V1 30.239
RP 238.47 LAP .58 LOP 211.17 VP 21.336 GAP 11.82 AZP 90.56 TAL 8.64 TAP 142.85 RCA 146.98 APO 256.50 V2 23.040
RC 179.231 GL 7.13 GP 3.80 ZAL 70.09 ZAP 161.15 ETS 167.30 ZAE 158.46 ETE 10.40 ZAC 94.18 ETC 255.80 CLP 161.52

PLANETOCENTRIC CONIC

C3 14.585 VHL 3.819 DLA 19.24 RAL 151.68 RAD 6567.6 VEL 11.661 PTH 2.05 VHP 6.593 DPA -.54 RAP 193.68 ECC 1.2400

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 34 8	2787.83	-28.14	80.94	14.44	93.25	14 20 35	2187.8	-27.40	72.35
90.00	6 58 6	4139.45	-1.92	168.60	8.48	61.74	8 7 5	3539.4	-5.68	161.94
100.00	15 7 23	2487.11	-29.52	58.70	14.33	94.95	15 48 50	1887.1	-28.52	50.04
100.00	8 7 32	3915.40	-.71	151.47	7.81	60.12	9 12 47	3315.4	-4.68	144.93
110.00	16 41 23	2192.99	-33.01	35.85	13.82	99.42	17 17 56	1593.0	-31.36	27.02
110.00	8 50 1	3782.28	2.27	139.51	5.94	55.88	9 53 3	3182.3	-2.22	133.30

DIFFERENTIAL CORRECTIONS
TDE .0957 TRA -.6793 TC3 3.0891 BAU .6039
RDE -.3328 RRA -.1055 RC3 .2230 FAU .12796
FDE .4225 FRA -.0200 FC3-7.5953 BSP 8630
BDE .3463 BRA .6875 BC3 3.0972 FSP 1547

MID-COURSE EXECUTION ACCURACY
SGT 2598.7 SGR 553.6 SG3 504.2
RRT .3553 RRF -.4022 RTF -.8943
SGB 2657.0 R23 -.0764 R13 -.8956
SG1 2606.4 SG2 515.9 THA 4.50

ORBIT DETERMINATION ACCURACY
ST 361.2 SR 501.9 SS 374.5
CRT -.3037 CRS .9606 CST -.3444
LSA 635.6 MSA 334.3 SSA 83.0
EL1 522.6 EL2 330.5 ALF 111.11

LAUNCH DATE DEC 9 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 434.952 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.769 GAL 1.93 AZL 89.23 HCA 135.16 SMA 200.72 ECC .26795 INC .7746 V1 30.239
RP 238.14 LAP .55 LOP 212.12 VP 21.293 GAP 11.30 AZP 90.55 TAL 9.17 TAP 144.32 RCA 146.94 APO 254.50 V2 23.073
RC 181.513 GL 6.92 GP 3.95 ZAL 69.07 ZAP 160.34 ETS 167.35 ZAE 159.10 ETE 11.32 ZAC 94.37 ETC 255.80 CLP 160.73

PLANETOCENTRIC CONIC

C3 14.346 VHL 3.788 DLA 19.40 RAL 150.60 RAD 6567.6 VEL 11.650 PTH 2.05 VHP 6.437 DPA -.46 RAP 193.89 ECC 1.2361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 28 5	2790.70	-28.16	81.15	13.15	93.15	14 14 36	2190.7	-27.42	72.56
90.00	6 55 34	4129.26	-2.24	168.03	7.23	61.76	8 4 23	3529.3	-6.00	161.37
100.00	15 1 32	2489.41	-29.53	58.87	13.04	94.86	15 43 1	1889.4	-28.54	50.21
100.00	8 4 49	3905.79	-1.04	150.94	6.56	60.12	9 9 55	3305.8	-5.01	144.40
110.00	16 35 52	2194.23	-33.02	35.94	12.53	99.37	17 12 27	1594.2	-31.38	27.11
110.00	8 46 58	3773.74	1.95	139.06	4.70	55.87	9 49 51	3173.7	-2.54	132.86

DIFFERENTIAL CORRECTIONS
TDE .0741 TRA -.6578 TC3 3.1394 BAU .6040
RDE -.3273 RRA -.0991 RC3 .2506 FAU .13331
FDE .4533 FRA -.0835 FC3-8.0447 BSP 8941
BDE .3356 BRA .6653 BC3 3.1493 FSP 1637

MID-COURSE EXECUTION ACCURACY
SGT 2604.1 SGR 553.5 SG3 530.0
RRT .3910 RRF -.4344 RTF -.8937
SGB 2662.3 R23 -.0773 R13 -.8951
SG1 2613.4 SG2 507.6 THA 4.94

ORBIT DETERMINATION ACCURACY
ST 343.2 SR 497.4 SS 395.3
CRT -.2341 CRS .9577 CST -.3135
LSA 638.1 MSA 327.2 SSA 85.7
EL1 508.7 EL2 326.3 ALF 105.83

LAUNCH DATE DEC 9 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 438.376 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.722 GAL 2.02 AZL 89.25 HCA 136.11 SMA 199.75 ECC .26463 INC .7452 V1 30.239
RP 237.81 LAP .52 LOP 213.08 VP 21.254 GAP 10.78 AZP 90.54 TAL 9.68 TAP 145.80 RCA 146.89 APO 252.61 V2 23.106
RC 183.786 GL 6.70 GP 4.12 ZAL 68.08 ZAP 159.51 ETS 167.39 ZAE 159.77 ETE 12.34 ZAC 94.56 ETC 255.79 CLP 159.91

PLANETOCENTRIC CONIC

C3 14.129 VHL 3.759 DLA 19.53 RAL 149.54 RAD 6567.6 VEL 11.641 PTH 2.04 VHP 6.285 DPA -.37 RAP 194.08 ECC 1.2325

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 22 24	2792.79	-28.16	81.30	11.88	93.07	14 8 57	2192.8	-27.44	72.71
90.00	6 52 49	4120.42	-2.53	167.54	6.01	61.79	8 1 29	3520.4	-6.28	160.87
100.00	14 55 59	2491.01	-29.54	58.99	11.78	94.80	15 37 30	1891.0	-28.56	50.32
100.00	8 1 55	3897.44	-1.32	150.48	5.34	60.13	9 6 52	3297.4	-5.29	143.94
110.00	16 30 37	2194.93	-33.03	36.00	11.27	99.34	17 7 12	1594.9	-31.39	27.16
110.00	8 43 46	3766.28	1.66	138.67	3.48	55.85	9 46 32	3166.3	-2.83	132.47

DIFFERENTIAL CORRECTIONS
TDE .0632 TRA -.6267 TC3 3.2127 BAU .6091
RDE -.3219 RRA -.0926 RC3 .2803 FAU .13899
FDE .4826 FRA -.1531 FC3-8.5167 BSP 9009
BDE .3281 BRA .6335 BC3 3.2249 FSP 1729

MID-COURSE EXECUTION ACCURACY
SGT 2621.0 SGR 554.7 SG3 557.2
RRT .4220 RRF -.4677 RTF -.8957
SGB 2679.1 R23 -.0832 R13 -.8973
SG1 2631.9 SG2 500.8 THA 5.30

ORBIT DETERMINATION ACCURACY
ST 327.1 SR 492.8 SS 414.9
CRT -.2057 CRS .9533 CST -.3183
LSA 644.0 MSA 315.2 SSA 88.7
EL1 500.5 EL2 315.2 ALF 103.00

LAUNCH DATE DEC 9 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 441.827 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.677 GAL 2.11 AZL 89.29 HCA 137.07 SMA 198.84 ECC .26147 INC .7148 V1 30.239
RP 237.48 LAP .49 LOP 214.04 VP 21.219 GAP 10.27 AZP 90.52 TAL 10.19 TAP 147.26 RCA 146.85 APO 250.84 V2 23.140
RC 186.049 GL 6.46 GP 4.29 ZAL 67.11 ZAP 158.66 ETS 167.42 ZAE 160.46 ETE 13.48 ZAC 94.76 ETC 255.79 CLP 159.08

PLANETOCENTRIC CONIC

C3 13.930 VHL 3.732 DLA 19.63 RAL 148.50 RAD 6567.5 VEL 11.633 PTH 2.04 VHP 6.137 DPA -.26 RAP 194.27 ECC 1.2293

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 17 5	2794.00	-28.17	81.39	10.65	93.03	14 3 39	2194.0	-27.45	72.79
90.00	6 49 50	4112.99	-2.77	167.13	4.82	61.81	7 58 23	3513.0	-6.52	160.45
100.00	14 50 47	2491.83	-29.54	59.05	10.54	94.77	15 32 19	1891.8	-28.57	50.38
100.00	7 58 48	3890.39	-1.56	150.09	4.15	60.14	9 3 39	3290.4	-5.52	143.55
110.00	16 25 39	2195.03	-33.03	36.00	10.03	99.34	17 2 14	1595.0	-31.39	27.16
110.00	8 40 26	3759.95	1.42	138.34	2.28	55.84	9 43 6	3160.0	-3.07	132.14

DIFFERENTIAL CORRECTIONS
TDE .0551 TRA -.5960 TC3 3.2826 BAU .6141
RDE -.3167 RRA -.0858 RC3 .3125 FAU .14499
FDE .5102 FRA -.2276 FC3-9.0106 BSP 9086
BDE .3215 BRA .6021 BC3 3.2974 FSP 1829

MID-COURSE EXECUTION ACCURACY
SGT 2637.2 SGR 557.2 SG3 585.9
RRT .4535 RRF -.5024 RTF -.8977
SGB 2695.4 R23 -.0902 R13 -.8995
SG1 2649.7 SG2 494.2 THA 5.67

ORBIT DETERMINATION ACCURACY
ST 312.2 SR 488.1 SS 432.9
CRT -.1862 CRS .9475 CST -.3289
LSA 650.0 MSA 303.5 SSA 91.8
EL1 493.7 EL2 303.3 ALF 100.98

LAUNCH DATE DEC 9 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 445.305 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.634 GAL 2.19 AZL 89.32 HCA 138.04 SMA 197.98 ECC .25849 INC .6832 V1 30.239
RP 237.15 LAP .46 LOP 215.00 VP 21.188 GAP 9.77 AZP 90.51 TAL 10.68 TAP 148.72 RCA 146.81 APO 249.16 V2 23.174
RC 188.300 GL 6.20 GP 4.48 ZAL 66.17 ZAP 157.79 ETS 167.43 ZAE 161.18 ETE 14.76 ZAC 94.96 ETC 255.78 CLP 158.23

PLANETOCENTRIC CONIC

C3 13.749 VHL 3.708 DLA 19.71 RAL 147.48 RAD 6567.5 VEL 11.625 PTH 2.04 VHP 5.993 DPA -.14 RAP 194.44 ECC 1.2263

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 12 10	2794.27	-28.17	81.41	9.43	93.02	13 58 44	2194.3	-27.45	72.81
90.00	6 46 36	4106.99	-2.96	166.79	3.65	61.83	7 55 3	3507.0	-6.71	160.11
100.00	14 45 57	2491.82	-29.54	59.05	9.33	94.77	15 27 29	1891.8	-28.57	50.38
100.00	7 55 29	3884.67	-1.75	149.78	2.98	60.15	9 0 14	3284.7	-5.71	143.23
110.00	16 20 59	2194.50	-33.03	35.96	8.82	99.36	16 57 34	1594.5	-31.38	27.13
110.00	8 36 57	3754.76	1.22	138.07	1.12	55.84	9 39 31	3154.8	-3.27	131.86

DIFFERENTIAL CORRECTIONS
TDE .0493 TRA -.5641 TC3 3.3507 BAU .6192
RDE -.3117 RRA -.0788 RC3 .3472 FAU .15127
FDE .5371 FRA -.3075 FC3-9.5249 BSP 9083
BDE .3156 BRA .5696 BC3 3.3686 FSP 1929

MID-COURSE EXECUTION ACCURACY
SGT 2652.8 SGR 561.3 SG3 616.0
RRT .4855 RRF -.5381 RTF -.8999
SGB 2711.6 R23 -.0982 R13 -.9020
SG1 2667.3 SG2 488.0 THA 6.07

ORBIT DETERMINATION ACCURACY
ST 297.5 SR 483.3 SS 450.4
CRT -.1761 CRS .9408 CST -.3457
LSA 656.4 MSA 291.5 SSA 95.0
EL1 487.7 EL2 290.2 ALF 99.62

LAUNCH DATE DEC 9 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 448.807 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.593 GAL 2.27 AZL 89.35 HCA 139.00 SMA 197.17 ECC .25565 INC .6500 V1 30.239
RP 236.81 LAP .43 LOP 215.97 VP 21.161 GAP 9.28 AZP 90.49 TAL 11.17 TAP 150.17 RCA 146.76 APO 247.58 V2 23.209
RC 190.540 GL 5.93 GP 4.68 ZAL 65.26 ZAP 156.90 ETS 167.44 ZAE 161.92 ETE 16.21 ZAC 95.17 ETC 255.78 CLP 157.35

PLANETOCENTRIC CONIC

C3 13.584 VHL 3.686 DLA 19.76 RAL 146.48 RAD 6567.5 VEL 11.618 PTH 2.04 VHP 5.852 DPA .00 RAP 194.61 ECC 1.2236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 7 39	2793.57	-28.17	81.36	8.25	93.05	13 54 12	2193.6	-27.45	72.76
90.00	6 43 7	4102.42	-3.11	166.53	2.50	61.84	7 51 30	3502.4	-6.85	159.85
100.00	14 41 30	2490.94	-29.54	58.99	8.14	94.80	15 23 1	1890.9	-28.56	50.32
100.00	7 51 58	3880.29	-1.90	149.54	1.83	60.16	8 56 38	3280.3	-5.86	142.99
110.00	16 16 38	2193.30	-33.01	35.87	7.63	99.41	16 53 11	1593.3	-31.36	27.04
110.00	8 33 19	3750.69	1.07	137.86	359.98	55.83	9 35 49	3150.7	-3.42	131.65

DIFFERENTIAL CORRECTIONS
TDE .0523 TRA -.5253 TC3 3.4345 BAU .6277
RDE -.3067 RRA -.0713 RC3 .3851 FAU .15804
FDE .5590 FRA -.3972 FC-10.0719 BSP 8892
BDE .3111 BRA .5301 BC3 3.4560 FSP 2026

MID-COURSE EXECUTION ACCURACY
SGT 2677.5 SGR 567.2 SG3 648.3
RRT .5150 RRF -.5743 RTF -.9037
SGB 2736.9 R23 -.1088 R13 -.9061
SG1 2693.9 SG2 483.2 THA 6.43

ORBIT DETERMINATION ACCURACY
ST 283.1 SR 478.1 SS 464.4
CRT -.2136 CRS .9319 CST -.4037
LSA 662.1 MSA 275.7 SSA 99.6
EL1 483.7 EL2 273.3 ALF 100.64

LAUNCH DATE DEC 9 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 452.331 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.554 GAL 2.34 AZL 89.38 HCA 139.97 SMA 196.41 ECC .25297 INC .6157 V1 30.239
RP 236.46 LAP .40 LOP 216.93 VP 21.137 GAP 8.79 AZP 90.47 TAL 11.64 TAP 151.61 RCA 146.72 APO 246.09 V2 23.244
RC 192.768 GL 5.64 GP 4.89 ZAL 64.37 ZAP 155.98 ETS 167.44 ZAE 162.67 ETE 17.85 ZAC 95.39 ETC 255.77 CLP 156.45

PLANETOCENTRIC CONIC

C3 13.434 VHL 3.665 DLA 19.77 RAL 145.51 RAD 6567.5 VEL 11.611 PTH 2.03 VHP 5.715 DPA .17 RAP 194.76 ECC 1.2211

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 3 36	2791.74	-28.16	81.22	7.09	93.11	13 50 7	2191.7	-27.43	72.63
90.00	6 39 24	4099.39	-3.20	166.37	1.39	61.85	7 47 43	3499.4	-6.94	159.68
100.00	14 37 28	2489.06	-29.53	58.85	6.98	94.88	15 18 57	1889.1	-28.54	50.18
100.00	7 48 13	3877.31	-2.00	149.38	.72	60.17	8 52 50	3277.3	-5.96	142.82
110.00	16 12 38	2191.31	-32.99	35.72	6.47	99.50	16 49 9	1591.3	-31.33	26.89
110.00	8 29 32	3747.82	.96	137.71	358.87	55.83	9 32 0	3147.8	-3.53	131.50

DIFFERENTIAL CORRECTIONS
TDE .0343 TRA -.5107 TC3 3.4442 BAU .6232
RDE -.3021 RRA -.0639 RC3 .4246 FAU .16458
FDE .5901 FRA -.4801 FC-10.6063 BSP 9260
BDE .3040 BRA .5147 BC3 3.4702 FSP 2155

MID-COURSE EXECUTION ACCURACY
SGT 2664.0 SGR 575.4 SG3 680.0
RRT .5548 RRF -.6118 RTF -.9016
SGB 2725.4 R23 -.1143 R13 -.9044
SG1 2683.7 SG2 475.2 THA 7.06

ORBIT DETERMINATION ACCURACY
ST 270.9 SR 473.3 SS 484.5
CRT -.1289 CRS .9262 CST -.3489
LSA 668.7 MSA 273.9 SSA 100.1
EL1 475.2 EL2 267.6 ALF 96.19

LAUNCH DATE DEC 9 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 455.878 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.516 GAL 2.42 AZL 89.42 HCA 140.94 SMA 195.68 ECC .25044 INC .5798 V1 30.239
RP 236.12 LAP .37 LOP 217.90 VP 21.117 GAP 8.31 AZP 90.45 TAL 12.10 TAP 153.04 RCA 146.68 APO 244.69 V2 23.279
RC 194.983 GL 5.33 GP 5.11 ZAL 63.52 ZAP 155.03 ETS 167.42 ZAE 163.44 ETE 19.72 ZAC 95.62 ETC 255.77 CLP 155.53

PLANETOCENTRIC CONIC

C3 13.297 VHL 3.646 DLA 19.76 RAL 144.55 RAD 6567.5 VEL 11.605 PTH 2.03 VHP 5.582 DPA .35 RAP 194.89 ECC 1.2188

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 59 58	2788.87	-28.15	81.01	5.96	93.22	13 46 27	2188.9	-27.41	72.43
90.00	6 35 25	4097.82	-3.26	166.28	.29	61.86	7 43 43	3497.8	-6.99	159.39
100.00	14 33 49	2486.24	-29.51	58.64	5.85	94.98	15 15 15	1886.2	-28.51	49.98
100.00	7 44 15	3875.68	-2.06	149.29	359.63	60.17	8 48 51	3275.7	-6.01	142.73
110.00	16 8 57	2188.61	-32.96	35.52	5.33	99.62	16 45 25	1588.6	-31.28	26.70
110.00	8 25 37	3746.07	.89	137.62	357.79	55.83	9 28 3	3146.1	-3.60	131.41

DIFFERENTIAL CORRECTIONS
TDE .0301 TRA -.4834 TC3 3.4849 BAU .6251
RDE -.2973 RRA -.0559 RC3 .4678 FAU .17173
FDE .6138 FRA -.5763 FC-11.1811 BSP 9290
BDE .2988 BRA .4866 BC3 3.5161 FSP 2274

MID-COURSE EXECUTION ACCURACY
SGT 2667.0 SGR 586.0 SG3 714.3
RRT .5889 RRF -.6488 RTF -.9026
SGB 2730.6 R23 -.1240 R13 -.9058
SG1 2689.9 SG2 469.6 THA 7.61

ORBIT DETERMINATION ACCURACY
ST 258.2 SR 468.1 SS 499.7
CRT -.1202 CRS .9175 CST -.3620
LSA 674.2 MSA 265.2 SSA 102.7
EL1 469.6 EL2 255.5 ALF 95.40

LAUNCH DATE DEC 9 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 459.447 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.481 GAL 2.48 AZL 89.46 HCA 141.91 SMA 195.00 ECC .24803 INC .5423 V1 30.239
RP 235.77 LAP .33 LOP 218.88 VP 21.100 GAP 7.84 AZP 90.43 TAL 12.55 TAP 154.47 RCA 146.63 APO 243.37 V2 23.315
RC 197.185 GL 5.00 GP 5.35 ZAL 62.69 ZAP 154.06 ETS 167.40 ZAE 164.21 ETE 21.87 ZAC 95.86 ETC 255.76 CLP 154.58

PLANETOCENTRIC CONIC

C3 13.172 VHL 3.629 DLA 19.71 RAL 143.62 RAD 6567.5 VEL 11.600 PTH 2.03 VHP 5.453 DPA .55 RAP 195.02 ECC 1.2168

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 56 47	2784.85	-28.13	80.72	4.85	93.36	13 43 12	2184.9	-27.37	72.14
90.00	6 31 11	4097.75	-3.26	166.27	359.23	61.86	7 39 28	3497.7	-7.00	159.59
100.00	14 30 35	2482.40	-29.49	58.36	4.74	95.13	15 11 57	1882.4	-28.47	49.70
100.00	7 40 4	3875.43	-2.07	149.27	358.57	60.17	8 44 40	3275.4	-6.02	142.72
110.00	16 5 37	2185.10	-32.92	35.25	4.21	99.77	16 42 2	1585.1	-31.22	26.44
110.00	8 21 32	3745.50	.87	137.59	356.73	55.83	9 23 57	3145.5	-3.62	131.38

DIFFERENTIAL CORRECTIONS
TDE .0289 TRA -.4562 TC3 3.5212 BAU .6267
RDE -.2926 RRA -.0473 RC3 .5145 FAU .17924
FDE .6337 FRA -.6790 FC-11.7803 BSP 9277
BDE .2940 BRA .4587 BC3 3.5586 FSP 2395

MID-COURSE EXECUTION ACCURACY
SGT 2668.3 SGR 599.3 SG3 750.3
RRT .6218 RRF -.6851 RTF -.9036
SGB 2734.8 R23 -.1349 R13 -.9072
SG1 2695.0 SG2 464.7 THA 8.19

ORBIT DETERMINATION ACCURACY
ST 246.2 SR 462.6 SS 512.5
CRT -.1293 CRS .9077 CST -.3895
LSA 678.5 MSA 256.6 SSA 105.5
EL1 464.1 EL2 243.4 ALF 95.43

LAUNCH DATE DEC 9 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 463.037 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.447 GAL 2.55 AZL 89.50 HCA 142.89 SMA 194.35 ECC .24576 INC .5028 V1 30.239
RP 235.42 LAP .30 LOP 219.85 VP 21.086 GAP 7.38 AZP 90.40 TAL 12.99 TAP 155.88 RCA 146.59 APO 242.12 V2 23.351
RC 199.372 GL 4.66 GP 5.60 ZAL 61.89 ZAP 153.07 ETS 167.37 ZAE 164.99 ETE 24.35 ZAC 96.10 ETC 255.75 CLP 153.61

PLANETOCENTRIC CONIC

C3 13.058 VHL 3.614 DLA 19.63 RAL 142.72 RAD 6567.5 VEL 11.595 PTH 2.03 VHP 5.326 DPA .78 RAP 195.12 ECC 1.2149

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 54 4	2779.67	-28.11	80.34	3.77	93.55	13 40 24	2179.7	-27.32	71.76
90.00	6 26 40	4099.19	-3.21	166.35	358.18	61.85	7 34 59	3499.2	-6.95	159.67
100.00	14 27 46	2477.52	-29.46	58.00	3.65	95.32	15 9 3	1877.5	-28.41	49.35
100.00	7 35 39	3876.57	-2.03	149.33	357.53	60.17	8 40 16	3276.6	-5.98	142.78
110.00	16 2 37	2180.77	-32.87	34.92	3.12	99.96	16 38 58	1580.8	-31.15	26.12
110.00	8 17 18	3746.08	.89	137.62	355.70	55.83	9 19 44	3146.1	-3.60	131.41

DIFFERENTIAL CORRECTIONS
TDE .0329 TRA -.4257 TC3 3.5640 BAU .6300
RDE -.2877 RRA -.0381 RC3 .5653 FAU .18723
FDE .6487 FRA -.7915 FC-12.4128 BSP 9144
BDE .2896 BRA .4274 BC3 3.6085 FSP 2514

MID-COURSE EXECUTION ACCURACY
SGT 2674.1 SGR 615.8 SG3 788.6
RRT .6527 RRF -.7204 RTF -.9054
SGB 2744.1 R23 -.1470 R13 -.9096
SG1 2705.1 SG2 461.2 THA 8.80

ORBIT DETERMINATION ACCURACY
ST 234.3 SR 456.7 SS 522.7
CRT -.1747 CRS .8959 CST -.4462
LSA 681.4 MSA 246.0 SSA 109.4
EL1 459.2 EL2 229.5 ALF 96.83

LAUNCH DATE DEC 9 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 466.645 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.415 GAL 2.61 AZL 89.54 HCA 143.87 SMA 193.74 ECC .24360 INC .4617 V1 30.239
RP 235.06 LAP .27 LOP 220.83 VP 21.076 GAP 6.92 AZP 90.37 TAL 13.41 TAP 157.28 RCA 146.55 APO 240.94 V2 23.387
RC 201.544 GL 4.29 GP 5.87 ZAL 61.13 ZAP 152.04 ETS 167.33 ZAE 165.76 ETE 27.23 ZAC 96.36 ETC 255.75 CLP 152.62

PLANETOCENTRIC CONIC

C3 12.955 VHL 3.599 DLA 19.51 RAL 141.84 RAD 6567.5 VEL 11.591 PTH 2.03 VHP 5.204 DPA 1.03 RAP 195.22 ECC 1.2132

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 51 50	2773.23	-28.08	79.87	2.71	93.78	13 38 3	2173.2	-27.26	71.30
90.00	6 21 53	4102.18	-3.11	166.52	357.16	61.84	7 30 16	3502.2	-6.86	159.84
100.00	14 25 24	2471.51	-29.42	57.55	2.59	95.55	15 6 35	1871.5	-28.34	48.92
100.00	7 31 0	3879.14	-1.94	149.48	356.51	60.16	8 35 40	3279.1	-5.90	142.92
110.00	16 0 0	2175.53	-32.81	34.53	2.04	100.18	16 36 15	1575.5	-31.06	25.74
110.00	8 12 54	3747.87	.96	137.71	354.70	55.83	9 15 22	3147.9	-3.53	131.50

DIFFERENTIAL CORRECTIONS

TDE .0269 TRA -.4083 TC3 3.5632 BAU .6264
RDE -.2832 RRA -.0288 RC3 .6189 FAU .19515
FDE .6689 FRA -.9011 FC-13.0417 BSP 9308
BDE .2844 BRA .4093 BC3 3.6165 FSP 2663

MID-COURSE EXECUTION ACCURACY

SGT 2656.4 SGR 635.6 SG3 826.9
RRT .6852 RRF -.7543 RTF -.9042
SGB 2731.4 R23 -.1591 R13 -.9091
SG1 2692.9 SG2 456.7 THA 9.59

ORBIT DETERMINATION ACCURACY

ST 224.8 SR 451.2 SS 536.1
CRT -.1502 CRS .8868 CST -.4414
LSA 685.7 MSA 243.4 SSA 109.9
EL1 452.9 EL2 221.4 ALF 95.63

LAUNCH DATE DEC 9 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 470.274 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.384 GAL 2.68 AZL 89.58 HCA 144.85 SMA 193.17 ECC .24156 INC .4182 V1 30.239
RP 234.71 LAP .24 LOP 221.81 VP 21.068 GAP 6.47 AZP 90.34 TAL 13.82 TAP 158.67 RCA 146.50 APO 239.83 V2 23.424
RC 203.699 GL 3.89 GP 6.15 ZAL 60.39 ZAP 150.99 ETS 167.28 ZAE 166.52 ETE 30.57 ZAC 96.63 ETC 255.74 CLP 151.59

PLANETOCENTRIC CONIC

C3 12.860 VHL 3.586 DLA 19.37 RAL 140.98 RAD 6567.5 VEL 11.587 PTH 2.03 VHP 5.085 DPA 1.31 RAP 195.30 ECC 1.2117

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 50 2	2765.59	-28.05	79.32	1.68	94.06	13 36 8	2165.6	-27.19	70.76
90.00	6 16 50	4106.68	-2.97	166.77	356.17	61.83	7 25 17	3506.7	-6.72	160.09
100.00	14 23 26	2464.41	-29.37	57.03	1.55	95.82	15 4 31	1864.4	-28.26	48.41
100.00	7 26 7	3883.10	-1.81	149.69	355.52	60.16	8 30 50	3283.1	-5.77	143.14
110.00	15 57 43	2169.43	-32.73	34.07	.99	100.45	16 33 53	1569.4	-30.95	25.30
110.00	8 8 20	3750.84	1.07	137.87	353.72	55.83	9 10 50	3150.8	-3.42	131.66

DIFFERENTIAL CORRECTIONS

TDE .0410 TRA -.3732 TC3 3.6117 BAU .6318
RDE -.2778 RRA -.0180 RC3 .6790 FAU .20413
FDE .6694 FRA-1.0339 FC-13.7413 BSP 8994
BDE .2808 BRA .3736 BC3 3.6750 FSP 2781

MID-COURSE EXECUTION ACCURACY

SGT 2667.2 SGR 659.6 SG3 869.8
RRT .7115 RRF -.7863 RTF -.9070
SGB 2747.6 R23 -.1729 R13 -.9127
SG1 2709.4 SG2 456.3 THA 10.27

ORBIT DETERMINATION ACCURACY

ST 215.1 SR 444.1 SS 539.4
CRT -.2744 CRS .8696 CST -.5555
LSA 684.2 MSA 229.9 SSA 115.8
EL1 449.1 EL2 204.6 ALF 99.58

LAUNCH DATE DEC 9 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 473.918 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.355 GAL 2.73 AZL 89.63 HCA 145.84 SMA 192.62 ECC .23964 INC .3722 V1 30.239
RP 234.35 LAP .21 LOP 222.80 VP 21.063 GAP 6.03 AZP 90.31 TAL 14.21 TAP 160.05 RCA 146.46 APO 238.78 V2 23.461
RC 205.837 GL 3.48 GP 6.46 ZAL 59.69 ZAP 149.90 ETS 167.22 ZAE 167.24 ETE 34.46 ZAC 96.92 ETC 255.73 CLP 150.54

PLANETOCENTRIC CONIC

C3 12.774 VHL 3.574 DLA 19.18 RAL 140.15 RAD 6567.5 VEL 11.583 PTH 2.03 VHP 4.970 DPA 1.62 RAP 195.37 ECC 1.2102

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 48 46	2756.59	-28.00	78.66	.67	94.39	13 34 42	2156.6	-27.10	70.11
90.00	6 11 30	4112.79	-2.77	167.11	355.20	61.81	7 20 3	3512.8	-6.52	160.44
100.00	14 21 57	2456.07	-29.31	56.42	.53	96.14	15 2 53	1856.1	-28.15	47.81
100.00	7 21 0	3888.55	-1.62	149.99	354.56	60.15	8 25 48	3288.5	-5.58	143.44
110.00	15 55 51	2162.32	-32.65	33.53	359.95	100.75	16 31 53	1562.3	-30.82	24.79
110.00	8 3 36	3755.05	1.23	138.09	352.77	55.84	9 6 11	3155.1	-3.26	131.88

DIFFERENTIAL CORRECTIONS

TDE .0322 TRA -.3634 TC3 3.5781 BAU .6240
RDE -.2733 RRA -.0075 RC3 .7407 FAU .21251
FDE .6879 FRA-1.1521 FC-14.4027 BSP 9236
BDE .2752 BRA .3635 BC3 3.6539 FSP 2949

MID-COURSE EXECUTION ACCURACY

SGT 2631.5 SGR 687.4 SG3 910.4
RRT .7405 RRF -.8159 RTF -.9041
SGB 2719.8 R23 -.1873 R13 -.9109
SG1 2681.7 SG2 453.3 THA 11.27

ORBIT DETERMINATION ACCURACY

ST 206.9 SR 438.5 SS 552.5
CRT -.2279 CRS .8612 CST -.5325
LSA 688.1 MSA 231.9 SSA 114.1
EL1 441.7 EL2 200.0 ALF 97.73

LAUNCH DATE DEC 9 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 477.580 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.328 GAL 2.79 AZL 89.68 HCA 146.83 SMA 192.11 ECC .23782 INC .3242 V1 30.239
RP 233.98 LAP .18 LOP 223.79 VP 21.061 GAP 5.59 AZP 90.27 TAL 14.59 TAP 161.41 RCA 146.42 APO 237.79 V2 23.498
RC 207.958 GL 3.03 GP 6.79 ZAL 59.02 ZAP 148.79 ETS 167.16 ZAE 167.92 ETE 38.99 ZAC 97.22 ETC 255.72 CLP 149.46

PLANETOCENTRIC CONIC

C3 12.696 VHL 3.563 DLA 18.96 RAL 139.34 RAD 6567.5 VEL 11.579 PTH 2.03 VHP 4.858 DPA 1.95 RAP 195.42 ECC 1.2089

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 47 57	2746.28	-27.95	77.91	359.67	94.76	13 33 43	2146.3	-26.99	69.38
90.00	6 5 53	4120.46	-2.63	167.54	354.25	61.79	7 14 34	3520.5	-6.28	160.87
100.00	14 20 54	2446.53	-29.24	55.72	359.53	96.50	15 1 41	1846.5	-28.03	47.12
100.00	7 15 37	3895.44	-1.39	150.37	353.62	60.14	8 20 32	3295.4	-5.35	143.83
110.00	15 54 20	2154.24	-32.54	32.92	358.93	101.10	16 30 14	1554.2	-30.67	24.21
110.00	7 58 41	3760.50	1.44	138.37	351.85	55.84	9 1 21	3160.5	-3.05	132.16

DIFFERENTIAL CORRECTIONS

TDE .0364 TRA -.3439 TC3 3.5694 BAU .6212
RDE -.2682 RRA .0043 RC3 .8088 FAU .22163
FDE .6906 FRA-1.2874 FC-15.1135 BSP 9205
BDE .2706 BRA .3439 BC3 3.6599 FSP 3105

MID-COURSE EXECUTION ACCURACY

SGT 2610.6 SGR 719.8 SG3 954.4
RRT .7643 RRF -.8429 RTF -.9033
SGB 2708.1 R23 -.2028 R13 -.9115
SG1 2669.8 SG2 453.9 THA 12.26

ORBIT DETERMINATION ACCURACY

ST 200.1 SR 431.6 SS 558.2
CRT -.2819 CRS .8466 CST -.5848
LSA 687.5 MSA 227.7 SSA 115.6
EL1 436.1 EL2 190.0 ALF 99.21

LAUNCH DATE DEC 9 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 481.260 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.301 GAL 2.84 AZL 89.73 HCA 147.82 SMA 191.62 ECC .23609 INC .2727 V1 30.239
RP 233.62 LAP .15 LOP 224.78 VP 21.061 GAP 5.16 AZP 90.23 TAL 14.95 TAP 162.77 RCA 146.38 APO 236.86 V2 23.536
RC 210.060 GL 2.56 GP 7.14 ZAL 58.38 ZAP 147.64 ETS 167.09 ZAE 168.52 ETE 44.24 ZAC 97.54 ETC 255.71 CLP 148.35

PLANETOCENTRIC CONIC

C3 12.624 VHL 3.553 DLA 18.70 RAL 138.56 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 4.749 DPA 2.32 RAP 195.46 ECC 1.2078

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 47 38	2734.59	-27.88	77.06	358.69	95.18	13 33 13	2134.6	-26.87	68.54
90.00	5 59 58	4129.73	-2.23	168.06	353.32	61.76	7 8 48	3529.7	-5.99	161.40
100.00	14 20 19	2435.73	-29.16	54.93	358.54	96.91	15 0 54	1835.7	-27.89	46.35
100.00	7 9 59	3903.83	-1.11	150.83	352.70	60.13	8 15 3	3303.8	-5.07	144.29
110.00	15 53 12	2145.11	-32.42	32.24	357.92	101.48	16 28 57	1545.1	-30.50	23.55
110.00	7 53 35	3767.21	1.70	138.72	350.95	55.85	8 56 22	3167.2	-2.79	132.52

DIFFERENTIAL CORRECTIONS
TDE .0420 TRA -.3266 TC3 3.5507 BAU .6175
RDE -.2627 RRA .0170 RC3 .8823 FAU .23106
FDE .6871 FRA-1.4293 FC-15.8459 BSP 9175
BDE .2661 BRA .3270 BC3 3.6586 FSP 3268

MID-COURSE EXECUTION ACCURACY
SGT 2584.5 SGR 757.2 SG3 999.9
RRT .7854 RRF -.8672 RTF -.9021
SGB 2693.2 R23 -.2193 R13 -.9118
SG1 2654.2 SG2 456.5 THA 13.36

ORBIT DETERMINATION ACCURACY
ST 195.3 SR 424.2 SS 561.8
CRT -.3468 CRS .8301 CST -.6405
LSA 685.3 MSA 224.7 SSA 116.8
EL1 430.7 EL2 180.4 ALF 101.03

LAUNCH DATE DEC 9 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 484.955 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.276 GAL 2.89 AZL 89.78 HCA 148.81 SMA 191.16 ECC .23446 INC .2190 V1 30.239
RP 233.25 LAP .11 LOP 225.77 VP 21.064 GAP 4.74 AZP 90.19 TAL 15.30 TAP 164.11 RCA 146.34 APO 235.98 V2 23.574
RC 212.144 GL 2.06 GP 7.52 ZAL 57.77 ZAP 146.45 ETS 167.01 ZAE 169.02 ETE 50.26 ZAC 97.87 ETC 255.70 CLP 147.21

PLANETOCENTRIC CONIC

C3 12.559 VHL 3.544 DLA 18.39 RAL 137.81 RAD 6567.5 VEL 11.574 PTH 2.02 VHP 4.645 DPA 2.73 RAP 195.48 ECC 1.2067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 47 48	2721.48	-27.79	76.11	357.73	95.65	13 33 10	2121.5	-26.72	67.61
90.00	5 53 45	4140.64	-1.88	168.67	352.42	61.74	7 2 46	3540.6	-5.64	162.01
100.00	14 20 11	2423.61	-29.05	54.04	357.57	97.36	15 0 34	1823.6	-27.73	45.49
100.00	7 4 4	3913.74	-.77	151.38	351.81	60.12	8 9 18	3313.7	-4.74	144.84
110.00	15 52 28	2134.88	-32.28	31.48	356.93	101.92	16 28 3	1534.9	-30.30	22.82
110.00	7 48 17	3775.23	2.00	139.14	350.07	55.87	8 51 12	3175.2	-2.49	132.93

DIFFERENTIAL CORRECTIONS
TDE .0487 TRA -.3105 TC3 3.5239 BAU .6133
RDE -.2570 RRA .0308 RC3 .9617 FAU .24081
FDE .6783 FRA-1.5783 FC-16.5997 BSP 9121
BDE .2616 BRA .3120 BC3 3.6527 FSP 3437

MID-COURSE EXECUTION ACCURACY
SGT 2554.2 SGR 800.1 SG3 1047.0
RRT .8035 RRF -.8887 RTF -.9006
SGB 2676.6 R23 -.2361 R13 -.9123
SG1 2636.6 SG2 461.4 THA 14.58

ORBIT DETERMINATION ACCURACY
ST 192.4 SR 416.4 SS 564.4
CRT -.4207 CRS .8123 CST -.6947
LSA 682.4 MSA 222.6 SSA 117.3
EL1 425.7 EL2 170.7 ALF 103.15

LAUNCH DATE DEC 9 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 488.666 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.253 GAL 2.93 AZL 89.84 HCA 149.81 SMA 190.73 ECC .23292 INC .1606 V1 30.239
RP 232.88 LAP .08 LOP 226.77 VP 21.070 GAP 4.32 AZP 90.14 TAL 15.63 TAP 165.44 RCA 146.30 APO 235.15 V2 23.612
RC 214.210 GL 1.52 GP 7.92 ZAL 57.19 ZAP 145.23 ETS 166.93 ZAE 169.39 ETE 57.03 ZAC 98.23 ETC 255.69 CLP 146.04

PLANETOCENTRIC CONIC

C3 12.500 VHL 3.536 DLA 18.04 RAL 137.07 RAD 6567.5 VEL 11.571 PTH 2.02 VHP 4.544 DPA 3.17 RAP 195.49 ECC 1.2057

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 48 29	2706.89	-27.69	75.06	356.78	96.17	13 33 36	2106.9	-26.55	66.58
90.00	5 47 14	4153.23	-1.47	169.37	351.54	61.72	6 56 27	3553.2	-5.24	162.72
100.00	14 20 31	2410.12	-28.93	53.06	356.61	97.87	15 0 41	1810.1	-27.54	44.53
100.00	6 57 53	3925.23	-.38	152.01	350.93	60.11	8 3 18	3325.2	-4.35	145.47
110.00	15 52 7	2123.49	-32.11	30.63	355.95	102.39	16 27 31	1523.5	-30.08	22.01
110.00	7 42 46	3784.62	2.36	139.63	349.22	55.89	8 45 50	3184.6	-2.13	133.42

DIFFERENTIAL CORRECTIONS
TDE .0574 TRA -.2959 TC3 3.4888 BAU .6088
RDE -.2507 RRA .0458 RC3 1.0482 FAU .25097
FDE .6593 FRA-1.7372 FC-17.3816 BSP 9054
BDE .2572 BRA .2995 BC3 3.6429 FSP 3608

MID-COURSE EXECUTION ACCURACY
SGT 2519.8 SGR 848.9 SG3 1096.2
RRT .8188 RRF -.9076 RTF -.8986
SGB 2658.9 R23 -.2530 R13 -.9128
SG1 2617.2 SG2 469.2 THA 15.95

ORBIT DETERMINATION ACCURACY
ST 192.4 SR 407.6 SS 564.3
CRT -.5059 CRS .7904 CST -.7464
LSA 677.1 MSA 222.4 SSA 117.2
EL1 421.2 EL2 160.6 ALF 105.79

LAUNCH DATE DEC 9 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 492.392 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.230 GAL 2.98 AZL 89.90 HCA 150.81 SMA 190.32 ECC .23147 INC .0992 V1 30.239
RP 232.51 LAP .05 LOP 227.77 VP 21.077 GAP 3.92 AZP 90.09 TAL 15.95 TAP 166.76 RCA 146.27 APO 234.37 V2 23.650
RC 216.258 GL .95 GP 8.36 ZAL 56.65 ZAP 143.98 ETS 166.84 ZAE 169.60 ETE 64.47 ZAC 98.61 ETC 255.68 CLP 144.83

PLANETOCENTRIC CONIC

C3 12.447 VHL 3.528 DLA 17.65 RAL 136.36 RAD 6567.5 VEL 11.569 PTH 2.02 VHP 4.446 DPA 3.65 RAP 195.48 ECC 1.2048

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 49 40	2690.75	-27.57	73.89	355.85	96.74	13 34 30	2090.8	-26.35	65.44
90.00	5 40 22	4167.55	-1.01	170.17	350.68	61.70	6 49 50	3567.5	-4.78	163.53
100.00	14 21 19	2395.18	-28.79	51.97	355.66	98.42	15 1 14	1795.2	-27.32	43.47
100.00	6 51 24	3938.35	.07	152.72	350.08	60.11	7 57 2	3338.3	-3.91	146.20
110.00	15 52 11	2110.88	-31.93	29.69	354.98	102.92	16 27 22	1510.9	-29.82	21.11
110.00	7 37 1	3795.42	2.77	140.19	348.39	55.92	8 40 17	3195.4	-1.72	133.99

DIFFERENTIAL CORRECTIONS
TDE .0671 TRA -.2835 TC3 3.4416 BAU .6034
RDE -.2440 RRA .0621 RC3 1.1415 FAU .26130
FDE .6327 FRA-1.9020 FC-18.1745 BSP 8973
BDE .2530 BRA .2902 BC3 3.6260 FSP 3788

MID-COURSE EXECUTION ACCURACY
SGT 2478.4 SGR 903.8 SG3 1146.3
RRT .8310 RRF -.9239 RTF -.8961
SGB 2638.1 R23 -.2696 R13 -.9133
SG1 2594.0 SG2 480.3 THA 17.48

ORBIT DETERMINATION ACCURACY
ST 195.5 SR 398.2 SS 563.2
CRT -.5915 CRS .7662 CST -.7850
LSA 671.0 MSA 224.2 SSA 116.0
EL1 417.3 EL2 150.4 ALF 108.71

LAUNCH DATE DEC 9 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 496.133 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.209 GAL 3.02 AZL 89.96 HCA 151.81 SMA 189.94 ECC .23009 INC .0313 V1 30.239
RP 232.14 LAP .02 LOP 228.78 VP 21.087 GAP 3.52 AZP 90.03 TAL 16.24 TAP 168.06 RCA 146.23 APO 233.64 V2 23.689
RC 218.287 GL .33 GP 8.83 ZAL 56.14 ZAP 142.68 ETS 166.74 ZAE 169.60 ETE 72.34 ZAC 99.02 ETC 255.66 CLP 143.59

PLANETOCENTRIC CONIC

C3 12.399 VHL 3.521 DLA 17.21 RAL 135.67 RAD 6567.5 VEL 11.567 PTH 2.02 VHP 4.352 DPA 4.17 RAP 195.47 ECC 1.2041

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 51 21	2673.00	-27.42	72.62	354.92	97.36	13 35 54	2073.0	-26.12	64.19
90.00	5 33 10	4183.67	-.49	171.07	349.84	61.69	6 42 54	3583.7	-4.27	164.43
100.00	14 22 36	2378.73	-28.62	50.78	354.73	99.03	15 2 15	1778.7	-27.07	42.31
100.00	6 44 36	3953.17	.57	153.54	349.25	60.11	7 50 29	3353.2	-3.41	147.01
110.00	15 52 40	2096.96	-31.71	28.66	354.01	103.49	16 27 37	1497.0	-29.53	20.13
110.00	7 31 2	3807.70	3.24	140.84	347.58	55.95	8 34 30	3207.7	-1.25	134.63

DIFFERENTIAL CORRECTIONS

TDE .0786 TRA -.2731 TC3 3.3856 BAU .5979
RDE -.2364 RRA .0799 RC3 1.2429 FAU .27197
FDE .5941 FRA-2.0754 FC-18.9892 BSP 8873
BDE .2491 BRA .2846 BC3 3.6066 FSP 3969

MID-COURSE EXECUTION ACCURACY

SGT 2432.7 SGR 965.7 SG3 1198.1
RRT .8405 RRF -.9379 RTF -.8929
SGB 2617.4 R23 -.2854 R13 -.9140
SG1 2570.1 SG2 495.3 THA 19.19

ORBIT DETERMINATION ACCURACY

ST 202.4 SR 387.6 SS 560.3
CRT -.6759 CRS .7369 CST -.8058
LSA 663.2 MSA 229.1 SSA 113.4
EL1 414.4 EL2 139.5 ALF 112.07

LAUNCH DATE DEC 9 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 499.888 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.189 GAL 3.06 AZL 90.03 HCA 152.82 SMA 189.57 ECC .22879 INC .0321 V1 30.239
RP 231.76 LAP -.02 LOP 229.78 VP 21.100 GAP 3.12 AZP 89.97 TAL 16.53 TAP 169.35 RCA 146.20 APO 232.95 V2 23.728
RC 220.299 GL -.33 GP 9.34 ZAL 55.67 ZAP 141.34 ETS 166.64 ZAE 169.39 ETE 80.34 ZAC 99.45 ETC 255.65 CLP 142.32

PLANETOCENTRIC CONIC

C3 12.357 VHL 3.515 DLA 16.71 RAL 135.00 RAD 6567.5 VEL 11.565 PTH 2.02 VHP 4.262 DPA 4.74 RAP 195.44 ECC 1.2034

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 53 34	2653.55	-27.24	71.22	354.00	98.04	13 37 48	2053.6	-25.85	62.83
90.00	5 25 36	4201.67	.09	172.07	349.02	61.68	6 35 38	3601.7	-3.69	165.44
100.00	14 24 24	2360.67	-28.42	49.47	353.79	99.69	15 3 44	1760.7	-26.79	41.05
100.00	6 37 28	3969.78	1.13	154.45	348.44	60.13	7 43 38	3369.8	-2.85	147.93
110.00	15 53 34	2081.65	-31.46	27.54	353.05	104.11	16 28 16	1481.6	-29.20	19.06
110.00	7 24 47	3821.57	3.77	141.56	346.80	56.00	8 28 28	3221.6	-.72	135.35

DIFFERENTIAL CORRECTIONS

TDE .0901 TRA -.2645 TC3 3.3163 BAU .5917
RDE -.2281 RRA .0995 RC3 1.3526 FAU .28278
FDE .5473 FRA-2.2570 FC-19.8112 BSP 8794
BDE .2452 BRA .2826 BC3 3.5815 FSP 4162

MID-COURSE EXECUTION ACCURACY

SGT 2379.1 SGR 1035.0 SG3 1250.7
RRT .8473 RRF -.9496 RTF -.8889
SGB 2594.5 R23 -.2994 R13 -.9151
SG1 2543.0 SG2 514.2 THA 21.14

ORBIT DETERMINATION ACCURACY

ST 211.4 SR 376.3 SS 558.3
CRT -.7475 CRS .7049 CST -.8031
LSA 655.6 MSA 237.1 SSA 109.1
EL1 412.1 EL2 128.2 ALF 115.41

LAUNCH DATE DEC 9 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 503.657 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.170 GAL 3.09 AZL 90.11 HCA 153.83 SMA 189.23 ECC .22757 INC .1074 V1 30.239
RP 231.38 LAP -.05 LOP 230.79 VP 21.114 GAP 2.74 AZP 89.90 TAL 16.80 TAP 170.63 RCA 146.17 APO 232.29 V2 23.768
RC 222.292 GL -1.04 GP 9.88 ZAL 55.23 ZAP 139.97 ETS 166.53 ZAE 168.94 ETE 88.11 ZAC 99.92 ETC 255.63 CLP 141.00

PLANETOCENTRIC CONIC

C3 12.321 VHL 3.510 DLA 16.15 RAL 134.35 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 4.176 DPA 5.36 RAP 195.39 ECC 1.2028

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 56 20	2632.29	-27.03	69.70	353.08	98.77	13 40 12	2032.3	-25.54	61.35
90.00	5 17 38	4221.67	.74	173.19	348.22	61.69	6 28 0	3621.7	-3.05	166.56
100.00	14 26 41	2340.90	-28.18	48.05	352.86	100.40	15 5 42	1740.9	-26.46	39.67
100.00	6 29 58	3988.30	1.76	155.47	347.66	60.15	7 36 26	3388.3	-2.23	148.94
110.00	15 54 55	2064.84	-31.18	26.31	352.09	104.79	16 29 20	1464.8	-28.83	17.90
110.00	7 18 14	3837.12	4.36	142.38	346.03	56.06	8 22 11	3237.1	-.12	136.16

DIFFERENTIAL CORRECTIONS

TDE .1033 TRA -.2595 TC3 3.2367 BAU .5857
RDE -.2184 RRA .1209 RC3 1.4720 FAU .29385
FDE .4833 FRA-2.4448 FC-20.6477 BSP 8696
BDE .2416 BRA .2862 BC3 3.5558 FSP 4351

MID-COURSE EXECUTION ACCURACY

SGT 2320.8 SGR 1112.3 SG3 1304.6
RRT .8512 RRF -.9594 RTF -.8838
SGB 2573.6 R23 -.3118 R13 -.9163
SG1 2516.7 SG2 538.3 THA 23.32

ORBIT DETERMINATION ACCURACY

ST 224.9 SR 363.2 SS 554.9
CRT -.8101 CRS .6653 CST -.7756
LSA 646.1 MSA 249.6 SSA 103.5
EL1 411.0 EL2 116.5 ALF 119.22

LAUNCH DATE DEC 9 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 507.439 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.152 GAL 3.12 AZL 90.19 HCA 154.85 SMA 188.91 ECC .22641 INC .1900 V1 30.239
RP 231.01 LAP -.08 LOP 231.81 VP 21.130 GAP 2.36 AZP 89.83 TAL 17.05 TAP 171.89 RCA 146.14 APO 231.68 V2 23.807
RC 224.266 GL -1.80 GP 10.48 ZAL 54.83 ZAP 138.54 ETS 166.42 ZAE 168.26 ETE 95.36 ZAC 100.43 ETC 255.61 CLP 139.66

PLANETOCENTRIC CONIC

C3 12.290 VHL 3.506 DLA 15.53 RAL 133.71 RAD 6567.5 VEL 11.562 PTH 2.02 VHP 4.094 DPA 6.04 RAP 195.34 ECC 1.2023

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 59 39	2609.12	-26.78	68.05	352.17	99.56	13 43 8	2009.1	-25.18	59.75
90.00	5 9 15	4243.80	1.45	174.42	347.45	61.72	6 19 59	3643.8	-2.34	167.80
100.00	14 29 31	2319.30	-27.91	46.50	351.93	101.17	15 8 10	1719.3	-26.08	38.17
100.00	6 22 4	4008.85	2.45	156.59	346.89	60.20	7 28 53	3408.8	-1.53	150.07
110.00	15 56 44	2046.42	-30.85	24.98	351.13	105.51	16 30 50	1446.4	-28.41	16.63
110.00	7 11 21	3854.49	5.02	143.29	345.29	56.14	8 15 35	3254.5	.54	137.07

DIFFERENTIAL CORRECTIONS

TDE .1186 TRA -.2551 TC3 3.1458 BAU .5800
RDE -.2073 RRA .1447 RC3 1.6017 FAU .30502
FDE .4025 FRA-2.6440 FC-21.4857 BSP 8586
BDE .2388 BRA .2933 BC3 3.5301 FSP 4543

MID-COURSE EXECUTION ACCURACY

SGT 2256.0 SGR 1198.4 SG3 1359.2
RRT .8526 RRF -.9676 RTF -.8779
SGB 2554.6 R23 -.3206 R13 -.9185
SG1 2490.8 SG2 567.3 THA 25.80

ORBIT DETERMINATION ACCURACY

ST 242.5 SR 348.3 SS 553.4
CRT -.8643 CRS .6188 CST -.7177
LSA 636.7 MSA 267.8 SSA 96.0
EL1 411.7 EL2 103.2 ALF 123.41

LAUNCH DATE DEC 9 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 511.235 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.135 GAL 3.15 AZL 90.28 HCA 155.86 SMA 188.61 ECC .22532 INC .2782 V1 30.239
RP 230.62 LAP -.11 LOP 232.83 VP 21.149 GAP 1.99 AZP 89.75 TAL 17.28 TAP 173.14 RCA 146.11 APO 231.10 V2 23.847
RC 226.222 GL -2.63 GP 11.12 ZAL 54.46 ZAP 137.08 ETS 166.31 ZAE 167.36 ETE 101.89 ZAC 100.97 ETC 255.59 CLP 138.27

PLANETOCENTRIC CONIC

C3 12.266 VHL 3.502 DLA 14.83 RAL 133.09 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 4.016 DPA 6.78 RAP 195.28 ECC 1.2019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 3 33	2583.86	-26.48	66.26	351.25	100.41	13 46 36	1983.9	-24.77	58.01
90.00	5 0 24	4268.22	2.24	175.79	346.69	61.76	6 11 32	3668.2	-1.55	169.16
100.00	14 32 54	2295.72	-27.59	44.82	351.00	102.00	15 11 9	1695.7	-25.65	36.55
100.00	6 13 44	4031.60	3.22	157.84	346.15	60.27	7 20 56	3431.6	-.76	151.32
110.00	15 59 1	2026.24	-30.47	23.53	350.17	106.30	16 32 47	1426.2	-27.94	15.25
110.00	7 4 6	3873.84	5.76	144.31	344.58	56.25	8 8 40	3273.8	1.28	138.08

DIFFERENTIAL CORRECTIONS
TDE .1338 TRA -.2546 TC3 3.0409 BAU .5747
RDE -.1945 RRA .1708 RC3 1.7424 FAU .31620
FDE .3058 FRA-2.8473 FC-22.3169 BSP 8511
BDE .2361 BRA .3066 BC3 3.5047 FSP 4743

MID-COURSE EXECUTION ACCURACY
SGT 2184.2 SGR 1294.0 SG3 1414.0
RRT .8511 RRF -.9742 RTF -.8703
SGB 2538.7 R23 -.3260 R13 -.9214
SG1 2466.4 SG2 601.6 THA 28.62

ORBIT DETERMINATION ACCURACY
ST 262.2 SR 331.8 SS 555.2
CRT -.9028 CRS .5684 CST -.6352
LSA 628.5 MSA 290.4 SSA 87.9
EL1 413.1 EL2 90.6 ALF 127.62

LAUNCH DATE DEC 9 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 515.043 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.119 GAL 3.18 AZL 90.37 HCA 156.88 SMA 188.32 ECC .22429 INC .3733 V1 30.239
RP 230.24 LAP -.15 LOP 233.85 VP 21.169 GAP 1.62 AZP 89.66 TAL 17.50 TAP 174.38 RCA 146.08 APO 230.56 V2 23.887
RC 228.159 GL -3.54 GP 11.82 ZAL 54.14 ZAP 135.57 ETS 166.19 ZAE 166.25 ETE 107.62 ZAC 101.57 ETC 255.57 CLP 136.85

PLANETOCENTRIC CONIC

C3 12.250 VHL 3.500 DLA 14.06 RAL 132.48 RAD 6567.5 VEL 11.560 PTH 2.02 VHP 3.943 DPA 7.58 RAP 195.21 ECC 1.2016

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 8 3	2556.37	-26.13	64.33	350.33	101.32	13 50 39	1956.4	-24.30	56.13
90.00	4 51 2	4295.13	3.11	177.29	345.96	61.84	6 2 37	3695.1	-.68	170.66
100.00	14 36 51	2269.99	-27.21	43.00	350.07	102.88	15 14 41	1670.0	-25.16	34.60
100.00	6 4 55	4056.75	4.07	159.23	345.43	60.36	7 12 32	3456.7	.10	152.70
110.00	16 1 49	2004.15	-30.04	21.95	349.20	107.14	16 35 13	1404.2	-27.40	13.75
110.00	6 56 27	3895.35	6.57	145.44	343.88	56.38	8 1 22	3295.3	2.10	139.20

DIFFERENTIAL CORRECTIONS
TDE .1494 TRA -.2565 TC3 2.9233 BAU .5706
RDE -.1795 RRA .2000 RC3 1.8956 FAU .32738
FDE .1888 FRA-3.0601 FC-23.1377 BSP 8441
BDE .2335 BRA .3253 BC3 3.4841 FSP 4936

MID-COURSE EXECUTION ACCURACY
SGT 2105.8 SGR 1400.3 SG3 1469.0
RRT .8469 RRF -.9797 RTF -.8611
SGB 2528.9 R23 -.3266 R13 -.9255
SG1 2446.3 SG2 641.1 THA 31.83

ORBIT DETERMINATION ACCURACY
ST 283.7 SR 313.3 SS 563.0
CRT -.9291 CRS .5156 CST -.5267
LSA 623.0 MSA 318.2 SSA 79.1
EL1 415.2 EL2 79.2 ALF 131.95

LAUNCH DATE DEC 9 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 518.863 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.104 GAL 3.20 AZL 90.48 HCA 157.91 SMA 188.06 ECC .22332 INC .4784 V1 30.239
RP 229.86 LAP -.18 LOP 234.87 VP 21.191 GAP 1.26 AZP 89.56 TAL 17.70 TAP 175.60 RCA 146.06 APO 230.05 V2 23.927
RC 230.076 GL -4.52 GP 12.59 ZAL 53.86 ZAP 134.01 ETS 166.06 ZAE 164.97 ETE 112.54 ZAC 102.22 ETC 255.54 CLP 135.39

PLANETOCENTRIC CONIC

C3 12.241 VHL 3.499 DLA 13.20 RAL 131.88 RAD 6567.5 VEL 11.560 PTH 2.02 VHP 3.874 DPA 8.45 RAP 195.14 ECC 1.2015

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 13 12	2526.42	-25.71	62.23	349.40	102.29	13 55 18	1926.4	-23.76	54.11
90.00	4 41 6	4324.80	4.06	178.95	345.26	61.95	5 53 10	3724.8	.27	172.31
100.00	14 41 25	2241.91	-26.77	41.03	349.13	103.83	15 18 47	1641.9	-24.60	32.90
100.00	5 55 33	4084.54	5.01	160.76	344.73	60.49	7 3 38	3484.5	1.04	154.22
110.00	16 5 8	1979.95	-29.54	20.24	348.23	108.04	16 38 8	1380.0	-26.79	12.14
110.00	6 48 20	3919.26	7.47	146.71	343.22	56.55	7 53 39	3319.3	3.02	140.45

DIFFERENTIAL CORRECTIONS
TDE .1662 TRA -.2617 TC3 2.7919 BAU .5679
RDE -.1617 RRA .2321 RC3 2.0611 FAU .33826
FDE .0500 FRA-3.2754 FC-23.9227 BSP 8406
BDE .2319 BRA .3498 BC3 3.4703 FSP 5138

MID-COURSE EXECUTION ACCURACY
SGT 2021.1 SGR 1517.5 SG3 1522.7
RRT .8392 RRF -.9840 RTF -.8495
SGB 2527.3 R23 -.3217 R13 -.9310
SG1 2432.5 SG2 685.6 THA 35.45

ORBIT DETERMINATION ACCURACY
ST 308.2 SR 292.8 SS 578.8
CRT -.9423 CRS .4680 CST -.3962
LSA 622.9 MSA 350.5 SSA 70.0
EL1 418.9 EL2 72.1 ALF 136.55

LAUNCH DATE DEC 9 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 522.696 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.089 GAL 3.23 AZL 90.59 HCA 158.93 SMA 187.81 ECC .22240 INC .5921 V1 30.239
RP 229.47 LAP -.21 LOP 235.90 VP 21.214 GAP .91 AZP 89.45 TAL 17.88 TAP 176.81 RCA 146.04 APO 229.57 V2 23.968
RC 231.973 GL -5.60 GP 13.43 ZAL 53.62 ZAP 132.40 ETS 165.94 ZAE 163.51 ETE 116.72 ZAC 102.93 ETC 255.51 CLP 133.88

PLANETOCENTRIC CONIC

C3 12.244 VHL 3.499 DLA 12.25 RAL 131.29 RAD 6567.5 VEL 11.560 PTH 2.02 VHP 3.810 DPA 9.41 RAP 195.08 ECC 1.2015

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 19 2	2493.78	-25.22	59.97	348.46	103.32	14 0 36	1893.8	-23.14	51.92
90.00	4 30 30	4357.52	5.10	180.79	344.58	62.11	5 43 8	3757.5	1.33	174.14
100.00	14 46 39	2211.23	-26.25	38.90	348.18	104.84	15 23 30	1611.2	-23.95	30.85
100.00	5 45 35	4115.30	6.03	162.47	344.06	60.67	6 54 10	3515.3	2.08	155.91
110.00	16 9 2	1953.43	-28.97	18.39	347.24	109.00	16 41 36	1353.4	-26.10	10.38
110.00	6 39 41	3945.86	8.46	148.13	342.58	56.76	7 45 27	3345.9	4.03	141.84

DIFFERENTIAL CORRECTIONS
TDE .1825 TRA -.2703 TC3 2.6451 BAU .5675
RDE -.1405 RRA .2683 RC3 2.2414 FAU .34896
FDE -.1151 FRA-3.4997 FC-24.6749 BSP 8405
BDE .2303 BRA .3808 BC3 3.4670 FSP 5328

MID-COURSE EXECUTION ACCURACY
SGT 1928.9 SGR 1647.9 SG3 1575.7
RRT .8278 RRF -.9876 RTF -.8347
SGB 2537.0 R23 -.3103 R13 -.9380
SG1 2428.4 SG2 734.4 THA 39.59

ORBIT DETERMINATION ACCURACY
ST 332.9 SR 270.8 SS 606.8
CRT -.9368 CRS .4371 CST -.2508
LSA 633.8 MSA 383.3 SSA 61.2
EL1 422.6 EL2 74.6 ALF 141.26

LAUNCH DATE DEC 9 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 526.542 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.076 GAL 3.25 AZL 90.72 HCA 159.96 SMA 187.57 ECC .22153 INC .7177 V1 30.239
RP 229.09 LAP -.25 LOP 236.93 VP 21.239 GAP .57 AZP 89.33 TAL 18.05 TAP 178.01 RCA 146.02 APO 229.13 V2 24.009
RC 233.848 GL -6.78 GP 14.34 ZAL 53.44 ZAP 130.73 ETS 165.81 ZAE 161.89 ETE 120.25 ZAC 103.71 ETC 255.47 CLP 132.34

PLANETOCENTRIC CONIC

C3 12.259 VHL 3.501 DLA 11.18 RAL 130.69 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 3.751 DPA 10.45 RAP 195.01 ECC 1.2018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 25 37	2458.17	-24.64	57.52	347.52	104.42	14 6 35	1858.2	-22.42	49.56
90.00	4 19 11	4393.67	6.25	182.83	343.93	62.33	5 32 25	3793.7	2.50	176.16
100.00	14 52 34	2177.71	-25.64	36.59	347.21	105.91	15 28 52	1577.7	-23.21	28.64
100.00	5 34 55	4149.36	7.17	164.36	343.43	60.90	6 44 4	3549.4	3.23	157.79
110.00	16 13 32	1924.34	-28.31	16.39	346.25	110.02	16 45 37	1324.3	-25.32	8.49
110.00	6 30 26	3975.49	9.56	149.71	341.97	57.03	7 36 41	3375.5	5.16	143.40

DIFFERENTIAL CORRECTIONS
TDE .2098 TRA -.2709 TC3 2.5207 BAU .5758
RDE -.1117 RRA .3121 RC3 2.4468 FAU .36070
FDE -.3430 FRA-3.7626 FC-25.4721 BSP 8232
BDE .2377 BRA .4133 BC3 3.5129 FSP 5447

MID-COURSE EXECUTION ACCURACY
SGT 1854.2 SGR 1800.0 SG3 1634.5
RRT .8169 RRF -.9904 RTF -.8223
SGB 2584.2 R23 -.2878 R13 -.9480
SG1 2463.2 SG2 781.6 THA 43.96

ORBIT DETERMINATION ACCURACY
ST 373.0 SR 245.9 SS 659.9
CRT -.8858 CRS .4372 CST -.0450
LSA 671.3 MSA 426.4 SSA 50.5
EL1 435.9 EL2 97.6 ALF 147.92

LAUNCH DATE DEC 9 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 530.398 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.064 GAL 3.26 AZL 90.86 HCA 161.00 SMA 187.35 ECC .22072 INC .8564 V1 30.239
RP 228.70 LAP -.28 LOP 237.96 VP 21.266 GAP .23 AZP 89.19 TAL 18.20 TAP 179.20 RCA 146.00 APO 228.71 V2 24.049
RC 235.703 GL -8.09 GP 15.35 ZAL 53.31 ZAP 129.02 ETS 165.68 ZAE 160.13 ETE 123.19 ZAC 104.57 ETC 255.43 CLP 130.76

PLANETOCENTRIC CONIC

C3 12.290 VHL 3.506 DLA 9.98 RAL 130.09 RAD 6567.5 VEL 11.562 PTH 2.02 VHP 3.698 DPA 11.59 RAP 194.96 ECC 1.2023

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 33 1	2419.16	-23.95	54.87	346.56	105.58	14 13 20	1819.2	-21.58	47.00
90.00	4 7 1	4433.75	7.51	185.10	343.31	62.62	5 20 55	3833.8	3.78	178.40
100.00	14 59 17	2140.91	-24.93	34.09	346.24	107.05	15 34 58	1540.9	-22.36	26.24
100.00	5 23 26	4187.23	8.41	166.48	342.83	61.21	6 33 13	3587.2	4.51	159.87
110.00	16 18 44	1892.30	-27.54	14.21	345.24	111.10	16 50 16	1292.3	-24.42	6.43
110.00	6 20 29	4008.61	10.79	151.50	341.40	57.37	7 27 17	3408.6	6.41	145.14

DIFFERENTIAL CORRECTIONS
TDE .2225 TRA -.2903 TC3 2.3323 BAU .5808
RDE -.0811 RRA .3571 RC3 2.6559 FAU .36989
FDE -.5628 FRA-3.9861 FC-26.0552 BSP 8441
BDE .2368 BRA .4602 BC3 3.5346 FSP 5641

MID-COURSE EXECUTION ACCURACY
SGT 1743.1 SGR 1958.7 SG3 1680.6
RRT .7942 RRF -.9926 RTF -.7970
SGB 2622.0 R23 -.2628 R13 -.9573
SG1 2485.6 SG2 834.6 THA 49.19

ORBIT DETERMINATION ACCURACY
ST 394.3 SR 228.7 SS 720.5
CRT -.7890 CRS .5071 CST .0838
LSA 730.7 MSA 437.0 SSA 43.8
EL1 437.9 EL2 126.5 ALF 152.98

LAUNCH DATE DEC 9 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 534.265 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.052 GAL 3.28 AZL 91.01 HCA 162.03 SMA 187.15 ECC .21995 INC 1.0114 V1 30.239
RP 228.31 LAP -.31 LOP 239.00 VP 21.294 GAP -.10 AZP 89.04 TAL 18.33 TAP 180.37 RCA 145.99 APO 228.31 V2 24.090
RC 237.537 GL -9.55 GP 16.46 ZAL 53.25 ZAP 127.25 ETS 165.55 ZAE 158.23 ETE 125.63 ZAC 105.53 ETC 255.38 CLP 129.13

PLANETOCENTRIC CONIC

C3 12.342 VHL 3.513 DLA 8.63 RAL 129.49 RAD 6567.5 VEL 11.564 PTH 2.02 VHP 3.652 DPA 12.83 RAP 194.92 ECC 1.2031

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 41 20	2376.35	-23.14	52.00	345.59	106.80	14 20 56	1776.4	-20.62	44.23
90.00	3 53 53	4478.35	8.90	187.64	342.75	63.01	5 8 31	3878.3	5.21	180.90
100.00	15 6 52	2100.47	-24.10	31.38	345.26	108.24	15 41 53	1500.5	-21.38	23.63
100.00	5 11 2	4229.46	9.79	168.86	342.27	61.62	6 21 31	3629.5	5.92	162.21
110.00	16 24 41	1856.98	-26.65	11.85	344.22	112.24	16 55 38	1257.0	-23.40	4.19
110.00	6 9 43	4045.72	12.14	153.52	340.87	57.80	7 17 8	3445.7	7.80	147.11

DIFFERENTIAL CORRECTIONS
TDE .2352 TRA -.3121 TC3 2.1337 BAU .5916
RDE -.0436 RRA .4083 RC3 2.8817 FAU .37826
FDE -.8179 FRA-4.2137 FC-26.5327 BSP 8703
BDE .2392 BRA .5139 BC3 3.5856 FSP 5817

MID-COURSE EXECUTION ACCURACY
SGT 1630.9 SGR 2135.0 SG3 1722.9
RRT .7644 RRF -.9943 RTF -.7651
SGB 2686.6 R23 -.2299 R13 -.9674
SG1 2536.7 SG2 885.1 THA 54.81

ORBIT DETERMINATION ACCURACY
ST 416.0 SR 222.6 SS 800.7
CRT -.6019 CRS .6380 CST .2035
LSA 817.8 MSA 440.0 SSA 37.4
EL1 441.0 EL2 167.7 ALF 158.96

LAUNCH DATE DEC 9 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 538.144 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.041 GAL 3.29 AZL 91.19 HCA 163.08 SMA 186.96 ECC .21923 INC 1.1853 V1 30.239
RP 227.92 LAP -.35 LOP 240.04 VP 21.324 GAP -.43 AZP 88.87 TAL 18.45 TAP 181.53 RCA 145.97 APO 227.95 V2 24.132
RC 239.350 GL -11.17 GP 17.70 ZAL 53.26 ZAP 125.42 ETS 165.43 ZAE 156.18 ETE 127.65 ZAC 106.59 ETC 255.32 CLP 127.47

PLANETOCENTRIC CONIC

C3 12.421 VHL 3.524 DLA 7.12 RAL 128.87 RAD 6567.5 VEL 11.568 PTH 2.02 VHP 3.612 DPA 14.20 RAP 194.91 ECC 1.2044

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 50 40	2329.22	-22.18	48.88	344.61	108.07	14 29 29	1729.2	-19.50	41.23
90.00	3 39 35	4528.20	10.43	190.50	342.24	63.52	4 55 3	3928.2	6.79	183.71
100.00	15 15 25	2055.87	-23.12	28.43	344.27	109.50	15 49 41	1455.9	-20.25	20.81
100.00	4 57 31	4276.78	11.31	171.56	341.78	62.14	6 8 48	3676.8	7.49	164.84
110.00	16 31 27	1817.93	-25.62	9.28	343.19	113.44	17 1 45	1217.9	-22.23	1.77
110.00	5 57 58	4087.49	13.65	155.82	340.41	58.35	7 6 6	3487.5	9.36	149.34

DIFFERENTIAL CORRECTIONS
TDE .2488 TRA -.3366 TC3 1.9227 BAU .6093
RDE .0038 RRA .4674 RC3 3.1249 FAU .38561
FDE-1.1214 FRA-4.4470 FC-26.8760 BSP 9035
BDE .2488 BRA .5760 BC3 3.6690 FSP 5961

MID-COURSE EXECUTION ACCURACY
SGT 1518.0 SGR 2332.0 SG3 1760.7
RRT .7247 RRF -.9957 RTF -.7239
SGB 2782.6 R23 -.1910 R13 -.9772
SG1 2622.5 SG2 930.2 THA 60.71

ORBIT DETERMINATION ACCURACY
ST 438.8 SR 239.1 SS 905.8
CRT -.3131 CRS .7936 CST .3131
LSA 936.4 MSA 438.7 SSA 31.5
EL1 447.3 EL2 222.8 ALF 167.06

LAUNCH DATE DEC 9 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 542.034 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.031 GAL 3.30 AZL 91.38 HCA 164.12 SMA 186.78 ECC .21855 INC 1.3818 V1 30.239
RP 227.53 LAP -.38 LOP 241.09 VP 21.355 GAP -.75 AZP 88.67 TAL 18.55 TAP 182.67 RCA 145.96 APO 227.60 V2 24.173
RC 241.142 GL -12.98 GP 19.06 ZAL 53.37 ZAP 123.53 ETS 165.30 ZAE 154.00 ETE 129.31 ZAC 107.78 ETC 255.24 CLP 125.77

PLANETOCENTRIC CONIC

C3 12.537 VHL 3.541 DLA 5.41 RAL 128.22 RAD 6567.5 VEL 11.573 PTH 2.02 VHP 3.581 DPA 15.70 RAP 194.94 ECC 1.2063

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 1 10	2277.10	-21.04	45.48	343.63	109.41	14 39 7	1677.1	-18.20	37.96
90.00	3 23 55	4584.27	12.11	193.76	341.80	64.21	4 40 19	3984.3	8.54	186.90
100.00	15 25 4	2006.50	-21.96	25.22	343.27	110.81	15 58 31	1406.5	-18.93	17.73
100.00	4 42 42	4330.11	12.99	174.63	341.35	62.84	5 54 52	3730.1	9.24	167.84
110.00	16 39 10	1774.60	-24.42	6.49	342.15	114.70	17 8 45	1174.6	-20.88	359.13
110.00	5 45 5	4134.77	15.32	158.47	340.02	59.06	6 54 0	3534.8	11.10	151.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2600 TRA -.3654 TC3 1.6984 BAU .6348 SGT 1405.8 SGR 2552.3 SG3 1792.2 ST 458.3 SR 289.3 SS 1034.8
RDE .0627 RRA .5356 RC3 3.3850 FAU .39161 RRT .6713 RRF -.9967 RTF -.6692 CRT -.0096 CRS .9080 CST .4003
FDE-1.4682 FRA-4.6811 FC-27.0424 BSP 9486 SGB 2913.9 R23 -.1497 R13 -.9854 LSA 1084.3 MSA 433.8 SSA 26.3
BDE .2675 BRA .6484 BC3 3.7872 FSP 6078 SG1 2748.6 SG2 967.6 THA 66.64 EL1 458.4 EL2 289.2 ALF 179.42

LAUNCH DATE DEC 9 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 545.934 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.021 GAL 3.30 AZL 91.61 HCA 165.17 SMA 186.62 ECC .21791 INC 1.6066 V1 30.239
RP 227.14 LAP -.41 LOP 242.14 VP 21.387 GAP -1.06 AZP 88.45 TAL 18.64 TAP 183.80 RCA 145.95 APO 227.28 V2 24.214
RC 242.914 GL -15.03 GP 20.59 ZAL 53.58 ZAP 121.58 ETS 165.19 ZAE 151.66 ETE 130.64 ZAC 109.12 ETC 255.15 CLP 124.02

PLANETOCENTRIC CONIC

C3 12.702 VHL 3.564 DLA 3.47 RAL 127.54 RAD 6567.5 VEL 11.580 PTH 2.03 VHP 3.560 DPA 17.37 RAP 195.01 ECC 1.2090

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 13 3	2219.17	-19.68	41.77	342.66	110.78	14 50 2	1619.2	-16.68	34.38
90.00	3 6 35	4647.78	13.96	197.51	341.47	65.11	4 24 2	4047.8	10.49	190.55
100.00	15 36 1	1951.57	-20.59	21.71	342.28	112.16	16 8 32	1351.6	-17.40	14.37
100.00	4 26 18	4390.61	14.84	178.16	341.03	63.75	5 39 28	3790.6	11.19	171.27
110.00	16 47 59	1726.32	-23.01	3.45	341.11	116.01	17 16 45	1126.3	-19.32	356.25
110.00	5 30 49	4188.62	17.18	161.53	339.73	59.98	6 40 38	3588.6	13.06	154.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2700 TRA -.3981 TC3 1.4614 BAU .6686 SGT 1298.0 SGR 2796.0 SG3 1813.0 ST 475.8 SR 377.2 SS 1187.0
RDE .1364 RRA .6142 RC3 3.6560 FAU .39538 RRT .5995 RRF -.9976 RTF -.5963 CRT .2260 CRS .9647 CST .4684
FDE-1.8602 FRA-4.9055 FC-26.9485 BSP 10073 SGB 3082.6 R23 -.1099 R13 -.9915 LSA 1262.3 MSA 428.5 SSA 21.8
BDE .3025 BRA .7320 BC3 3.9373 FSP 6167 SG1 2917.4 SG2 995.7 THA 72.32 EL1 492.7 EL2 354.9 ALF 21.98

LAUNCH DATE DEC 9 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 549.845 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.012 GAL 3.31 AZL 91.87 HCA 166.22 SMA 186.46 ECC .21731 INC 1.8652 V1 30.239
RP 226.75 LAP -.44 LOP 243.19 VP 21.420 GAP -1.36 AZP 88.19 TAL 18.70 TAP 184.92 RCA 145.94 APO 226.98 V2 24.256
RC 244.666 GL -17.36 GP 22.31 ZAL 53.92 ZAP 119.57 ETS 165.09 ZAE 149.17 ETE 131.71 ZAC 110.62 ETC 255.03 CLP 122.23

PLANETOCENTRIC CONIC

C3 12.934 VHL 3.596 DLA 1.26 RAL 126.80 RAD 6567.5 VEL 11.590 PTH 2.03 VHP 3.550 DPA 19.21 RAP 195.16 ECC 1.2129

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 26 34	2154.39	-18.06	37.71	341.71	112.18	15 2 28	1554.4	-14.90	30.46
90.00	2 47 12	4720.34	15.99	201.87	341.27	66.32	4 5 52	4120.3	12.65	194.78
100.00	15 48 29	1890.12	-18.96	17.87	341.31	113.55	16 20 0	1290.1	-15.62	10.68
100.00	4 7 57	4459.84	16.88	182.29	340.85	64.96	5 22 17	3859.8	13.36	175.26
110.00	16 58 5	1672.30	-21.36	.12	340.10	117.35	17 25 57	1072.3	-17.52	353.09
110.00	5 14 51	4250.41	19.24	165.13	339.59	61.19	6 25 42	3650.4	15.25	158.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2771 TRA -.4358 TC3 1.2140 BAU .7128 SGT 1199.8 SGR 3071.5 SG3 1824.1 ST 488.8 SR 507.0 SS 1367.4
RDE .2311 RRA .7073 RC3 3.9392 FAU .39705 RRT .5031 RRF -.9982 RTF -.4991 CRT .3804 CRS .9875 CST .5178
FDE-2.3094 FRA-5.1273 FC-26.5764 BSP 10785 SGB 3297.5 R23 -.0746 R13 -.9954 LSA 1478.7 MSA 422.7 SSA 17.9
BDE .3608 BRA .8308 BC3 4.1220 FSP 6196 SG1 3137.3 SG2 1015.2 THA 77.56 EL1 585.4 EL2 391.5 ALF 47.75

LAUNCH DATE DEC 9 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 553.766 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.004 GAL 3.31 AZL 92.17 HCA 167.27 SMA 186.32 ECC .21674 INC 2.1671 V1 30.239
RP 226.36 LAP -.48 LOP 244.24 VP 21.455 GAP -1.66 AZP 87.89 TAL 18.76 TAP 186.03 RCA 145.94 APO 226.71 V2 24.297
RC 246.398 GL -20.01 GP 24.24 ZAL 54.42 ZAP 117.48 ETS 165.00 ZAE 146.50 ETE 132.53 ZAC 112.33 ETC 254.89 CLP 120.40

PLANETOCENTRIC CONIC

C3 13.261 VHL 3.642 DLA -1.27 RAL 126.00 RAD 6567.5 VEL 11.604 PTH 2.03 VHP 3.554 DPA 21.25 RAP 195.39 ECC 1.2182

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 42 6	2081.40	-16.13	33.22	340.82	113.59	15 16 47	1481.4	-12.80	26.12
90.00	2 25 15	4804.12	18.21	207.01	341.27	67.93	3 45 19	4204.1	15.06	199.76
100.00	16 2 51	1820.91	-17.03	13.64	340.39	114.95	16 33 12	1220.9	-13.52	6.61
100.00	3 47 11	4539.84	19.12	187.18	340.87	66.57	5 2 50	3939.8	15.78	179.97
110.00	17 9 44	1611.53	-19.41	356.48	339.12	118.70	17 36 36	1011.5	-15.43	349.62
110.00	4 56 47	4321.99	21.53	169.42	339.65	62.79	6 8 49	3722.0	17.72	162.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2776 TRA -.4808 TC3 .9507 BAU .7664 SGT 1114.8 SGR 3374.0 SG3 1816.9 ST 492.7 SR 677.9 SS 1564.2
RDE .3497 RRA .8158 RC3 4.2170 FAU .39499 RRT .3710 RRF -.9986 RTF -.3662 CRT .4636 CRS .9956 CST .5422
FDE-2.7928 FRA-5.3232 FC-25.7860 BSP 11709 SGB 3553.4 R23 -.0453 R13 -.9976 LSA 1724.9 MSA 416.5 SSA 14.7
BDE .4465 BRA .9469 BC3 4.3228 FSP 6194 SG1 3401.8 SG2 1026.7 THA 82.31 EL1 735.0 EL2 402.7 ALF 62.50

LAUNCH DATE DEC 9 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 557.698 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	32.997	GAL	3.31	AZL	92.52	HCA	168.33	SMA	186.19	ECC	.21621	INC	2.5236
RP	225.97	LAP	-.51	LOP	245.30	VP	21.491	GAP	-1.95	AZP	87.53	TAL	18.79	TAP	187.12	RCA	145.94	APO	226.45
RC	248.110	GL	-23.05	GP	26.42	ZAL	55.13	ZAP	115.32	ETS	164.94	ZAE	143.64	ETE	133.15	ZAC	114.28	ETC	254.70

V1	30.239	V2	24.339	CLP	118.53														

PLANETOCENTRIC CONIC

C3	13.725	VHL	3.705	DLA	-4.18	RAL	125.10	RAD	6567.5	VEL	11.624	PTH	2.04	VHP	3.577	DPA	23.53	RAP	195.75
ECC	1.2259																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 12	1998.40	-13.80	28.24	340.02	114.97	15 33 30	1398.4	-10.33	21.29
90.00	1 59 58	4902.09	20.60	213.21	341.53	70.13	3 21 41	4302.1	17.71	205.73
100.00	16 19 35	1742.32	-14.71	8.96	339.57	116.32	16 48 37	1142.3	-11.06	2.07
100.00	3 23 17	4633.40	21.54	193.07	341.16	68.76	4 40 30	4033.4	18.46	185.63
110.00	17 23 20	1542.74	-17.11	352.47	338.23	120.05	17 49 3	942.7	-12.99	345.79
110.00	4 36 1	4405.74	24.05	174.62	339.99	64.94	5 49 27	3805.7	20.47	167.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2735	TRA	-.5324	TC3	.6835	BAU	.8324	SGT	1056.9	SGR	3715.3	SG3	1792.0	ST	490.4	SR	901.3
RDE	.5044	RRA	.9463	RC3	4.4847	FAU	.38929	RRT	.2041	RRF	-.9990	RTF	-.1987	CRT	.5034	CRS	.9985
FDE	-3.3291	FRA	-5.4967	FC	-24.5555	BSP	12782	SGB	3862.7	R23	-.0228	R13	-.9987	LSA	2017.1	MSA	411.5
BDE	.5738	BRA	1.0858	BC3	4.5365	FSP	6108	SG1	3722.1	SG2	1032.7	THA	86.40	EL1	942.7	EL2	405.1

SS	1784.7	CST	.5484	SSA	11.9	ALF	71.05										

LAUNCH DATE DEC 9 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 561.638 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	32.990	GAL	3.31	AZL	92.95	HCA	169.39	SMA	186.08	ECC	.21571	INC	2.9512
RP	225.58	LAP	-.54	LOP	246.37	VP	21.527	GAP	-2.24	AZP	87.10	TAL	18.81	TAP	188.20	RCA	145.94	APO	226.21
RC	249.803	GL	-26.56	GP	28.90	ZAL	56.09	ZAP	113.09	ETS	164.91	ZAE	140.57	ETE	133.58	ZAC	116.51	ETC	254.45

V1	30.239	V2	24.381	CLP	116.61														

PLANETOCENTRIC CONIC

C3	14.391	VHL	3.793	DLA	-7.54	RAL	124.07	RAD	6567.6	VEL	11.652	PTH	2.05	VHP	3.623	DPA	26.08	RAP	196.27
ECC	1.2368																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 43	1902.83	-10.99	22.63	339.41	116.26	15 53 26	1302.8	-7.37	15.82
90.00	1 30 16	5018.49	23.10	220.83	342.19	73.15	2 53 54	4418.5	20.57	213.06
100.00	16 39 26	1652.10	-11.92	3.71	338.93	117.62	17 6 58	1052.1	-8.13	356.97
100.00	2 55 14	4744.46	24.10	200.33	341.85	71.76	4 14 18	4144.5	21.38	192.58
110.00	17 39 25	1464.32	-14.39	348.03	337.50	121.35	18 3 49	864.3	-10.13	341.51
110.00	4 11 45	4505.01	26.76	181.06	340.77	67.89	5 26 50	3905.0	23.52	173.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2579	TRA	-.5955	TC3	.4062	BAU	.9111	SGT	1034.3	SGR	4097.0	SG3	1743.2	ST	475.3	SR	1184.8
RDE	.7060	RRA	1.1051	RC3	4.7181	FAU	.37869	RRT	-.0021	RRF	-.9993	RTF	.0080	CRT	.4953	CRS	.9995
FDE	-3.8976	FRA	-5.6338	FC	-22.7820	BSP	14048	SGB	4225.5	R23	-.0058	R13	-.9993	LSA	2353.1	MSA	406.4
BDE	.7517	BRA	1.2553	BC3	4.7355	FSP	5938	SG1	4097.0	SG2	1034.3	THA	90.03	EL1	1211.0	EL2	404.0

SS	2018.1	CST	.5212	SSA	9.6	ALF	77.33										

LAUNCH DATE DEC 9 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 565.587 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	32.984	GAL	3.30	AZL	93.48	HCA	170.45	SMA	185.97	ECC	.21525	INC	3.4755
RP	225.19	LAP	-.58	LOP	247.43	VP	21.565	GAP	-2.52	AZP	86.57	TAL	18.82	TAP	189.27	RCA	145.94	APO	226.00
RC	251.477	GL	-30.62	GP	31.73	ZAL	57.38	ZAP	110.77	ETS	164.94	ZAE	137.26	ETE	133.87	ZAC	119.06	ETC	254.12

V1	30.239	V2	24.423	CLP	114.64														

PLANETOCENTRIC CONIC

C3	15.364	VHL	3.920	DLA	-11.42	RAL	122.87	RAD	6567.6	VEL	11.694	PTH	2.06	VHP	3.702	DPA	28.95	RAP	197.00
ECC	1.2529																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 5	1790.72	-7.54	16.20	339.12	117.37	16 17 55	1190.7	-3.81	9.50
90.00	0 54 19	5159.84	25.56	230.45	343.39	77.37	2 20 18	4559.8	23.56	222.35
100.00	17 3 39	1546.89	-8.53	357.74	338.58	118.76	17 29 26	946.9	-4.63	351.12
100.00	2 21 25	4878.90	26.65	209.50	343.10	75.94	3 42 44	4278.9	24.45	201.39
110.00	17 58 51	1374.04	-11.13	343.06	337.02	122.53	18 21 45	774.0	-6.76	336.69
110.00	3 42 43	4624.52	29.55	189.23	342.16	71.98	4 59 47	4024.5	26.81	181.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2331	TRA	-.6689	TC3	.1389	BAU	1.0008	SGT	1059.7	SGR	4505.3	SG3	1658.1	ST	453.5	SR	1530.7
RDE	.9662	RRA	1.2945	RC3	4.8701	FAU	.36084	RRT	-.2155	RRF	-.9994	RTF	.2215	CRT	.4440	CRS	.9998
FDE	-4.4517	FRA	-5.6860	FC	-20.3325	BSP	15650	SGB	4628.2	R23	.0059	R13	-.9994	LSA	2720.9	MSA	403.4
BDE	.9939	BRA	1.4571	BC3	4.8721	FSP	5717	SG1	4511.4	SG2	1033.4	THA	93.06	EL1	1544.9	EL2	402.6

SS	2239.9	CST	.4589	SSA	7.7	ALF	81.96										

LAUNCH DATE DEC 9 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 569.546 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	32.978	GAL	3.29	AZL	94.13	HCA	171.52	SMA	185.87	ECC	.21481	INC	4.1313
RP	224.80	LAP	-.61	LOP	248.50	VP	21.604	GAP	-2.80	AZP	85.91	TAL	18.81	TAP	190.33	RCA	145.94	APO	225.80
RC	253.132	GL	-35.33	GP	34.98	ZAL	59.07	ZAP	108.37	ETS	165.04	ZAE	133.67	ETE	134.05	ZAC	122.00	ETC	253.67

V1	30.239	V2	24.465	CLP	112.62														

PLANETOCENTRIC CONIC

C3	16.829	VHL	4.102	DLA	-15.93	RAL	121.42	RAD	6567.7	VEL	11.756	PTH	2.08	VHP	3.826	DPA	32.17	RAP	198.02
ECC	1.2770																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 21 59	1654.83	-3.22	8.54	339.40	118.15	16 49 34	1054.8	.56	1.91
90.00	0 8 50	5337.18	27.59	243.02	345.30	83.35	1 37 47	4737.2	26.38	234.56
100.00	17 34 29	1420.88	-4.35	350.73	338.78	119.60	17 58 10	820.9	-.37	344.19
100.00	1 39 1	5046.36	28.86	221.44	345.12	81.84	3 3 7	4446.4	27.43	212.93
110.00	18 23 7	1268.55	-7.22	337.40	337.01	123.50	18 44 16	668.6	-2.76	331.15
110.00	3 6 52	4771.45	32.17	199.87	344.42	77.77	4 26 24	4171.4	30.15	191.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1998	TRA	-.7515	TC3	-.0960	BAU	1.1150	SGT	1129.3	SGR	5007.1	SG3	1553.5	ST	430.2	SR	1985.0
RDE	1.3335	RRA	1.5511	RC3	4.9549	FAU	.33881	RRT	-.3996	RRF	-.9996	RTF	.4055	CRT	.3491	CRS	1.0000
FDE	-5.0470	FRA	-5.7242	FC	-17.4292	BSP	17034	SGB	5132.9	R23	.0127	R13	-.9995	LSA	3176.8	MSA	402.1
BDE	1.3484	BRA	1.7236	BC3	4.9558	FSP	5227	SG1	5028.3	SG2	1030.9	THA	95.38	EL1	1990.9	EL2	402.0

SS	2475.6	CST	.3567	SSA	6.1	ALF	85.49										

LAUNCH DATE DEC 9 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 573.512 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 32.973 GAL 3.29 AZL 94.98 HCA 172.59 SMA 185.78 ECC .21441 INC 4.9776 V1 30.239
RP 224.41 LAP -.64 LOP 249.58 VP 21.643 GAP -3.07 AZP 85.06 TAL 18.79 TAP 191.38 RCA 145.95 APO 225.61 V2 24.506
RC 254.766 GL -40.80 GP 38.69 ZAL 61.24 ZAP 105.88 ETS 165.25 ZAE 129.78 ETE 134.17 ZAC 125.37 ETC 253.07 CLP 110.53

PLANETOCENTRIC CONIC

C3 19.116 VHL 4.372 DLA -21.13 RAL 119.61 RAD 6567.8 VEL 11.853 PTH 2.10 VHP 4.017 DPA 35.79 RAP 199.43 ECC 1.3146

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 3	1477.08	2.51	358.63	340.79	118.21	17 34 40	877.1	6.26	351.96
90.00	23 2 26	5574.30	28.25	260.30	347.91	91.96	24 35 20	4974.3	28.23	251.64
100.00	18 17 6	1260.70	1.08	341.93	339.99	119.87	18 38 7	660.7	5.04	335.39
100.00	0 42 0	5265.92	29.89	237.65	347.95	90.29	2 9 46	4665.9	29.61	228.86
110.00	18 55 11	1141.35	-2.39	330.71	337.82	124.11	19 14 12	541.4	2.10	324.51
110.00	2 20 25	4958.02	33.98	214.11	347.80	86.00	3 43 3	4358.0	33.05	205.00

DIFFERENTIAL CORRECTIONS
TDE .1439 TRA -.8584 TC3 -.3058 BAU 1.2458
RDE 1.8223 RRA 1.8751 RC3 4.8650 FAU .30728
FDE-5.5153 FRA-5.6200 FC-13.9161 BSP 18697
BDE 1.8279 BRA 2.0623 BC3 4.8746 FSP 4643

MID-COURSE EXECUTION ACCURACY
SGT 1249.6 SGR 5544.4 SG3 1400.3
RRT -.5578 RRF -.9997 RTF .5636
SGB 5683.5 R23 .0167 R13 -.9996
SG1 5589.6 SG2 1028.8 THA 97.42

ORBIT DETERMINATION ACCURACY
ST 408.1 SR 2518.6 SS 2642.8
CRT .1588 CRS 1.0000 CST .1618
LSA 3651.3 MSA 402.8 SSA 4.8
EL1 2519.5 EL2 402.7 ALF 88.49

LAUNCH DATE DEC 9 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 577.485 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 32.968 GAL 3.28 AZL 96.11 HCA 173.66 SMA 185.70 ECC .21403 INC 6.1127 V1 30.239
RP 224.02 LAP -.67 LOP 250.66 VP 21.684 GAP -3.33 AZP 83.92 TAL 18.76 TAP 192.42 RCA 145.95 APO 225.45 V2 24.548
RC 256.380 GL -47.12 GP 42.92 ZAL 63.99 ZAP 103.33 ETS 165.62 ZAE 125.55 ETE 134.30 ZAC 129.22 ETC 252.23 CLP 108.35

PLANETOCENTRIC CONIC

C3 22.874 VHL 4.783 DLA -27.11 RAL 117.28 RAD 6567.9 VEL 12.011 PTH 2.14 VHP 4.313 DPA 39.82 RAP 201.36 ECC 1.3764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 24	1161.56	12.34	340.66	345.15	115.69	19 3 46	561.6	15.69	333.59
90.00	21 9 27	687.85	24.00	310.88	349.75	105.50	21 20 55	87.9	25.89	302.72
100.00	19 30 20	1013.19	9.34	328.20	343.59	118.52	19 47 13	413.2	13.08	321.41
100.00	23 6 12	5599.50	27.26	262.00	350.66	102.77	24 39 32	4999.5	28.74	253.51
110.00	19 42 38	974.57	3.98	322.01	340.32	123.98	19 58 52	374.6	8.41	315.73
110.00	1 14 20	5210.88	33.43	233.77	351.95	97.58	2 41 10	4610.9	34.12	224.60

DIFFERENTIAL CORRECTIONS
TDE .0672 TRA -.9929 TC3 -.4584 BAU 1.3888
RDE 2.4739 RRA 2.2851 RC3 4.5182 FAU .26400
FDE-5.7273 FRA-5.2999 FC3-9.9920 BSP 20968
BDE 2.4748 BRA 2.4915 BC3 4.5414 FSP 4004

MID-COURSE EXECUTION ACCURACY
SGT 1408.8 SGR 6076.2 SG3 1188.8
RRT -.6737 RRF -.9997 RTF .6795
SGB 6237.3 R23 .0187 R13 -.9996
SG1 6152.0 SG2 1028.3 THA 99.13

ORBIT DETERMINATION ACCURACY
ST 409.1 SR 3106.7 SS 2680.5
CRT -.1047 CRS 1.0000 CST -.1051
LSA 4103.5 MSA 406.8 SSA 3.8
EL1 3107.0 EL2 406.8 ALF 90.80

LAUNCH DATE DEC 9 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 581.461 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 32.964 GAL 3.26 AZL 97.71 HCA 174.73 SMA 185.63 ECC .21369 INC 7.7108 V1 30.239
RP 223.63 LAP -.71 LOP 251.74 VP 21.725 GAP -3.59 AZP 82.32 TAL 18.72 TAP 193.44 RCA 145.96 APO 225.29 V2 24.590
RC 257.974 GL -54.39 GP 47.68 ZAL 67.37 ZAP 100.72 ETS 166.25 ZAE 120.98 ETE 134.56 ZAC 133.53 ETC 251.06 CLP 106.03

PLANETOCENTRIC CONIC

C3 29.504 VHL 5.432 DLA -33.88 RAL 114.10 RAD 6568.2 VEL 12.283 PTH 2.21 VHP 4.784 DPA 44.24 RAP 203.99 ECC 1.4856

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.57	17 18 2	1453.37	20.35	6.49	350.55	117.69	17 42 15	853.4	23.89	359.16
109.43	22 10 29	5809.94	20.36	274.99	350.56	117.68	23 47 19	5209.9	23.90	267.66
70.57	17 18 2	1453.37	20.35	6.49	350.55	117.69	17 42 15	853.4	23.89	359.16
109.43	22 10 29	5809.94	20.36	274.99	350.56	117.68	23 47 19	5209.9	23.90	267.66
110.00	21 39 27	616.63	17.05	302.53	348.63	120.08	21 49 44	16.6	20.92	295.54
110.00	22 48 14	5694.68	23.73	267.82	352.37	115.35	24 23 8	5094.7	26.95	260.13

DIFFERENTIAL CORRECTIONS
TDE -.0384 TRA-1.1752 TC3 -.5403 BAU 1.5698
RDE 3.3968 RRA 2.8703 RC3 3.9430 FAU .21306
FDE-5.6008 FRA-4.7897 FC3-6.2518 BSP 23026
BDE 3.3970 BRA 3.1016 BC3 3.9798 FSP 3133

MID-COURSE EXECUTION ACCURACY
SGT 1604.9 SGR 6669.9 SG3 938.8
RRT -.7571 RRF -.9997 RTF .7634
SGB 6860.2 R23 .0185 R13 -.9996
SG1 6782.3 SG2 1031.0 THA 100.57

ORBIT DETERMINATION ACCURACY
ST 450.1 SR 3748.6 SS 2557.1
CRT -.3778 CRS 1.0000 CST -.3809
LSA 4540.9 MSA 416.3 SSA 3.1
EL1 3752.5 EL2 416.3 ALF 92.63

LAUNCH DATE DEC 9 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 626.253 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 32.947 GAL 2.90 AZL 81.35 HCA 187.01 SMA 185.33 ECC .21095 INC 8.6458 V1 30.239
RP 219.44 LAP -1.05 LOP 263.89 VP 22.215 GAP -6.02 AZP 98.58 TAL 16.80 TAP 203.80 RCA 146.24 APO 224.43 V2 25.047
RC 274.220 GL 59.05 GP -41.81 ZAL 70.95 ZAP 87.40 ETS 176.42 ZAE 112.19 ETE 198.92 ZAC 45.04 ETC 251.81 CLP 86.51

PLANETOCENTRIC CONIC

C3 33.263 VHL 5.767 DLA 71.63 RAL 174.04 RAD 6568.3 VEL 12.435 PTH 2.25 VHP 4.073 DPA -32.52 RAP 152.95 ECC 1.5474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
12.63	9 45 4	4342.80	-49.97	241.74	124.32	17.42	10 57 26	3742.8	-57.53	237.70
12.63	2 35 56	4775.59	-21.40	249.03	25.84	11.93	3 55 32	4175.6	-29.21	247.55
20.98	6 27 27	4543.26	-34.43	237.01	70.89	22.46	7 43 11	3943.3	-41.75	233.34
159.02	17 3 9	2780.35	-34.42	85.00	70.87	22.46	17 49 30	2180.3	-41.75	81.33
20.98	6 27 27	4543.26	-34.43	237.01	70.89	22.46	7 43 11	3943.3	-41.75	233.34
159.02	17 3 9	2780.35	-34.42	85.00	70.87	22.46	17 49 30	2180.3	-41.75	81.33

DIFFERENTIAL CORRECTIONS
TDE 4.3056 TRA .1707 TC3-2.1349 BAU 1.7029
RDE 4.3876 RRA .6535 RC3-3.1789 FAU .31428
FDE10.6273 FRA 1.5857 FC3-8.1796 BSP 26070
BDE 6.1473 BRA .6755 BC3 3.8293 FSP 4548

MID-COURSE EXECUTION ACCURACY
SGT 4964.8 SGR 6057.1 SG3 1297.3
RRT .9571 RRF .9996 RTF .9535
SGB 7831.8 R23 .1280 R13 .9914
SG1 7750.7 SG2 1124.2 THA 50.91

ORBIT DETERMINATION ACCURACY
ST 4281.1 SR 4403.7 SS 3753.7
CRT .9947 CRS-1.0000 CST -.9946
LSA 7189.2 MSA 356.1 SSA 4.4
EL1 6133.5 EL2 317.2 ALF 45.81

LAUNCH DATE DEC 9 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 630.349 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	32.947	GAL	2.86	AZL	82.33	HCA	188.13	SMA	185.34	ECC	.21083	INC	7.6650	V1	30.239
RP	219.07	LAP	-1.08	LOP	265.02	VP	22.262	GAP	-6.22	AZP	97.59	TAL	16.57	TAP	204.69	RCA	146.27	APO	224.42	V2	25.088
RC	275.589	GL	55.52	GP	-38.00	ZAL	69.57	ZAP	85.80	ETS	175.55	ZAE	111.87	ETE	196.01	ZAC	48.54	ETC	252.95	CLP	84.67

PLANETOCENTRIC CONIC

C3	28.354	VHL	5.325	DLA	68.68	RAL	167.88	RAD	6568.1	VEL	12.236	PTH	2.20	VHP	3.812	DPA	-28.90	RAP	154.49	ECC	1.4666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
24.39	6 10 14	4494.04	-36.15	231.97	61.32	26.76	7 25 8	3894.0	-43.20	227.45
155.61	16 31 18	2749.40	-36.14	83.55	61.31	26.76	17 17 7	2149.4	-43.19	79.03
24.39	6 10 14	4494.04	-36.15	231.97	61.32	26.76	7 25 8	3894.0	-43.20	227.45
155.61	16 31 18	2749.40	-36.14	83.55	61.31	26.76	17 17 7	2149.4	-43.19	79.03
24.39	6 10 14	4494.04	-36.15	231.97	61.32	26.76	7 25 8	3894.0	-43.20	227.45
155.61	16 31 18	2749.40	-36.14	83.55	61.31	26.76	17 17 7	2149.4	-43.19	79.03

DIFFERENTIAL CORRECTIONS

TDE	4.0944	TRA	.0374	TC3	-2.6077	BAU	1.6097
RDE	3.7739	RRA	.4702	RC3	-3.3515	FAU	.35630
FDE	11.5123	FRA	1.4217	FC	-10.8788	BSP	25336
BDE	5.5683	BRA	.4717	BC3	4.2465	FSP	5285

MID-COURSE EXECUTION ACCURACY

SGT	5209.0	SGR	5582.6	SG3	1509.8		
RRT	.9614	RRF	.9995	RTF	.9581		
SGB	7635.4	R23	.1392	R13	.9898		
SG1	7561.7	SG2	1058.7	THA	47.06		

ORBIT DETERMINATION ACCURACY

ST	4406.5	SR	4083.5	SS	4102.6
CRT	.9955	CRS	-1.0000	CST	-.9955
LSA	7267.3	MSA	332.2	SSA	5.1
EL1	6000.9	EL2	284.9	ALF	42.81

LAUNCH DATE DEC 9 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 634.457 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	32.948	GAL	2.82	AZL	83.08	HCA	189.25	SMA	185.36	ECC	.21073	INC	6.9188	V1	30.239
RP	218.70	LAP	-1.11	LOP	266.15	VP	22.309	GAP	-6.41	AZP	96.83	TAL	16.32	TAP	205.57	RCA	146.30	APO	224.42	V2	25.128
RC	276.940	GL	52.48	GP	-34.66	ZAL	68.47	ZAP	84.11	ETS	174.81	ZAE	111.15	ETE	193.42	ZAC	51.60	ETC	253.80	CLP	82.83

PLANETOCENTRIC CONIC

C3	24.984	VHL	4.998	DLA	65.99	RAL	163.87	RAD	6568.0	VEL	12.098	PTH	2.17	VHP	3.634	DPA	-25.67	RAP	155.64	ECC	1.4112

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
27.53	6 1 11	4452.74	-37.19	227.22	54.13	30.71	7 15 24	3852.7	-43.94	221.97
152.47	16 8 20	2727.92	-37.18	82.20	54.11	30.71	16 53 48	2127.9	-43.93	76.96
27.53	6 1 11	4452.74	-37.19	227.22	54.13	30.71	7 15 24	3852.7	-43.94	221.97
152.47	16 8 20	2727.92	-37.18	82.20	54.11	30.71	16 53 48	2127.9	-43.93	76.96
27.53	6 1 11	4452.74	-37.19	227.22	54.13	30.71	7 15 24	3852.7	-43.94	221.97
152.47	16 8 20	2727.92	-37.18	82.20	54.11	30.71	16 53 48	2127.9	-43.93	76.96

DIFFERENTIAL CORRECTIONS

TDE	3.9186	TRA	-.0605	TC3	-3.0873	BAU	1.5422
RDE	3.2306	RRA	.3465	RC3	-3.4333	FAU	.38931
FDE	11.8766	FRA	1.2453	FC	-13.4900	BSP	24941
BDE	5.0786	BRA	.3517	BC3	4.6172	FSP	5892

MID-COURSE EXECUTION ACCURACY

SGT	5452.6	SGR	5142.6	SG3	1683.2		
RRT	.9650	RRF	.9994	RTF	.9619		
SGB	7495.1	R23	.1498	R13	.9882		
SG1	7429.6	SG2	989.2	THA	43.26		

ORBIT DETERMINATION ACCURACY

ST	4493.0	SR	3716.2	SS	4289.6
CRT	.9959	CRS	-1.0000	CST	-.9960
LSA	7231.8	MSA	315.7	SSA	5.9
EL1	5825.0	EL2	259.2	ALF	39.57

LAUNCH DATE DEC 9 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 638.576 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	32.949	GAL	2.77	AZL	83.67	HCA	190.38	SMA	185.38	ECC	.21064	INC	6.3315	V1	30.239
RP	218.34	LAP	-1.14	LOP	267.28	VP	22.356	GAP	-6.59	AZP	96.23	TAL	16.05	TAP	206.43	RCA	146.33	APO	224.43	V2	25.168
RC	278.273	GL	49.85	GP	-31.74	ZAL	67.63	ZAP	82.37	ETS	174.21	ZAE	110.12	ETE	191.15	ZAC	54.28	ETC	254.47	CLP	81.01

PLANETOCENTRIC CONIC

C3	22.548	VHL	4.748	DLA	63.57	RAL	161.14	RAD	6567.9	VEL	11.997	PTH	2.14	VHP	3.511	DPA	-22.80	RAP	156.50	ECC	1.3711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.37	5 56 53	4417.33	-37.76	222.83	48.52	34.26	7 10 30	3817.3	-44.21	216.97
149.63	15 50 53	2713.16	-37.75	81.03	48.50	34.25	16 36 6	2113.2	-44.20	75.17
30.37	5 56 53	4417.33	-37.76	222.83	48.52	34.26	7 10 30	3817.3	-44.21	216.97
149.63	15 50 53	2713.16	-37.75	81.03	48.50	34.25	16 36 6	2113.2	-44.20	75.17
30.37	5 56 53	4417.33	-37.76	222.83	48.52	34.26	7 10 30	3817.3	-44.21	216.97
149.63	15 50 53	2713.16	-37.75	81.03	48.50	34.25	16 36 6	2113.2	-44.20	75.17

DIFFERENTIAL CORRECTIONS

TDE	3.7757	TRA	-.1416	TC3	-3.5818	BAU	1.4999
RDE	2.7754	RRA	.2589	RC3	-3.4538	FAU	.41528
FDE	11.9071	FRA	1.0653	FC	-15.9446	BSP	24645
BDE	4.6860	BRA	.2951	BC3	4.9757	FSP	6350

MID-COURSE EXECUTION ACCURACY

SGT	5698.6	SGR	4739.8	SG3	1820.7		
RRT	.9680	RRF	.9993	RTF	.9648		
SGB	7412.1	R23	.1596	R13	.9865		
SG1	7354.5	SG2	922.3	THA	39.58		

ORBIT DETERMINATION ACCURACY

ST	4558.4	SR	3356.9	SS	4368.8
CRT	.9961	CRS	-1.0000	CST	-.9963
LSA	7144.2	MSA	304.9	SSA	6.6
EL1	5656.0	EL2	238.6	ALF	36.34

LAUNCH DATE DEC 9 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 642.704 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	32.951	GAL	2.72	AZL	84.14	HCA	191.52	SMA	185.41	ECC	.21056	INC	5.8572	V1	30.239
RP	217.98	LAP	-1.17	LOP	268.42	VP	22.403	GAP	-6.77	AZP	95.74	TAL	15.77	TAP	207.29	RCA	146.37	APO	224.45	V2	25.208
RC	279.589	GL	47.56	GP	-29.18	ZAL	66.98	ZAP	80.61	ETS	173.71	ZAE	108.88	ETE	189.17	ZAC	56.63	ETC	254.99	CLP	79.23

PLANETOCENTRIC CONIC

C3	20.714	VHL	4.551	DLA	61.40	RAL	159.24	RAD	6567.8	VEL	11.920	PTH	2.12	VHP	3.426	DPA	-20.25	RAP	157.15	ECC	1.3409

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
32.94	5 55 28	4386.33	-38.00	218.83	44.03	37.41	7 8 34	3786.3	-44.17	212.48
147.06	15 37 5	2703.22	-37.99	80.04	44.02	37.40	16 22 9	2103.2	-44.16	73.69
32.94	5 55 28	4386.33	-38.00	218.83	44.03	37.41	7 8 34	3786.3	-44.17	212.48
147.06	15 37 5	2703.22	-37.99	80.04	44.02	37.40	16 22 9	2103.2	-44.16	73.69
32.94	5 55 28	4386.33	-38.00	218.83	44.03	37.41	7 8 34	3786.3	-44.17	212.48
147.06	15 37 5	2703.22	-37.99	80.04	44.02	37.40	16 22 9	2103.2	-44.16	73.69

DIFFERENTIAL CORRECTIONS

TDE	3.6712	TRA	-.2006	TC3	-4.0702	BAU	1.4709
RDE	2.4065	RRA	.2044	RC3	-3.4125	FAU	.43318
FDE	11.7601	FRA	.9366	FC	-18.1045	BSP	24764
BDE	4.3897	BRA	.2864	BC3	5.3114	FSP	6758

MID-COURSE EXECUTION ACCURACY

SGT	5946.8	SGR	4372.2	SG3	1925.8		
RRT	.9702	RRF	.9991	RTF	.9670		
SGB	7381.1	R23	.1682	R13	.9849		
SG1	7330.9	SG2	858.9	THA	36.07		

ORBIT DETERMINATION ACCURACY

ST	4625.7	SR	3035.3	SS	4389.6
CRT	.9962	CRS	-1.0000	CST	-.9964
LSA	7056.2	MSA	299.0	SSA	7.4
EL1	5528.2	EL2	222.3	ALF	33.23

LAUNCH DATE DEC 9 1964 FLIGHT TIME 296.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 646.843 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	32.953	GAL	2.67	AZL	84.53	HCA	192.66	SMA	185.44	ECC	.21050	INC	5.4655
RP	217.62	LAP	-1.20	LOP	269.57	VP	22.450	GAP	-6.95	AZP	95.33	TAL	15.47	TAP	208.13	RCA	146.40	APO	224.47
RC	280.887	GL	45.55	GP	-26.92	ZAL	66.51	ZAP	78.85	ETS	173.30	ZAE	107.48	ETE	187.47	ZAC	58.69	ETC	255.42

V1	30.239	V2	25.248	CLP	77.47														

PLANETOCENTRIC CONIC

C3	19.287	VHL	4.392	DLA	59.44	RAL	157.89	RAD	6567.8	VEL	11.860	PTH	2.10	VHP	3.367	DPA	-17.98	RAP	157.65
ECC	1.3174																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.28	5 55 57	4358.71	-38.04	215.19	40.40	40.20	7 8 35	3758.7	-43.94	208.44
144.72	15 25 53	2696.86	-38.03	79.24	40.38	40.20	16 10 50	2096.9	-43.93	72.49
35.28	5 55 57	4358.71	-38.04	215.19	40.40	40.20	7 8 35	3758.7	-43.94	208.44
144.72	15 25 53	2696.86	-38.03	79.24	40.38	40.20	16 10 50	2096.9	-43.93	72.49
35.28	5 55 57	4358.71	-38.04	215.19	40.40	40.20	7 8 35	3758.7	-43.94	208.44
144.72	15 25 53	2696.86	-38.03	79.24	40.38	40.20	16 10 50	2096.9	-43.93	72.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.5806	TRA	-.2574	TC3	-4.5786	BAU	1.4632	SGT	6199.3	SGR	4039.7	SG3	2005.0	ST	4677.1	SR	2739.0	SS	4350.0
RDE	2.0962	RRA	.1596	RC3	-3.3527	FAU	.44757	RRT	.9722	RRF	.9988	RTF	.9689	CRT	.9962	CRS	-1.0000	CST	-.9965
FDE	11.4463	FRA	.7896	FC	-20.0903	BSP	24724	SGB	7399.3	R23	.1748	R13	.9835	LSA	6943.7	MSA	293.0	SSA	8.3
BDE	4.1491	BRA	.3029	BC3	5.6748	FSP	6978	SG1	7356.3	SG2	796.8	THA	32.79	EL1	5416.2	EL2	206.7	ALF	30.31

LAUNCH DATE DEC 9 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 650.990 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	32.955	GAL	2.62	AZL	84.86	HCA	193.80	SMA	185.47	ECC	.21045	INC	5.1369
RP	217.27	LAP	-1.22	LOP	270.71	VP	22.498	GAP	-7.12	AZP	94.99	TAL	15.16	TAP	208.96	RCA	146.44	APO	224.51
RC	282.167	GL	43.79	GP	-24.93	ZAL	66.19	ZAP	77.10	ETS	172.97	ZAE	105.97	ETE	186.00	ZAC	60.50	ETC	255.76

V1	30.239	V2	25.287	CLP	75.75														

PLANETOCENTRIC CONIC

C3	18.144	VHL	4.260	DLA	57.67	RAL	156.95	RAD	6567.7	VEL	11.812	PTH	2.09	VHP	3.327	DPA	-15.95	RAP	158.03
ECC	1.2986																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.40	5 57 43	4333.73	-37.93	211.87	37.42	42.68	7 9 56	3733.7	-43.58	204.81
142.60	15 16 35	2693.14	-37.92	78.61	37.41	42.67	16 1 28	2093.1	-43.57	71.55
37.40	5 57 43	4333.73	-37.93	211.87	37.42	42.68	7 9 56	3733.7	-43.58	204.81
142.60	15 16 35	2693.14	-37.92	78.61	37.41	42.67	16 1 28	2093.1	-43.57	71.55
37.40	5 57 43	4333.73	-37.93	211.87	37.42	42.68	7 9 56	3733.7	-43.58	204.81
142.60	15 16 35	2693.14	-37.92	78.61	37.41	42.67	16 1 28	2093.1	-43.57	71.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.5145	TRA	-.2985	TC3	-5.0773	BAU	1.4639	SGT	6451.5	SGR	3738.0	SG3	2061.0	ST	4734.5	SR	2481.6	SS	4286.2
RDE	1.8424	RRA	.1313	RC3	-3.2618	FAU	.45650	RRT	.9739	RRF	.9985	RTF	.9705	CRT	.9962	CRS	-1.0000	CST	-.9966
FDE	11.0701	FRA	.6867	FC	-21.7815	BSP	24998	SGB	7456.1	R23	.1796	R13	.9823	LSA	6845.6	MSA	288.1	SSA	9.2
BDE	3.9682	BRA	.3261	BC3	6.0348	FSP	7157	SG1	7419.6	SG2	737.0	THA	29.76	EL1	5342.0	EL2	192.7	ALF	27.61

LAUNCH DATE DEC 9 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 655.147 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	32.957	GAL	2.56	AZL	85.14	HCA	194.95	SMA	185.51	ECC	.21042	INC	4.8565
RP	216.91	LAP	-1.25	LOP	271.86	VP	22.545	GAP	-7.29	AZP	94.69	TAL	14.83	TAP	209.79	RCA	146.48	APO	224.55
RC	283.431	GL	42.22	GP	-23.16	ZAL	66.00	ZAP	75.38	ETS	172.70	ZAE	104.39	ETE	184.73	ZAC	62.11	ETC	256.06

V1	30.239	V2	25.327	CLP	74.07														

PLANETOCENTRIC CONIC

C3	17.208	VHL	4.148	DLA	56.07	RAL	156.31	RAD	6567.7	VEL	11.772	PTH	2.08	VHP	3.303	DPA	-14.14	RAP	158.33
ECC	1.2832																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.35	6 0 25	4310.81	-37.72	208.84	34.97	44.88	7 12 16	3710.8	-43.14	201.52
140.65	15 8 46	2691.45	-37.71	78.13	34.96	44.87	15 53 37	2091.4	-43.13	70.81
39.35	6 0 25	4310.81	-37.72	208.84	34.97	44.88	7 12 16	3710.8	-43.14	201.52
140.65	15 8 46	2691.45	-37.71	78.13	34.96	44.87	15 53 37	2091.4	-43.13	70.81
39.35	6 0 25	4310.81	-37.72	208.84	34.97	44.88	7 12 16	3710.8	-43.14	201.52
140.65	15 8 46	2691.45	-37.71	78.13	34.96	44.87	15 53 37	2091.4	-43.13	70.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.4578	TRA	-.3351	TC3	-5.5851	BAU	1.4760	SGT	6705.8	SGR	3465.2	SG3	2098.8	ST	4784.3	SR	2254.2	SS	4199.2
RDE	1.6300	RRA	.1118	RC3	-3.1576	FAU	.46200	RRT	.9752	RRF	.9981	RTF	.9718	CRT	.9960	CRS	-1.0000	CST	-.9965
FDE	10.6398	FRA	.6069	FC	-23.2430	BSP	25275	SGB	7548.2	R23	.1828	R13	.9813	LSA	6747.0	MSA	285.5	SSA	10.1
BDE	3.8227	BRA	.3532	BC3	6.4159	FSP	7251	SG1	7517.2	SG2	683.6	THA	26.99	EL1	5285.7	EL2	181.4	ALF	25.17

LAUNCH DATE DEC 9 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 659.312 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	32.960	GAL	2.50	AZL	85.39	HCA	196.10	SMA	185.56	ECC	.21040	INC	4.6148
RP	216.57	LAP	-1.28	LOP	273.02	VP	22.592	GAP	-7.45	AZP	94.43	TAL	14.49	TAP	210.60	RCA	146.52	APO	224.60
RC	284.679	GL	40.82	GP	-21.59	ZAL	65.92	ZAP	73.69	ETS	172.48	ZAE	102.76	ETE	183.64	ZAC	63.55	ETC	256.30

V1	30.239	V2	25.365	CLP	72.42														

PLANETOCENTRIC CONIC

C3	16.425	VHL	4.053	DLA	54.60	RAL	155.90	RAD	6567.7	VEL	11.739	PTH	2.07	VHP	3.291	DPA	-12.52	RAP	158.57
ECC	1.2703																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.15	6 3 49	4289.59	-37.44	206.05	32.94	46.85	7 15 18	3689.6	-42.66	198.53
138.85	15 2 6	2691.27	-37.43	77.77	32.93	46.85	15 46 58	2091.3	-42.65	70.26
41.15	6 3 49	4289.59	-37.44	206.05	32.94	46.85	7 15 18	3689.6	-42.66	198.53
138.85	15 2 6	2691.27	-37.43	77.77	32.93	46.85	15 46 58	2091.3	-42.65	70.26
41.15	6 3 49	4289.59	-37.44	206.05	32.94	46.85	7 15 18	3689.6	-42.66	198.53
138.85	15 2 6	2691.27	-37.43	77.77	32.93	46.85	15 46 58	2091.3	-42.65	70.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.4172	TRA	-.3591	TC3	-6.0811	BAU	1.4928	SGT	6957.1	SGR	3217.1	SG3	2120.2	ST	4840.3	SR	2058.0	SS	4105.1
RDE	1.4538	RRA	.1008	RC3	-3.0382	FAU	.46362	RRT	.9763	RRF	.9976	RTF	.9729	CRT	.9959	CRS	-1.0000	CST	-.9965
FDE	10.2004	FRA	.5646	FC	-24.4361	BSP	25773	SGB	7665.0	R23	.1841	R13	.9805	LSA	6666.0	MSA	283.2	SSA	11.1
BDE	3.7136	BRA	.3730	BC3	6.7978	FSP	7317	SG1	7638.7	SG2	633.5	THA	24.48	EL1	5256.9	EL2	171.0	ALF	22.98

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LAUNCH DATE  DEC  9 1964                                FLIGHT TIME 304.00                                    ARRIVAL DATE  OCT  9 1965

 HELIOCENTRIC CONIC                                     DISTANCE 663.485                                       EARTH  TO  MARS
  RL  147.33 LAL     .00 LOL  76.96 VL  32.963 GAL   2.44 AZL  85.60 HCA 197.26 SMA 185.61 ECC .21039 INC 4.4040 V1  30.239
  RP  216.22 LAP   -1.31 LOP 274.17 VP  22.640 GAP  -7.61 AZP  94.21 TAL  14.14 TAP 211.40 RCA 146.56 APO 224.66 V2  25.404
  RC 285.910 GL    39.57 GP  -20.17 ZAL  65.93 ZAP  72.03 ETS 172.31 ZAE 101.10 ETE 182.70 ZAC  64.84 ETC 256.51 CLP  70.81
 PLANETOCENTRIC CONIC
  C3  15.759 VHL   3.970 DLA  53.25 RAL 155.68 RAD 6567.6 VEL 11.711 PTH   2.06 VHP  3.288 DPA -11.05 RAP 158.76 ECC 1.2594
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     42.82     6  7 46   4269.67     -37.12     203.47      31.27      48.63    7 18 56    3669.7     -42.15     195.79
    137.18    14 56 23   2692.35     -37.11      77.53      31.26      48.62   15 41 15    2092.4     -42.14      69.85
     42.82     6  7 46   4269.67     -37.12     203.47      31.27      48.63    7 18 56    3669.7     -42.15     195.79
    137.18    14 56 23   2692.35     -37.11      77.53      31.26      48.62   15 41 15    2092.4     -42.14      69.85
     42.82     6  7 46   4269.67     -37.12     203.47      31.27      48.63    7 18 56    3669.7     -42.15     195.79
    137.18    14 56 23   2692.35     -37.11      77.53      31.26      48.62   15 41 15    2092.4     -42.14      69.85
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
  TDE 3.3836 TRA -.3765 TC3-6.5764 BAU 1.5155      SGT 7206.8 SGR 2991.2 SG3 2128.3             ST  4893.7 SR  1884.9 SS  4000.0
  RDE 1.3042 RRA  .0943 RC3-2.9138 FAU .46270      RRT  .9772 RRF  .9970 RTF  .9738             CRT  .9958 CRS -.9999 CST -.9964
  FDE 9.7441 FRA  .5423 FC-25.4184 BSP  26331      SGB 7802.8 R23  .1837 R13  .9799             LSA 6589.5 MSA  281.3 SSA   12.1
  BDE 3.6263 BRA  .3882 BC3 7.1930 FSP   7333      SG1 7780.7 SG2  588.0 THA  22.21              EL1 5241.6 EL2  161.7 ALF  21.01

LAUNCH DATE  DEC  9 1964                                FLIGHT TIME 306.00                                    ARRIVAL DATE  OCT 11 1965

 HELIOCENTRIC CONIC                                     DISTANCE 667.665                                       EARTH  TO  MARS
  RL  147.33 LAL     .00 LOL  76.96 VL  32.966 GAL   2.38 AZL  85.78 HCA 198.42 SMA 185.66 ECC .21040 INC 4.2184 V1  30.239
  RP  215.88 LAP   -1.33 LOP 275.34 VP  22.687 GAP  -7.76 AZP  94.00 TAL  13.77 TAP 212.19 RCA 146.60 APO 224.72 V2  25.442
  RC 287.127 GL    38.45 GP  -18.90 ZAL  66.03 ZAP  70.41 ETS 172.17 ZAE  99.44 ETE 181.89 ZAC  66.00 ETC 256.69 CLP  69.25
 PLANETOCENTRIC CONIC
  C3  15.183 VHL   3.897 DLA  52.00 RAL 155.61 RAD 6567.6 VEL 11.686 PTH   2.06 VHP  3.292 DPA  -9.74 RAP 158.93 ECC 1.2499
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     44.38     6 12 10   4250.81     -36.78     201.06      29.89      50.24    7 23  1    3650.8     -41.62     193.25
    135.62    14 51 26   2694.40     -36.77      77.38      29.88      50.23   15 36 21    2094.4     -41.61      69.57
     44.38     6 12 10   4250.81     -36.78     201.06      29.89      50.24    7 23  1    3650.8     -41.62     193.25
    135.62    14 51 26   2694.40     -36.77      77.38      29.88      50.23   15 36 21    2094.4     -41.61      69.57
     44.38     6 12 10   4250.81     -36.78     201.06      29.89      50.24    7 23  1    3650.8     -41.62     193.25
    135.62    14 51 26   2694.40     -36.77      77.38      29.88      50.23   15 36 21    2094.4     -41.61      69.57
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
  TDE 3.3653 TRA -.3789 TC3-7.0497 BAU 1.5376      SGT 7449.0 SGR 2782.4 SG3 2121.9             ST  4958.5 SR  1741.4 SS  3910.4
  RDE 1.1825 RRA  .0972 RC3-2.7714 FAU .45719      RRT  .9775 RRF  .9962 RTF  .9744             CRT  .9955 CRS -.9999 CST -.9963
  FDE 9.3356 FRA  .5930 FC-26.0687 BSP  27201      SGB 7951.7 R23  .1824 R13  .9794             LSA 6544.4 MSA  284.6 SSA   12.9
  BDE 3.5670 BRA  .3912 BC3 7.5749 FSP   7421      SG1 7932.6 SG2  551.5 THA  20.16              EL1 5253.1 EL2  155.7 ALF  19.29

LAUNCH DATE  DEC  9 1964                                FLIGHT TIME 308.00                                    ARRIVAL DATE  OCT 13 1965

 HELIOCENTRIC CONIC                                     DISTANCE 671.856                                       EARTH  TO  MARS
  RL  147.33 LAL     .00 LOL  76.96 VL  32.969 GAL   2.32 AZL  85.95 HCA 199.58 SMA 185.72 ECC .21042 INC 4.0534 V1  30.239
  RP  215.54 LAP   -1.36 LOP 276.50 VP  22.734 GAP  -7.92 AZP  93.82 TAL  13.38 TAP 212.97 RCA 146.64 APO 224.79 V2  25.480
  RC 288.329 GL    37.43 GP  -17.75 ZAL  66.21 ZAP  68.83 ETS 172.07 ZAE  97.77 ETE 181.19 ZAC  67.04 ETC 256.85 CLP  67.71
 PLANETOCENTRIC CONIC
  C3  14.679 VHL   3.831 DLA  50.83 RAL 155.66 RAD 6567.6 VEL 11.665 PTH   2.05 VHP  3.303 DPA  -8.54 RAP 159.07 ECC 1.2416
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     45.84     6 16 55   4232.86     -36.41     198.81      28.75      51.70    7 27 28    3632.9     -41.09     190.89
    134.16    14 47  7   2697.29     -36.40      77.31      28.74      51.69   15 32  4    2097.3     -41.08      69.40
     45.84     6 16 55   4232.86     -36.41     198.81      28.75      51.70    7 27 28    3632.9     -41.09     190.89
    134.16    14 47  7   2697.29     -36.40      77.31      28.74      51.69   15 32  4    2097.3     -41.08      69.40
     45.84     6 16 55   4232.86     -36.41     198.81      28.75      51.70    7 27 28    3632.9     -41.09     190.89
    134.16    14 47  7   2697.29     -36.40      77.31      28.74      51.69   15 32  4    2097.3     -41.08      69.40
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
  TDE 3.3331 TRA -.3914 TC3-7.5583 BAU 1.5722      SGT 7697.3 SGR 2596.9 SG3 2112.6             ST  4995.3 SR  1601.0 SS  3780.6
  RDE 1.0689 RRA  .0924 RC3-2.6556 FAU .45410      RRT  .9781 RRF  .9952 RTF  .9751             CRT  .9953 CRS -.9999 CST -.9962
  FDE 8.8443 FRA  .5699 FC-26.7814 BSP  27644      SGB 8123.5 R23  .1787 R13  .9791             LSA 6459.9 MSA  280.8 SSA   14.0
  BDE 3.5003 BRA  .4021 BC3 8.0112 FSP   7294      SG1 8107.3 SG2  513.6 THA  18.34              EL1 5243.5 EL2  147.3 ALF  17.71

LAUNCH DATE  DEC  9 1964                                FLIGHT TIME 310.00                                    ARRIVAL DATE  OCT 15 1965

 HELIOCENTRIC CONIC                                     DISTANCE 676.055                                       EARTH  TO  MARS
  RL  147.33 LAL     .00 LOL  76.96 VL  32.972 GAL   2.25 AZL  86.09 HCA 200.75 SMA 185.78 ECC .21045 INC 3.9059 V1  30.239
  RP  215.21 LAP   -1.38 LOP 277.67 VP  22.781 GAP  -8.06 AZP  93.65 TAL  12.99 TAP 213.74 RCA 146.68 APO 224.87 V2  25.517
  RC 289.516 GL    36.51 GP  -16.70 ZAL  66.47 ZAP  67.28 ETS 171.99 ZAE  96.11 ETE 180.58 ZAC  68.00 ETC 256.98 CLP  66.22
 PLANETOCENTRIC CONIC
  C3  14.233 VHL   3.773 DLA  49.74 RAL 155.83 RAD 6567.6 VEL 11.646 PTH   2.04 VHP  3.320 DPA  -7.46 RAP 159.21 ECC 1.2342
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     47.23     6 22  1   4215.57     -36.03     196.68      27.82      53.04    7 32 17    3615.6     -40.56     188.68
    132.77    14 43 21   2700.88     -36.02      77.32      27.81      53.03   15 28 22    2100.9     -40.55      69.32
     47.23     6 22  1   4215.57     -36.03     196.68      27.82      53.04    7 32 17    3615.6     -40.56     188.68
    132.77    14 43 21   2700.88     -36.02      77.32      27.81      53.03   15 28 22    2100.9     -40.55      69.32
     47.23     6 22  1   4215.57     -36.03     196.68      27.82      53.04    7 32 17    3615.6     -40.56     188.68
    132.77    14 43 21   2700.88     -36.02      77.32      27.81      53.03   15 28 22    2100.9     -40.55      69.32
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
  TDE 3.3096 TRA -.3928 TC3-8.0524 BAU 1.6062      SGT 7939.2 SGR 2425.6 SG3 2093.9             ST  5037.3 SR  1480.6 SS  3658.8
  RDE  .9732 RRA  .0925 RC3-2.5326 FAU .44827      RRT  .9783 RRF  .9941 RTF  .9757             CRT  .9951 CRS -.9999 CST -.9961
  FDE 8.3850 FRA  .5875 FC-27.2671 BSP  28270      SGB 8301.5 R23  .1739 R13  .9789             LSA 6393.3 MSA  279.2 SSA   15.1
  BDE 3.4497 BRA  .4035 BC3 8.4413 FSP   7194      SG1 8287.5 SG2  481.9 THA  16.70              EL1 5248.5 EL2  140.6 ALF  16.32
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LAUNCH DATE DEC 9 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 680.261 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 32.976 GAL 2.18 AZL 86.23 HCA 201.92 SMA 185.84 ECC .21051 INC 3.7731 V1 30.239
RP 214.88 LAP -1.41 LOP 278.84 VP 22.827 GAP -8.21 AZP 93.50 TAL 12.57 TAP 214.50 RCA 146.72 APO 224.96 V2 25.554
RC 290.691 GL 35.66 GP -15.75 ZAL 66.78 ZAP 65.78 ETS 171.92 ZAE 94.47 ETE 180.05 ZAC 68.87 ETC 257.10 CLP 64.77

PLANETOCENTRIC CONIC

C3 13.833 VHL 3.719 DLA 48.72 RAL 156.09 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 3.341 DPA -6.48 RAP 159.34 ECC 1.2277

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.54	6 27 24	4198.88	-35.65	194.65	27.08	54.28	7 37 22	3598.9	-40.03	186.59
131.46	14 40 3	2705.04	-35.64	77.38	27.07	54.27	15 25 8	2105.0	-40.02	69.32
48.54	6 27 24	4198.88	-35.65	194.65	27.08	54.28	7 37 22	3598.9	-40.03	186.59
131.46	14 40 3	2705.04	-35.64	77.38	27.07	54.27	15 25 8	2105.0	-40.02	69.32
48.54	6 27 24	4198.88	-35.65	194.65	27.08	54.28	7 37 22	3598.9	-40.03	186.59
131.46	14 40 3	2705.04	-35.64	77.38	27.07	54.27	15 25 8	2105.0	-40.02	69.32

DIFFERENTIAL CORRECTIONS
TDE 3.2903 TRA -.3862 TC3-8.5399 BAU 1.6410
RDE .8912 RRA .0953 RC3-2.4101 FAU .44095
FDE 7.9480 FRA .6294 FC-27.5970 BSP 28969
BDE 3.4089 BRA .3977 BC3 8.8735 FSP 7092

MID-COURSE EXECUTION ACCURACY
SGT 8176.7 SGR 2269.0 SG3 2069.1
RRT .9781 RRF .9927 RTF .9761
SGB 8485.7 R23 .1678 R13 .9787
SG1 8473.5 SG2 455.6 THA 15.23

ORBIT DETERMINATION ACCURACY
ST 5079.6 SR 1375.6 SS 3540.9
CRT .9948 CRS -.9999 CST -.9959
LSA 6336.8 MSA 278.8 SSA 16.1
EL1 5260.8 EL2 135.0 ALF 15.09

LAUNCH DATE DEC 9 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 684.476 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 32.980 GAL 2.10 AZL 86.35 HCA 203.10 SMA 185.91 ECC .21057 INC 3.6527 V1 30.239
RP 214.56 LAP -1.43 LOP 280.02 VP 22.874 GAP -8.35 AZP 93.36 TAL 12.15 TAP 215.25 RCA 146.76 APO 225.05 V2 25.590
RC 291.851 GL 34.90 GP -14.89 ZAL 67.16 ZAP 64.32 ETS 171.88 ZAE 92.85 ETE 179.59 ZAC 69.67 ETC 257.20 CLP 63.36

PLANETOCENTRIC CONIC

C3 13.472 VHL 3.670 DLA 47.74 RAL 156.43 RAD 6567.5 VEL 11.613 PTH 2.03 VHP 3.366 DPA -5.60 RAP 159.47 ECC 1.2217

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.81	6 33 3	4182.59	-35.25	192.72	26.49	55.43	7 42 46	3582.6	-39.50	184.59
130.19	14 37 8	2709.78	-35.24	77.51	26.49	55.42	15 22 18	2109.8	-39.49	69.39
49.81	6 33 3	4182.59	-35.25	192.72	26.49	55.43	7 42 46	3582.6	-39.50	184.59
130.19	14 37 8	2709.78	-35.24	77.51	26.49	55.42	15 22 18	2109.8	-39.49	69.39
49.81	6 33 3	4182.59	-35.25	192.72	26.49	55.43	7 42 46	3582.6	-39.50	184.59
130.19	14 37 8	2709.78	-35.24	77.51	26.49	55.42	15 22 18	2109.8	-39.49	69.39

DIFFERENTIAL CORRECTIONS
TDE 3.2693 TRA -.3761 TC3-9.0312 BAU 1.6782
RDE .8189 RRA .0983 RC3-2.2923 FAU .43297
FDE 7.5148 FRA .6745 FC-27.8234 BSP 29611
BDE 3.3703 BRA .3888 BC3 9.3176 FSP 6951

MID-COURSE EXECUTION ACCURACY
SGT 8411.9 SGR 2125.5 SG3 2039.5
RRT .9777 RRF .9910 RTF .9765
SGB 8676.3 R23 .1605 R13 .9786
SG1 8665.5 SG2 433.4 THA 13.91

ORBIT DETERMINATION ACCURACY
ST 5114.1 SR 1281.1 SS 3418.8
CRT .9945 CRS -.9998 CST -.9958
LSA 6277.4 MSA 278.4 SSA 17.1
EL1 5270.5 EL2 129.9 ALF 14.00

LAUNCH DATE DEC 9 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 688.697 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 32.984 GAL 2.03 AZL 86.46 HCA 204.28 SMA 185.98 ECC .21065 INC 3.5432 V1 30.239
RP 214.24 LAP -1.46 LOP 281.20 VP 22.920 GAP -8.49 AZP 93.23 TAL 11.71 TAP 215.99 RCA 146.80 APO 225.15 V2 25.626
RC 292.998 GL 34.19 GP -14.09 ZAL 67.60 ZAP 62.90 ETS 171.85 ZAE 91.25 ETE 179.18 ZAC 70.41 ETC 257.29 CLP 61.98

PLANETOCENTRIC CONIC

C3 13.143 VHL 3.625 DLA 46.81 RAL 156.85 RAD 6567.5 VEL 11.599 PTH 2.03 VHP 3.394 DPA -4.79 RAP 159.61 ECC 1.2163

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.02	6 38 59	4166.57	-34.85	190.85	26.05	56.51	7 48 26	3566.6	-38.97	182.68
128.98	14 34 33	2715.08	-34.85	77.69	26.04	56.50	15 19 48	2115.1	-38.96	69.53
51.02	6 38 59	4166.57	-34.85	190.85	26.05	56.51	7 48 26	3566.6	-38.97	182.68
128.98	14 34 33	2715.08	-34.85	77.69	26.04	56.50	15 19 48	2115.1	-38.96	69.53
51.02	6 38 59	4166.57	-34.85	190.85	26.05	56.51	7 48 26	3566.6	-38.97	182.68
128.98	14 34 33	2715.08	-34.85	77.69	26.04	56.50	15 19 48	2115.1	-38.96	69.53

DIFFERENTIAL CORRECTIONS
TDE 3.2525 TRA -.3579 TC3-9.5108 BAU 1.7143
RDE .7565 RRA .1030 RC3-2.1746 FAU .42361
FDE 7.1072 FRA .7386 FC-27.9029 BSP 30356
BDE 3.3393 BRA .3724 BC3 9.7562 FSP 6828

MID-COURSE EXECUTION ACCURACY
SGT 8640.7 SGR 1993.0 SG3 2004.8
RRT .9769 RRF .9890 RTF .9768
SGB 8867.5 R23 .1521 R13 .9785
SG1 8857.8 SG2 415.8 THA 12.73

ORBIT DETERMINATION ACCURACY
ST 5150.4 SR 1198.6 SS 3302.4
CRT .9942 CRS -.9998 CST -.9955
LSA 6228.3 MSA 278.9 SSA 18.1
EL1 5286.6 EL2 125.5 ALF 13.04

LAUNCH DATE DEC 9 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 692.926 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 32.988 GAL 1.95 AZL 86.56 HCA 205.46 SMA 186.05 ECC .21075 INC 3.4428 V1 30.239
RP 213.93 LAP -1.48 LOP 282.38 VP 22.966 GAP -8.62 AZP 93.11 TAL 11.25 TAP 216.71 RCA 146.84 APO 225.26 V2 25.662
RC 294.131 GL 33.54 GP -13.36 ZAL 68.09 ZAP 61.51 ETS 171.83 ZAE 89.67 ETE 178.83 ZAC 71.09 ETC 257.36 CLP 60.64

PLANETOCENTRIC CONIC

C3 12.842 VHL 3.584 DLA 45.92 RAL 157.34 RAD 6567.5 VEL 11.586 PTH 2.03 VHP 3.426 DPA -4.06 RAP 159.76 ECC 1.2114

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.20	6 45 13	4150.72	-34.45	189.03	25.73	57.52	7 54 23	3550.7	-38.45	180.83
127.80	14 32 13	2720.96	-34.44	77.93	25.72	57.51	15 17 34	2121.0	-38.44	69.73
52.20	6 45 13	4150.72	-34.45	189.03	25.73	57.52	7 54 23	3550.7	-38.45	180.83
127.80	14 32 13	2720.96	-34.44	77.93	25.72	57.51	15 17 34	2121.0	-38.44	69.73
52.20	6 45 13	4150.72	-34.45	189.03	25.73	57.52	7 54 23	3550.7	-38.45	180.83
127.80	14 32 13	2720.96	-34.44	77.93	25.72	57.51	15 17 34	2121.0	-38.44	69.73

DIFFERENTIAL CORRECTIONS
TDE 3.2337 TRA -.3359 TC3-9.9933 BAU 1.7519
RDE .7014 RRA .1075 RC3-2.0623 FAU .41396
FDE 6.7112 FRA .8022 FC-27.9057 BSP 31065
BDE 3.3088 BRA .3527 BC310.2039 FSP 6689

MID-COURSE EXECUTION ACCURACY
SGT 8867.1 SGR 1871.7 SG3 1967.5
RRT .9757 RRF .9866 RTF .9771
SGB 9062.5 R23 .1425 R13 .9785
SG1 9053.6 SG2 401.5 THA 11.66

ORBIT DETERMINATION ACCURACY
ST 5179.7 SR 1124.7 SS 3185.5
CRT .9939 CRS -.9998 CST -.9953
LSA 6177.6 MSA 279.0 SSA 19.1
EL1 5299.0 EL2 121.4 ALF 12.18

LAUNCH DATE DEC 9 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 697.162 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 32.993 GAL 1.87 AZL 86.65 HCA 206.64 SMA 186.13 ECC .21086 INC 3.3505 V1 30.239
RP 213.62 LAP -1.50 LOP 283.57 VP 23.011 GAP -8.75 AZP 93.00 TAL 10.79 TAP 217.43 RCA 146.88 APO 225.37 V2 25.697
RC 295.251 GL 32.94 GP -12.69 ZAL 68.63 ZAP 60.17 ETS 171.83 ZAE 88.12 ETE 178.53 ZAC 71.73 ETC 257.42 CLP 59.34

PLANETOCENTRIC CONIC

C3 12.565 VHL 3.545 DLA 45.06 RAL 157.89 RAD 6567.5 VEL 11.574 PTH 2.02 VHP 3.461 DPA -3.40 RAP 159.93 ECC 1.2068

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.35	6 51 41	4135.01	-34.05	187.27	25.51	58.48	8 0 36	3535.0	-37.93	179.03
126.65	14 30 8	2727.32	-34.04	78.21	25.51	58.47	15 15 35	2127.3	-37.92	69.98
53.35	6 51 41	4135.01	-34.05	187.27	25.51	58.48	8 0 36	3535.0	-37.93	179.03
126.65	14 30 8	2727.32	-34.04	78.21	25.51	58.47	15 15 35	2127.3	-37.92	69.98
53.35	6 51 41	4135.01	-34.05	187.27	25.51	58.48	8 0 36	3535.0	-37.93	179.03
126.65	14 30 8	2727.32	-34.04	78.21	25.51	58.47	15 15 35	2127.3	-37.92	69.98

DIFFERENTIAL CORRECTIONS
TDE 3.2129 TRA -.3082 TC-10.4750 BAU 1.7900
RDE .6521 RRA .1124 RC3-1.8543 FAU .40391
FDE 6.3228 FRA .8726 FC-27.8292 BSP 31735
BDE 3.2764 BRA .3290 BC310.6557 FSP 6526

MID-COURSE EXECUTION ACCURACY
SGT 9089.5 SGR 1759.8 SG3 1927.5
RRT .9741 RRF .9838 RTF .9773
SGB 9258.3 RZS .1327 R13 .9784
SG1 9250.0 SG2 391.1 THA 10.70

ORBIT DETERMINATION ACCURACY
ST 5202.3 SR 1057.7 SS 3066.2
CRT .9935 CRS -.9997 CST -.9950
LSA 6124.2 MSA 279.8 SSA 20.1
EL1 5307.4 EL2 117.8 ALF 11.43

LAUNCH DATE DEC 9 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 701.406 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 32.997 GAL 1.79 AZL 86.73 HCA 207.83 SMA 186.21 ECC .21098 INC 3.2654 V1 30.239
RP 213.31 LAP -1.52 LOP 284.76 VP 23.056 GAP -8.88 AZP 92.89 TAL 10.31 TAP 218.14 RCA 146.92 APO 225.49 V2 25.731
RC 296.356 GL 32.38 GP -12.07 ZAL 68.23 ZAP 58.86 ETS 171.83 ZAE 86.60 ETE 178.26 ZAC 72.32 ETC 257.48 CLP 58.08

PLANETOCENTRIC CONIC

C3 12.309 VHL 3.508 DLA 44.23 RAL 158.50 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 3.498 DPA -2.80 RAP 160.10 ECC 1.2026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.48	6 58 26	4119.27	-33.64	185.53	25.40	59.39	8 7 5	3519.3	-37.41	177.27
125.52	14 28 14	2734.28	-33.63	78.55	25.40	59.38	15 13 48	2134.3	-37.40	70.30
54.48	6 58 26	4119.27	-33.64	185.53	25.40	59.39	8 7 5	3519.3	-37.41	177.27
125.52	14 28 14	2734.28	-33.63	78.55	25.40	59.38	15 13 48	2134.3	-37.40	70.30
54.48	6 58 26	4119.27	-33.64	185.53	25.40	59.39	8 7 5	3519.3	-37.41	177.27
125.52	14 28 14	2734.28	-33.63	78.55	25.40	59.38	15 13 48	2134.3	-37.40	70.30

DIFFERENTIAL CORRECTIONS
TDE 3.1943 TRA -.2745 TC-10.9452 BAU 1.8266
RDE .6092 RRA .1179 RC3-1.8484 FAU .30315
FDE 5.9590 FRA .9518 FC-27.6522 BSP 32486
BDE 3.2519 BRA .2987 BC311.1002 FSP 6379

MID-COURSE EXECUTION ACCURACY
SGT 9305.3 SGR 1656.5 SG3 1884.8
RRT .9720 RRF .9804 RTF .9775
SGB 9451.6 RZS .1221 R13 .9784
SG1 9443.8 SG2 383.6 THA 9.83

ORBIT DETERMINATION ACCURACY
ST 5225.2 SR 998.9 SS 2853.0
CRT .9932 CRS -.9997 CST -.9946
LSA 6077.9 MSA 280.8 SSA 21.0
EL1 5318.5 EL2 114.4 ALF 10.76

LAUNCH DATE DEC 9 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 705.657 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.002 GAL 1.71 AZL 86.81 HCA 209.03 SMA 186.29 ECC .21112 INC 3.1865 V1 30.239
RP 213.01 LAP -1.55 LOP 285.95 VP 23.101 GAP -9.00 AZP 92.79 TAL 9.81 TAP 218.84 RCA 146.96 APO 225.62 V2 25.765
RC 297.448 GL 31.86 GP -11.49 ZAL 69.87 ZAP 57.60 ETS 171.84 ZAE 85.11 ETE 178.03 ZAC 72.88 ETC 257.52 CLP 56.85

PLANETOCENTRIC CONIC

C3 12.071 VHL 3.474 DLA 43.42 RAL 159.16 RAD 6567.5 VEL 11.552 PTH 2.02 VHP 3.537 DPA -2.25 RAP 160.30 ECC 1.1987

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.60	7 5 29	4103.45	-33.22	183.81	25.38	60.25	8 13 52	3503.4	-36.89	175.54
124.40	14 26 28	2741.84	-33.21	78.94	25.38	60.24	15 12 10	2141.8	-36.88	70.67
55.60	7 5 29	4103.45	-33.22	183.81	25.38	60.25	8 13 52	3503.4	-36.89	175.54
124.40	14 26 28	2741.84	-33.21	78.94	25.38	60.24	15 12 10	2141.8	-36.88	70.67
55.60	7 5 29	4103.45	-33.22	183.81	25.38	60.25	8 13 52	3503.4	-36.89	175.54
124.40	14 26 28	2741.84	-33.21	78.94	25.38	60.24	15 12 10	2141.8	-36.88	70.67

DIFFERENTIAL CORRECTIONS
TDE 3.1715 TRA -.2368 TC-11.4204 BAU 1.8644
RDE .5705 RRA .1230 RC3-1.7487 FAU .38262
FDE 5.6023 FRA 1.0285 FC-27.4420 BSP 33166
BDE 3.2224 BRA .2669 BC311.5535 FSP 6212

MID-COURSE EXECUTION ACCURACY
SGT 9519.4 SGR 1561.9 SG3 1841.8
RRT .9694 RRF .9765 RTF .9776
SGB 9646.6 RZS .1114 R13 .9783
SG1 9639.2 SG2 378.8 THA 9.05

ORBIT DETERMINATION ACCURACY
ST 5238.2 SR 945.2 SS 2837.2
CRT .9928 CRS -.9996 CST -.9942
LSA 6025.1 MSA 281.9 SSA 22.0
EL1 5321.6 EL2 111.1 ALF 10.16

LAUNCH DATE DEC 9 1964 FLIGHT TIME 326.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 709.914 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.007 GAL 1.62 AZL 86.89 HCA 210.22 SMA 186.37 ECC .21128 INC 3.1131 V1 30.239
RP 212.72 LAP -1.57 LOP 287.15 VP 23.145 GAP -9.13 AZP 92.69 TAL 9.30 TAP 219.53 RCA 147.00 APO 225.75 V2 25.798
RC 298.528 GL 31.37 GP -10.96 ZAL 70.55 ZAP 56.37 ETS 171.85 ZAE 83.64 ETE 177.82 ZAC 73.40 ETC 257.55 CLP 55.65

PLANETOCENTRIC CONIC

C3 11.849 VHL 3.442 DLA 42.62 RAL 159.87 RAD 6567.5 VEL 11.543 PTH 2.01 VHP 3.579 DPA -1.77 RAP 160.51 ECC 1.1950

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.71	7 12 50	4087.39	-32.80	182.10	25.45	61.09	8 20 57	3487.4	-36.37	173.81
123.29	14 24 48	2750.09	-32.78	79.39	25.44	61.07	15 10 38	2150.1	-36.36	71.11
56.71	7 12 50	4087.39	-32.80	182.10	25.45	61.09	8 20 57	3487.4	-36.37	173.81
123.29	14 24 48	2750.09	-32.78	79.39	25.44	61.07	15 10 38	2150.1	-36.36	71.11
56.71	7 12 50	4087.39	-32.80	182.10	25.45	61.09	8 20 57	3487.4	-36.37	173.81
123.29	14 24 48	2750.09	-32.78	79.39	25.44	61.07	15 10 38	2150.1	-36.36	71.11

DIFFERENTIAL CORRECTIONS
TDE 3.1486 TRA -.1916 TC-11.8861 BAU 1.9010
RDE .5361 RRA .1286 RC3-1.6509 FAU .37153
FDE 5.2624 FRA 1.1142 FC-27.1457 BSP 33876
BDE 3.1939 BRA .2308 BC312.0002 FSP 6053

MID-COURSE EXECUTION ACCURACY
SGT 9727.0 SGR 1474.0 SG3 1796.5
RRT .9660 RRF .9720 RTF .9777
SGB 9838.1 RZS .1009 R13 .9783
SG1 9830.9 SG2 376.8 THA 8.34

ORBIT DETERMINATION ACCURACY
ST 5248.2 SR 897.2 SS 2724.2
CRT .9925 CRS -.9996 CST -.9937
LSA 5974.0 MSA 283.7 SSA 22.9
EL1 5323.2 EL2 108.1 ALF 9.63

LAUNCH DATE DEC 9 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 714.178 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.012	GAL	1.53	AZL	86.96	HCA	211.42	SMA	186.46	ECC	.21146	INC	3.0445
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.189	GAP	-9.25	AZP	92.60	TAL	8.78	TAP	220.20	RCA	147.03	APO	225.89
RC	299.592	GL	30.91	GP	-10.47	ZAL	71.29	ZAP	55.17	ETS	171.87	ZAE	82.21	ETE	177.64	ZAC	73.89	ETC	257.58

PLANETOCENTRIC CONIC

C3	11.642	VHL	3.412	DLA	41.84	RAL	160.63	RAD	6567.4	VEL	11.534	PTH	2.01	VHP	3.623	DPA	-1.33	RAP	160.74

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.81	7 20 29	4071.10	-32.36	180.39	25.59	61.89	8 28 20	3471.1	-35.84	172.10
122.19	14 23 12	2759.00	-32.35	79.90	25.59	61.88	15 9 11	2159.0	-35.83	71.61
57.81	7 20 29	4071.10	-32.36	180.39	25.59	61.89	8 28 20	3471.1	-35.84	172.10
122.19	14 23 12	2759.00	-32.35	79.90	25.59	61.88	15 9 11	2159.0	-35.83	71.61
57.81	7 20 29	4071.10	-32.36	180.39	25.59	61.89	8 28 20	3471.1	-35.84	172.10
122.19	14 23 12	2759.00	-32.35	79.90	25.59	61.88	15 9 11	2159.0	-35.83	71.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.1222	TRA	-.1437	TC-12.3539	BAU	1.9380	SGT	9933.0	SGR	1393.1	SG3	1750.9	ST	5249.8	SR	853.8	SS	2611.4
RDE	.5052	RRA	.1337	RC3-1.5578	FAU	.36056	RRT	.9621	RRF	.9667	RTF	.9778	CRT	.9922	CRS	-.9996	CST	-.9932
FDE	4.9346	FRA	1.1935	FC-26.8119	BSP	34540	SGB	10030.2	R23	.0904	R13	.9783	LSA	5918.3	MSA	285.1	SSA	23.8
BDE	3.1628	BRA	.1963	BC312.4517	FSP	5881	SG1	10023.1	SG2	376.7	THA	7.70	EL1	5317.7	EL2	105.1	ALF	9.17

LAUNCH DATE DEC 9 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 718.449 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.017	GAL	1.44	AZL	87.02	HCA	212.62	SMA	186.55	ECC	.21165	INC	2.9803
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.232	GAP	-9.36	AZP	92.51	TAL	8.25	TAP	220.87	RCA	147.07	APO	226.03
RC	300.645	GL	30.48	GP	-10.01	ZAL	72.07	ZAP	54.01	ETS	171.89	ZAE	80.80	ETE	177.48	ZAC	74.36	ETC	257.60

PLANETOCENTRIC CONIC

C3	11.449	VHL	3.384	DLA	41.06	RAL	161.44	RAD	6567.4	VEL	11.525	PTH	2.01	VHP	3.668	DPA	-.93	RAP	160.98

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.92	7 28 30	4054.35	-31.92	178.67	25.81	62.66	8 36 4	3454.3	-35.30	170.37
121.08	14 21 37	2768.78	-31.91	80.47	25.80	62.65	15 7 45	2168.8	-35.29	72.18
58.92	7 28 30	4054.35	-31.92	178.67	25.81	62.66	8 36 4	3454.3	-35.30	170.37
121.08	14 21 37	2768.78	-31.91	80.47	25.80	62.65	15 7 45	2168.8	-35.29	72.18
58.92	7 28 30	4054.35	-31.92	178.67	25.81	62.66	8 36 4	3454.3	-35.30	170.37
121.08	14 21 37	2768.78	-31.91	80.47	25.80	62.65	15 7 45	2168.8	-35.29	72.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.0940	TRA	-.0886	TC-12.8163	BAU	1.9745	SGT	10134.7	SGR	1318.8	SG3	1705.4	ST	5246.0	SR	814.6	SS	2500.5
RDE	.4776	RRA	.1390	RC3-1.4687	FAU	.34966	RRT	.9573	RRF	.9607	RTF	.9778	CRT	.9919	CRS	-.9995	CST	-.9926
FDE	4.6211	FRA	1.2774	FC-26.4402	BSP	35204	SGB	10220.1	R23	.0805	R13	.9782	LSA	5861.2	MSA	287.1	SSA	24.7
BDE	3.1307	BRA	.1648	BC312.9002	FSP	5709	SG1	10213.1	SG2	378.3	THA	7.11	EL1	5307.9	EL2	102.2	ALF	8.76

LAUNCH DATE DEC 9 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 722.726 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.023	GAL	1.34	AZL	87.08	HCA	213.83	SMA	186.64	ECC	.21186	INC	2.9201
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.275	GAP	-9.48	AZP	92.43	TAL	7.70	TAP	221.53	RCA	147.10	APO	226.19
RC	301.687	GL	30.07	GP	-9.58	ZAL	72.89	ZAP	52.88	ETS	171.91	ZAE	79.42	ETE	177.35	ZAC	74.80	ETC	257.61

PLANETOCENTRIC CONIC

C3	11.268	VHL	3.357	DLA	40.30	RAL	162.29	RAD	6567.4	VEL	11.518	PTH	2.01	VHP	3.715	DPA	-.58	RAP	161.25

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.04	7 36 52	4037.11	-31.47	176.92	26.09	63.42	8 44 9	3437.1	-34.76	168.63
119.96	14 20 0	2779.43	-31.46	81.11	26.08	63.40	15 6 19	2179.4	-34.75	72.82
60.04	7 36 52	4037.11	-31.47	176.92	26.09	63.42	8 44 9	3437.1	-34.76	168.63
119.96	14 20 0	2779.43	-31.46	81.11	26.08	63.40	15 6 19	2179.4	-34.75	72.82
60.04	7 36 52	4037.11	-31.47	176.92	26.09	63.42	8 44 9	3437.1	-34.76	168.63
119.96	14 20 0	2779.43	-31.46	81.11	26.08	63.40	15 6 19	2179.4	-34.75	72.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.0642	TRA	-.0285	TC-13.2669	BAU	2.0094	SGT	10329.2	SGR	1249.4	SG3	1658.3	ST	5236.9	SR	779.1	SS	2390.4
RDE	.4527	RRA	.1439	RC3-1.3816	FAU	.33848	RRT	.9517	RRF	.9536	RTF	.9779	CRT	.9917	CRS	-.9994	CST	-.9918
FDE	4.3197	FRA	1.3577	FC-26.0048	BSP	35883	SGB	10404.4	R23	.0707	R13	.9782	LSA	5802.0	MSA	288.7	SSA	25.6
BDE	3.0974	BRA	.1467	BC313.3386	FSP	5543	SG1	10397.5	SG2	381.1	THA	6.58	EL1	5293.6	EL2	99.1	ALF	8.40

LAUNCH DATE DEC 9 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 727.009 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.028	GAL	1.25	AZL	87.14	HCA	215.04	SMA	186.74	ECC	.21209	INC	2.8634
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.317	GAP	-9.59	AZP	92.35	TAL	7.13	TAP	222.17	RCA	147.13	APO	226.34
RC	302.717	GL	29.68	GP	-9.18	ZAL	73.76	ZAP	51.79	ETS	171.94	ZAE	78.07	ETE	177.22	ZAC	75.22	ETC	257.61

PLANETOCENTRIC CONIC

C3	11.100	VHL	3.332	DLA	39.53	RAL	163.17	RAD	6567.4	VEL	11.510	PTH	2.00	VHP	3.764	DPA	-.27	RAP	161.54

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.18	7 45 39	4019.22	-31.01	175.14	26.44	64.15	8 52 38	3419.2	-34.21	166.85
118.82	14 18 19	2791.10	-31.00	81.83	26.43	64.13	15 4 50	2191.1	-34.20	73.54
61.18	7 45 39	4019.22	-31.01	175.14	26.44	64.15	8 52 38	3419.2	-34.21	166.85
118.82	14 18 19	2791.10	-31.00	81.83	26.43	64.13	15 4 50	2191.1	-34.20	73.54
61.18	7 45 39	4019.22	-31.01	175.14	26.44	64.15	8 52 38	3419.2	-34.21	166.85
118.82	14 18 19	2791.10	-31.00	81.83	26.43	64.13	15 4 50	2191.1	-34.20	73.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.0299	TRA	.0364	TC-13.7186	BAU	2.0449	SGT	10522.2	SGR	1185.7	SG3	1612.0	ST	5217.9	SR	746.7	SS	2280.3
RDE	.4301	RRA	.1488	RC3-1.2987	FAU	.32758	RRT	.9451	RRF	.9456	RTF	.9779	CRT	.9915	CRS	-.9993	CST	-.9910
FDE	4.0283	FRA	1.4373	FC-25.5500	BSP	36541	SGB	10588.8	R23	.0617	R13	.9782	LSA	5735.8	MSA	290.8	SSA	26.5
BDE	3.0603	BRA	.1532	BC313.7799	FSP	5380	SG1	10581.8	SG2	385.3	THA	6.09	EL1	5270.2	EL2	96.0	ALF	8.08

LAUNCH DATE DEC 9 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 731.295 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.034	GAL	1.15	AZL	87.19	HCA	216.25	SMA	186.84	ECC	.21233	INC	2.8099
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.359	GAP	-9.70	AZP	92.27	TAL	6.55	TAP	222.81	RCA	147.16	APO	226.51
RC	303.736	GL	29.30	GP	-8.80	ZAL	74.67	ZAP	50.73	ETS	171.97	ZAE	76.75	ETE	177.12	ZAC	75.62	ETC	257.61

V1	30.239	V2	25.956	CLP	50.17														

PLANETOCENTRIC CONIC

C3	10.942	VHL	3.308	DLA	38.76	RAL	164.10	RAD	6567.4	VEL	11.504	PTH	2.00	VHP	3.814	DPA	.01	RAP	161.85
ECC	1.1801																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.34	7 54 53	4000.50	-30.54	173.31	26.84	64.86	9 1 34	3400.5	-33.65	165.03
117.66	14 16 30	2803.95	-30.52	82.64	26.84	64.85	15 3 14	2204.0	-33.64	74.36
62.34	7 54 53	4000.50	-30.54	173.31	26.84	64.86	9 1 34	3400.5	-33.65	165.03
117.66	14 16 30	2803.95	-30.52	82.64	26.84	64.85	15 3 14	2204.0	-33.64	74.36
62.34	7 54 53	4000.50	-30.54	173.31	26.84	64.86	9 1 34	3400.5	-33.65	165.03
117.66	14 16 30	2803.95	-30.52	82.64	26.84	64.85	15 3 14	2204.0	-33.64	74.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.0136	TRA	.1257	TC-14.0962	BAU	2.0697	SGT10690.9	SGR	1126.9	SG3	1560.5	ST	5227.9	SR	722.7	SS	2201.4
RDE	.4127	RRA	.1562	RC3-1.2079	FAU	.31442	RRT	.9363	RRF	.9365	RTF	.9778	CRT	.9916	CRS	-.9991	CST -.9899
FDE	3.7994	FRA	1.5625	FC-24.8765	BSP	37631	SGB10750.1	R23	.0561	R13	.9780	LSA	5710.6	MSA	297.0	SSA	26.9
BDE	3.0417	BRA	.2005	BC314.1479	FSP	5301	SG110742.9	SG2	393.8	THA	5.64	EL1	5276.8	EL2	92.9	ALF	7.81

AUNCH DATE DEC 9 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 735.591 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.040	GAL	1.04	AZL	87.24	HCA	217.47	SMA	186.94	ECC	.21260	INC	2.7592
RP	211.08	LAP	-1.68	LOP	294.40	VP	23.400	GAP	-9.81	AZP	92.19	TAL	5.96	TAP	223.43	RCA	147.19	APO	226.68
RC	304.746	GL	28.95	GP	-8.45	ZAL	75.62	ZAP	49.69	ETS	171.99	ZAE	75.45	ETE	177.03	ZAC	76.00	ETC	257.60

V1	30.239	V2	25.986	CLP	49.16														

PLANETOCENTRIC CONIC

C3	10.796	VHL	3.286	DLA	37.99	RAL	165.07	RAD	6567.4	VEL	11.497	PTH	2.00	VHP	3.865	DPA	.25	RAP	162.17
ECC	1.1777																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.53	8 4 34	3980.88	-30.05	171.43	27.31	65.56	9 10 55	3380.9	-33.07	163.15
116.47	14 14 30	2818.07	-30.04	83.55	27.30	65.55	15 1 28	2218.1	-33.06	75.27
63.53	8 4 34	3980.88	-30.05	171.43	27.31	65.56	9 10 55	3380.9	-33.07	163.15
116.47	14 14 30	2818.07	-30.04	83.55	27.30	65.55	15 1 28	2218.1	-33.06	75.27
63.53	8 4 34	3980.88	-30.05	171.43	27.31	65.56	9 10 55	3380.9	-33.07	163.15
116.47	14 14 30	2818.07	-30.04	83.55	27.30	65.55	15 1 28	2218.1	-33.06	75.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.9661	TRA	.1950	TC-14.5582	BAU	2.1077	SGT10884.2	SGR	1073.1	SG3	1516.8	ST	5181.7	SR	694.0	SS	2083.7		
RDE	.3931	RRA	.1597	RC3-1.1353	FAU	.30468	RRT	.9278	RRF	.9262	RTF	.9778	CRT	.9915	CRS	-.9988	CST -.9887		
FDE	3.5135	FRA	1.6234	FC-24.4315	BSP	38078	SGB10936.9	R23	.0477	R13	.9780	LSA	5619.9	MSA	298.5	SSA	27.9		
BDE	2.9920	BRA	.2521	BC314.6024	FSP	5099	SG110929.7	SG2	398.8	THA	5.23	EL1	5227.2	EL2	89.5	ALF	7.57		

LAUNCH DATE DEC 9 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 739.893 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.046	GAL	.94	AZL	87.29	HCA	218.68	SMA	187.04	ECC	.21289	INC	2.7112
RP	210.82	LAP	-1.69	LOP	295.62	VP	23.441	GAP	-9.91	AZP	92.12	TAL	5.36	TAP	224.05	RCA	147.22	APO	226.86
RC	305.746	GL	28.60	GP	-8.12	ZAL	76.62	ZAP	48.69	ETS	172.02	ZAE	74.18	ETE	176.94	ZAC	76.37	ETC	257.59

V1	30.239	V2	26.015	CLP	48.18														

PLANETOCENTRIC CONIC

C3	10.661	VHL	3.265	DLA	37.22	RAL	166.07	RAD	6567.4	VEL	11.491	PTH	2.00	VHP	3.918	DPA	.46	RAP	162.52
ECC	1.1755																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.76	8 14 49	3960.06	-29.54	169.47	27.83	66.25	9 20 49	3360.1	-32.48	161.20
115.24	14 12 14	2833.75	-29.53	84.57	27.82	66.24	14 59 28	2233.8	-32.47	76.30
64.76	8 14 49	3960.06	-29.54	169.47	27.83	66.25	9 20 49	3360.1	-32.48	161.20
115.24	14 12 14	2833.75	-29.53	84.57	27.82	66.24	14 59 28	2233.8	-32.47	76.30
64.76	8 14 49	3960.06	-29.54	169.47	27.83	66.25	9 20 49	3360.1	-32.48	161.20
115.24	14 12 14	2833.75	-29.53	84.57	27.82	66.24	14 59 28	2233.8	-32.47	76.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.9188	TRA	.2718	TC-14.9975	BAU	2.1429	SGT11068.4	SGR	1022.8	SG3	1471.8	ST	5133.4	SR	668.7	SS	1972.4		
RDE	.3759	RRA	.1633	RC3-1.0627	FAU	.29452	RRT	.9178	RRF	.9145	RTF	.9779	CRT	.9916	CRS	-.9983	CST -.9873		
FDE	3.2480	FRA	1.6849	FC-23.9163	BSP	38593	SGB11115.6	R23	.0398	R13	.9780	LSA	5531.6	MSA	300.1	SSA	28.8		
BDE	2.9429	BRA	.3171	BC315.0351	FSP	4913	SG111108.2	SG2	404.7	THA	4.85	EL1	5176.1	EL2	85.8	ALF	7.36		

LAUNCH DATE DEC 9 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 744.199 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.052	GAL	.83	AZL	87.33	HCA	219.91	SMA	187.14	ECC	.21320	INC	2.6656
RP	210.58	LAP	-1.71	LOP	296.84	VP	23.481	GAP	-10.02	AZP	92.05	TAL	4.74	TAP	224.65	RCA	147.24	APO	227.04
RC	306.737	GL	28.26	GP	-7.82	ZAL	77.65	ZAP	47.72	ETS	172.05	ZAE	72.94	ETE	176.87	ZAC	76.73	ETC	257.57

V1	30.239	V2	26.043	CLP	47.23														

PLANETOCENTRIC CONIC

C3	10.536	VHL	3.246	DLA	36.44	RAL	167.10	RAD	6567.4	VEL	11.486	PTH	2.00	VHP	3.972	DPA	.64	RAP	162.89
ECC	1.1734																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.04	8 25 40	3937.82	-29.02	167.41	28.40	66.93	9 31 18	3337.8	-31.88	159.16
113.96	14 9 37	2851.21	-29.01	85.72	28.39	66.92	14 57 9	2251.2	-31.87	77.47
66.04	8 25 40	3937.82	-29.02	167.41	28.40	66.93	9 31 18	3337.8	-31.88	159.16
113.96	14 9 37	2851.21	-29.01	85.72	28.39	66.92	14 57 9	2251.2	-31.87	77.47
66.04	8 25 40	3937.82	-29.02	167.41	28.40	66.93	9 31 18	3337.8	-31.88	159.16
113.96	14 9 37	2851.21	-29.01	85.72	28.39	66.92	14 57 9	2251.2	-31.87	77.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.8697	TRA	.3573	TC-15.4210	BAU	2.1767	SGT11247.1	SGR	976.6	SG3	1426.8	ST	5079.8	SR	646.0	SS	1864.4		
RDE	.3604	RRA	.1673	RC3 -.9914	FAU	.28427	RRT	.9062	RRF	.9014	RTF	.9778	CRT	.9918	CRS	-.9976	CST -.9856		
FDE	2.9961	FRA	1.7538	FC-23.3574	BSP	39155	SGB11289.5	R23	.0332	R13	.9779	LSA	5441.0	MSA	303.1	SSA	29.6		
BDE	2.8923	BRA	.3945	BC315.4529	FSP	4746	SG111282.0	SG2	411.6	THA	4.51	EL1	5120.0	EL2	81.9	ALF	7.19		

LAUNCH DATE DEC 9 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 748.510 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.058	GAL	.72	AZL	87.38	HCA	221.13	SMA	187.25	ECC	.21353	INC	2.6220	V1	30.239
RP	210.34	LAP	-1.72	LOP	298.06	VP	23.520	GAP	-10.12	AZP	91.98	TAL	4.11	TAP	225.24	RCA	147.27	APO	227.23	V2	26.071
RC	307.719	GL	27.93	GP	-7.53	ZAL	78.73	ZAP	46.77	ETS	172.08	ZAE	71.72	ETE	176.81	ZAC	77.07	ETC	257.55	CLP	46.30

PLANETOCENTRIC CONIC

C3	10.422	VHL	3.228	DLA	35.65	RAL	168.17	RAD	6567.4	VEL	11.481	PTH	2.00	VHP	4.028	DPA	.79	RAP	163.27	ECC	1.1715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.38	8 37 14	3913.86	-28.49	165.24	29.02	67.60	9 42 28	3313.9	-31.26	157.00
112.62	14 6 34	2870.76	-28.47	87.03	29.02	67.58	14 54 25	2270.8	-31.25	78.79
67.38	8 37 14	3913.86	-28.49	165.24	29.02	67.60	9 42 28	3313.9	-31.26	157.00
112.62	14 6 34	2870.76	-28.47	87.03	29.02	67.58	14 54 25	2270.8	-31.25	78.79
67.38	8 37 14	3913.86	-28.49	165.24	29.02	67.60	9 42 28	3313.9	-31.26	157.00
112.62	14 6 34	2870.76	-28.47	87.03	29.02	67.58	14 54 25	2270.8	-31.25	78.79

DIFFERENTIAL CORRECTIONS

TDE	2.8180	TRA	.4484	TC-15.8374	BAU	2.2104	
RDE	.3466	RRA	.1710	RC3 -.9237	FAU	.27445	
FDE	2.7578	FRA	1.8195	FC-22.7980	BSP	39721	
BDE	2.8392	BRA	.4799	BC315.8643	FSP	4583	

MID-COURSE EXECUTION ACCURACY

SGT11425.2	SGR	934.7	SG3	1383.5		
RRT	.8934	RRF	.8869	RTF	.9778	
SGB11463.4	R23	.0269	R13	.9779		
SG111455.8	SG2	418.7	THA	4.19		

ORBIT DETERMINATION ACCURACY

ST	5019.3	SR	625.5	SS	1759.8
CRT	.9921	CRS	-.9966	CST	-.9835
LSA	5346.6	MSA	306.3	SSA	30.5
EL1	5057.5	EL2	77.8	ALF	7.05

LAUNCH DATE DEC 9 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 752.826 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.064	GAL	.61	AZL	87.42	HCA	222.36	SMA	187.36	ECC	.21388	INC	2.5806	V1	30.239
RP	210.10	LAP	-1.74	LOP	299.29	VP	23.558	GAP	-10.22	AZP	91.91	TAL	3.47	TAP	225.82	RCA	147.29	APO	227.43	V2	26.098
RC	308.691	GL	27.61	GP	-7.25	ZAL	79.85	ZAP	45.85	ETS	172.11	ZAE	70.52	ETE	176.76	ZAC	77.41	ETC	257.52	CLP	45.40

PLANETOCENTRIC CONIC

C3	10.318	VHL	3.212	DLA	34.85	RAL	169.27	RAD	6567.4	VEL	11.476	PTH	1.99	VHP	4.085	DPA	.91	RAP	163.68	ECC	1.1698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.79	8 49 37	3887.76	-27.93	162.92	29.70	68.26	9 54 25	3287.8	-30.62	154.69
111.21	14 2 57	2892.84	-27.92	88.52	29.69	68.24	14 51 9	2292.8	-30.61	80.30
68.79	8 49 37	3887.76	-27.93	162.92	29.70	68.26	9 54 25	3287.8	-30.62	154.69
111.21	14 2 57	2892.84	-27.92	88.52	29.69	68.24	14 51 9	2292.8	-30.61	80.30
68.79	8 49 37	3887.76	-27.93	162.92	29.70	68.26	9 54 25	3287.8	-30.62	154.69
111.21	14 2 57	2892.84	-27.92	88.52	29.69	68.24	14 51 9	2292.8	-30.61	80.30

DIFFERENTIAL CORRECTIONS

TDE	2.7653	TRA	.5464	TC-16.2322	BAU	2.2423	
RDE	.3345	RRA	.1748	RC3 -.8566	FAU	.26446	
FDE	2.5376	FRA	1.8864	FC-22.1884	BSP	40293	
BDE	2.7854	BRA	.5737	BC316.2548	FSP	4425	

MID-COURSE EXECUTION ACCURACY

SGT11596.9	SGR	896.2	SG3	1339.9		
RRT	.8787	RRF	.8708	RTF	.9778	
SGB11631.5	R23	.0218	R13	.9778		
SG111623.6	SG2	426.8	THA	3.89		

ORBIT DETERMINATION ACCURACY

ST	4955.1	SR	607.7	SS	1662.1
CRT	.9926	CRS	-.9950	CST	-.9811
LSA	5252.4	MSA	310.2	SSA	31.2
EL1	4991.7	EL2	73.4	ALF	6.94

LAUNCH DATE DEC 9 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 757.147 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.070	GAL	.50	AZL	87.46	HCA	223.58	SMA	187.47	ECC	.21426	INC	2.5409	V1	30.239
RP	209.88	LAP	-1.75	LOP	300.52	VP	23.596	GAP	-10.32	AZP	91.84	TAL	2.81	TAP	226.39	RCA	147.30	APO	227.63	V2	26.124
RC	309.654	GL	27.29	GP	-7.00	ZAL	81.01	ZAP	44.96	ETS	172.13	ZAE	69.35	ETE	176.71	ZAC	77.73	ETC	257.49	CLP	44.53

PLANETOCENTRIC CONIC

C3	10.225	VHL	3.198	DLA	34.03	RAL	170.39	RAD	6567.4	VEL	11.472	PTH	1.99	VHP	4.142	DPA	1.00	RAP	164.10	ECC	1.1683

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.28	9 2 57	3859.10	-27.35	160.41	30.42	68.91	10 7 17	3259.1	-29.97	152.21
109.72	13 58 36	2917.86	-27.34	90.23	30.41	68.90	14 47 14	2317.9	-29.96	82.03
70.28	9 2 57	3859.10	-27.35	160.41	30.42	68.91	10 7 17	3259.1	-29.97	152.21
109.72	13 58 36	2917.86	-27.34	90.23	30.41	68.90	14 47 14	2317.9	-29.96	82.03
110.00	14 24 36	2838.58	-29.18	84.80	31.17	71.35	15 11 54	2238.6	-31.44	76.32
110.00	13 36 8	2986.37	-25.55	94.75	29.59	66.47	14 25 55	2386.4	-28.50	86.82

DIFFERENTIAL CORRECTIONS

TDE	2.7059	TRA	.6490	TC-16.6121	BAU	2.2735	
RDE	.3232	RRA	.1779	RC3 -.7917	FAU	.25469	
FDE	2.3172	FRA	1.9417	FC-21.5630	BSP	40890	
BDE	2.7252	BRA	.6730	BC316.6310	FSP	4281	

MID-COURSE EXECUTION ACCURACY

SGT11762.2	SGR	860.0	SG3	1296.1		
RRT	.8627	RRF	.8528	RTF	.9778	
SGB11793.6	R23	.0159	R13	.9779		
SG111785.6	SG2	434.1	THA	3.61		

ORBIT DETERMINATION ACCURACY

ST	4877.1	SR	590.6	SS	1559.8
CRT	.9932	CRS	-.9928	CST	-.9782
LSA	5144.7	MSA	313.3	SSA	32.0
EL1	4912.2	EL2	68.4	ALF	6.86

LAUNCH DATE DEC 9 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 761.472 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.076	GAL	.38	AZL	87.50	HCA	224.82	SMA	187.58	ECC	.21466	INC	2.5029	V1	30.239
RP	209.66	LAP	-1.76	LOP	301.75	VP	23.633	GAP	-10.41	AZP	91.78	TAL	2.14	TAP	226.95	RCA	147.32	APO	227.85	V2	26.149
RC	310.607	GL	26.97	GP	-6.76	ZAL	82.21	ZAP	44.09	ETS	172.16	ZAE	68.20	ETE	176.67	ZAC	78.04	ETC	257.46	CLP	43.67

PLANETOCENTRIC CONIC

C3	10.143	VHL	3.185	DLA	33.21	RAL	171.55	RAD	6567.4	VEL	11.469	PTH	1.99	VHP	4.201	DPA	1.07	RAP	164.54	ECC	1.1669

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.89	9 17 29	3827.09	-26.76	157.68	31.19	69.56	10 21 16	3227.1	-29.29	149.50
108.11	13 53 18	2946.64	-26.75	92.21	31.18	69.55	14 42 25	2346.6	-29.28	84.03
71.89	9 17 29	3827.09	-26.76	157.68	31.19	69.56	10 21 16	3227.1	-29.29	149.50
108.11	13 53 18	2946.64	-26.75	92.21	31.18	69.55	14 42 25	2346.6	-29.28	84.03
110.00	15 6 44	2721.32	-31.44	76.42	32.86	75.83	15 52 5	2121.3	-33.06	67.57
110.00	13 3 14	3100.41	-22.25	101.96	29.03	63.35	13 54 54	2500.4	-25.64	94.45

DIFFERENTIAL CORRECTIONS

TDE	2.6439	TRA	.7586	TC-16.9795	BAU	2.3047	
RDE	.3132	RRA	.1814	RC3 -.7287	FAU	.24505	
FDE	2.1114	FRA	2.0050	FC-20.9152	BSP	41381	
BDE	2.6624	BRA	.7800	BC316.9952	FSP	4116	

MID-COURSE EXECUTION ACCURACY

SGT11927.2	SGR	827.7	SG3	1253.5		
RRT	.8445	RRF	.8332	RTF	.9777	
SGB11955.9	R23	.0121	R13	.9777		
SG111947.7	SG2	442.5	THA	3.36		

ORBIT DETERMINATION ACCURACY

ST	4792.4	SR	575.6	SS	1463.7
CRT	.9938	CRS	-.9896	CST	-.9743
LSA	5033.7	MSA	318.7	SSA	32.7
EL1	4826.5	EL2	63.3	ALF	6.81

LAUNCH DATE DEC 9 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 765.801 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.083	GAL	.26	AZL	87.53	HCA	226.05	SMA	187.69	ECC	.21508	INC	2.4664
RP	209.44	LAP	-1.78	LOP	302.99	VP	23.669	GAP	-10.51	AZP	91.71	TAL	1.45	TAP	227.50	RCA	147.32	APO	228.06
RC	311.551	GL	26.65	GP	-6.53	ZAL	83.45	ZAP	43.24	ETS	172.18	ZAE	67.07	ETE	176.63	ZAC	78.35	ETC	257.42

V1	30.239	V2	26.174	CLP	42.84														

PLANETOCENTRIC CONIC

C3	10.072	VHL	3.174	DLA	32.36	RAL	172.73	RAD	6567.4	VEL	11.466	PTH	1.99	VHP	4.261	DPA	1.12	RAP	165.00

ECC	1.1658	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		73.63	9 33 28	3790.74	-26.14	154.63	32.00	70.20	10 36 39	3190.7	-28.59	146.47							
		106.37	13 46 44	2980.17	-26.13	94.53	32.00	70.19	14 36 24	2380.2	-28.58	86.37							
		73.63	9 33 28	3790.74	-26.14	154.63	32.00	70.20	10 36 39	3190.7	-28.59	146.47							
		106.37	13 46 44	2980.17	-26.13	94.53	32.00	70.19	14 36 24	2380.2	-28.58	86.37							
		110.00	15 33 46	2649.72	-32.51	71.11	34.03	78.80	16 17 55	2049.7	-33.71	62.08							
		110.00	12 45 37	3169.20	-20.09	106.13	29.07	61.74	13 38 26	2569.2	-23.70	98.86							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.5787	TRA	.8757	TC-17.3294	BAU	2.3353	SGT12090.0	SGR	798.7	SG3	1212.8	ST	4700.8	SR	562.1	SS	1371.1		
RDE	.3043	RRA	.1849	RC3 -.6685	FAU	.23583	RRT	.8248	RRF	.8122	RTF	.9775	CRT	.9946	CRS	-.9850	CST	-.9695	
FDE	1.9156	FRA	2.0689	FC-20.2701	BSP	42021	SGB12116.4	R23	.0086	R13	.9775	LSA	4918.0	MSA	325.4	SSA	33.4		
BDE	2.5966	BRA	.8950	BC317.3423	FSP	3992	SG112108.0	SG2	451.0	THA	3.12	EL1	4733.9	EL2	57.9	ALF	6.78		

LAUNCH DATE DEC 9 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 770.130 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.090	GAL	.13	AZL	87.57	HCA	227.29	SMA	187.81	ECC	.21553	INC	2.4314
RP	209.24	LAP	-1.79	LOP	304.22	VP	23.705	GAP	-10.61	AZP	91.65	TAL	.75	TAP	228.04	RCA	147.33	APO	228.29
RC	312.486	GL	26.34	GP	-6.31	ZAL	84.74	ZAP	42.42	ETS	172.21	ZAE	65.96	ETE	176.60	ZAC	78.64	ETC	257.38

V1	30.239	V2	26.198	CLP	42.04														

PLANETOCENTRIC CONIC

C3	10.012	VHL	3.164	DLA	31.51	RAL	173.94	RAD	6567.4	VEL	11.463	PTH	1.99	VHP	4.322	DPA	1.15	RAP	165.48

ECC	1.1648	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		75.58	9 51 27	3748.45	-25.50	151.17	32.86	70.84	10 53 55	3148.4	-27.87	143.03							
		104.42	13 38 24	3020.09	-25.49	97.31	32.86	70.83	14 28 44	2420.1	-27.87	89.18							
		75.58	9 51 27	3748.45	-25.50	151.17	32.86	70.84	10 53 55	3148.4	-27.87	143.03							
		104.42	13 38 24	3020.09	-25.49	97.31	32.86	70.83	14 28 44	2420.1	-27.87	89.18							
		110.00	15 56 18	2591.77	-33.19	66.72	35.05	81.31	16 39 29	1991.8	-34.04	57.59							
		110.00	12 32 43	3224.77	-18.26	109.41	29.35	60.59	13 26 28	2624.8	-22.04	102.31							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.5364	TRA	1.0184	TC-17.5696	BAU	2.3532	SGT12223.0	SGR	773.0	SG3	1166.9	ST	4650.3	SR	553.5	SS	1308.4		
RDE	.2984	RRA	.1884	RC3 -.6030	FAU	.22500	RRT	.8032	RRF	.7897	RTF	.9779	CRT	.9956	CRS	-.9799	CST	-.9659	
FDE	1.7716	FRA	2.1344	FC-19.4544	BSP	43072	SGB12247.4	R23	.0052	R13	.9779	LSA	4851.3	MSA	327.9	SSA	33.6		
BDE	2.5539	BRA	1.0357	BC317.5799	FSP	3890	SG112238.8	SG2	459.9	THA	2.91	EL1	4682.8	EL2	51.3	ALF	6.76		

LAUNCH DATE DEC 9 1964 FLIGHT TIME 356.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 774.472 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.096	GAL	.01	AZL	87.60	HCA	228.53	SMA	187.93	ECC	.21601	INC	2.3976
RP	209.04	LAP	-1.80	LOP	305.46	VP	23.739	GAP	-10.70	AZP	91.59	TAL	.04	TAP	228.56	RCA	147.33	APO	228.52
RC	313.411	GL	26.02	GP	-6.11	ZAL	86.05	ZAP	41.62	ETS	172.23	ZAE	64.88	ETE	176.57	ZAC	78.94	ETC	257.34

V1	30.239	V2	26.221	CLP	41.25														

PLANETOCENTRIC CONIC

C3	9.965	VHL	3.157	DLA	30.63	RAL	175.17	RAD	6567.4	VEL	11.461	PTH	1.99	VHP	4.384	DPA	1.16	RAP	165.98

ECC	1.1640	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		77.80	10 12 11	3697.53	-24.84	147.08	33.77	71.47	11 13 49	3097.5	-27.14	138.97							
		102.20	13 27 28	3069.10	-24.83	100.75	33.76	71.46	14 18 37	2469.1	-27.13	92.65							
		77.80	10 12 11	3697.53	-24.84	147.08	33.77	71.47	11 13 49	3097.5	-27.14	138.97							
		102.20	13 27 28	3069.10	-24.83	100.75	33.76	71.46	14 18 37	2469.1	-27.13	92.65							
		110.00	16 16 24	2541.17	-33.64	62.84	36.00	83.57	16 58 45	1941.2	-34.17	53.64							
		110.00	12 22 25	3273.47	-16.61	112.22	29.78	59.69	13 16 59	2673.5	-20.51	105.27							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.4416	TRA	1.2223	TC-18.1124	BAU	2.4142	SGT12531.8	SGR	775.1	SG3	1198.7	ST	4511.6	SR	538.7	SS	1211.9		
RDE	.2881	RRA	.2040	RC3 -.5971	FAU	.22900	RRT	.7966	RRF	.7831	RTF	.9738	CRT	.9961	CRS	-.9590	CST	-.9422	
FDE	1.5246	FRA	2.4659	FC-19.8956	BSP	42793	SGB12555.8	R23	.0103	R13	.9738	LSA	4685.9	MSA	394.0	SSA	34.2		
BDE	2.4585	BRA	1.2392	BC318.1222	FSP	3701	SG112547.1	SG2	468.0	THA	2.82	EL1	4543.5	EL2	47.3	ALF	6.78		

LAUNCH DATE DEC 9 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 778.810 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.103	GAL	-.12	AZL	87.63	HCA	229.77	SMA	188.05	ECC	.21652	INC	2.3651
RP	208.85	LAP	-1.81	LOP	306.71	VP	23.773	GAP	-10.79	AZP	91.53	TAL	359.31	TAP	229.08	RCA	147.33	APO	228.76
RC	314.329	GL	25.69	GP	-5.92	ZAL	87.40	ZAP	40.84	ETS	172.25	ZAE	63.81	ETE	176.55	ZAC	79.22	ETC	257.29

V1	30.239	V2	26.243	CLP	40.49														

PLANETOCENTRIC CONIC

C3	9.929	VHL	3.151	DLA	29.74	RAL	176.42	RAD	6567.4	VEL	11.459	PTH	1.99	VHP	4.448	DPA	1.14	RAP	166.49

ECC	1.1634	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		80.51	10 37 26	3632.30	-24.15	141.97	34.71	72.10	11 37 58	3032.3	-26.37	133.89							
		99.49	13 12 10	3132.92	-24.15	105.27	34.71	72.09	14 4 23	2532.9	-26.37	97.18							
		100.00	13 41 33	3039.03	-25.87	98.86	35.28	74.47	14 32 12	2439.0	-27.75	90.57							
		100.00	12 50 44	3201.42	-22.46	109.72	34.07	69.73	13 44 6	2601.4	-25.01	101.85							
		110.00	16 34 59	2495.25	-33.94	59.29	36.91	85.65	17 16 34	1895.3	-34.17	50.05							
		110.00	12 13 48	3317.96	-15.07	114.74	30.33	58.95	13 9 6	2718.0	-19.07	107.91							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.3624	TRA	1.2582	TC-18.2368	BAU	2.4217	SGT12549.3	SGR	725.7	SG3	1089.2	ST	4381.3	SR	530.2	SS	1120.1		
RDE	.2838	RRA	.1928	RC3 -.4948	FAU	.20829	RRT	.7538	RRF	.7380	RTF	.9776	CRT	.9970	CRS	-.9588	CST	-.9492	
FDE	1.3960	FRA	2.2145	FC-18.1604	BSP	43768	SGB12570.3	R23	.0000	R13	.9776	LSA	4540.1	MSA	342.8	SSA	35.3		
BDE	2.3794	BRA	1.2729	BC318.2435	FSP	3628	SG112561.3	SG2	476.4	THA	2.50	EL1	4413.1	EL2	41.0	ALF	6.88		

LAUNCH DATE DEC 9 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 783.153 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.110 GAL -.25 AZL 87.67 HCA 231.01 SMA 188.17 ECC .21705 INC 2.3336 V1 30.239
RP 208.67 LAP -1.81 LOP 307.95 VP 23.806 GAP -10.89 AZP 91.47 TAL 358.57 TAP 229.58 RCA 147.33 APO 229.01 V2 26.264
RC 315.238 GL 25.36 GP -5.73 ZAL 88.79 ZAP 40.08 ETS 172.27 ZAE 62.76 ETE 176.53 ZAC 79.50 ETC 257.24 CLP 39.74

PLANETOCENTRIC CONIC

C3 9.906 VHL 3.147 DLA 28.83 RAL 177.69 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 4.512 DPA 1.11 RAP 167.02 ECC 1.1630

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.35	11 12 56	3534.09	-23.45	134.48	35.70	72.73	12 11 50	2934.1	-25.59	126.42
95.65	12 46 49	3230.21	-23.44	112.21	35.70	72.72	13 40 39	2630.2	-25.58	104.15
100.00	14 28 4	2904.85	-27.97	89.45	36.97	79.00	15 16 29	2304.9	-29.20	80.86
100.00	12 14 22	3334.68	-19.07	118.16	33.96	66.54	13 9 57	2734.7	-22.08	110.66
110.00	16 52 30	2452.60	-34.11	55.97	37.81	87.61	17 33 23	1852.6	-34.06	46.73
110.00	12 6 25	3359.70	-13.59	117.07	30.98	58.33	13 2 24	2759.7	-17.68	110.35

DIFFERENTIAL CORRECTIONS
TDE 2.2799 TRA 1.3991 TC-18.4982 BAU 2.4506
RDE .2784 RRA .1952 RC3 -.4421 FAU .19990
FDE 1.2317 FRA 2.2593 FC-17.4699 BSP 44191
BDE 2.2968 BRA 1.4126 BC318.5035 FSP 3458

MID-COURSE EXECUTION ACCURACY
SGT12699.2 SGR 706.3 SG3 1051.1
RRT .7273 RRF .7101 RTF .9774
SGB12718.8 R23 -.0027 R13 .9774
SG112709.6 SG2 484.3 THA 2.32

ORBIT DETERMINATION ACCURACY
ST 4255.3 SR 521.3 SS 1040.2
CRT .9974 CRS -.9422 CST -.9379
LSA 4397.3 MSA 351.7 SSA 35.9
EL1 4287.0 EL2 37.2 ALF 6.97

LAUNCH DATE DEC 9 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 787.499 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.117 GAL -.39 AZL 87.70 HCA 232.26 SMA 188.29 ECC .21762 INC 2.3032 V1 30.239
RP 208.49 LAP -1.82 LOP 309.20 VP 23.838 GAP -10.98 AZP 91.41 TAL 357.82 TAP 230.08 RCA 147.31 APO 229.26 V2 26.285
RC 316.140 GL 25.03 GP -5.56 ZAL 90.22 ZAP 39.35 ETS 172.28 ZAE 61.73 ETE 176.51 ZAC 79.78 ETC 257.19 CLP 39.01

PLANETOCENTRIC CONIC

C3 9.897 VHL 3.146 DLA 27.90 RAL 178.98 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 4.577 DPA 1.06 RAP 167.56 ECC 1.1629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 47 31	3243.83	-25.46	113.80	37.52	77.18	13 41 34	2643.8	-26.98	105.46
90.00	11 22 31	3520.08	-20.02	132.19	35.76	69.55	12 21 11	2920.1	-22.63	124.49
100.00	14 57 42	2824.10	-28.88	83.62	38.23	81.93	15 44 47	2224.1	-29.70	74.91
100.00	11 55 0	3415.04	-16.82	123.07	34.35	64.92	12 51 55	2815.0	-20.06	115.78
110.00	17 9 15	2412.42	-34.18	52.84	38.70	89.46	17 49 27	1812.4	-33.88	43.60
110.00	11 59 57	3399.48	-12.16	119.26	31.72	57.80	12 56 36	2799.5	-16.32	112.63

DIFFERENTIAL CORRECTIONS
TDE 2.1944 TRA 1.5419 TC-18.7367 BAU 2.4796
RDE .2738 RRA .1968 RC3 -.3916 FAU .19183
FDE 1.0774 FRA 2.2884 FC-16.7812 BSP 44677
BDE 2.2114 BRA 1.5544 BC318.7408 FSP 3326

MID-COURSE EXECUTION ACCURACY
SGT12846.9 SGR 688.4 SG3 1013.4
RRT .6995 RRF .6802 RTF .9775
SGB12865.4 R23 -.0063 R13 .9775
SG112856.0 SG2 491.6 THA 2.15

ORBIT DETERMINATION ACCURACY
ST 4123.9 SR 513.4 SS 964.8
CRT .9974 CRS -.9206 CST -.9246
LSA 4251.0 MSA 359.3 SSA 36.4
EL1 4155.6 EL2 36.5 ALF 7.08

LAUNCH DATE DEC 9 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 791.847 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.124 GAL -.53 AZL 87.73 HCA 233.51 SMA 188.41 ECC .21821 INC 2.2738 V1 30.239
RP 208.32 LAP -1.83 LOP 310.45 VP 23.870 GAP -11.07 AZP 91.35 TAL 357.05 TAP 230.56 RCA 147.30 APO 229.53 V2 26.304
RC 317.035 GL 24.69 GP -5.40 ZAL 91.68 ZAP 38.63 ETS 172.30 ZAE 60.72 ETE 176.49 ZAC 80.06 ETC 257.14 CLP 38.31

PLANETOCENTRIC CONIC

C3 9.901 VHL 3.147 DLA 26.96 RAL 180.28 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 4.643 DPA .99 RAP 168.12 ECC 1.1629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 27 7	3130.62	-26.93	105.84	39.02	80.91	14 19 18	2530.6	-27.91	97.31
90.00	10 53 18	3633.45	-17.17	139.29	36.01	67.13	11 53 52	3033.5	-20.12	131.85
100.00	15 22 22	2759.12	-29.41	78.86	39.38	84.38	16 8 21	2159.1	-29.88	70.09
100.00	11 40 45	3480.18	-14.90	126.95	34.93	63.78	12 38 45	2880.2	-18.30	119.81
110.00	17 25 23	2374.19	-34.16	49.85	39.60	91.23	18 4 57	1774.2	-33.62	40.65
110.00	11 54 13	3437.88	-10.75	121.35	32.53	57.36	12 51 31	2837.9	-14.98	114.80

DIFFERENTIAL CORRECTIONS
TDE 2.1068 TRA 1.6947 TC-18.9395 BAU 2.5073
RDE .2703 RRA .1987 RC3 -.3417 FAU .18365
FDE .9359 FRA 2.3265 FC-16.0585 BSP 45212
BDE 2.1240 BRA 1.7064 BC318.9426 FSP 3208

MID-COURSE EXECUTION ACCURACY
SGT12990.8 SGR 673.3 SG3 976.1
RRT .6696 RRF .6497 RTF .9774
SGB13008.2 R23 -.0078 R13 .9774
SG112998.6 SG2 499.8 THA 1.99

ORBIT DETERMINATION ACCURACY
ST 3990.4 SR 507.0 SS 899.6
CRT .9968 CRS -.8921 CST -.9082
LSA 4105.1 MSA 369.8 SSA 36.9
EL1 4022.3 EL2 40.2 ALF 7.22

LAUNCH DATE DEC 9 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 796.197 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.131 GAL -.67 AZL 87.75 HCA 234.76 SMA 188.54 ECC .21884 INC 2.2453 V1 30.239
RP 208.16 LAP -1.83 LOP 311.70 VP 23.900 GAP -11.16 AZP 91.30 TAL 356.27 TAP 231.03 RCA 147.28 APO 229.80 V2 26.323
RC 317.924 GL 24.34 GP -5.24 ZAL 93.16 ZAP 37.93 ETS 172.31 ZAE 59.73 ETE 176.48 ZAC 80.32 ETC 257.09 CLP 37.62

PLANETOCENTRIC CONIC

C3 9.919 VHL 3.149 DLA 26.00 RAL 181.60 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 4.710 DPA .91 RAP 168.69 ECC 1.1632

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 55 54	3052.22	-27.65	100.21	40.28	83.64	14 46 46	2452.2	-28.24	91.60
90.00	10 35 3	3712.59	-15.01	144.09	36.57	65.71	11 36 56	3112.6	-18.17	136.84
100.00	15 44 21	2702.56	-29.71	74.69	40.48	86.56	16 29 24	2102.6	-29.87	65.89
100.00	11 29 17	3537.48	-13.15	130.31	35.65	62.91	12 28 14	2937.5	-16.68	123.29
110.00	17 41 1	2337.54	-34.07	46.99	40.51	92.92	18 19 59	1737.5	-33.29	37.84
110.00	11 49 6	3475.27	-9.37	123.37	33.42	56.98	12 47 1	2875.3	-13.66	116.89

DIFFERENTIAL CORRECTIONS
TDE 2.0125 TRA 1.8535 TC-19.1120 BAU 2.5347
RDE .2671 RRA .2003 RC3 -.2941 FAU .17580
FDE .7938 FRA 2.3585 FC-15.3439 BSP 45724
BDE 2.0301 BRA 1.8643 BC319.1143 FSP 3089

MID-COURSE EXECUTION ACCURACY
SGT13130.2 SGR 659.5 SG3 939.7
RRT .6387 RRF .6174 RTF .9772
SGB13146.8 R23 -.0100 R13 .9772
SG113137.0 SG2 507.1 THA 1.84

ORBIT DETERMINATION ACCURACY
ST 3847.2 SR 501.0 SS 836.1
CRT .9952 CRS -.8527 CST -.8861
LSA 3950.1 MSA 382.6 SSA 37.3
EL1 3879.4 EL2 48.8 ALF 7.38

LAUNCH DATE DEC 9 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 800.548 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.138	GAL	-.81	AZL	87.78	HCA	236.01	SMA	188.66	ECC	.21951	INC	2.2176	V1	30.239
RP	208.01	LAP	-1.84	LOP	312.95	VP	23.929	GAP	-11.25	AZP	91.24	TAL	355.47	TAP	231.48	RCA	147.25	APO	230.08	V2	26.341
RC	318.808	GL	23.98	GP	-5.09	ZAL	94.68	ZAP	37.25	ETS	172.32	ZAE	58.75	ETE	176.47	ZAC	80.58	ETC	257.04	CLP	36.95

PLANETOCENTRIC CONIC

C3	9.953	VHL	3.155	DLA	25.02	RAL	182.93	RAD	6567.4	VEL	11.460	PTH	1.99	VHP	4.778	DPA	.81	RAP	169.28	ECC	1.1638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 20 26	2987.41	-28.05	95.52	41.46	85.96	15 10 13	2387.4	-28.32	86.86
90.00	10 21 8	3778.74	-13.12	148.03	37.30	64.68	11 24 7	3178.7	-16.43	140.91
100.00	16 4 38	2651.42	-29.86	70.89	41.56	88.55	16 48 50	2051.4	-29.74	62.09
100.00	11 19 37	3589.96	-11.50	133.33	36.47	62.22	12 19 27	2990.0	-15.13	126.42
110.00	17 56 15	2302.23	-33.92	44.24	41.43	94.54	18 34 37	1702.2	-32.92	35.15
110.00	11 44 29	3511.91	-8.01	125.33	34.38	56.66	12 43 1	2911.9	-12.34	118.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.9166	TRA	2.0176	TC-19.2530	BAU	2.5620	SGT13267.9	SGR	647.6	SG3	903.9	ST	3704.2	SR	496.4	SS	782.9
RDE	.2650	RRA	.2015	RC3 -.2486	FAU	.16820	RRT .6068	RRF	.5843	RTF	.9773	CRT	.9921	CRS	-.8056	CST	-.8624
FDE	.6675	FRA	2.3809	FC-14.6308	BSP	46223	SGB13283.7	R23	-.0122	R13	.9773	LSA	3797.8	MSA	394.2	SSA	37.5
BDE	1.9348	BRA	2.0277	BC319.2546	FSP	2971	SG113273.7	SG2	514.5	THA	1.70	EL1	3736.8	EL2	61.7	ALF	7.58

LAUNCH DATE DEC 9 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 804.901 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.145	GAL	-.96	AZL	87.81	HCA	237.26	SMA	188.79	ECC	.22021	INC	2.1906	V1	30.239
RP	207.86	LAP	-1.84	LOP	314.21	VP	23.958	GAP	-11.34	AZP	91.18	TAL	354.66	TAP	231.93	RCA	147.22	APO	230.36	V2	26.357
RC	319.685	GL	23.61	GP	-4.95	ZAL	96.23	ZAP	36.58	ETS	172.33	ZAE	57.79	ETE	176.45	ZAC	80.84	ETC	256.98	CLP	36.29

PLANETOCENTRIC CONIC

C3	10.002	VHL	3.163	DLA	24.02	RAL	184.27	RAD	6567.4	VEL	11.463	PTH	1.99	VHP	4.848	DPA	.69	RAP	169.88	ECC	1.1646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 42 32	2930.39	-28.25	91.36	42.61	88.04	15 31 23	2330.4	-28.23	82.69
90.00	10 9 44	3837.73	-11.38	151.49	38.14	63.90	11 13 42	3237.7	-14.80	144.48
100.00	16 23 43	2604.16	-29.89	67.38	42.63	90.40	17 7 7	2004.2	-29.51	58.60
100.00	11 11 14	3639.19	-9.93	136.14	37.38	61.66	12 11 54	3039.2	-13.64	129.31
110.00	18 11 8	2268.09	-33.70	41.60	42.38	96.09	18 48 56	1668.1	-32.49	32.58
110.00	11 40 19	3548.03	-6.65	127.25	35.40	56.39	12 39 27	2948.0	-11.02	120.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.8137	TRA	2.1886	TC-19.3643	BAU	2.5895	SGT13403.7	SGR	637.0	SG3	869.0	ST	3553.5	SR	492.0	SS	734.1
RDE	.2633	RRA	.2025	RC3 -.2048	FAU	.16074	RRT .5737	RRF	.5499	RTF	.9770	CRT	.9870	CRS	-.7416	CST	-.8302
FDE	.5392	FRA	2.4050	FC-13.9132	BSP	46680	SGB13418.9	R23	-.0140	R13	.9770	LSA	3638.5	MSA	410.7	SSA	37.8
BDE	1.8327	BRA	2.1980	BC319.3653	FSP	2856	SG113408.7	SG2	521.5	THA	1.56	EL1	3586.6	EL2	78.2	ALF	7.79

LAUNCH DATE DEC 9 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 809.255 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.152	GAL	-1.11	AZL	87.84	HCA	238.52	SMA	188.92	ECC	.22094	INC	2.1644	V1	30.239
RP	207.73	LAP	-1.85	LOP	315.46	VP	23.985	GAP	-11.43	AZP	91.13	TAL	353.84	TAP	232.36	RCA	147.18	APO	230.66	V2	26.373
RC	320.558	GL	23.24	GP	-4.82	ZAL	97.80	ZAP	35.93	ETS	172.34	ZAE	56.85	ETE	176.44	ZAC	81.10	ETC	256.93	CLP	35.65

PLANETOCENTRIC CONIC

C3	10.068	VHL	3.173	DLA	23.01	RAL	185.62	RAD	6567.4	VEL	11.465	PTH	1.99	VHP	4.918	DPA	.56	RAP	170.50	ECC	1.1657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 3 2	2878.57	-28.32	87.57	43.74	89.93	15 51 1	2278.6	-28.03	78.91
90.00	10 0 1	3892.17	-9.73	154.64	39.08	63.28	11 4 53	3292.2	-13.24	147.72
100.00	16 41 53	2559.86	-29.82	64.09	43.71	92.13	17 24 33	1959.9	-29.21	55.34
100.00	11 3 51	3686.11	-8.40	138.78	38.37	61.21	12 5 17	3086.1	-12.18	132.03
110.00	18 25 43	2234.98	-33.43	39.05	43.35	97.57	19 2 58	1635.0	-32.03	30.11
110.00	11 36 30	3583.75	-5.30	129.13	36.48	56.18	12 36 14	2983.8	-9.71	122.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7104	TRA	2.3666	TC-19.4334	BAU	2.6158	SGT13534.5	SGR	628.0	SG3	834.1	ST	3408.2	SR	488.9	SS	695.5
RDE	.2625	RRA	.2033	RC3 -.1626	FAU	.15335	RRT .5398	RRF	.5148	RTF	.9768	CRT	.9793	CRS	-.6668	CST	-.7957
FDE	.4233	FRA	2.4223	FC-13.1863	BSP	47184	SGB13549.1	R23	-.0158	R13	.9768	LSA	3486.3	MSA	427.6	SSA	37.9
BDE	1.7304	BRA	2.3753	BC319.4341	FSP	2746	SG113538.8	SG2	528.5	THA	1.44	EL1	3441.7	EL2	97.9	ALF	8.00

LAUNCH DATE DEC 9 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 813.610 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.160	GAL	-1.27	AZL	87.86	HCA	239.78	SMA	189.05	ECC	.22172	INC	2.1388	V1	30.239
RP	207.60	LAP	-1.85	LOP	316.72	VP	24.012	GAP	-11.53	AZP	91.08	TAL	353.01	TAP	232.78	RCA	147.13	APO	230.97	V2	26.388
RC	321.425	GL	22.85	GP	-4.69	ZAL	99.40	ZAP	35.30	ETS	172.35	ZAE	55.92	ETE	176.44	ZAC	81.36	ETC	256.87	CLP	35.03

PLANETOCENTRIC CONIC

C3	10.151	VHL	3.186	DLA	21.99	RAL	186.98	RAD	6567.4	VEL	11.469	PTH	1.99	VHP	4.989	DPA	.42	RAP	171.13	ECC	1.1671

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 22 22	2830.57	-28.27	84.06	44.87	91.69	16 9 32	2230.6	-27.74	75.43
90.00	9 51 31	3943.47	-8.15	157.57	40.10	62.79	10 57 15	3343.5	-11.73	150.73
100.00	16 59 19	2517.93	-29.68	60.98	44.80	93.76	17 41 17	1917.9	-28.84	52.28
100.00	10 57 15	3731.34	-6.91	141.31	39.43	60.84	11 59 26	3131.3	-10.74	134.62
110.00	18 40 3	2202.82	-33.12	36.60	44.35	98.99	19 16 45	1602.8	-31.52	27.74
110.00	11 33 1	3619.21	-3.96	130.99	37.61	56.02	12 33 20	3019.2	-8.39	124.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.6027	TRA	2.5509	TC-19.4712	BAU	2.6425	SGT13664.7	SGR	620.5	SG3	800.6	ST	3263.2	SR	486.6	SS	666.3
RDE	.2624	RRA	.2038	RC3 -.1227	FAU	.14628	RRT .5055	RRF	.4796	RTF	.9765	CRT	.9680	CRS	-.5797	CST	-.7585
FDE	.3149	FRA	2.4377	FC-12.4756	BSP	47674	SGB13678.8	R23	-.0171	R13	.9765	LSA	3335.9	MSA	446.6	SSA	37.9
BDE	1.6241	BRA	2.5590	BC319.4715	FSP	2640	SG113668.3	SG2	535.3	THA	1.32	EL1	3297.1	EL2	120.9	ALF	8.22

LAUNCH DATE DEC 9 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 817.964 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.167 GAL -1.43 AZL 87.89 HCA 241.03 SMA 189.18 ECC .22253 INC 2.1138 V1 30.239
RP 207.48 LAP -1.85 LOP 317.98 VP 24.038 GAP -11.62 AZP 91.02 TAL 352.16 TAP 233.19 RCA 147.08 APO 231.28 V2 26.402
RC 322.286 GL 22.45 GP -4.57 ZAL 101.01 ZAP 34.69 ETS 172.36 ZAE 55.01 ETE 176.43 ZAC 81.62 ETC 256.81 CLP 34.42

PLANETOCENTRIC CONIC

C3 10.253 VHL 3.202 DLA 20.95 RAL 188.34 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 5.061 DPA .27 RAP 171.77 ECC 1.1687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 40 47	2785.54	-28.14	80.77	46.02	93.34	16 27 13	2185.5	-27.38	72.19
90.00	9 43 59	3992.50	-6.61	160.36	41.20	62.40	10 50 31	3392.5	-10.26	153.57
100.00	17 16 10	2477.99	-29.46	58.03	45.90	95.30	17 57 28	1878.0	-28.42	49.38
100.00	10 51 17	3775.28	-5.44	143.75	40.56	60.56	11 54 13	3175.3	-9.32	137.12
110.00	18 54 7	2171.55	-32.76	34.23	45.37	100.35	19 30 18	1571.5	-30.99	25.46
110.00	11 29 50	3654.49	-2.61	132.84	38.81	55.90	12 30 44	3054.5	-7.07	126.59

DIFFERENTIAL CORRECTIONS
TDE 1.4926 TRA 2.7426 TC-19.4694 BAU 2.6687
RDE .2630 RRA .2040 RC3 -.0851 FAU .13943
FDE .2134 FRA 2.4478 FC-11.7730 BSP 48163
BDE 1.5156 BRA 2.7502 BC319.4696 FSP 2537

MID-COURSE EXECUTION ACCURACY
SGT13791.5 SGR 614.2 SG3 767.9
RRT .4710 RRF .4440 RTF .9763
SGB13805.1 R23 -.0188 R13 .9763
SG113794.5 SG2 541.7 THA 1.20

ORBIT DETERMINATION ACCURACY
ST 3123.9 SR 485.1 SS 645.2
CRT .9520 CRS -.4822 CST -.7209
LSA 3192.2 MSA 467.4 SSA 37.8
EL1 3157.9 EL2 146.9 ALF 8.43

LAUNCH DATE DEC 9 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 822.319 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.174 GAL -1.59 AZL 87.91 HCA 242.29 SMA 189.31 ECC .22339 INC 2.0894 V1 30.239
RP 207.36 LAP -1.85 LOP 319.24 VP 24.062 GAP -11.71 AZP 90.97 TAL 351.29 TAP 233.59 RCA 147.02 APO 231.61 V2 26.416
RC 323.141 GL 22.05 GP -4.45 ZAL 102.65 ZAP 34.09 ETS 172.36 ZAE 54.11 ETE 176.42 ZAC 81.87 ETC 256.76 CLP 33.83

PLANETOCENTRIC CONIC

C3 10.374 VHL 3.221 DLA 19.90 RAL 189.71 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 5.135 DPA .10 RAP 172.42 ECC 1.1707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 58 29	2742.94	-27.93	77.67	47.18	94.88	16 44 12	2142.9	-26.96	69.14
90.00	9 37 12	4039.82	-5.11	163.02	42.37	62.11	10 44 31	3439.8	-8.80	156.29
100.00	17 32 30	2439.76	-29.19	55.22	47.03	96.75	18 13 10	1839.8	-27.95	46.64
100.00	10 45 51	3818.23	-4.00	146.13	41.75	60.35	11 49 30	3218.2	-7.92	139.53
110.00	19 7 57	2141.11	-32.36	31.94	46.43	101.65	19 43 38	1541.1	-30.42	23.26
110.00	11 26 53	3689.64	-1.27	134.67	40.05	55.84	12 28 23	3089.6	-5.74	128.45

DIFFERENTIAL CORRECTIONS
TDE 1.3793 TRA 2.9417 TC-19.4292 BAU 2.6946
RDE .2644 RRA .2040 RC3 -.0492 FAU .13269
FDE .1194 FRA 2.4556 FC-11.0732 BSP 48644
BDE 1.4044 BRA 2.9488 BC319.4293 FSP 2435

MID-COURSE EXECUTION ACCURACY
SGT13915.3 SGR 609.2 SG3 735.7
RRT .4363 RRF .4085 RTF .9760
SGB13928.6 R23 -.0200 R13 .9760
SG113917.9 SG2 548.1 THA 1.10

ORBIT DETERMINATION ACCURACY
ST 2991.4 SR 484.3 SS 632.6
CRT .9301 CRS -.3786 CST -.6866
LSA 3056.5 MSA 490.0 SSA 37.5
EL1 3025.3 EL2 175.9 ALF 8.59

LAUNCH DATE DEC 9 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 826.672 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.182 GAL -1.75 AZL 87.93 HCA 243.56 SMA 189.45 ECC .22429 INC 2.0656 V1 30.239
RP 207.26 LAP -1.85 LOP 320.50 VP 24.086 GAP -11.80 AZP 90.92 TAL 350.42 TAP 233.97 RCA 146.96 APO 231.94 V2 26.428
RC 323.990 GL 21.63 GP -4.34 ZAL 104.29 ZAP 33.50 ETS 172.36 ZAE 53.22 ETE 176.41 ZAC 82.12 ETC 256.70 CLP 33.25

PLANETOCENTRIC CONIC

C3 10.515 VHL 3.243 DLA 18.84 RAL 191.08 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 5.209 DPA -.08 RAP 173.09 ECC 1.1730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 34	2702.39	-27.66	74.73	48.35	96.33	17 0 36	2102.4	-26.49	66.26
90.00	9 31 2	4085.82	-3.64	165.61	43.59	61.90	10 39 8	3485.8	-7.37	158.91
100.00	17 48 24	2403.04	-28.86	52.54	48.18	98.13	18 28 27	1803.0	-27.44	44.03
100.00	10 40 53	3860.41	-2.58	148.45	43.00	60.21	11 45 13	3260.4	-6.52	141.88
110.00	19 21 35	2111.49	-31.94	29.74	47.52	102.89	19 56 47	1511.5	-29.83	21.16
110.00	11 24 11	3724.73	.07	136.50	41.35	55.82	12 26 16	3124.7	-4.41	130.29

DIFFERENTIAL CORRECTIONS
TDE 1.2627 TRA 3.1476 TC-19.3536 BAU 2.7207
RDE .2663 RRA .2036 RC3 -.0157 FAU .12618
FDE .0299 FRA 2.4582 FC-10.3885 BSP 49127
BDE 1.2905 BRA 3.1542 BC319.3537 FSP 2337

MID-COURSE EXECUTION ACCURACY
SGT14037.5 SGR 605.0 SG3 704.3
RRT .4017 RRF .3727 RTF .9757
SGB14050.6 R23 -.0217 R13 .9757
SG114039.6 SG2 554.0 THA .99

ORBIT DETERMINATION ACCURACY
ST 2868.4 SR 484.2 SS 626.7
CRT .9008 CRS -.2699 CST -.6563
LSA 2930.6 MSA 514.9 SSA 37.1
EL1 2901.6 EL2 207.9 ALF 8.69

LAUNCH DATE DEC 9 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 831.024 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.189 GAL -1.92 AZL 87.96 HCA 244.82 SMA 189.58 ECC .22524 INC 2.0422 V1 30.239
RP 207.16 LAP -1.85 LOP 321.77 VP 24.109 GAP -11.90 AZP 90.87 TAL 349.53 TAP 234.34 RCA 146.88 APO 232.28 V2 26.439
RC 324.833 GL 21.21 GP -4.24 ZAL 105.96 ZAP 32.93 ETS 172.36 ZAE 52.35 ETE 176.40 ZAC 82.37 ETC 256.65 CLP 32.69

PLANETOCENTRIC CONIC

C3 10.677 VHL 3.268 DLA 17.78 RAL 192.45 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 5.284 DPA -.27 RAP 173.77 ECC 1.1757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 32 8	2663.64	-27.34	71.94	49.56	97.69	17 16 32	2063.6	-25.99	63.54
90.00	9 25 23	4130.80	-2.19	168.12	44.88	61.76	10 34 14	3530.8	-5.95	161.46
100.00	18 3 54	2367.70	-28.50	49.98	49.36	99.43	18 43 22	1767.7	-26.90	41.54
100.00	10 36 18	3901.98	-1.17	150.73	44.31	60.13	11 41 20	3302.0	-5.13	144.19
110.00	19 35 0	2082.67	-31.48	27.61	48.64	104.07	20 9 43	1482.7	-29.22	19.13
110.00	11 21 41	3759.77	1.41	138.33	42.70	55.84	12 24 21	3159.8	-3.08	132.13

DIFFERENTIAL CORRECTIONS
TDE 1.1435 TRA 3.3601 TC-19.2386 BAU 2.7463
RDE .2690 RRA .2030 RC3 .0159 FAU .11977
FDE -.0525 FRA 2.4582 FC3-9.7111 BSP 49586
BDE 1.1748 BRA 3.3662 BC319.2386 FSP 2242

MID-COURSE EXECUTION ACCURACY
SGT14155.6 SGR 601.9 SG3 673.6
RRT .3671 RRF .3373 RTF .9752
SGB14168.3 R23 -.0228 R13 .9752
SG114157.3 SG2 559.8 THA .90

ORBIT DETERMINATION ACCURACY
ST 2758.2 SR 484.8 SS 627.4
CRT .8628 CRS -.1633 CST -.6352
LSA 2818.3 MSA 540.8 SSA 36.7
EL1 2790.0 EL2 242.3 ALF 8.69

LAUNCH DATE DEC 9 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 835.375 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.197 GAL -2.09 AZL 87.98 HCA 246.08 SMA 189.72 ECC .22623 INC 2.0193 V1 30.239
RP 207.08 LAP -1.85 LOP 323.03 VP 24.130 GAP -11.99 AZP 90.82 TAL 348.62 TAP 234.70 RCA 146.80 APO 232.64 V2 26.449
RC 325.671 GL 20.77 GP -4.14 ZAL 107.63 ZAP 32.38 ETS 172.36 ZAE 51.49 ETE 176.39 ZAC 82.62 ETC 256.59 CLP 32.14

PLANETOCENTRIC CONIC

C3 10.862 VHL 3.296 DLA 16.70 RAL 193.82 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 5.361 DPA -.48 RAP 174.46 ECC 1.1788

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 14	2626.51	-26.97	69.29	50.78	98.97	17 32 1	2026.5	-25.45	60.95
90.00	9 20 11	4174.94	-.77	170.58	46.23	61.69	10 29 46	3574.9	-4.55	163.94
100.00	18 19 3	2333.64	-28.09	47.53	50.56	100.66	18 57 57	1733.6	-26.33	39.17
100.00	10 32 3	3943.04	.22	152.98	45.67	60.11	11 37 47	3343.0	-3.75	146.45
110.00	19 48 14	2054.64	-31.00	25.57	49.80	105.19	20 22 28	1454.6	-28.60	17.19
110.00	11 19 23	3794.81	2.75	140.16	44.09	55.91	12 22 37	3194.8	-1.74	133.96

DIFFERENTIAL CORRECTIONS
TDE 1.0219 TRA 3.5803 TC-19.0875 BAU 2.7719
RDE .2723 RRA .2022 RC3 .0452 FAU .11357
FDE -.1291 FRA 2.4545 FC3-9.0512 BSP 50054
BDE 1.0575 BRA 3.5860 BC319.0876 FSP 2148

MID-COURSE EXECUTION ACCURACY
SGT14271.8 SGR 599.7 SG3 643.6
RRT .3330 RRF .3023 RTF .9746
SGB14284.4 R23 -.0241 R13 .9746
SG114273.2 SG2 565.4 THA .80

ORBIT DETERMINATION ACCURACY
ST 2664.4 SR 486.0 SS 633.1
CRT .8149 CRS -.0613 CST -.6244
LSA 2722.7 MSA 567.1 SSA 36.1
EL1 2694.0 EL2 278.6 ALF 8.55

LAUNCH DATE DEC 9 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 839.723 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.204 GAL -2.27 AZL 88.00 HCA 247.35 SMA 189.86 ECC .22727 INC 1.9968 V1 30.239
RP 207.00 LAP -1.84 LOP 324.30 VP 24.151 GAP -12.09 AZP 90.77 TAL 347.71 TAP 235.05 RCA 146.71 APO 233.00 V2 26.459
RC 326.503 GL 20.33 GP -4.04 ZAL 109.31 ZAP 31.83 ETS 172.36 ZAE 50.65 ETE 176.39 ZAC 82.87 ETC 256.54 CLP 31.60

PLANETOCENTRIC CONIC

C3 11.071 VHL 3.327 DLA 15.63 RAL 195.18 RAD 6567.4 VEL 11.509 PTH 2.00 VHP 5.438 DPA -.69 RAP 175.16 ECC 1.1822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 56	2590.85	-26.57	66.76	52.04	100.18	17 47 7	1990.8	-24.89	58.49
90.00	9 15 23	4218.40	.63	173.01	47.63	61.69	10 25 41	3618.4	-3.16	166.38
100.00	18 33 53	2300.79	-27.66	45.18	51.80	101.82	19 12 14	1700.8	-25.75	36.90
100.00	10 28 7	3983.70	1.60	155.21	47.09	60.15	11 34 31	3383.7	-2.38	148.69
110.00	20 1 15	2027.41	-30.49	23.61	50.99	106.25	20 35 3	1427.4	-27.97	15.33
110.00	11 17 14	3829.84	4.09	141.99	45.54	56.03	12 21 4	3229.8	-.40	135.78

DIFFERENTIAL CORRECTIONS
TDE .8982 TRA 3.8087 TC-18.8988 BAU 2.7972
RDE .2763 RRA .2010 RC3 .0726 FAU .10746
FDE -.1991 FRA 2.4468 FC3-8.4034 BSP 50549
BDE .9398 BRA 3.8140 BC318.8989 FSP 2061

MID-COURSE EXECUTION ACCURACY
SGT14385.4 SGR 598.2 SG3 614.2
RRT .2993 RRF .2678 RTF .9739
SGB14397.8 R23 -.0253 R13 .9739
SG114386.5 SG2 570.7 THA .71

ORBIT DETERMINATION ACCURACY
ST 2590.1 SR 487.9 SS 642.3
CRT .7562 CRS .0328 CST -.6255
LSA 2647.2 MSA 592.1 SSA 35.5
EL1 2616.7 EL2 316.0 ALF 8.23

LAUNCH DATE DEC 9 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 844.069 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.212 GAL -2.45 AZL 88.03 HCA 248.61 SMA 189.99 ECC .22836 INC 1.9748 V1 30.239
RP 206.93 LAP -1.84 LOP 325.56 VP 24.170 GAP -12.19 AZP 90.72 TAL 346.78 TAP 235.39 RCA 146.61 APO 233.38 V2 26.467
RC 327.330 GL 19.88 GP -3.95 ZAL 110.99 ZAP 31.30 ETS 172.35 ZAE 49.82 ETE 176.38 ZAC 83.12 ETC 256.48 CLP 31.08

PLANETOCENTRIC CONIC

C3 11.305 VHL 3.362 DLA 14.55 RAL 196.54 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 5.517 DPA -.91 RAP 175.87 ECC 1.1860

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 19 16	2556.57	-26.13	64.34	53.32	101.32	18 1 52	1956.6	-24.31	56.15
90.00	9 10 55	4261.30	2.02	175.40	49.08	61.75	10 21 56	3661.3	-1.78	168.77
100.00	18 48 24	2269.09	-27.19	42.94	53.06	102.91	19 26 13	1669.1	-25.14	34.74
100.00	10 24 27	4024.01	2.97	157.43	48.55	60.24	11 31 31	3424.0	-1.02	150.90
110.00	20 14 5	2000.99	-29.98	21.73	52.21	107.26	20 47 26	1401.0	-27.32	13.54
110.00	11 15 15	3864.88	5.42	143.84	47.03	56.20	12 19 40	3264.9	.94	137.61

DIFFERENTIAL CORRECTIONS
TDE .7719 TRA 4.0429 TC-18.6802 BAU 2.8232
RDE .2810 RRA .1994 RC3 .0975 FAU .10161
FDE -.2626 FRA 2.4347 FC3-7.7815 BSP 50989
BDE .8214 BRA 4.0478 BC318.6805 FSP 1971

MID-COURSE EXECUTION ACCURACY
SGT14497.6 SGR 597.4 SG3 585.7
RRT .2662 RRF .2340 RTF .9733
SGB14509.9 R23 -.0264 R13 .9732
SG114498.5 SG2 575.8 THA .63

ORBIT DETERMINATION ACCURACY
ST 2536.0 SR 490.3 SS 653.3
CRT .6868 CRS .1178 CST -.6377
LSA 2592.3 MSA 614.6 SSA 34.8
EL1 2558.7 EL2 353.2 ALF 7.71

LAUNCH DATE DEC 9 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 848.411 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.220 GAL -2.63 AZL 88.05 HCA 249.88 SMA 190.13 ECC .22950 INC 1.9531 V1 30.239
RP 206.86 LAP -1.83 LOP 326.83 VP 24.189 GAP -12.29 AZP 90.67 TAL 345.83 TAP 235.71 RCA 146.50 APO 233.77 V2 26.474
RC 328.152 GL 19.43 GP -3.86 ZAL 112.68 ZAP 30.79 ETS 172.35 ZAE 49.00 ETE 176.37 ZAC 83.37 ETC 256.43 CLP 30.57

PLANETOCENTRIC CONIC

C3 11.564 VHL 3.401 DLA 13.47 RAL 197.90 RAD 6567.4 VEL 11.530 PTH 2.01 VHP 5.597 DPA -1.15 RAP 176.59 ECC 1.1903

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 14	2523.59	-25.67	62.04	54.63	102.38	18 16 18	1923.6	-23.71	53.92
90.00	9 6 44	4303.71	3.38	177.77	50.58	61.87	10 18 28	3703.7	-.41	171.14
100.00	19 2 38	2238.51	-26.71	40.80	54.36	103.94	19 39 56	1638.5	-24.53	32.68
100.00	10 21 2	4064.03	4.32	159.63	50.06	60.39	11 28 46	3464.0	.34	153.10
110.00	20 26 43	1975.38	-29.44	19.92	53.47	108.20	20 59 39	1375.4	-26.68	11.83
110.00	11 13 25	3899.92	6.74	145.68	48.57	56.41	12 18 25	3299.9	2.28	139.44

DIFFERENTIAL CORRECTIONS
TDE .6449 TRA 4.2858 TC-18.4243 BAU 2.8486
RDE .2864 RRA .1975 RC3 .1203 FAU .09587
FDE -.3208 FRA 2.4184 FC3-7.1770 BSP 51456
BDE .7056 BRA 4.2904 BC318.4247 FSP 1885

MID-COURSE EXECUTION ACCURACY
SGT14606.1 SGR 597.1 SG3 557.8
RRT .2339 RRF .2007 RTF .9724
SGB14618.3 R23 -.0279 R13 .9724
SG114606.8 SG2 580.6 THA .55

ORBIT DETERMINATION ACCURACY
ST 2506.8 SR 493.3 SS 665.5
CRT .6082 CRS .1946 CST -.6574
LSA 2562.6 MSA 634.0 SSA 34.0
EL1 2525.1 EL2 388.7 ALF 6.99

LAUNCH DATE DEC 9 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 852.750 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.227	GAL	-2.82	AZL	88.07	HCA	251.15	SMA	190.27	ECC	.23070	INC	1.9316	V1	30.239
RP	206.81	LAP	-1.83	LOP	328.10	VP	24.206	GAP	-12.39	AZP	90.62	TAL	344.88	TAP	236.02	RCA	146.38	APO	234.17	V2	26.480
RC	328.970	GL	18.96	GP	-3.78	ZAL	114.37	ZAP	30.28	ETS	172.34	ZAE	48.19	ETE	176.36	ZAC	83.61	ETC	256.38	CLP	30.07

PLANETOCENTRIC CONIC

C3	11.852	VHL	3.443	DLA	12.39	RAL	199.24	RAD	6567.5	VEL	11.543	PTH	2.01	VHP	5.678	DPA	-1.39	RAP	177.33	ECC	1.1951

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 48 53	2491.88	-25.19	59.84	55.97	103.38	18 30 25	1891.9	-23.10	51.79
90.00	9 2 50	4345.70	4.73	180.12	52.13	62.05	10 15 16	3745.7	.95	173.48
100.00	19 16 35	2209.04	-26.21	38.75	55.69	104.91	19 53 24	1609.0	-23.91	30.71
100.00	10 17 49	4103.78	5.65	181.83	51.62	60.60	11 26 13	3503.8	1.69	155.28
110.00	20 39 10	1950.61	.91	18.20	54.76	109.10	21 11 41	1350.6	-26.03	10.20
110.00	11 11 43	3934.97	.06	147.55	50.15	56.67	12 17 18	3335.0	3.62	141.27

DIFFERENTIAL CORRECTIONS

TDE	.5141	TRA	4.5351	TC-18.141	U	2.8748	
RDE	.2923	RRA	.1953	RC3 .140	AU	.09030	
FDE	-.3744	FRA	2.3980	FC3-6.5958	BSP	51896	
BDE	.5914	BRA	4.5393	BC318.1434	FSP	1799	

MID-COURSE EXECUTION ACCURACY

SGT14713.9	SGR	597.4	SG3	530.6			
RRT	.2020	RRF	.1679	RTF	.9714		
SGB14726.1	R23	-.0292	R13	.9714			
SG114714.4	SG2	585.1	THA	.47			

ORBIT DETERMINATION ACCURACY

ST	2499.4	SR	496.7	SS	677.9		
CRT	.5209	CRS	.2640	CST	-.6833		
LSA	2555.6	MSA	649.1	SSA	33.1		
EL1	2513.2	EL2	421.7	ALF	6.08		

LAUNCH DATE DEC 9 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 857.084 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.235	GAL	-3.01	AZL	88.09	HCA	252.41	SMA	190.41	ECC	.23195	INC	1.9106	V1	30.239
RP	206.77	LAP	-1.82	LOP	329.37	VP	24.223	GAP	-12.49	AZP	90.58	TAL	343.91	TAP	236.32	RCA	146.25	APO	234.58	V2	26.486
RC	329.784	GL	18.49	GP	-3.70	ZAL	116.05	ZAP	29.79	ETS	172.33	ZAE	47.39	ETE	176.35	ZAC	83.86	ETC	256.33	CLP	29.58

PLANETOCENTRIC CONIC

C3	12.169	VHL	3.488	DLA	11.32	RAL	200.58	RAD	6567.5	VEL	11.557	PTH	2.02	VHP	5.761	DPA	-1.64	RAP	178.07	ECC	1.2003

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 13	2461.37	-24.69	57.74	57.34	104.32	18 44 15	1861.4	-22.48	49.77
90.00	8 59 10	4387.32	6.05	182.47	53.73	62.28	10 12 18	3787.3	2.29	175.80
100.00	19 30 16	2180.64	-25.70	36.79	57.04	105.82	20 6 37	1580.6	-23.28	28.83
100.00	10 14 49	4143.29	6.97	164.03	53.23	60.86	11 23 52	3543.3	3.03	157.45
110.00	20 51 26	1926.69	-28.36	16.55	56.08	109.93	21 23 32	1326.7	-25.38	8.64
110.00	11 10 9	3970.01	9.36	149.42	51.77	56.97	12 16 19	3370.0	4.95	143.11

DIFFERENTIAL CORRECTIONS

TDE	.3845	TRA	4.7936	TC-17.8283	BAU	2.9005	
RDE	.2990	RRA	.1928	RC3 .1595	FAU	.08486	
FDE	-.4214	FRA	2.3739	FC3-6.0376	BSP	52350	
BDE	.4871	BRA	4.7974	BC317.8291	FSP	1720	

MID-COURSE EXECUTION ACCURACY

SGT14818.4	SGR	598.2	SG3	504.0			
RRT	.1714	RRF	.1362	RTF	.9703		
SGB14830.5	R23	-.0308	R13	.9703			
SG114818.7	SG2	589.3	THA	.40			

ORBIT DETERMINATION ACCURACY

ST	2518.1	SR	500.6	SS	689.3		
CRT	.4302	CRS	.3242	CST	-.7122		
LSA	2575.1	MSA	658.9	SSA	32.3		
EL1	2527.6	EL2	450.2	ALF	5.05		

LAUNCH DATE DEC 9 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 861.413 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.243	GAL	-3.21	AZL	88.11	HCA	253.68	SMA	190.56	ECC	.23327	INC	1.8898	V1	30.239
RP	206.73	LAP	-1.81	LOP	330.64	VP	24.238	GAP	-12.60	AZP	90.53	TAL	342.92	TAP	236.60	RCA	146.10	APO	235.01	V2	26.490
RC	330.595	GL	18.02	GP	-3.62	ZAL	117.72	ZAP	29.31	ETS	172.32	ZAE	46.61	ETE	176.34	ZAC	84.11	ETC	256.28	CLP	29.11

PLANETOCENTRIC CONIC

C3	12.516	VHL	3.538	DLA	10.25	RAL	201.91	RAD	6567.5	VEL	11.572	PTH	2.02	VHP	5.844	DPA	-1.90	RAP	178.82	ECC	1.2060

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 16	2432.06	-24.18	55.74	58.74	105.20	18 57 48	1832.1	-21.86	47.84
90.00	8 55 44	4428.60	7.35	184.80	55.37	62.58	10 9 32	3828.6	3.62	178.11
100.00	19 43 42	2153.31	-25.18	34.93	58.43	106.67	20 19 35	1553.3	-22.65	27.04
100.00	10 11 59	4182.57	8.26	166.22	54.88	61.17	11 21 42	3582.6	4.35	159.62
110.00	21 3 29	1903.63	-27.82	14.97	57.43	110.72	21 35 13	1303.6	-24.74	7.15
110.00	11 8 41	4005.02	10.65	151.31	53.44	57.33	12 15 26	3405.0	6.27	144.96

DIFFERENTIAL CORRECTIONS

TDE	.2519	TRA	5.0592	TC-17.4895	BAU	2.9266	
RDE	.3063	RRA	.1899	RC3 .1759	FAU	.07958	
FDE	-.4638	FRA	2.3458	FC3-5.5044	BSP	52801	
BDE	.3966	BRA	5.0627	BC317.4904	FSP	1639	

MID-COURSE EXECUTION ACCURACY

SGT14920.9	SGR	599.3	SG3	478.2			
RRT	.1413	RRF	.1052	RTF	.9691		
SGB14933.0	R23	-.0323	R13	.9691			
SG114921.2	SG2	593.3	THA	.33			

ORBIT DETERMINATION ACCURACY

ST	2558.1	SR	504.8	SS	699.6		
CRT	.3370	CRS	.3782	CST	-.7421		
LSA	2616.6	MSA	663.8	SSA	31.4		
EL1	2564.0	EL2	474.2	ALF	3.94		

LAUNCH DATE DEC 9 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 865.737 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.251	GAL	-3.41	AZL	88.13	HCA	254.95	SMA	190.70	ECC	.23464	INC	1.8693	V1	30.239
RP	206.70	LAP	-1.81	LOP	331.90	VP	24.252	GAP	-12.70	AZP	90.49	TAL	341.93	TAP	236.88	RCA	145.95	APO	235.44	V2	26.493
RC	331.403	GL	17.55	GP	-3.55	ZAL	119.39	ZAP	28.85	ETS	172.31	ZAE	45.83	ETE	176.33	ZAC	84.35	ETC	256.23	CLP	28.65

PLANETOCENTRIC CONIC

C3	12.896	VHL	3.591	DLA	9.20	RAL	203.23	RAD	6567.5	VEL	11.588	PTH	2.03	VHP	5.929	DPA	-2.17	RAP	179.58	ECC	1.2122

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 2	2403.90	-23.67	53.84	60.17	106.02	19 11 6	1803.9	-21.24	46.01
90.00	8 52 29	4469.56	8.63	187.13	57.06	62.92	10 6 59	3869.6	4.93	180.41
100.00	19 56 52	2127.05	-24.65	33.16	59.85	107.46	20 32 19	1527.0	-22.03	25.34
100.00	10 9 20	4221.64	9.54	168.42	56.58	61.54	11 19 41	3621.6	5.66	161.78
110.00	21 15 21	1881.44	-27.27	13.48	58.82	111.46	21 46 43	1281.4	-24.11	5.74
110.00	11 7 20	4040.01	11.93	153.21	55.15	57.73	12 14 40	3440.0	7.59	146.81

DIFFERENTIAL CORRECTIONS

TDE	.1183	TRA	5.3318	TC-17.1292	BAU	2.9534	
RDE	.3142	RRA	.1866	RC3 .1904	FAU	.07444	
FDE	-.5013	FRA	2.3136	FC3-4.9975	BSP	53214	
BDE	.3358	BRA	5.3350	BC317.1303	FSP	1561	

MID-COURSE EXECUTION ACCURACY

SGT15021.7	SGR	600.8	SG3	453.1			
RRT	.1121	RRF	.0749	RTF	.9676		
SGB15033.7	R23	-.0339	R13	.9676			
SG115021.8	SG2	597.0	THA	.26			

ORBIT DETERMINATION ACCURACY

ST	2618.3	SR	509.4	SS	708.0		
CRT	.2452	CRS	.4260	CST	-.7708		
LSA	2678.4	MSA	664.3	SSA	30.5		
EL1	2621.4	EL2	493.3	ALF	2.83		

LAUNCH DATE DEC 9 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 870.054 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.259	GAL	-3.61	AZL	88.15	HCA	256.22	SMA	190.84	ECC	.23608	INC	1.8490	V1	30.239
RP	206.68	LAP	-1.80	LOP	333.17	VP	24.266	GAP	-12.81	AZP	90.44	TAL	340.92	TAP	237.14	RCA	145.79	APO	235.90	V2	26.495
RC	332.208	GL	17.07	GP	-3.48	ZAL	121.04	ZAP	28.39	ETS	172.30	ZAE	45.07	ETE	176.32	ZAC	84.60	ETC	256.19	CLP	28.19

PLANETOCENTRIC CONIC

C3	13.310	VHL	3.648	DLA	8.15	RAL	204.54	RAD	6567.5	VEL	11.606	PTH	2.03	VHP	6.015	DPA	-2.45	RAP	180.35	ECC	1.2190

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 31	2376.90	-23.15	52.03	61.63	106.78	19 24 8	1776.9	-20.63	44.27
90.00	8 49 25	4510.21	9.88	189.47	58.80	63.33	10 4 35	3910.2	6.22	182.70
100.00	20 9 48	2101.84	-24.13	31.47	61.30	108.20	20 44 50	1501.8	-21.41	23.72
100.00	10 6 49	4260.51	10.79	170.63	58.32	61.95	11 17 50	3660.5	6.96	163.94
110.00	21 27 2	1860.16	-26.73	12.06	60.24	112.14	21 58 2	1260.2	-23.49	4.39
110.00	11 6 5	4074.95	13.20	155.13	56.90	58.18	12 14 0	3474.9	8.89	148.67

DIFFERENTIAL CORRECTIONS

TDE	-.0171	TRA	5.6132	TC-16.7494	BAU	2.9807	
RDE	.3228	RRA	.1830	RC3 .2029	FAU	.06945	
FDE	-.5345	FRA	2.2777	FC3-4.5174	BSP	53624	
BDE	.3232	BRA	5.6162	BC316.7506	FSP	1484	

MID-COURSE EXECUTION ACCURACY

SGT15121.7	SGR	602.6	SG3	428.8			
RRT	.0836	RRF	.0453	RTF	.9659		
SGB15133.7	R23	-.0357	R13	.9659			
SG115121.8	SG2	600.5	THA	.19			

ORBIT DETERMINATION ACCURACY

ST	2696.8	SR	514.3	SS	714.5
CRT	.1568	CRS	.4689	CST	-.7971
LSA	2758.5	MSA	661.4	SSA	29.6
EL1	2698.0	EL2	507.7	ALF	1.78

LAUNCH DATE DEC 9 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 874.365 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.267	GAL	-3.82	AZL	88.17	HCA	257.49	SMA	190.99	ECC	.23759	INC	1.8289	V1	30.239
RP	206.67	LAP	-1.79	LOP	334.44	VP	24.278	GAP	-12.93	AZP	90.40	TAL	339.90	TAP	237.38	RCA	145.61	APO	236.36	V2	26.497
RC	333.009	GL	16.59	GP	-3.41	ZAL	122.68	ZAP	27.94	ETS	172.29	ZAE	44.32	ETE	176.30	ZAC	84.85	ETC	256.14	CLP	27.75

PLANETOCENTRIC CONIC

C3	13.760	VHL	3.709	DLA	7.11	RAL	205.83	RAD	6567.5	VEL	11.625	PTH	2.04	VHP	6.103	DPA	-2.73	RAP	181.13	ECC	1.2265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 45	2351.03	-22.63	50.31	63.12	107.49	19 36 56	1751.0	-20.02	42.61
90.00	8 46 31	4550.58	11.10	191.80	60.57	63.78	10 2 22	3950.6	7.49	184.98
100.00	20 22 29	2077.69	-23.60	29.86	62.77	108.89	20 57 7	1477.7	-20.81	22.18
100.00	10 4 28	4299.15	12.02	172.84	60.10	62.42	11 16 7	3699.1	8.23	166.10
110.00	21 38 31	1839.78	-26.20	10.71	61.68	112.78	22 9 10	1239.8	-22.89	3.12
110.00	11 4 56	4109.82	14.44	157.07	58.69	58.67	12 13 25	3509.8	10.19	150.55

DIFFERENTIAL CORRECTIONS

TDE	-.1526	TRA	5.9028	TC-16.3490	BAU	3.0079	
RDE	.3319	RRA	.1790	RC3 .2136	FAU	.06455	
FDE	-.5628	FRA	2.2377	FC3-4.0615	BSP	54021	
BDE	.3653	BRA	5.9055	BC316.3504	FSP	1408	

MID-COURSE EXECUTION ACCURACY

SGT15218.2	SGR	604.6	SG3	404.9			
RRT	.0561	RRF	.0166	RTF	.9640		
SGB15230.2	R23	-.0376	R13	.9640			
SG115218.3	SG2	603.7	THA	.13			

ORBIT DETERMINATION ACCURACY

ST	2790.3	SR	519.5	SS	718.3
CRT	.0744	CRS	.5070	CST	-.8203
LSA	2853.2	MSA	655.7	SSA	28.8
EL1	2790.6	EL2	518.0	ALF	.82

LAUNCH DATE DEC 9 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 878.668 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.275	GAL	-4.03	AZL	88.19	HCA	258.76	SMA	191.13	ECC	.23916	INC	1.8091	V1	30.239
RP	206.67	LAP	-1.77	LOP	335.71	VP	24.289	GAP	-13.04	AZP	90.35	TAL	338.86	TAP	237.62	RCA	145.42	APO	236.84	V2	26.497
RC	333.807	GL	16.12	GP	-3.35	ZAL	124.30	ZAP	27.51	ETS	172.27	ZAE	43.58	ETE	176.29	ZAC	85.09	ETC	256.10	CLP	27.32

PLANETOCENTRIC CONIC

C3	14.249	VHL	3.775	DLA	6.09	RAL	207.11	RAD	6567.6	VEL	11.646	PTH	2.04	VHP	6.192	DPA	-3.02	RAP	181.92	ECC	1.2345

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 42	2326.28	-22.11	48.68	64.64	108.15	19 49 29	1726.3	-19.43	41.04
90.00	8 43 47	4590.66	12.30	194.14	62.39	64.29	10 0 17	3990.7	8.74	187.27
100.00	20 34 56	2054.60	-23.09	28.34	64.28	109.53	21 9 11	1454.6	-20.21	20.73
100.00	10 2 14	4337.57	13.22	175.06	61.92	62.94	11 14 31	3737.6	9.49	168.26
110.00	21 49 48	1820.33	-25.68	9.44	63.16	113.37	22 20 8	1220.3	-22.30	1.92
110.00	11 3 52	4144.61	15.66	159.02	60.53	59.22	12 12 56	3544.6	11.46	152.43

DIFFERENTIAL CORRECTIONS

TDE	-.2884	TRA	6.1998	TC-15.9368	BAU	3.0361	
RDE	.3417	RRA	.1746	RC3 .2225	FAU	.05981	
FDE	-.5864	FRA	2.1934	FC3-3.6339	BSP	54408	
BDE	.4472	BRA	6.2023	BC315.9384	FSP	1334	

MID-COURSE EXECUTION ACCURACY

SGT15313.9	SGR	606.8	SG3	381.8			
RRT	.0294	RRF	-.0114	RTF	.9617		
SGB15325.9	R23	-.0397	R13	.9617			
SG115313.9	SG2	606.6	THA	.07			

ORBIT DETERMINATION ACCURACY

ST	2895.3	SR	524.8	SS	719.4
CRT	-.0013	CRS	.5410	CST	-.8403
LSA	2958.9	MSA	648.2	SSA	27.9
EL1	2895.3	EL2	524.8	ALF	179.99

LAUNCH DATE DEC 9 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 882.962 EARTH TO MARS

RL	147.33	LAL	.00	LOL	76.96	VL	33.283	GAL	-4.25	AZL	88.21	HCA	260.03	SMA	191.28	ECC	.24081	INC	1.7894	V1	30.239
RP	206.68	LAP	-1.76	LOP	336.98	VP	24.299	GAP	-13.16	AZP	90.31	TAL	337.81	TAP	237.84	RCA	145.22	APO	237.34	V2	26.496
RC	334.601	GL	15.64	GP	-3.29	ZAL	125.91	ZAP	27.09	ETS	172.26	ZAE	42.85	ETE	176.27	ZAC	85.34	ETC	256.06	CLP	26.90

PLANETOCENTRIC CONIC

C3	14.777	VHL	3.844	DLA	5.08	RAL	208.38	RAD	6567.6	VEL	11.669	PTH	2.05	VHP	6.283	DPA	-3.32	RAP	182.72	ECC	1.2432

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 25	2302.65	-21.60	47.14	66.18	108.76	20 1 47	1702.6	-18.84	39.55
90.00	8 41 10	4630.46	13.46	196.48	64.25	64.85	9 58 21	4030.5	9.96	189.55
100.00	20 47 9	2032.56	-22.58	26.90	65.81	110.13	21 21 2	1432.6	-19.63	19.35
100.00	10 0 7	4375.78	14.39	177.29	63.78	63.51	11 13 3	3775.8	10.72	170.43
110.00	22 0 53	1801.80	-25.18	8.23	64.66	113.92	22 30 55	1201.8	-21.73	.78
110.00	11 2 53	4179.30	16.86	161.00	62.40	59.81	12 12 32	3579.3	12.72	154.33

DIFFERENTIAL CORRECTIONS

TDE	-.4259	TRA	6.5041	TC-15.5122	BAU	3.0649	
RDE	.3521	RRA	.1698	RC3 .2298	FAU	.05522	
FDE	-.6066	FRA	2.1448	FC3-3.2349	BSP	54763	
BDE	.5526	BRA	6.5063	BC315.5139	FSP	1261	

MID-COURSE EXECUTION ACCURACY

SGT15406.4	SGR	609.2	SG3	359.4			
RRT	.0035	RRF	-.0389	RTF	.9592		
SGB15418.5	R23	-.0422	R13	.9592			
SG115406.4	SG2	609.2	THA	.01			

ORBIT DETERMINATION ACCURACY

ST	3009.3	SR	530.3	SS	718.1
CRT	-.0705	CRS	.5723	CST	-.8570
LSA	3073.0	MSA	639.7	SSA	27.1
EL1	3009.6	EL2	528.9	ALF	179.27

LAUNCH DATE DEC 9 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 887.247 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.291 GAL -4.48 AZL 88.23 HCA 261.30 SMA 191.42 ECC .24253 INC 1.7698 V1 30.239
RP 206.69 LAP -1.75 LOP 338.25 VP 24.308 GAP -13.28 AZP 90.27 TAL 336.75 TAP 238.05 RCA 145.00 APO 237.85 V2 26.494
RC 335.390 GL 15.17 GP -3.23 ZAL 127.49 ZAP 26.68 ETS 172.24 ZAE 42.12 ETE 176.26 ZAC 85.58 ETC 256.03 CLP 26.49

PLANETOCENTRIC CONIC

C3 15.348 VHL 3.918 DLA 4.09 RAL 209.63 RAD 6567.6 VEL 11.693 PTH 2.06 VHP 6.375 DPA -3.63 RAP 183.53 ECC 1.2526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 52	2280.11	-21.10	45.68	67.74	109.33	20 13 52	1680.1	-18.27	38.14
90.00	8 38 42	4669.97	14.59	198.83	66.14	65.46	9 56 32	4070.0	11.16	191.84
100.00	20 59 8	2011.56	-22.08	25.54	67.36	110.68	21 32 39	1411.6	-19.07	18.04
100.00	9 58 8	4413.76	15.53	179.53	65.69	64.13	11 11 42	3813.8	11.93	172.60
110.00	22 11 46	1784.20	-24.69	7.10	66.18	114.43	22 41 31	1184.2	-21.18	359.71
110.00	11 1 59	4213.88	18.03	162.99	64.31	60.46	12 12 12	3613.9	13.96	156.24

DIFFERENTIAL CORRECTIONS
TDE -.5641 TRA 6.8179 TC-15.0793 BAU 3.0945
RDE .3631 RRA .1646 RC3 .2355 FAU .05072
FDE -.6222 FRA 2.0923 FC3-2.8608 BSP 55130
BDE .6708 BRA 6.8199 BC315.0811 FSP 1190

MID-COURSE EXECUTION ACCURACY
SGT15498.7 SGR 611.7 SG3 337.6
RRT -.0217 RRF -.0655 RTF .9562
SGB15510.8 R23 .0447 R13 -.9562
SG115498.7 SG2 611.6 THA 179.95

ORBIT DETERMINATION ACCURACY
ST 3130.5 SR 535.9 SS 713.8
CRT -.1329 CRS .6003 CST -.8712
LSA 3193.6 MSA 630.5 SSA 26.4
EL1 3131.4 EL2 531.0 ALF 178.66

LAUNCH DATE DEC 9 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 891.522 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.299 GAL -4.70 AZL 88.25 HCA 262.56 SMA 191.57 ECC .24432 INC 1.7504 V1 30.239
RP 206.72 LAP -1.74 LOP 339.52 VP 24.316 GAP -13.41 AZP 90.23 TAL 335.68 TAP 238.24 RCA 144.77 APO 238.38 V2 26.491
RC 336.176 GL 14.70 GP -3.17 ZAL 129.06 ZAP 26.27 ETS 172.22 ZAE 41.41 ETE 176.24 ZAC 85.83 ETC 255.99 CLP 26.10

PLANETOCENTRIC CONIC

C3 15.964 VHL 3.995 DLA 3.12 RAL 210.87 RAD 6567.6 VEL 11.720 PTH 2.06 VHP 6.468 DPA -3.94 RAP 184.34 ECC 1.2627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 5	2258.67	-20.61	44.29	69.33	109.86	20 25 44	1658.7	-17.72	36.81
90.00	8 36 21	4709.20	15.69	201.19	68.08	66.12	9 54 51	4109.2	12.33	194.12
100.00	21 10 53	1991.60	-21.59	24.26	68.94	111.19	21 44 5	1391.6	-18.52	16.81
100.00	9 56 15	4451.50	16.64	181.79	67.63	64.80	11 10 26	3851.5	13.11	174.78
110.00	22 22 28	1767.55	-24.22	6.04	67.73	114.90	22 51 56	1167.5	-20.65	358.70
110.00	11 1 9	4248.31	19.18	165.01	66.27	61.14	12 11 57	3648.3	15.18	158.17

DIFFERENTIAL CORRECTIONS
TDE -.7013 TRA 7.1400 TC-14.6379 BAU 3.1244
RDE .3746 RRA .1590 RC3 .2397 FAU .04633
FDE -.6345 FRA 2.0361 FC3-2.5125 BSP 55462
BDE .7950 BRA 7.1418 BC314.6398 FSP 1120

MID-COURSE EXECUTION ACCURACY
SGT15587.8 SGR 614.3 SG3 316.4
RRT -.0459 RRF -.0915 RTF .9528
SGB15599.9 R23 .0477 R13 -.9528
SG115587.8 SG2 613.7 THA 179.90

ORBIT DETERMINATION ACCURACY
ST 3255.4 SR 541.6 SS 707.1
CRT -.1880 CRS .6261 CST -.8824
LSA 3317.2 MSA 621.7 SSA 25.6
EL1 3257.0 EL2 531.6 ALF 178.16

LAUNCH DATE DEC 9 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 895.786 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.307 GAL -4.94 AZL 88.27 HCA 263.83 SMA 191.72 ECC .24620 INC 1.7311 V1 30.239
RP 206.75 LAP -1.72 LOP 340.79 VP 24.323 GAP -13.54 AZP 90.19 TAL 334.60 TAP 238.43 RCA 144.52 APO 238.92 V2 26.488
RC 336.957 GL 14.23 GP -3.11 ZAL 130.60 ZAP 25.88 ETS 172.21 ZAE 40.71 ETE 176.22 ZAC 86.08 ETC 255.96 CLP 25.71

PLANETOCENTRIC CONIC

C3 16.627 VHL 4.078 DLA 2.16 RAL 212.09 RAD 6567.7 VEL 11.748 PTH 2.07 VHP 6.563 DPA -4.26 RAP 185.17 ECC 1.2736

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 0 4	2238.30	-20.14	42.99	70.95	110.34	20 37 22	1638.3	-17.19	35.56
90.00	8 34 8	4748.14	16.74	203.56	70.05	66.83	9 53 16	4148.1	13.46	196.42
100.00	21 22 25	1972.67	-21.12	23.05	70.54	111.66	21 55 18	1372.7	-18.00	15.65
100.00	9 54 28	4489.00	17.71	184.06	69.60	65.52	11 9 17	3889.0	14.26	176.97
110.00	22 32 58	1751.83	-23.76	5.05	69.30	115.33	23 2 10	1151.8	-20.15	357.76
110.00	11 0 24	4282.60	20.29	167.04	68.26	61.88	12 11 46	3682.6	16.37	160.11

DIFFERENTIAL CORRECTIONS
TDE -.8398 TRA 7.4700 TC-14.1940 BAU 3.1556
RDE .3867 RRA .1530 RC3 .2427 FAU .04206
FDE -.6427 FRA 1.9756 FC3-2.1899 BSP 55765
BDE .9246 BRA 7.4716 BC314.1961 FSP 1051

MID-COURSE EXECUTION ACCURACY
SGT15675.3 SGR 617.0 SG3 295.8
RRT -.0696 RRF -.1167 RTF .9487
SGB15687.5 R23 .0508 R13 -.9488
SG115675.4 SG2 615.5 THA 179.84

ORBIT DETERMINATION ACCURACY
ST 3382.8 SR 547.2 SS 697.5
CRT -.2377 CRS .6496 CST -.8917
LSA 3442.8 MSA 612.7 SSA 24.9
EL1 3385.3 EL2 531.1 ALF 177.74

LAUNCH DATE DEC 9 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 900.039 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.315 GAL -5.18 AZL 88.29 HCA 265.10 SMA 191.87 ECC .24816 INC 1.7119 V1 30.239
RP 206.79 LAP -1.71 LOP 342.06 VP 24.328 GAP -13.67 AZP 90.15 TAL 333.50 TAP 238.60 RCA 144.26 APO 239.48 V2 26.483
RC 337.733 GL 13.77 GP -3.06 ZAL 132.12 ZAP 25.50 ETS 172.19 ZAE 40.02 ETE 176.20 ZAC 86.32 ETC 255.94 CLP 25.33

PLANETOCENTRIC CONIC

C3 17.340 VHL 4.164 DLA 1.23 RAL 213.29 RAD 6567.7 VEL 11.778 PTH 2.08 VHP 6.660 DPA -4.58 RAP 186.00 ECC 1.2854

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 11 49	2218.99	-19.66	41.76	72.58	110.78	20 48 48	1619.0	-16.67	34.37
90.00	8 32 0	4786.79	17.76	205.94	72.06	67.58	9 51 47	4186.8	14.57	198.72
100.00	21 33 44	1954.77	-20.67	21.91	72.17	112.09	22 6 18	1354.8	-17.49	14.56
100.00	9 52 46	4526.24	18.75	186.34	71.62	66.28	11 8 13	3926.2	15.38	179.16
110.00	22 43 17	1737.05	-23.33	4.12	70.90	115.72	23 12 14	1137.1	-19.67	356.88
110.00	10 59 42	4316.73	21.37	169.10	70.28	62.66	12 11 39	3716.7	17.54	162.07

DIFFERENTIAL CORRECTIONS
TDE -.9783 TRA 7.8089 TC-13.7495 BAU 3.1879
RDE .3994 RRA .1466 RC3 .2444 FAU .03789
FDE -.6480 FRA 1.9109 FC3-1.8920 BSP 56056
BDE 1.0566 BRA 7.8103 BC313.7517 FSP 983

MID-COURSE EXECUTION ACCURACY
SGT15761.8 SGR 619.7 SG3 275.9
RRT -.0924 RRF -.1416 RTF .9440
SGB15774.0 R23 .0545 R13 -.9440
SG115761.9 SG2 617.1 THA 179.79

ORBIT DETERMINATION ACCURACY
ST 3510.7 SR 552.8 SS 685.6
CRT -.2816 CRS .6717 CST -.8989
LSA 3568.6 MSA 604.4 SSA 24.3
EL1 3514.2 EL2 529.9 ALF 177.40

LAUNCH DATE DEC 9 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 904.279 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.323 GAL -5.42 AZL 88.31 HCA 266.37 SMA 192.02 ECC .25020 INC 1.6928 V1 30.239
RP 206.84 LAP -1.69 LOP 343.33 VP 24.333 GAP -13.81 AZP 90.11 TAL 332.39 TAP 238.76 RCA 143.98 APO 240.06 V2 26.477
RC 338.506 GL 13.32 GP -3.01 ZAL 133.62 ZAP 25.13 ETS 172.17 ZAE 39.34 ETE 176.18 ZAC 86.57 ETC 255.91 CLP 24.96

PLANETOCENTRIC CONIC

C3 18.106 VHL 4.255 DLA .32 RAL 214.48 RAD 6567.7 VEL 11.811 PTH 2.09 VHP 6.759 DPA -4.91 RAP 186.84 ECC 1.2980

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 23 20	2200.73	-19.23	40.61	74.24	111.19	21 0 0	1600.7	-16.18	33.26
90.00	8 29 59	4825.14	18.74	208.33	74.10	68.38	9 50 24	4225.1	15.64	201.02
100.00	21 44 49	1937.88	-20.23	20.85	73.81	112.49	22 17 7	1337.9	-17.01	13.54
100.00	9 51 11	4563.23	19.74	188.63	73.67	67.09	11 7 14	3963.2	16.47	181.37
110.00	22 53 24	1723.20	-22.92	3.25	72.51	116.09	23 22 7	1123.2	-19.22	356.06
110.00	10 59 5	4350.67	22.42	171.18	72.35	63.49	12 11 36	3750.7	18.67	164.04

DIFFERENTIAL CORRECTIONS
TDE-1.1167 TRA 8.1569 TC-13.3037 BAU 3.2208
RDE .4126 RRA .1397 RC3 .2450 FAU .03382
FDE -.6494 FRA 1.8422 FC3-1.6174 BSP 56315
BDE 1.1904 BRA 8.1581 BC313.3059 FSP 917

MID-COURSE EXECUTION ACCURACY
SGT15845.6 SGR 622.5 SG3 256.5
RRT -.1146 RRF -.1657 RTF .9385
SGB15857.8 R23 .0584 R13 -.9385
SG115845.7 SG2 618.4 THA 179.74

ORBIT DETERMINATION ACCURACY
ST 3637.8 SR 558.4 SS 671.0
CRT -.3207 CRS .6921 CST -.9046
LSA 3693.2 MSA 596.3 SSA 23.6
EL1 3642.3 EL2 528.3 ALF 177.12

LAUNCH DATE DEC 9 1964 FLIGHT TIME 418.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 908.505 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.331 GAL -5.67 AZL 88.33 HCA 267.63 SMA 192.17 ECC .25234 INC 1.6738 V1 30.239
RP 206.90 LAP -1.67 LOP 344.60 VP 24.337 GAP -13.95 AZP 90.07 TAL 331.27 TAP 238.90 RCA 143.68 APO 240.66 V2 26.470
RC 339.274 GL 12.87 GP -2.96 ZAL 135.09 ZAP 24.77 ETS 172.15 ZAE 38.67 ETE 176.15 ZAC 86.82 ETC 255.89 CLP 24.60

PLANETOCENTRIC CONIC

C3 18.927 VHL 4.351 DLA -.58 RAL 215.66 RAD 6567.8 VEL 11.845 PTH 2.10 VHP 6.859 DPA -5.24 RAP 187.69 ECC 1.3115

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 34 37	2183.50	-18.80	39.52	75.92	111.57	21 11 1	1583.5	-15.71	32.21
90.00	8 28 3	4863.19	19.68	210.73	76.18	69.22	9 49 7	4263.2	16.68	203.34
100.00	21 55 42	1921.98	-19.82	19.85	75.48	112.85	22 27 44	1322.0	-16.55	12.58
100.00	9 49 40	4599.95	20.70	190.94	75.75	67.94	11 6 20	3999.9	17.52	183.58
110.00	23 3 20	1710.28	-22.53	2.45	74.14	116.42	23 31 50	1110.3	-18.80	355.30
110.00	10 58 32	4384.41	23.43	173.28	74.45	64.36	12 11 36	3784.4	19.78	166.03

DIFFERENTIAL CORRECTIONS
TDE-1.2543 TRA 8.5135 TC-12.8620 BAU 3.2552
RDE .4263 RRA .1324 RC3 .2447 FAU .02983
FDE -.6475 FRA 1.7694 FC3-1.3644 BSP 56584
BDE 1.3248 BRA 8.5145 BC312.8643 FSP 852

MID-COURSE EXECUTION ACCURACY
SGT15927.9 SGR 625.3 SG3 237.7
RRT -.1360 RRF -.1890 RTF .9317
SGB15940.1 R23 .0627 R13 -.9318
SG115928.1 SG2 619.4 THA 179.69

ORBIT DETERMINATION ACCURACY
ST 3762.5 SR 563.9 SS 653.8
CRT -.3552 CRS .7111 CST -.9088
LSA 3815.1 MSA 588.9 SSA 23.0
EL1 3768.0 EL2 526.4 ALF 176.89

LAUNCH DATE DEC 9 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 912.716 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.339 GAL -5.93 AZL 88.35 HCA 268.90 SMA 192.32 ECC .25456 INC 1.6548 V1 30.239
RP 206.97 LAP -1.65 LOP 345.86 VP 24.339 GAP -14.10 AZP 90.03 TAL 330.13 TAP 239.03 RCA 143.36 APO 241.28 V2 26.462
RC 340.039 GL 12.43 GP -2.91 ZAL 136.53 ZAP 24.42 ETS 172.13 ZAE 38.00 ETE 176.13 ZAC 87.06 ETC 255.87 CLP 24.25

PLANETOCENTRIC CONIC

C3 19.808 VHL 4.451 DLA -1.45 RAL 216.82 RAD 6567.8 VEL 11.882 PTH 2.11 VHP 6.961 DPA -5.58 RAP 188.54 ECC 1.3260

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 45 41	2167.28	-18.39	38.51	77.61	111.92	21 21 49	1567.3	-15.26	31.23
90.00	8 26 13	4900.93	20.57	213.13	78.28	70.10	9 47 54	4300.9	17.68	205.66
100.00	22 6 22	1907.06	-19.42	18.92	77.16	113.18	22 38 9	1307.1	-16.11	11.69
100.00	9 48 14	4636.39	21.61	193.26	77.86	68.83	11 5 31	4036.4	18.54	185.81
110.00	23 13 4	1698.26	-22.16	1.71	75.79	116.72	23 41 22	1098.3	-18.40	354.60
110.00	10 58 2	4417.95	24.40	175.40	76.58	65.28	12 11 39	3817.9	20.86	168.04

DIFFERENTIAL CORRECTIONS
TDE-1.3921 TRA 8.8794 TC-12.4223 BAU 3.2902
RDE .4405 RRA .1247 RC3 .2434 FAU .02596
FDE -.6433 FRA 1.6920 FC3-1.1345 BSP 56800
BDE 1.4601 BRA 8.8802 BC312.4247 FSP 788

MID-COURSE EXECUTION ACCURACY
SGT16007.2 SGR 628.0 SG3 219.5
RRT -.1568 RRF -.2122 RTF .9238
SGB16019.5 R23 .0680 R13 -.9238
SG116007.5 SG2 620.2 THA 179.65

ORBIT DETERMINATION ACCURACY
ST 3884.5 SR 569.2 SS 634.8
CRT -.3859 CRS .7297 CST -.9114
LSA 3934.1 MSA 582.1 SSA 22.5
EL1 3890.8 EL2 524.3 ALF 176.70

LAUNCH DATE DEC 9 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 916.911 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.347 GAL -6.19 AZL 88.36 HCA 270.17 SMA 192.47 ECC .25689 INC 1.6358 V1 30.239
RP 207.04 LAP -1.64 LOP 347.13 VP 24.341 GAP -14.25 AZP 90.00 TAL 328.99 TAP 239.15 RCA 143.03 APO 241.92 V2 26.453
RC 340.800 GL 11.99 GP -2.87 ZAL 137.95 ZAP 24.07 ETS 172.11 ZAE 37.35 ETE 176.10 ZAC 87.31 ETC 255.85 CLP 23.91

PLANETOCENTRIC CONIC

C3 20.751 VHL 4.555 DLA -2.30 RAL 217.96 RAD 6567.8 VEL 11.922 PTH 2.12 VHP 7.065 DPA -5.93 RAP 189.41 ECC 1.3415

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 56 33	2152.04	-18.00	37.56	79.32	112.23	21 32 25	1552.0	-14.83	30.32
90.00	8 24 29	4938.36	21.42	215.55	80.42	71.03	9 46 47	4338.4	18.63	207.99
100.00	22 16 49	1893.09	-19.04	18.06	78.86	113.49	22 48 22	1293.1	-15.70	10.85
100.00	9 46 53	4672.54	22.48	195.59	80.01	69.76	11 4 46	4072.5	19.52	188.05
110.00	23 22 37	1687.14	-21.82	1.03	77.46	116.99	23 50 44	1087.1	-18.02	353.95
110.00	10 57 35	4451.26	25.33	177.54	78.75	66.24	12 11 46	3851.3	21.90	170.07

DIFFERENTIAL CORRECTIONS
TDE-1.5303 TRA 9.2536 TC-11.9909 BAU 3.3272
RDE .4553 RRA .1166 RC3 .2413 FAU .02217
FDE -.6359 FRA 1.6110 FC3 -.9248 BSP 56979
BDE 1.5965 BRA 9.2543 BC311.9933 FSP 724

MID-COURSE EXECUTION ACCURACY
SGT16085.1 SGR 630.7 SG3 201.9
RRT -.1769 RRF -.2346 RTF .9142
SGB16097.5 R23 .0737 R13 -.9142
SG116085.5 SG2 620.7 THA 179.60

ORBIT DETERMINATION ACCURACY
ST 4002.9 SR 574.3 SS 613.6
CRT -.4134 CRS .7472 CST -.9130
LSA 4049.4 MSA 575.6 SSA 21.9
EL1 4010.1 EL2 522.0 ALF 176.55

LAUNCH DATE DEC 9 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 6 1966

HELIOCENTRIC CONIC DISTANCE 921.090 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.355 GAL -6.46 AZL 88.38 HCA 271.43 SMA 192.63 ECC .25931 INC 1.6168 V1 30.239
RP 207.13 LAP -1.62 LOP 348.39 VP 24.342 GAP -14.41 AZP 89.96 TAL 327.83 TAP 239.26 RCA 142.68 APO 242.57 V2 26.444
RC 341.558 GL 11.57 GP -2.82 ZAL 139.34 ZAP 23.74 ETS 172.09 ZAE 36.71 ETE 176.07 ZAC 87.56 ETC 255.84 CLP 23.58

PLANETOCENTRIC CONIC

C3 21.760 VHL 4.665 DLA -3.12 RAL 219.08 RAD 6567.9 VEL 11.964 PTH 2.13 VHP 7.171 DPA -6.27 RAP 190.28 ECC 1.3581

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 7 12	2137.77	-17.63	36.68	81.04	112.52	21 42 49	1537.8	-14.43	29.47
90.00	8 22 49	4975.48	22.22	217.98	82.58	71.98	9 45 44	4375.5	19.55	210.32
100.00	22 27 5	1880.07	-18.69	17.25	80.57	113.76	22 58 25	1280.1	-15.32	10.08
100.00	9 45 37	4708.41	23.31	197.94	82.18	70.74	11 4 5	4108.4	20.47	190.30
110.00	23 31 59	1676.90	-21.50	.40	79.14	117.24	23 59 56	1076.9	-17.68	353.36
110.00	10 57 12	4484.34	26.22	179.70	80.95	67.24	12 11 56	3884.3	22.90	172.11

DIFFERENTIAL CORRECTIONS
TDE-1.6678 TRA 9.6372 TC-11.5671 BAU 3.3657
RDE .4705 RRA .1080 RC3 .2386 FAU .01845
FDE -.6258 FRA 1.5253 FC3 -.7342 BSP 57137
BDE 1.7329 BRA 9.6378 BC311.5696 FSP 663

MID-COURSE EXECUTION ACCURACY
SGT16161.3 SGR 633.3 SG3 184.9
RRT -.1965 RRF -.2564 RTF .9023
SGB16173.7 R23 .0803 R13 -.9023
SG116161.8 SG2 621.0 THA 179.56

ORBIT DETERMINATION ACCURACY
ST 4117.0 SR 579.3 SS 590.4
CRT -.4379 CRS .7643 CST -.9133
LSA 4160.4 MSA 569.7 SSA 21.4
EL1 4124.9 EL2 519.8 ALF 176.42

LAUNCH DATE DEC 9 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 8 1966

HELIOCENTRIC CONIC DISTANCE 925.250 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.364 GAL -6.73 AZL 88.40 HCA 272.69 SMA 192.78 ECC .26184 INC 1.5979 V1 30.239
RP 207.22 LAP -1.60 LOP 349.66 VP 24.341 GAP -14.57 AZP 89.92 TAL 326.66 TAP 239.36 RCA 142.30 APO 243.26 V2 26.433
RC 342.314 GL 11.15 GP -2.78 ZAL 140.71 ZAP 23.42 ETS 172.07 ZAE 36.07 ETE 176.04 ZAC 87.81 ETC 255.83 CLP 23.26

PLANETOCENTRIC CONIC

C3 22.838 VHL 4.779 DLA -3.93 RAL 220.19 RAD 6567.9 VEL 12.009 PTH 2.14 VHP 7.279 DPA -6.63 RAP 191.16 ECC 1.3759

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 17 38	2124.43	-17.28	35.85	82.78	112.78	21 53 3	1524.4	-14.05	28.67
90.00	8 21 13	5012.27	22.98	220.41	84.77	72.98	9 44 46	4412.3	20.43	212.66
100.00	22 37 8	1867.97	-18.35	16.51	82.30	114.02	23 8 16	1268.0	-14.95	9.37
100.00	9 44 24	4743.97	24.09	200.29	84.39	71.74	11 3 28	4144.0	21.37	192.55
110.00	23 41 10	1667.52	-21.21	359.83	80.83	117.46	24 8 58	1067.5	-17.36	352.82
110.00	10 56 52	4517.18	27.06	181.88	83.18	68.28	12 12 9	3917.2	23.87	174.17

DIFFERENTIAL CORRECTIONS
TDE-1.8047 TRA10.0311 TC-11.1507 BAU 3.4054
RDE .4862 RRA .0989 RC3 .2352 FAU .01481
FDE -.6129 FRA 1.4358 FC3 -.5614 BSP 57286
BDE 1.8690 BRA10.0316 BC311.1531 FSP 603

MID-COURSE EXECUTION ACCURACY
SGT16235.3 SGR 635.9 SG3 168.5
RRT -.2155 RRF -.2772 RTF .8876
SGB16247.7 R23 .0877 R13 -.8876
SG116235.9 SG2 621.0 THA 179.52

ORBIT DETERMINATION ACCURACY
ST 4226.4 SR 584.0 SS 565.4
CRT -.4596 CRS .7808 CST -.9125
LSA 4266.6 MSA 564.2 SSA 20.9
EL1 4235.0 EL2 517.6 ALF 176.31

LAUNCH DATE DEC 9 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 10 1966

HELIOCENTRIC CONIC DISTANCE 929.390 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.372 GAL -7.01 AZL 88.42 HCA 273.95 SMA 192.93 ECC .26447 INC 1.5789 V1 30.239
RP 207.32 LAP -1.58 LOP 350.92 VP 24.340 GAP -14.74 AZP 89.89 TAL 325.48 TAP 239.44 RCA 141.91 APO 243.96 V2 26.421
RC 343.066 GL 10.74 GP -2.74 ZAL 142.05 ZAP 23.10 ETS 172.05 ZAE 35.45 ETE 176.01 ZAC 88.05 ETC 255.83 CLP 22.95

PLANETOCENTRIC CONIC

C3 23.991 VHL 4.898 DLA -4.71 RAL 221.29 RAD 6568.0 VEL 12.057 PTH 2.16 VHP 7.390 DPA -6.98 RAP 192.04 ECC 1.3948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 27 53	2112.01	-16.95	35.09	84.53	113.02	22 3 5	1512.0	-13.69	27.93
90.00	8 19 43	5048.73	23.68	222.85	86.98	74.01	9 43 51	4448.7	21.26	215.01
100.00	22 47 0	1856.75	-18.04	15.82	84.04	114.25	23 17 57	1256.7	-14.62	8.70
100.00	9 43 16	4779.23	24.82	202.66	86.61	72.78	11 2 55	4179.2	22.23	194.82
110.00	23 50 11	1658.98	-20.94	359.32	82.54	117.66	24 17 50	1059.0	-17.07	352.33
110.00	10 56 35	4549.76	27.87	184.07	85.44	69.35	12 12 25	3949.8	24.80	176.24

DIFFERENTIAL CORRECTIONS
TDE-1.9407 TRA10.4345 TC-10.7422 BAU 3.4462
RDE .5023 RRA .0894 RC3 .2314 FAU .01122
FDE -.5976 FRA 1.3419 FC3 -.4050 BSP 57407
BDE 2.0046 BRA10.4348 BC310.7447 FSP 543

MID-COURSE EXECUTION ACCURACY
SGT16306.0 SGR 638.5 SG3 152.8
RRT -.2338 RRF -.2971 RTF .8688
SGB16318.5 R23 .0963 R13 -.8689
SG116306.7 SG2 620.7 THA 179.47

ORBIT DETERMINATION ACCURACY
ST 4330.4 SR 588.5 SS 538.8
CRT -.4789 CRS .7974 CST -.9104
LSA 4367.6 MSA 559.2 SSA 20.5
EL1 4339.7 EL2 515.5 ALF 176.22

LAUNCH DATE DEC 9 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 12 1966

HELIOCENTRIC CONIC DISTANCE 933.510 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.380 GAL -7.30 AZL 88.44 HCA 275.22 SMA 193.09 ECC .26721 INC 1.5599 V1 30.239
RP 207.43 LAP -1.55 LOP 352.18 VP 24.337 GAP -14.92 AZP 89.86 TAL 324.29 TAP 239.51 RCA 141.49 APO 244.68 V2 26.408
RC 343.815 GL 10.34 GP -2.70 ZAL 143.36 ZAP 22.80 ETS 172.02 ZAE 34.83 ETE 175.98 ZAC 88.30 ETC 255.82 CLP 22.65

PLANETOCENTRIC CONIC

C3 25.222 VHL 5.022 DLA -5.47 RAL 222.37 RAD 6568.0 VEL 12.108 PTH 2.17 VHP 7.502 DPA -7.34 RAP 192.94 ECC 1.4151

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 37 55	2100.47	-16.65	34.38	86.30	113.24	22 12 56	1500.5	-13.36	27.25
90.00	8 18 16	5084.86	24.34	225.29	89.22	75.06	9 43 1	4484.9	22.05	217.37
100.00	22 56 41	1846.40	-17.75	15.19	85.79	114.45	23 27 27	1246.4	-14.30	8.10
100.00	9 42 12	4814.17	25.50	205.03	88.86	73.85	11 2 26	4214.2	23.04	197.09
110.00	0 2 57	1651.26	-20.69	358.85	84.26	117.83	0 30 28	1051.3	-16.81	351.88
110.00	10 56 21	4582.08	28.62	186.28	87.73	70.46	12 12 43	3982.1	25.69	178.33

DIFFERENTIAL CORRECTIONS
TDE-2.0759 TRA10.8474 TC-10.3466 BAU 3.4896
RDE .5189 RRA .0795 RC3 .2271 FAU .00772
FDE -.5801 FRA 1.2439 FC3 -.2648 BSP 57474
BDE 2.1397 BRA10.8477 BC310.3491 FSP 485

MID-COURSE EXECUTION ACCURACY
SGT16375.7 SGR 640.9 SG3 137.7
RRT -.2515 RRF -.3158 RTF .8449
SGB16388.3 R23 .1064 R13 -.8449
SG116376.5 SG2 620.2 THA 179.44

ORBIT DETERMINATION ACCURACY
ST 4429.0 SR 592.6 SS 510.7
CRT -.4961 CRS .8140 CST -.9068
LSA 4463.2 MSA 554.5 SSA 20.0
EL1 4438.9 EL2 513.4 ALF 176.15

LAUNCH DATE DEC 9 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 14 1966

HELIOCENTRIC CONIC DISTANCE 937.607 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.388 GAL -7.60 AZL 88.46 HCA 276.47 SMA 193.24 ECC .27007 INC 1.5408 V1 30.239
RP 207.54 LAP -1.53 LOP 353.44 VP 24.334 GAP -15.10 AZP 89.83 TAL 323.09 TAP 239.56 RCA 141.05 APO 245.43 V2 26.395
RC 344.561 GL 9.85 GP -2.67 ZAL 144.65 ZAP 22.51 ETS 172.00 ZAE 34.23 ETE 175.94 ZAC 88.55 ETC 255.83 CLP 22.36

PLANETOCENTRIC CONIC

C3 26.535 VHL 5.151 DLA -6.20 RAL 223.43 RAD 6568.1 VEL 12.162 PTH 2.18 VHP 7.617 DPA -7.71 RAP 193.84 ECC 1.4367

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 47	2089.79	-16.36	33.73	88.07	113.44	22 22 37	1489.8	-13.05	26.62
90.00	8 16 54	5120.66	24.94	227.74	91.47	76.14	9 42 14	4520.7	22.79	219.73
100.00	23 6 11	1836.88	-17.48	14.61	87.55	114.64	23 36 47	1236.9	-14.01	7.54
100.00	9 41 11	4848.79	26.14	207.41	91.13	74.95	11 2 0	4248.8	23.81	199.38
110.00	0 11 37	1644.32	-20.47	358.43	85.98	117.99	0 39 1	1044.3	-16.57	351.49
110.00	10 56 10	4614.12	29.33	188.50	90.04	71.60	12 13 4	4014.1	26.54	180.43

DIFFERENTIAL CORRECTIONS

TDE-2.2099 TRA11.2722 TC3-9.9583 BAU 3.5336
RDE .5359 RRA .0690 RC3 .2223 FAU .00425
FDE -.5599 FRA 1.1415 FC3 -.1387 BSP 57555
BDE 2.2739 BRA11.2724 BC3 9.9608 FSP 429

MID-COURSE EXECUTION ACCURACY

SGT16442.4 SGR 643.2 SG3 123.4
RRT -.2686 RRF -.3324 RTF .8136
SGB16455.0 R23 .1178 R13 -.8136
SG116443.3 SG2 619.5 THA 179.40

ORBIT DETERMINATION ACCURACY

ST 4522.3 SR 596.5 SS 481.2
CRT -.5114 CRS .8307 CST -.9017
LSA 4553.6 NSA 550.2 SSA 19.6
EL1 4532.7 EL2 511.4 ALF 176.09

LAUNCH DATE DEC 9 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 16 1966

HELIOCENTRIC CONIC DISTANCE 941.681 EARTH TO MARS

RL 147.33 LAL .00 LOL 76.96 VL 33.397 GAL -7.90 AZL 88.48 HCA 277.73 SMA 193.40 ECC .27305 INC 1.5217 V1 30.239
RP 207.67 LAP -1.51 LOP 354.70 VP 24.329 GAP -15.28 AZP 89.80 TAL 321.87 TAP 239.61 RCA 140.59 APO 246.21 V2 26.380
RC 345.302 GL 9.57 GP -2.63 ZAL 145.91 ZAP 22.22 ETS 171.98 ZAE 33.63 ETE 175.90 ZAC 88.80 ETC 255.83 CLP 22.07

PLANETOCENTRIC CONIC

C3 27.936 VHL 5.285 DLA -6.92 RAL 224.48 RAD 6568.1 VEL 12.219 PTH 2.20 VHP 7.734 DPA -8.07 RAP 194.75 ECC 1.4598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 27	2079.92	-16.09	33.13	89.86	113.62	22 32 7	1479.9	-12.76	26.04
90.00	8 15 35	5156.11	25.50	230.19	93.74	77.25	9 41 31	4556.1	23.49	222.10
100.00	23 15 29	1828.17	-17.23	14.08	89.32	114.81	23 45 57	1228.2	-13.75	7.03
100.00	9 40 14	4883.09	26.72	209.79	93.42	76.07	11 1 37	4283.1	24.54	201.67
110.00	0 20 7	1638.16	-20.28	358.06	87.72	118.13	0 47 25	1038.2	-16.36	351.13
110.00	10 56 2	4645.87	29.99	190.74	92.38	72.78	12 13 28	4045.9	27.34	182.55

DIFFERENTIAL CORRECTIONS

TDE-2.3429 TRA11.7070 TC3-9.5826 BAU 3.5799
RDE .5532 RRA .0582 RC3 .2174 FAU .00084
FDE -.5378 FRA 1.0349 FC3 -.0260 BSP 57586
BDE 2.4074 BRA11.7071 BC3 9.5851 FSP 374

MID-COURSE EXECUTION ACCURACY

SGT16507.2 SGR 645.4 SG3 109.9
RRT -.2852 RRF -.3462 RTF .7719
SGB16519.8 R23 .1312 R13 -.7719
SG116508.2 SG2 618.5 THA 179.36

ORBIT DETERMINATION ACCURACY

ST 4609.9 SR 600.1 SS 450.6
CRT -.5250 CRS .8480 CST -.8946
LSA 4638.5 NSA 546.2 SSA 19.2
EL1 4620.8 EL2 509.5 ALF 176.04

LAUNCH DATE DEC 10 1964 FLIGHT TIME 140.00 ARRIVAL DATE APR 29 1965

HELIOCENTRIC CONIC DISTANCE 368.575 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	35.696	GAL	-.68	AZL	88.76	HCA	113.22	SMA	251.55	ECC	.41452	INC	1.2419
RP	244.46	LAP	1.14	LOP	191.20	VP	23.626	GAP	24.44	AZP	90.49	TAL	357.67	TAP	110.89	RCA	147.28	APO	355.83
RC	130.354	GL	8.08	GP	1.87	ZAL	92.30	ZAP	175.03	ETS	156.65	ZAE	152.58	ETE	1.37	ZAC	90.95	ETC	255.99

V1	30.243	V2	22.440	CLP	175.39														

PLANETOCENTRIC CONIC

C3	30.269	VHL	5.502	DLA	11.27	RAL	174.32	RAD	6568.2	VEL	12.314	PTH	2.22	VHP	11.140	DPA	.23	RAP	187.33
ECC	1.4982																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 14 57	2673.37	-27.42	72.64	46.97	97.35	16 59 31	2073.4	-26.12	64.22
90.00	7 10 3	4602.78	12.65	194.85	40.64	64.46	8 26 45	4002.8	9.11	187.96
100.00	17 41 58	2392.74	-28.76	51.79	46.76	98.51	18 21 51	1792.7	-27.29	43.30
100.00	8 25 43	4358.65	13.87	176.29	40.03	63.25	9 38 21	3758.6	10.17	169.45
110.00	19 3 3	2139.00	-32.34	31.78	46.02	101.74	19 38 42	1539.0	-30.38	23.11
110.00	9 21 7	4185.15	17.06	161.33	38.24	59.92	10 30 52	3585.2	12.93	154.65

DIFFERENTIAL CORRECTIONS

TDE	.4744	TRA	-1.3552	TC3	.9559	BAU	.3869
RDE	-.5520	RRA	-.2448	RC3	-.0213	FAU	.05736
FDE	-.0458	FRA	.5678	FC3	-1.6404	BSP	5864
BDE	.7279	BRA	1.3771	BC3	.9561	FSP	439

MID-COURSE EXECUTION ACCURACY

SGT	1849.6	SGR	631.4	SG3	164.5		
RRT	.0560	RRF	-.0724	RTF	-.7923		
SGB	1954.4	R23	-.0222	R13	-.7925		
SG1	1850.0	SG2	630.3	THA	1.24		

ORBIT DETERMINATION ACCURACY

ST	656.9	SR	580.2	SS	187.4
CRT	-.6570	CRS	-.1179	CST	.8079
LSA	806.6	MSA	388.8	SSA	37.4
EL1	799.3	EL2	359.4	ALF	140.37

LAUNCH DATE DEC 10 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 370.407 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	35.562	GAL	-.52	AZL	88.77	HCA	114.13	SMA	247.08	ECC	.40386	INC	1.2252
RP	244.23	LAP	1.12	LOP	192.11	VP	23.445	GAP	23.81	AZP	90.50	TAL	358.18	TAP	112.31	RCA	147.29	APO	346.87
RC	132.477	GL	8.15	GP	1.92	ZAL	91.27	ZAP	174.50	ETS	158.25	ZAE	152.45	ETE	1.61	ZAC	91.09	ETC	255.97

V1	30.243	V2	22.463	CLP	174.85														

PLANETOCENTRIC CONIC

C3	28.787	VHL	5.365	DLA	11.74	RAL	173.38	RAD	6568.2	VEL	12.254	PTH	2.20	VHP	10.867	DPA	.13	RAP	187.68
ECC	1.4738																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 7 19	2676.47	-27.45	72.87	45.30	97.24	16 51 56	2076.5	-26.16	64.44
90.00	7 10 13	4574.54	11.82	193.19	38.91	64.08	8 26 27	3974.5	8.24	186.35
100.00	17 34 37	2394.93	-28.78	51.95	45.09	98.43	18 14 32	1794.9	-27.32	43.45
100.00	8 25 36	4331.31	13.02	174.70	38.29	62.85	9 37 48	3731.3	9.28	167.90
110.00	18 56 19	2139.26	-32.34	31.80	44.35	101.73	19 31 59	1539.3	-30.39	23.13
110.00	9 20 23	4159.74	16.19	159.88	36.50	59.47	10 29 43	3559.7	12.01	153.26

DIFFERENTIAL CORRECTIONS

TDE	.4520	TRA	-1.3291	TC3	1.0341	BAU	.3980
RDE	-.5366	RRA	-.2371	RC3	-.0191	FAU	.05924
FDE	-.0339	FRA	.5603	FC3	-1.7817	BSP	6070
BDE	.7016	BRA	1.3501	BC3	1.0342	FSP	464

MID-COURSE EXECUTION ACCURACY

SGT	1888.3	SGR	629.0	SG3	173.4		
RRT	.0637	RRF	-.0778	RTF	-.7979		
SGB	1990.3	R23	-.0207	R13	-.7981		
SG1	1888.8	SG2	627.6	THA	1.37		

ORBIT DETERMINATION ACCURACY

ST	650.5	SR	578.2	SS	183.5
CRT	-.6456	CRS	-.0579	CST	.7794
LSA	797.0	MSA	393.1	SSA	38.6
EL1	791.0	EL2	363.2	ALF	140.18

LAUNCH DATE DEC 10 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 372.397 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	35.434	GAL	-.36	AZL	88.79	HCA	115.04	SMA	242.97	ECC	.39373	INC	1.2081
RP	243.99	LAP	1.09	LOP	193.02	VP	23.273	GAP	23.19	AZP	90.51	TAL	358.71	TAP	113.75	RCA	147.30	APO	338.63
RC	134.631	GL	8.20	GP	1.98	ZAL	90.22	ZAP	173.96	ETS	159.57	ZAE	152.36	ETE	1.86	ZAC	91.22	ETC	255.96

V1	30.243	V2	22.486	CLP	174.29														

PLANETOCENTRIC CONIC

C3	27.421	VHL	5.236	DLA	12.21	RAL	172.42	RAD	6568.1	VEL	12.198	PTH	2.19	VHP	10.602	DPA	.03	RAP	188.03
ECC	1.4513																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 32	2680.17	-27.48	73.13	43.62	97.11	16 44 12	2080.2	-26.21	64.70
90.00	7 10 20	4546.58	10.98	191.57	37.20	63.73	8 26 6	3946.6	7.36	184.76
100.00	17 27 7	2397.71	-28.81	52.15	43.42	98.33	18 7 4	1797.7	-27.36	43.65
100.00	8 25 26	4304.28	12.18	173.13	36.58	62.49	9 37 10	3704.3	8.40	166.38
110.00	18 49 27	2140.07	-32.35	31.86	42.69	101.70	19 25 7	1540.1	-30.40	23.19
110.00	9 19 35	4134.68	15.31	158.46	34.77	59.06	10 28 30	3534.7	11.10	151.89

DIFFERENTIAL CORRECTIONS

TDE	.4307	TRA	-1.2967	TC3	1.1168	BAU	.4095
RDE	-.5219	RRA	-.2295	RC3	-.0163	FAU	.06126
FDE	-.0202	FRA	.5500	FC3	-1.9340	BSP	6224
BDE	.6766	BRA	1.3169	BC3	1.1169	FSP	492

MID-COURSE EXECUTION ACCURACY

SGT	1922.8	SGR	626.4	SG3	182.9		
RRT	.0698	RRF	-.0837	RTF	-.8041		
SGB	2022.3	R23	-.0211	R13	-.8043		
SG1	1923.4	SG2	624.7	THA	1.46		

ORBIT DETERMINATION ACCURACY

ST	642.6	SR	576.2	SS	179.3
CRT	-.6361	CRS	.0138	CST	.7396
LSA	786.5	MSA	396.1	SSA	40.0
EL1	781.9	EL2	365.4	ALF	139.88

LAUNCH DATE DEC 10 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 374.527 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	35.312	GAL	-.21	AZL	88.81	HCA	115.95	SMA	239.18	ECC	.38410	INC	1.1908
RP	243.75	LAP	1.07	LOP	193.93	VP	23.110	GAP	22.56	AZP	90.52	TAL	359.24	TAP	115.19	RCA	147.31	APO	331.05
RC	136.814	GL	8.25	GP	2.04	ZAL	89.15	ZAP	173.41	ETS	160.67	ZAE	152.31	ETE	2.12	ZAC	91.36	ETC	255.95

V1	30.243	V2	22.510	CLP	173.73														

PLANETOCENTRIC CONIC

C3	26.162	VHL	5.115	DLA	12.68	RAL	171.43	RAD	6568.1	VEL	12.147	PTH	2.18	VHP	10.344	DPA	-.06	RAP	188.38
ECC	1.4306																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 51 35	2684.44	-27.52	73.44	41.96	96.96	16 36 20	2084.4	-26.27	65.00
90.00	7 10 23	4518.97	10.14	189.97	35.50	63.42	8 25 42	3919.0	6.50	183.19
100.00	17 19 28	2401.03	-28.84	52.39	41.76	98.21	17 59 29	1801.0	-27.41	43.88
100.00	8 25 11	4277.62	11.34	171.60	34.87	62.15	9 36 29	3677.6	7.52	164.89
110.00	18 42 27	2141.38	-32.37	31.96	41.04	101.64	19 18 8	1541.4	-30.43	23.28
110.00	9 18 42	4110.03	14.45	157.08	33.06	58.68	10 27 12	3510.0	10.19	150.56

DIFFERENTIAL CORRECTIONS

TDE	.4074	TRA	-1.2685	TC3	1.2025	BAU	.4206
RDE	-.5078	RRA	-.2222	RC3	-.0130	FAU	.06329
FDE	-.0044	FRA	.5396	FC3	-2.0945	BSP	6521
BDE	.6510	BRA	1.2878	BC3	1.2026	FSP	535

MID-COURSE EXECUTION ACCURACY

SGT	1960.3	SGR	623.6	SG3	192.7		
RRT	.0782	RRF	-.0912	RTF	-.8097		
SGB	2057.1	R23	-.0208	R13	-.8099		
SG1	1961.0	SG2	621.5	THA	1.58		

ORBIT DETERMINATION ACCURACY

ST	632.9	SR	574.0	SS	175.8
CRT	-.6226	CRS	.1012	CST	.6892
LSA	773.8	MSA	400.6	SSA	41.3
EL1	770.7	EL2	368.8	ALF	139.47

LAUNCH DATE DEC 10 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 376.786 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	35.195	GAL	-.06	AZL	88.83	HCA	116.86	SMA	235.68	ECC	.37495	INC	1.1732	V1	30.243
RP	243.50	LAP	1.05	LOP	194.85	VP	22.955	GAP	21.94	AZP	90.53	TAL	359.79	TAP	116.65	RCA	147.31	APO	324.05	V2	22.535
RC	139.022	GL	8.29	GP	2.10	ZAL	88.05	ZAP	172.85	ETS	161.60	ZAE	152.32	ETE	2.38	ZAC	91.49	ETC	255.94	CLP	173.17

PLANETOCENTRIC CONIC

C3	25.001	VHL	5.000	DLA	13.14	RAL	170.42	RAD	6568.0	VEL	12.099	PTH	2.17	VHP	10.093	DPA	-.15	RAP	188.72	ECC	1.4115

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 43 31	2689.25	-27.56	73.79	40.30	96.79	16 28 20	2089.2	-26.33	65.33
90.00	7 10 22	4491.76	9.31	188.41	33.81	63.14	8 25 14	3891.8	5.63	181.66
100.00	17 11 42	2404.86	-28.88	52.67	40.11	98.06	17 51 47	1804.9	-27.47	44.16
100.00	8 24 52	4251.37	10.50	170.11	33.19	61.85	9 35 43	3651.4	6.65	163.43
110.00	18 35 20	2143.17	-32.39	32.09	39.40	101.57	19 11 3	1543.2	-30.46	23.41
110.00	9 17 44	4085.83	13.59	155.73	31.37	58.33	10 25 49	3485.8	9.30	149.26

DIFFERENTIAL CORRECTIONS

TDE	.3624	TRA	-1.2376	TC3	1.2698	BAU	.4244
RDE	-.4947	RRA	-.2150	RC3	-.0096	FAU	.06490
FDE	.0269	FRA	.5259	FC3	-2.2474	BSP	6870
BDE	.6133	BRA	1.2561	BC3	1.2699	FSP	569

MID-COURSE EXECUTION ACCURACY

SGT	1976.3	SGR	620.9	SG3	201.4		
RRT	.0985	RRF	-.1053	RTF	-.8123		
SGB	2071.5	R23	-.0168	R13	-.8125		
SG1	1977.4	SG2	617.5	THA	1.96		

ORBIT DETERMINATION ACCURACY

ST	604.0	SR	572.0	SS	174.3		
CRT	-.5856	CRS	.2757	CST	.5872		
LSA	742.0	MSA	412.2	SSA	42.6		
EL1	741.0	EL2	377.9	ALF	137.66		

LAUNCH DATE DEC 10 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 379.161 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	35.083	GAL	.09	AZL	88.84	HCA	117.78	SMA	232.45	ECC	.36625	INC	1.1551	V1	30.243
RP	243.25	LAP	1.02	LOP	195.76	VP	22.808	GAP	21.33	AZP	90.54	TAL	.34	TAP	118.12	RCA	147.31	APO	317.58	V2	22.560
RC	141.251	GL	8.31	GP	2.17	ZAL	86.94	ZAP	172.28	ETS	162.40	ZAE	152.36	ETE	2.66	ZAC	91.63	ETC	255.92	CLP	172.59

PLANETOCENTRIC CONIC

C3	23.933	VHL	4.892	DLA	13.61	RAL	169.38	RAD	6568.0	VEL	12.054	PTH	2.15	VHP	9.849	DPA	-.23	RAP	189.05	ECC	1.3939

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 20	2694.54	-27.60	74.17	38.65	96.60	16 20 14	2094.5	-26.40	65.71
90.00	7 10 16	4465.01	8.48	186.87	32.15	62.88	8 24 41	3865.0	4.78	180.15
100.00	17 3 49	2409.16	-28.92	52.99	38.46	97.90	17 43 58	1809.2	-27.53	44.46
100.00	8 24 28	4225.62	9.67	168.65	31.52	61.58	9 34 54	3625.6	5.79	162.00
110.00	18 28 7	2145.40	-32.42	32.26	37.77	101.47	19 3 52	1545.4	-30.50	23.57
110.00	9 16 40	4062.15	12.74	154.42	29.70	58.01	10 24 22	3462.1	8.42	147.99

DIFFERENTIAL CORRECTIONS

TDE	.3793	TRA	-1.1932	TC3	1.4041	BAU	.4493
RDE	-.4815	RRA	-.2078	RC3	-.0042	FAU	.06810
FDE	.0221	FRA	.5024	FC3	-2.4633	BSP	6565
BDE	.6129	BRA	1.2111	BC3	1.4041	FSP	592

MID-COURSE EXECUTION ACCURACY

SGT	2037.6	SGR	617.0	SG3	214.7		
RRT	.0826	RRF	-.1019	RTF	-.8235		
SGB	2129.0	R23	-.0272	R13	-.8238		
SG1	2038.3	SG2	614.7	THA	1.58		

ORBIT DETERMINATION ACCURACY

ST	620.5	SR	568.9	SS	167.8		
CRT	-.6178	CRS	.2515	CST	.5708		
LSA	759.1	MSA	398.4	SSA	44.7		
EL1	758.0	EL2	366.2	ALF	139.01		

LAUNCH DATE DEC 10 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 381.641 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	34.977	GAL	.24	AZL	88.86	HCA	118.70	SMA	229.45	ECC	.35798	INC	1.1369	V1	30.243
RP	243.00	LAP	1.00	LOP	196.68	VP	22.670	GAP	20.71	AZP	90.55	TAL	.89	TAP	119.59	RCA	147.31	APO	311.58	V2	22.585
RC	143.499	GL	8.33	GP	2.23	ZAL	85.82	ZAP	171.71	ETS	163.08	ZAE	152.45	ETE	2.94	ZAC	91.77	ETC	255.91	CLP	172.01

PLANETOCENTRIC CONIC

C3	22.949	VHL	4.791	DLA	14.07	RAL	168.32	RAD	6567.9	VEL	12.014	PTH	2.14	VHP	9.610	DPA	-.31	RAP	189.39	ECC	1.3777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 27 3	2700.27	-27.64	74.58	37.02	96.40	16 12 4	2100.3	-26.47	66.11
90.00	7 10 6	4438.78	7.67	185.38	30.50	62.66	8 24 5	3838.8	3.94	178.68
100.00	16 55 52	2413.88	-28.97	53.33	36.83	97.73	17 36 5	1813.9	-27.59	44.80
100.00	8 23 59	4200.40	8.85	167.22	29.87	61.33	9 34 0	3600.4	4.95	160.60
110.00	18 20 49	2148.03	-32.46	32.46	36.15	101.36	18 56 37	1548.0	-30.55	23.76
110.00	9 15 31	4039.02	11.90	153.15	28.04	57.72	10 22 50	3439.0	7.55	146.76

DIFFERENTIAL CORRECTIONS

TDE	.3512	TRA	-1.1643	TC3	1.4943	BAU	.4585
RDE	-.4694	RRA	-.2011	RC3	.0009	FAU	.07028
FDE	.0434	FRA	.4898	FC3	-2.6511	BSP	6793
BDE	.5863	BRA	1.1815	BC3	1.4943	FSP	626

MID-COURSE EXECUTION ACCURACY

SGT	2070.5	SGR	613.7	SG3	225.6		
RRT	.0955	RRF	-.1130	RTF	-.8289		
SGB	2159.6	R23	-.0264	R13	-.8292		
SG1	2071.4	SG2	610.6	THA	1.78		

ORBIT DETERMINATION ACCURACY

ST	603.2	SR	566.3	SS	168.8		
CRT	-.5967	CRS	.3702	CST	.4852		
LSA	740.0	MSA	404.2	SSA	46.1		
EL1	739.7	EL2	370.6	ALF	138.02		

LAUNCH DATE DEC 10 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 384.217 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	34.875	GAL	.38	AZL	88.88	HCA	119.61	SMA	226.66	ECC	.35011	INC	1.1182	V1	30.243
RP	242.74	LAP	.97	LOP	197.60	VP	22.538	GAP	20.10	AZP	90.55	TAL	1.46	TAP	121.07	RCA	147.30	APO	306.02	V2	22.611
RC	145.763	GL	8.34	GP	2.31	ZAL	84.68	ZAP	171.12	ETS	163.66	ZAE	152.58	ETE	3.23	ZAC	91.91	ETC	255.90	CLP	171.42

PLANETOCENTRIC CONIC

C3	22.044	VHL	4.695	DLA	14.52	RAL	167.24	RAD	6567.9	VEL	11.976	PTH	2.13	VHP	9.378	DPA	-.38	RAP	189.71	ECC	1.3628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 43	2706.39	-27.69	75.02	35.39	96.18	16 3 49	2106.4	-26.54	66.54
90.00	7 9 51	4413.13	6.86	183.93	28.88	62.46	8 23 24	3813.1	3.12	177.24
100.00	16 47 50	2418.97	-29.01	53.70	35.21	97.54	17 28 9	1819.0	-27.67	45.16
100.00	8 23 25	4175.77	8.04	165.84	28.24	61.11	9 33 1	3575.8	4.12	159.24
110.00	18 13 29	2151.01	-32.50	32.68	34.54	101.23	18 49 20	1551.0	-30.61	23.97
110.00	9 14 16	4016.50	11.08	151.93	26.41	57.45	10 21 12	3416.5	6.71	145.56

DIFFERENTIAL CORRECTIONS

TDE	.3289	TRA	-1.1366	TC3	1.5931	BAU	.4695
RDE	-.4579	RRA	-.1945	RC3	.0069	FAU	.07273
FDE	.0643	FRA	.4751	FC3	-2.8563	BSP	6943
BDE	-.5637	BRA	1.1531	BC3	1.5931	FSP	665

MID-COURSE EXECUTION ACCURACY

SGT	2109.9	SGR	610.2	SG3	237.5		
RRT	.1062	RRF	-.1240	RTF	-.8342		
SGB	2196.4	R23	-.0276	R13	-.8345		
SG1	2111.0	SG2	606.4	THA	1.92		

ORBIT DETERMINATION ACCURACY

ST	589.8	SR	563.6	SS	171.7		
CRT	-.5795	CRS	.4777	CST	.3950		
LSA	725.2	MSA	408.3	SSA	47.7		
EL1	725.2	EL2	373.5	ALF	137.24		

LAUNCH DATE DEC 10 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 386.881 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 34.778 GAL .52 AZL 88.90 HCA 120.54 SMA 224.07 ECC .34264 INC 1.0991 V1 30.243
RP 242.47 LAP .95 LOP 198.52 VP 22.414 GAP 19.50 AZP 90.56 TAL 2.02 TAP 122.56 RCA 147.29 APO 300.84 V2 22.638
RC 148.041 GL 8.33 GP 2.38 ZAL 83.53 ZAP 170.52 ETS 164.17 ZAE 152.74 ETE 3.54 ZAC 92.06 ETC 255.89 CLP 170.82

PLANETOCENTRIC CONIC

C3 21.211 VHL 4.606 DLA 14.96 RAL 166.15 RAD 6567.9 VEL 11.941 PTH 2.13 VHP 9.152 DPA -.44 RAP 190.03 ECC 1.3491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 10 20	2712.83	-27.73	75.49	33.78	95.96	15 55 32	2112.8	-26.62	67.00
90.00	7 9 30	4388.11	6.07	182.51	27.27	62.29	8 22 38	3788.1	2.32	175.85
100.00	16 39 46	2424.38	-29.06	54.10	33.61	97.33	17 20 11	1824.4	-27.74	45.54
100.00	8 22 45	4151.79	7.25	164.50	26.63	60.92	9 31 57	3551.8	3.31	157.92
110.00	18 6 6	2154.29	-32.54	32.93	32.95	101.09	18 42 0	1554.3	-30.67	24.21
110.00	9 12 55	3994.65	10.27	150.75	24.80	57.22	10 19 30	3394.6	5.88	144.41

DIFFERENTIAL CORRECTIONS
TDE .3071 TRA-1.1026 TC3 1.6940 BAU .4804
RDE -.4469 RRA -.1879 RC3 .0139 FAU .07538
FDE .0861 FRA .4540 FC3-3.0767 BSP 7096
BDE .5423 BRA 1.1185 BC3 1.6940 FSP 706

MID-COURSE EXECUTION ACCURACY
SGT 2143.9 SGR 606.5 SG3 250.2
RRT .1162 RRF -.1351 RTF -.8394
SGB 2228.1 R23 -.0294 R13 -.8397
SG1 2145.2 SG2 602.0 THA 2.04

ORBIT DETERMINATION ACCURACY
ST 574.1 SR 560.7 SS 175.8
CRT -.5637 CRS .5798 CST .2960
LSA 710.1 MSA 410.0 SSA 49.6
EL1 709.7 EL2 374.7 ALF 136.19

LAUNCH DATE DEC 10 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 389.624 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 34.685 GAL .65 AZL 88.92 HCA 121.46 SMA 221.65 ECC .33555 INC 1.0796 V1 30.243
RP 242.20 LAP .92 LOP 199.44 VP 22.297 GAP 18.90 AZP 90.56 TAL 2.59 TAP 124.05 RCA 147.28 APO 296.02 V2 22.664
RC 150.330 GL 8.31 GP 2.46 ZAL 82.38 ZAP 169.90 ETS 164.62 ZAE 152.95 ETE 3.87 ZAC 92.20 ETC 255.88 CLP 170.20

PLANETOCENTRIC CONIC

C3 20.446 VHL 4.522 DLA 15.39 RAL 165.04 RAD 6567.8 VEL 11.909 PTH 2.12 VHP 8.932 DPA -.50 RAP 190.35 ECC 1.3365

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 1 55	2719.53	-27.78	75.97	32.19	95.72	15 47 15	2119.5	-26.70	67.47
90.00	7 9 4	4363.79	5.30	181.14	25.69	62.14	8 21 47	3763.8	1.53	174.49
100.00	16 31 41	2430.04	-29.11	54.51	32.02	97.12	17 12 11	1830.0	-27.82	45.94
100.00	8 21 59	4128.51	6.47	163.20	25.05	60.75	9 30 47	3528.5	2.53	156.64
110.00	17 58 41	2157.82	-32.59	33.19	31.37	100.94	18 34 39	1557.8	-30.74	24.46
110.00	9 11 28	3973.49	9.49	149.61	23.21	57.01	10 17 42	3373.5	5.08	143.29

DIFFERENTIAL CORRECTIONS
TDE .2893 TRA-1.0708 TC3 1.8003 BAU .4921
RDE -.4365 RRA -.1815 RC3 .0218 FAU .07821
FDE .1056 FRA .4314 FC3-3.3116 BSP 7224
BDE .5236 BRA 1.0861 BC3 1.8004 FSP 747

MID-COURSE EXECUTION ACCURACY
SGT 2183.1 SGR 602.6 SG3 263.6
RRT .1255 RRF -.1460 RTF -.8445
SGB 2264.7 R23 -.0317 R13 -.8449
SG1 2184.5 SG2 597.4 THA 2.14

ORBIT DETERMINATION ACCURACY
ST 561.3 SR 557.7 SS 180.9
CRT -.5512 CRS .6600 CST .2063
LSA 698.5 MSA 410.2 SSA 51.6
EL1 696.8 EL2 374.8 ALF 135.34

LAUNCH DATE DEC 10 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 392.443 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 34.596 GAL .78 AZL 88.94 HCA 122.38 SMA 219.39 ECC .32880 INC 1.0597 V1 30.243
RP 241.93 LAP .89 LOP 200.37 VP 22.186 GAP 18.30 AZP 90.57 TAL 3.17 TAP 125.55 RCA 147.26 APO 291.53 V2 22.692
RC 152.629 GL 8.28 GP 2.54 ZAL 81.22 ZAP 169.28 ETS 165.01 ZAE 153.20 ETE 4.21 ZAC 92.35 ETC 255.88 CLP 169.58

PLANETOCENTRIC CONIC

C3 19.742 VHL 4.443 DLA 15.82 RAL 163.92 RAD 6567.8 VEL 11.880 PTH 2.11 VHP 8.717 DPA -.55 RAP 190.66 ECC 1.3249

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 53 30	2726.46	-27.83	76.48	30.61	95.47	15 38 56	2126.5	-26.78	67.97
90.00	7 8 31	4340.17	4.55	179.81	24.12	62.02	8 20 51	3740.2	.77	173.17
100.00	16 23 35	2435.92	-29.16	54.94	30.44	96.90	17 4 11	1835.9	-27.90	46.36
100.00	8 21 6	4105.95	5.72	161.95	23.48	60.61	9 29 32	3505.9	1.76	155.40
110.00	17 51 16	2161.57	-32.64	33.48	29.81	100.78	18 27 18	1561.6	-30.81	24.73
110.00	9 9 55	3953.05	8.73	148.51	21.64	56.82	10 15 48	3353.1	4.30	142.22

DIFFERENTIAL CORRECTIONS
TDE .2796 TRA-1.0252 TC3 1.9244 BAU .5080
RDE -.4267 RRA -.1753 RC3 .0303 FAU .08095
FDE .1316 FRA .4082 FC3-3.5499 BSP 7083
BDE .5102 BRA 1.0400 BC3 1.9246 FSP 799

MID-COURSE EXECUTION ACCURACY
SGT 2223.1 SGR 598.9 SG3 277.0
RRT .1279 RRF -.1598 RTF -.8537
SGB 2302.4 R23 -.0425 R13 -.8542
SG1 2224.5 SG2 593.6 THA 2.13

ORBIT DETERMINATION ACCURACY
ST 550.0 SR 554.8 SS 191.6
CRT -.5549 CRS .7444 CST .0808
LSA 693.1 MSA 404.8 SSA 53.0
EL1 688.8 EL2 368.5 ALF 134.56

LAUNCH DATE DEC 10 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 395.328 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 34.511 GAL .91 AZL 88.96 HCA 123.31 SMA 217.29 ECC .32239 INC 1.0394 V1 30.243
RP 241.65 LAP .87 LOP 201.29 VP 22.083 GAP 17.71 AZP 90.57 TAL 3.74 TAP 127.05 RCA 147.24 APO 287.34 V2 22.720
RC 154.936 GL 8.24 GP 2.63 ZAL 80.06 ZAP 168.65 ETS 165.35 ZAE 153.48 ETE 4.57 ZAC 92.50 ETC 255.87 CLP 168.95

PLANETOCENTRIC CONIC

C3 19.097 VHL 4.370 DLA 16.22 RAL 162.78 RAD 6567.8 VEL 11.852 PTH 2.10 VHP 8.508 DPA -.60 RAP 190.96 ECC 1.3143

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 45 8	2733.45	-27.87	76.98	29.05	95.22	15 30 42	2133.5	-26.86	68.46
90.00	7 7 51	4317.44	3.82	178.54	22.59	61.92	8 19 48	3717.4	.04	171.90
100.00	16 15 33	2441.87	-29.21	55.38	28.89	96.67	16 56 15	1841.9	-27.97	46.79
100.00	8 20 7	4084.26	5.00	160.75	21.94	60.49	9 28 11	3484.3	1.03	154.21
110.00	17 43 55	2165.42	-32.68	33.77	28.27	100.62	18 20 0	1565.4	-30.88	25.01
110.00	9 8 15	3933.47	8.00	147.47	20.09	56.65	10 13 48	3333.5	3.56	141.19

DIFFERENTIAL CORRECTIONS
TDE .2524 TRA -.9984 TC3 2.0170 BAU .5151
RDE -.4173 RRA -.1690 RC3 .0403 FAU .08410
FDE .1547 FRA .3793 FC3-3.8128 BSP 7348
BDE .4877 BRA 1.0126 BC3 2.0174 FSP 842

MID-COURSE EXECUTION ACCURACY
SGT 2252.9 SGR 594.8 SG3 291.9
RRT .1460 RRF -.1731 RTF -.8557
SGB 2330.1 R23 -.0395 R13 -.8562
SG1 2254.7 SG2 588.0 THA 2.37

ORBIT DETERMINATION ACCURACY
ST 528.7 SR 551.5 SS 201.6
CRT -.5236 CRS .8051 CST .0120
LSA 674.9 MSA 407.2 SSA 55.5
EL1 667.1 EL2 372.4 ALF 132.70

LAUNCH DATE DEC 10 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 398.277 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 34.430 GAL 1.04 AZL 88.98 HCA 124.24 SMA 215.32 ECC .31631 INC 1.0186 V1 30.243
RP 241.36 LAP .84 LOP 202.22 VP 21.985 GAP 17.12 AZP 90.57 TAL 4.32 TAP 128.56 RCA 147.21 APO 283.43 V2 22.748
RC 157.250 GL 8.18 GP 2.72 ZAL 78.90 ZAP 168.00 ETS 165.65 ZAE 153.79 ETE 4.96 ZAC 92.65 ETC 255.86 CLP 168.31

PLANETOCENTRIC CONIC

C3 18.504 VHL 4.302 DLA 16.61 RAL 161.65 RAD 6567.7 VEL 11.827 PTH 2.09 VHP 8.304 DPA -.63 RAP 191.26 ECC 1.3045

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 50	2740.50	-27.91	77.49	27.51	94.97	15 22 31	2140.5	-26.93	68.96
90.00	7 7 4	4295.56	3.12	177.31	21.07	61.84	8 18 39	3695.6	-.67	170.68
100.00	16 7 35	2447.88	-29.25	55.82	27.36	96.45	16 48 23	1847.9	-28.05	47.22
100.00	8 19 0	4063.42	4.30	159.60	20.42	60.39	9 26 44	3463.4	.32	153.07
110.00	17 36 36	2169.36	-32.73	34.06	26.75	100.45	18 12 45	1569.4	-30.95	25.30
110.00	9 6 29	3914.70	7.30	146.47	18.57	56.51	10 11 43	3314.7	2.84	140.21

DIFFERENTIAL CORRECTIONS

TDE .2294 TRA -.9683 TC3 2.1172 BAU .5239
RDE -.4083 RRA -.1627 RC3 .0515 FAU .08741
FDE .1784 FRA .3480 FC3-4.0896 BSP 7588
BDE .4684 BRA .9819 BC3 2.1178 FSP 893

MID-COURSE EXECUTION ACCURACY

SGT 2285.3 SGR 590.7 SG3 307.5
RRT .1622 RRF -.1876 RTF -.8590
SGB 2360.4 R23 -.0392 R13 -.8595
SG1 2287.5 SG2 582.3 THA 2.57

ORBIT DETERMINATION ACCURACY

ST 509.3 SR 548.1 SS 213.7
CRT -.4970 CRS .8531 CST -.0545
LSA 660.9 MSA 406.5 SSA 58.1
EL1 648.2 EL2 373.7 ALF 130.80

LAUNCH DATE DEC 10 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 401.283 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 34.353 GAL 1.16 AZL 89.00 HCA 125.17 SMA 213.48 ECC .31053 INC .9972 V1 30.243
RP 241.08 LAP .82 LOP 203.16 VP 21.894 GAP 16.54 AZP 90.57 TAL 4.89 TAP 130.06 RCA 147.19 APO 279.77 V2 22.777
RC 159.568 GL 8.11 GP 2.81 ZAL 77.74 ZAP 167.34 ETS 165.91 ZAE 154.15 ETE 5.37 ZAC 92.80 ETC 255.85 CLP 167.65

PLANETOCENTRIC CONIC

C3 17.961 VHL 4.238 DLA 16.99 RAL 160.50 RAD 6567.7 VEL 11.804 PTH 2.09 VHP 8.105 DPA -.66 RAP 191.55 ECC 1.2956

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 28 37	2747.53	-27.95	78.00	25.99	94.71	15 14 25	2147.5	-27.01	69.47
90.00	7 6 9	4274.60	2.44	176.14	19.59	61.78	8 17 23	3674.6	-1.35	169.51
100.00	15 59 41	2453.87	-29.30	56.26	25.84	96.22	16 40 35	1853.9	-28.13	47.65
100.00	8 17 46	4043.48	3.63	158.50	18.93	60.31	9 25 10	3443.5	-.35	151.97
110.00	17 29 21	2173.31	-32.78	34.36	25.25	100.28	18 5 34	1573.3	-31.02	25.58
110.00	9 4 35	3896.81	6.62	145.52	17.08	56.39	10 9 32	3296.8	2.16	139.28

DIFFERENTIAL CORRECTIONS

TDE .2093 TRA -.9369 TC3 2.2180 BAU .5328
RDE -.3998 RRA -.1566 RC3 .0637 FAU .09083
FDE .2036 FRA .3154 FC3-4.3780 BSP 7758
BDE .4513 BRA .9499 BC3 2.2189 FSP 947

MID-COURSE EXECUTION ACCURACY

SGT 2317.0 SGR 586.6 SG3 323.8
RRT .1779 RRF -.2037 RTF -.8625
SGB 2390.1 R23 -.0408 R13 -.8630
SG1 2319.5 SG2 576.7 THA 2.75

ORBIT DETERMINATION ACCURACY

ST 491.1 SR 544.6 SS 228.0
CRT -.4730 CRS .8900 CST -.1154
LSA 650.5 MSA 403.7 SSA 60.6
EL1 631.2 EL2 373.3 ALF 128.82

LAUNCH DATE DEC 10 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 404.343 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 34.279 GAL 1.28 AZL 89.02 HCA 126.11 SMA 211.75 ECC .30504 INC .9753 V1 30.243
RP 240.79 LAP .79 LOP 204.09 VP 21.808 GAP 15.97 AZP 90.57 TAL 5.47 TAP 131.57 RCA 147.16 APO 276.34 V2 22.806
RC 161.890 GL 8.02 GP 2.91 ZAL 76.59 ZAP 166.67 ETS 166.14 ZAE 154.53 ETE 5.81 ZAC 92.96 ETC 255.85 CLP 166.98

PLANETOCENTRIC CONIC

C3 17.463 VHL 4.179 DLA 17.34 RAL 159.35 RAD 6567.7 VEL 11.783 PTH 2.08 VHP 7.911 DPA -.68 RAP 191.84 ECC 1.2874

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 20 31	2754.45	-27.99	78.51	24.49	94.46	15 6 26	2154.5	-27.08	69.96
90.00	7 5 6	4254.61	1.80	175.03	18.12	61.74	8 16 0	3654.6	-1.99	168.40
100.00	15 51 54	2459.78	-29.34	56.69	24.35	96.00	16 32 53	1859.8	-28.20	48.07
100.00	8 16 24	4024.51	2.98	157.45	17.46	60.24	9 23 29	3424.5	-1.00	150.93
110.00	17 22 12	2177.23	-32.83	34.66	23.77	100.11	17 58 29	1577.2	-31.09	25.87
110.00	9 2 35	3879.82	5.98	144.62	15.61	56.28	10 7 15	3279.8	1.51	138.39

DIFFERENTIAL CORRECTIONS

TDE .1904 TRA -.9043 TC3 2.3184 BAU .5415
RDE -.3918 RRA -.1505 RC3 .0771 FAU .09441
FDE .2292 FRA .2787 FC3-4.6803 BSP 7881
BDE .4356 BRA .9167 BC3 2.3196 FSP 1001

MID-COURSE EXECUTION ACCURACY

SGT 2347.2 SGR 582.6 SG3 340.8
RRT .1941 RRF -.2208 RTF -.8659
SGB 2418.5 R23 -.0430 R13 -.8665
SG1 2350.1 SG2 570.8 THA 2.93

ORBIT DETERMINATION ACCURACY

ST 472.6 SR 541.1 SS 243.5
CRT -.4492 CRS .9172 CST -.1688
LSA 642.3 MSA 398.6 SSA 63.2
EL1 614.9 EL2 371.6 ALF 126.60

LAUNCH DATE DEC 10 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 407.454 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 34.208 GAL 1.39 AZL 89.05 HCA 127.04 SMA 210.13 ECC .29983 INC .9527 V1 30.243
RP 240.49 LAP .76 LOP 205.03 VP 21.728 GAP 15.40 AZP 90.57 TAL 6.04 TAP 133.08 RCA 147.13 APO 273.13 V2 22.836
RC 164.213 GL 7.93 GP 3.02 ZAL 75.44 ZAP 165.98 ETS 166.35 ZAE 154.95 ETE 6.28 ZAC 93.12 ETC 255.84 CLP 166.30

PLANETOCENTRIC CONIC

C3 17.007 VHL 4.124 DLA 17.68 RAL 158.21 RAD 6567.7 VEL 11.764 PTH 2.08 VHP 7.722 DPA -.69 RAP 192.11 ECC 1.2799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 12 34	2761.19	-28.03	79.00	23.01	94.22	14 58 35	2161.2	-27.15	70.44
90.00	7 3 54	4235.64	1.19	173.97	16.68	61.71	8 14 29	3635.6	-2.60	167.34
100.00	15 44 15	2465.53	-29.38	57.11	22.88	95.78	16 25 20	1865.5	-28.27	48.49
100.00	8 14 54	4006.53	2.38	156.47	16.02	60.19	9 21 40	3406.5	-1.61	149.95
110.00	17 15 10	2181.05	-32.87	34.94	22.31	99.94	17 51 31	1581.0	-31.15	26.15
110.00	9 0 27	3863.77	5.37	143.78	14.16	56.19	10 4 51	3263.8	.90	137.55

DIFFERENTIAL CORRECTIONS

TDE .1727 TRA -.8708 TC3 2.4204 BAU .5507
RDE -.3841 RRA -.1445 RC3 .0918 FAU .09819
FDE .2558 FRA .2391 FC3-4.9986 BSP 8021
BDE .4212 BRA .8827 BC3 2.4221 FSP 1062

MID-COURSE EXECUTION ACCURACY

SGT 2378.1 SGR 578.8 SG3 358.8
RRT .2112 RRF -.2394 RTF -.8696
SGB 2447.5 R23 -.0458 R13 -.8703
SG1 2381.4 SG2 564.9 THA 3.12

ORBIT DETERMINATION ACCURACY

ST 454.2 SR 537.5 SS 260.6
CRT -.4254 CRS .9364 CST -.2143
LSA 636.7 MSA 391.5 SSA 66.0
EL1 599.4 EL2 368.5 ALF 124.16

LAUNCH DATE DEC 10 1964 FLIGHT TIME 172.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 410.611 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	34.141	GAL	1.50	AZL	89.07	HCA	127.98	SMA	208.60	ECC	.29488	INC	.9296	V1	30.243
RP	240.19	LAP	.73	LOP	205.96	VP	21.654	GAP	14.83	AZP	90.57	TAL	6.61	TAP	134.59	RCA	147.09	APO	270.12	V2	22.866
RC	166.536	GL	7.81	GP	3.13	ZAL	74.31	ZAP	165.28	ETS	166.53	ZAE	155.41	ETE	6.79	ZAC	93.28	ETC	255.83	CLP	165.61

PLANETOCENTRIC CONIC -

C3	16.589	VHL	4.073	DLA	18.00	RAL	157.06	RAD	6567.7	VEL	11.746	PTH	2.07	VHP	7.538	DPA	-.69	RAP	192.38	ECC	1.2730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 47	2767.65	-28.06	79.47	21.56	93.99	14 50 54	2167.7	-27.21	70.90
90.00	7 2 32	4217.75	.61	172.97	15.27	61.69	8 12 50	3617.7	-3.18	166.34
100.00	15 36 46	2471.04	-29.42	57.52	21.43	95.57	16 17 57	1871.0	-28.33	48.88
100.00	8 13 14	3989.60	1.80	155.54	14.61	60.16	9 19 44	3389.6	-2.18	149.02
110.00	17 8 17	2184.70	-32.92	35.22	20.88	99.79	17 44 42	1584.7	-31.22	26.41
110.00	8 58 13	3848.70	4.80	142.98	12.74	56.12	10 2 21	3248.7	.32	136.77

DIFFERENTIAL CORRECTIONS

TDE	.1554	TRA	-.8366	TC3	2.5201	BAU	.5594
RDE	-.3769	RRA	-.1384	RC3	.1079	FAU	.10215
FDE	.2833	FRA	.1956	FC3	-5.3310	BSP	8133
BDE	.4077	BRA	.8480	BC3	2.5224	FSP	1123

MID-COURSE EXECUTION ACCURACY

SGT	2406.9	SGR	575.1	SG3	377.6		
RRT	.2296	RRF	-.2595	RTF	-.8732		
SGB	2474.7	R23	-.0489	R13	-.8740		
SG1	2410.8	SG2	558.9	THA	3.32		

ORBIT DETERMINATION ACCURACY

ST	435.2	SR	533.8	SS	278.9
CRT	-.4002	CRS	.9494	CST	-.2516
LSA	633.2	MSA	382.7	SSA	68.9
EL1	584.5	EL2	364.2	ALF	121.41

LAUNCH DATE DEC 10 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 413.811 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	34.076	GAL	1.61	AZL	89.09	HCA	128.92	SMA	207.17	ECC	.29018	INC	.9059	V1	30.243
RP	239.88	LAP	.70	LOP	206.90	VP	21.585	GAP	14.27	AZP	90.57	TAL	7.18	TAP	136.10	RCA	147.05	APO	267.29	V2	22.897
RC	168.857	GL	7.69	GP	3.25	ZAL	73.19	ZAP	164.56	ETS	166.68	ZAE	155.89	ETE	7.35	ZAC	93.44	ETC	255.83	CLP	164.90

PLANETOCENTRIC CONIC

C3	16.207	VHL	4.026	DLA	18.29	RAL	155.92	RAD	6567.6	VEL	11.730	PTH	2.07	VHP	7.358	DPA	-.68	RAP	192.64	ECC	1.2667

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 57 12	2773.77	-28.09	79.91	20.13	93.76	14 43 26	2173.8	-27.27	71.34
90.00	7 1 1	4200.99	.07	172.04	13.89	61.68	8 11 2	3601.0	-3.72	165.40
100.00	15 29 28	2476.24	-29.45	57.90	20.01	95.37	16 10 44	1876.2	-28.40	49.26
100.00	8 11 26	3973.76	1.27	154.67	13.22	60.13	9 17 40	3373.8	-2.72	148.15
110.00	17 1 33	2188.13	-32.96	35.48	19.47	99.64	17 38 1	1588.1	-31.28	26.66
110.00	8 55 50	3834.62	4.27	142.25	11.35	56.05	9 59 45	3234.6	-.22	136.03

DIFFERENTIAL CORRECTIONS

TDE	.1381	TRA	-.8043	TC3	2.6143	BAU	.5671
RDE	-.3701	RRA	-.1324	RC3	.1253	FAU	.10625
FDE	.3127	FRA	.1506	FC3	-5.6753	BSP	8252
BDE	.3950	BRA	.8151	BC3	2.6173	FSP	1190

MID-COURSE EXECUTION ACCURACY

SGT	2433.7	SGR	571.8	SG3	397.2		
RRT	.2502	RRF	-.2817	RTF	-.8763		
SGB	2499.9	R23	-.0522	R13	-.8771		
SG1	2438.1	SG2	552.6	THA	3.55		

ORBIT DETERMINATION ACCURACY

ST	416.5	SR	530.0	SS	299.1
CRT	-.3706	CRS	.9576	CST	-.2773
LSA	631.9	MSA	373.4	SSA	71.7
EL1	570.1	EL2	359.6	ALF	118.35

LAUNCH DATE DEC 10 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 417.052 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	34.015	GAL	1.72	AZL	89.12	HCA	129.86	SMA	205.83	ECC	.28573	INC	.8814	V1	30.243
RP	239.58	LAP	.68	LOP	207.85	VP	21.520	GAP	13.72	AZP	90.57	TAL	7.74	TAP	137.60	RCA	147.02	APO	264.64	V2	22.928
RC	171.174	GL	7.55	GP	3.37	ZAL	72.08	ZAP	163.83	ETS	166.81	ZAE	156.41	ETE	7.95	ZAC	93.61	ETC	255.82	CLP	164.17

PLANETOCENTRIC CONIC

C3	15.858	VHL	3.982	DLA	18.56	RAL	154.79	RAD	6567.6	VEL	11.715	PTH	2.06	VHP	7.182	DPA	-.65	RAP	192.89	ECC	1.2610

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 49 51	2779.48	-28.11	80.33	18.73	93.56	14 36 10	2179.5	-27.32	71.75
90.00	6 59 19	4185.38	-.43	171.17	12.53	61.69	8 9 5	3585.4	-4.21	164.53
100.00	15 22 23	2481.07	-29.48	58.26	18.61	95.18	16 3 44	1881.1	-28.45	49.61
100.00	8 9 28	3959.03	.77	153.86	11.86	60.12	9 15 27	3359.0	-3.21	147.34
110.00	16 55 0	2191.30	-32.99	35.72	18.08	99.50	17 31 32	1591.3	-31.33	26.89
110.00	8 53 20	3821.56	3.77	141.56	9.98	56.00	9 57 2	3221.6	-.72	135.35

DIFFERENTIAL CORRECTIONS

TDE	.1267	TRA	-.7676	TC3	2.7190	BAU	.5773
RDE	-.3635	RRA	-.1263	RC3	.1444	FAU	.11066
FDE	.3410	FRA	.1004	FC3	-6.0413	BSP	8260
BDE	.3850	BRA	.7779	BC3	2.7229	FSP	1259

MID-COURSE EXECUTION ACCURACY

SGT	2465.8	SGR	568.8	SG3	418.1		
RRT	.2688	RRF	-.3050	RTF	-.8807		
SGB	2530.5	R23	-.0581	R13	-.8816		
SG1	2470.8	SG2	546.7	THA	3.73		

ORBIT DETERMINATION ACCURACY

ST	399.5	SR	526.2	SS	318.7
CRT	-.3570	CRS	.9614	CST	-.3125
LSA	634.3	MSA	360.7	SSA	74.8
EL1	559.9	EL2	350.7	ALF	116.00

LAUNCH DATE DEC 10 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 420.331 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.956	GAL	1.82	AZL	89.14	HCA	130.81	SMA	204.56	ECC	.28150	INC	.8561	V1	30.243
RP	239.26	LAP	.65	LOP	208.79	VP	21.461	GAP	13.18	AZP	90.56	TAL	8.30	TAP	139.11	RCA	146.98	APO	262.15	V2	22.959
RC	173.485	GL	7.39	GP	3.50	ZAL	71.00	ZAP	163.08	ETS	166.93	ZAE	156.96	ETE	8.61	ZAC	93.78	ETC	255.82	CLP	163.43

PLANETOCENTRIC CONIC

C3	15.540	VHL	3.942	DLA	18.81	RAL	153.66	RAD	6567.6	VEL	11.701	PTH	2.06	VHP	7.011	DPA	-.62	RAP	193.13	ECC	1.2557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 42 46	2784.66	-28.13	80.71	17.35	93.37	14 29 11	2184.7	-27.37	72.12
90.00	6 57 27	4171.02	-.90	170.36	11.19	61.70	8 6 58	3571.0	-4.67	163.72
100.00	15 15 34	2485.43	-29.51	58.58	17.24	95.02	15 56 59	1885.4	-28.50	49.92
100.00	8 7 20	3945.48	.31	153.12	10.52	60.11	9 13 6	3345.5	-3.67	146.59
110.00	16 48 40	2194.11	-33.02	35.93	16.72	99.38	17 25 14	1594.1	-31.38	27.10
110.00	8 50 43	3809.57	3.31	140.93	8.65	55.96	9 54 13	3209.6	-1.18	134.73

DIFFERENTIAL CORRECTIONS

TDE	.1083	TRA	-.7392	TC3	2.7995	BAU	.5826
RDE	-.3572	RRA	-.1201	RC3	.1652	FAU	.11525
FDE	.3701	FRA	.0474	FC3	-6.4207	BSP	8469
BDE	.3733	BRA	.7489	BC3	2.8044	FSP	1334

MID-COURSE EXECUTION ACCURACY

SGT	2486.8	SGR	566.2	SG3	439.9		
RRT	.2947	RRF	-.3302	RTF	-.8823		
SGB	2550.5	R23	-.0600	R13	-.8833		
SG1	2492.7	SG2	539.8	THA	4.03		

ORBIT DETERMINATION ACCURACY

ST	380.9	SR	522.2	SS	338.9
CRT	-.3150	CRS	.9624	CST	-.3154
LSA	634.9	MSA	351.4	SSA	77.8
EL1	546.2	EL2	345.7	ALF	112.24

LAUNCH DATE DEC 10 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 423.646 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.900	GAL	1.92	AZL	89.17	HCA	131.76	SMA	203.37	ECC	.27750	INC	.8301	V1	30.243
RP	238.95	LAP	.62	LOP	209.74	VP	21.407	GAP	12.64	AZP	90.55	TAL	8.85	TAP	140.60	RCA	146.93	APO	259.80	V2	22.991
RC	175.790	GL	7.22	GP	3.63	ZAL	69.93	ZAP	162.31	ETS	167.03	ZAE	157.54	ETE	9.33	ZAC	93.96	ETC	255.81	CLP	162.68

PLANETOCENTRIC CONIC

C3	15.249	VHL	3.905	DLA	19.03	RAL	152.55	RAD	6567.6	VEL	11.689	PTH	2.06	VHP	6.845	DPA	-.58	RAP	193.36	ECC	1.2510

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 35 58	2789.27	-28.15	81.04	16.00	93.20	14 22 27	2189.3	-27.41	72.45
90.00	6 55 23	4157.90	-1.32	169.63	9.89	61.71	8 4 41	3557.9	-5.09	162.98
100.00	15 9 0	2489.28	-29.53	58.86	15.89	94.87	15 50 29	1889.3	-28.54	50.20
100.00	8 5 2	3933.12	-.11	152.44	9.22	60.11	9 10 35	3333.1	-4.09	145.91
110.00	16 42 34	2196.55	-33.05	36.12	15.38	99.27	17 19 10	1596.5	-31.42	27.28
110.00	8 47 58	3798.62	2.90	140.36	7.34	55.92	9 51 16	3198.6	-1.59	134.16

DIFFERENTIAL CORRECTIONS

TDE	.0942	TRA	-.7065	TC3	2.8840	BAU	.5892
RDE	-.3513	RRA	-.1138	RC3	.1875	FAU	.12005
FDE	.3998	FRA	-.0107	FC3	-6.8154	BSP	8563
BDE	.3637	BRA	.7157	BC3	2.8901	FSP	1410

MID-COURSE EXECUTION ACCURACY

SGT	2509.0	SGR	564.2	SG3	462.7
RRT	.3196	RRF	-.3571	RTF	-.8849
SGB	2571.6	R23	-.0643	R13	-.8861
SG1	2515.7	SG2	533.2	THA	4.30

ORBIT DETERMINATION ACCURACY

ST	363.1	SR	518.1	SS	359.5
CRT	-.2842	CRS	.9611	CST	-.3256
LSA	638.6	MSA	339.5	SSA	80.9
EL1	535.6	EL2	336.8	ALF	109.03

LAUNCH DATE DEC 10 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 426.994 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.846	GAL	2.01	AZL	89.20	HCA	132.71	SMA	202.24	ECC	.27370	INC	.8034	V1	30.243
RP	238.63	LAP	.59	LOP	210.69	VP	21.357	GAP	12.10	AZP	90.55	TAL	9.39	TAP	142.10	RCA	146.89	APO	257.60	V2	23.024
RC	178.086	GL	7.04	GP	3.78	ZAL	68.88	ZAP	161.53	ETS	167.11	ZAE	158.14	ETE	10.12	ZAC	94.14	ETC	255.81	CLP	161.90

PLANETOCENTRIC CONIC

C3	14.984	VHL	3.871	DLA	19.22	RAL	151.45	RAD	6567.6	VEL	11.678	PTH	2.05	VHP	6.682	DPA	-.52	RAP	193.58	ECC	1.2466

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 29 28	2793.24	-28.17	81.33	14.68	93.06	14 16 1	2193.2	-27.44	72.74
90.00	6 53 7	4146.07	-1.70	168.97	8.61	61.73	8 2 13	3546.1	-5.47	162.32
100.00	15 2 42	2492.57	-29.55	59.11	14.57	94.74	15 44 15	1892.6	-28.58	50.44
100.00	8 2 34	3921.97	-.49	151.83	7.94	60.11	9 7 56	3322.0	-4.46	145.29
110.00	16 36 41	2198.55	-33.07	36.27	14.07	99.18	17 13 20	1598.6	-31.45	27.42
110.00	8 45 4	3788.75	2.52	139.84	6.06	55.90	9 48 13	3188.7	-1.97	133.64

DIFFERENTIAL CORRECTIONS

TDE	.0830	TRA	-.6731	TC3	2.9694	BAU	.5963
RDE	-.3455	RRA	-.1074	RC3	.2117	FAU	.12510
FDE	.4286	FRA	-.0731	FC3	-7.2281	BSP	8627
BDE	.3554	BRA	.6816	BC3	2.9769	FSP	1492

MID-COURSE EXECUTION ACCURACY

SGT	2532.3	SGR	562.8	SG3	486.7
RRT	.3448	RRF	-.3855	RTF	-.8879
SGB	2594.1	R23	-.0697	R13	-.8892
SG1	2540.1	SG2	526.7	THA	4.58

ORBIT DETERMINATION ACCURACY

ST	346.5	SR	514.0	SS	379.4
CRT	-.2612	CRS	.9580	CST	-.3394
LSA	643.5	MSA	326.9	SSA	84.2
EL1	527.1	EL2	326.1	ALF	106.42

LAUNCH DATE DEC 10 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 430.375 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.795	GAL	2.11	AZL	89.22	HCA	133.66	SMA	201.18	ECC	.27009	INC	.7755	V1	30.243
RP	238.31	LAP	.56	LOP	211.64	VP	21.311	GAP	11.58	AZP	90.54	TAL	9.92	TAP	143.59	RCA	146.85	APO	255.52	V2	23.056
RC	180.373	GL	6.84	GP	3.93	ZAL	67.86	ZAP	160.72	ETS	167.18	ZAE	158.78	ETE	11.00	ZAC	94.32	ETC	255.80	CLP	161.11

PLANETOCENTRIC CONIC

C3	14.742	VHL	3.840	DLA	19.39	RAL	150.37	RAD	6567.6	VEL	11.667	PTH	2.05	VHP	6.523	DPA	-.45	RAP	193.79	ECC	1.2426

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 23 17	2796.53	-28.18	81.57	13.38	92.94	14 9 53	2196.5	-27.47	72.98
90.00	6 50 39	4135.51	-2.04	168.38	7.36	61.75	7 59 34	3535.5	-5.80	161.72
100.00	14 56 43	2495.25	-29.56	59.30	13.28	94.64	15 38 18	1895.3	-28.61	50.63
100.00	7 59 54	3912.02	-.83	151.28	6.68	60.12	9 5 6	3312.0	-4.80	144.74
110.00	16 31 3	2200.11	-33.09	36.39	12.78	99.11	17 7 43	1600.1	-31.48	27.54
110.00	8 42 3	3779.93	2.18	139.38	4.80	55.88	9 45 3	3179.9	-2.31	133.18

DIFFERENTIAL CORRECTIONS

TDE	.0863	TRA	-.6268	TC3	3.0882	BAU	.6104
RDE	-.3400	RRA	-.1008	RC3	.2380	FAU	.13059
FDE	.4549	FRA	-.1426	FC3	-7.6690	BSP	8368
BDE	.3508	BRA	.6348	BC3	3.0973	FSP	1572

MID-COURSE EXECUTION ACCURACY

SGT	2573.6	SGR	562.4	SG3	512.6
RRT	.3636	RRF	-.4150	RTF	-.8944
SGB	2634.3	R23	-.0815	R13	-.8958
SG1	2582.1	SG2	522.2	THA	4.74

ORBIT DETERMINATION ACCURACY

ST	331.8	SR	509.7	SS	397.2
CRT	-.2998	CRS	.9527	CST	-.4060
LSA	652.0	MSA	307.8	SSA	88.3
EL1	524.7	EL2	307.5	ALF	107.06

LAUNCH DATE DEC 10 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 433.784 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.747	GAL	2.19	AZL	89.25	HCA	134.62	SMA	200.19	ECC	.26668	INC	.7467	V1	30.243
RP	237.98	LAP	.53	LOP	212.60	VP	21.270	GAP	11.06	AZP	90.52	TAL	10.45	TAP	145.07	RCA	146.80	APO	253.57	V2	23.089
RC	182.651	GL	6.62	GP	4.09	ZAL	66.86	ZAP	159.90	ETS	167.23	ZAE	159.44	ETE	11.97	ZAC	94.51	ETC	255.80	CLP	160.30

PLANETOCENTRIC CONIC

C3	14.521	VHL	3.811	DLA	19.53	RAL	149.31	RAD	6567.6	VEL	11.658	PTH	2.05	VHP	6.369	DPA	-.36	RAP	193.99	ECC	1.2390

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 17 30	2798.94	-28.19	81.75	12.12	92.85	14 4 9	2198.9	-27.49	73.15
90.00	6 47 58	4126.41	-2.34	167.88	6.14	61.77	7 56 44	3526.4	-6.09	161.21
100.00	14 51 5	2497.15	-29.57	59.44	12.01	94.56	15 32 42	1897.1	-28.63	50.77
100.00	7 57 3	3903.43	-1.12	150.81	5.46	60.13	9 2 7	3303.4	-5.09	144.27
110.00	16 25 44	2201.05	-33.10	36.46	11.52	99.07	17 2 25	1601.1	-31.49	27.61
110.00	8 38 54	3772.29	1.89	138.98	3.58	55.86	9 41 47	3172.3	-2.60	132.78

DIFFERENTIAL CORRECTIONS

TDE	.0596	TRA	-.6118	TC3	3.1160	BAU	.6071
RDE	-.3348	RRA	-.0941	RC3	.2660	FAU	.13602
FDE	.4876	FRA	-.2104	FC3	-8.1090	BSP	8814
BDE	.3400	BRA	.6190	BC3	3.1273	FSP	1667

MID-COURSE EXECUTION ACCURACY

SGT	2569.1	SGR	563.0	SG3	538.5
RRT	.4030	RRF	-.4479	RTF	-.8920
SGB	2630.1	R23	-.0802	R13	-.8937
SG1	2579.5	SG2	513.2	THA	5.26

ORBIT DETERMINATION ACCURACY

ST	314.4	SR	505.4	SS	419.8
CRT	-.1982	CRS	.9483	CST	-.3419
LSA	655.3	MSA	304.9	SSA	90.3
EL1	511.4	EL2	304.5	ALF	100.96

LAUNCH DATE DEC 10 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 437.221 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.700 GAL 2.28 AZL 89.28 HCA 135.58 SMA 199.24 ECC .26345 INC .7169 V1 30.243
RP 237.65 LAP .50 LOP 213.56 VP 21.232 GAP 10.55 AZP 90.51 TAL 10.97 TAP 146.54 RCA 146.75 APO 251.73 V2 23.123
RC 184.919 GL 6.39 GP 4.26 ZAL 65.89 ZAP 159.05 ETS 167.28 ZAE 160.12 ETE 13.06 ZAC 94.71 ETC 255.79 CLP 159.47

PLANETOCENTRIC CONIC

C3 14.321 VHL 3.784 DLA 19.65 RAL 148.26 RAD 6567.6 VEL 11.649 PTH 2.05 VHP 6.218 DPA -.26 RAP 194.18 ECC 1.2357

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 12 4	2800.55	-28.19	81.86	10.88	92.79	13 58 44	2200.6	-27.51	73.27
90.00	6 45 3	4118.63	-2.59	167.44	4.95	61.79	7 53 42	3518.6	-6.34	160.77
100.00	14 45 47	2498.34	-29.58	59.53	10.78	94.52	15 27 25	1898.3	-28.64	50.85
100.00	7 54 1	3896.07	-1.37	150.41	4.27	60.14	8 58 57	3296.1	-5.33	143.86
110.00	16 20 40	2201.47	-33.10	36.49	10.29	99.05	16 57 22	1601.5	-31.50	27.64
110.00	8 35 37	3765.71	1.64	138.64	2.39	55.85	9 38 23	3165.7	-2.85	132.44

DIFFERENTIAL CORRECTIONS
TDE .0503 TRA -.5814 TC3 3.1818 BAU .6118
RDE -.3297 RRA -.0872 RC3 .2963 FAU .14185
FDE .5162 FRA -.2862 FC3-8.5754 BSP 8896
BDE .3335 BRA .5879 BC3 3.1956 FSP 1762

MID-COURSE EXECUTION ACCURACY
SGT 2584.3 SGR 564.9 SG3 566.2
RRT .4337 RRF -.4812 RTF -.8940
SGB 2645.4 R23 -.0865 R13 -.8958
SG1 2596.4 SG2 506.6 THA 5.63

ORBIT DETERMINATION ACCURACY
ST 299.4 SR 500.9 SS 439.0
CRT -.1716 CRS .9420 CST -.3440
LSA 661.8 MSA 294.4 SSA 93.3
EL1 504.9 EL2 292.7 ALF 98.85

LAUNCH DATE DEC 10 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 440.686 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.656 GAL 2.36 AZL 89.31 HCA 136.54 SMA 198.35 ECC .26038 INC .6859 V1 30.243
RP 237.31 LAP .47 LOP 214.52 VP 21.199 GAP 10.04 AZP 90.50 TAL 11.47 TAP 148.01 RCA 146.71 APO 250.00 V2 23.157
RC 187.176 GL 6.15 GP 4.44 ZAL 64.94 ZAP 158.19 ETS 167.31 ZAE 160.83 ETE 14.28 ZAC 94.91 ETC 255.78 CLP 158.62

PLANETOCENTRIC CONIC

C3 14.138 VHL 3.760 DLA 19.73 RAL 147.24 RAD 6567.6 VEL 11.641 PTH 2.04 VHP 6.072 DPA -.14 RAP 194.35 ECC 1.2327

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 7 1	2801.27	-28.19	81.92	9.67	92.76	13 53 42	2201.3	-27.51	73.32
90.00	6 41 56	4112.24	-2.79	167.08	3.78	61.81	7 50 28	3512.2	-6.54	160.41
100.00	14 40 50	2498.74	-29.58	59.56	9.57	94.50	15 22 29	1898.7	-28.64	50.88
100.00	7 50 48	3890.01	-1.57	150.07	3.10	60.15	8 55 38	3290.0	-5.54	143.53
110.00	16 15 55	2201.27	-33.10	36.48	9.08	99.06	16 52 36	1601.3	-31.50	27.62
110.00	8 32 12	3760.24	1.43	138.36	1.22	55.84	9 34 52	3160.2	-3.06	132.15

DIFFERENTIAL CORRECTIONS
TDE .0431 TRA -.5516 TC3 3.2426 BAU .6161
RDE -.3247 RRA -.0800 RC3 .3289 FAU .14797
FDE .5438 FRA -.3668 FC3-9.0607 BSP 8943
BDE .3275 BRA .5574 BC3 3.2593 FSP 1861

MID-COURSE EXECUTION ACCURACY
SGT 2597.7 SGR 568.1 SG3 595.3
RRT .4651 RRF -.5157 RTF -.8957
SGB 2659.1 R23 -.0938 R13 -.8978
SG1 2611.6 SG2 500.2 THA 6.03

ORBIT DETERMINATION ACCURACY
ST 285.3 SR 496.3 SS 457.4
CRT -.1519 CRS .9349 CST -.3503
LSA 668.5 MSA 284.4 SSA 96.2
EL1 499.1 EL2 280.5 ALF 97.31

LAUNCH DATE DEC 10 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 444.176 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.614 GAL 2.44 AZL 89.35 HCA 137.50 SMA 197.51 ECC .25748 INC .6537 V1 30.243
RP 236.98 LAP .44 LOP 215.48 VP 21.169 GAP 9.54 AZP 90.48 TAL 11.97 TAP 149.47 RCA 146.66 APO 248.37 V2 23.191
RC 189.421 GL 5.89 GP 4.63 ZAL 64.02 ZAP 157.30 ETS 167.33 ZAE 161.56 ETE 15.65 ZAC 95.11 ETC 255.78 CLP 157.75

PLANETOCENTRIC CONIC

C3 13.972 VHL 3.738 DLA 19.79 RAL 146.23 RAD 6567.6 VEL 11.634 PTH 2.04 VHP 5.929 DPA -.00 RAP 194.52 ECC 1.2300

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 2 23	2801.05	-28.19	81.90	8.49	92.77	13 49 4	2201.0	-27.51	73.30
90.00	6 38 34	4107.27	-2.95	166.81	2.64	61.82	7 47 1	3507.3	-6.70	160.13
100.00	14 36 16	2498.30	-29.58	59.53	8.39	94.52	15 17 54	1898.3	-28.64	50.85
100.00	7 47 22	3885.26	-1.74	149.81	1.96	60.15	8 52 7	3285.3	-5.69	143.26
110.00	16 11 28	2200.43	-33.09	36.42	7.90	99.10	16 48 9	1600.4	-31.48	27.56
110.00	8 28 39	3755.88	1.26	138.13	.09	55.84	9 31 15	3155.9	-3.23	131.92

DIFFERENTIAL CORRECTIONS
TDE .0398 TRA -.5190 TC3 3.3084 BAU .6217
RDE -.3198 RRA -.0725 RC3 .3643 FAU .15450
FDE .5692 FRA -.4551 FC3-9.5729 BSP 8911
BDE .3223 BRA .5240 BC3 3.3284 FSP 1962

MID-COURSE EXECUTION ACCURACY
SGT 2614.6 SGR 573.0 SG3 626.2
RRT .4962 RRF -.5512 RTF -.8982
SGB 2676.6 R23 -.1024 R13 -.9006
SG1 2630.6 SG2 494.5 THA 6.44

ORBIT DETERMINATION ACCURACY
ST 271.2 SR 491.5 SS 474.1
CRT -.1524 CRS .9265 CST -.3733
LSA 674.8 MSA 273.4 SSA 99.5
EL1 494.0 EL2 266.7 ALF 96.80

LAUNCH DATE DEC 10 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 447.691 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.573 GAL 2.52 AZL 89.38 HCA 138.47 SMA 196.72 ECC .25473 INC .6202 V1 30.243
RP 236.64 LAP .41 LOP 216.45 VP 21.144 GAP 9.05 AZP 90.46 TAL 12.45 TAP 150.92 RCA 146.61 APO 246.83 V2 23.226
RC 191.655 GL 5.61 GP 4.83 ZAL 63.12 ZAP 156.39 ETS 167.34 ZAE 162.31 ETE 17.21 ZAC 95.33 ETC 255.77 CLP 156.86

PLANETOCENTRIC CONIC

C3 13.822 VHL 3.718 DLA 19.82 RAL 145.25 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 5.789 DPA .15 RAP 194.67 ECC 1.2275

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 58 8	2799.86	-28.19	81.81	7.33	92.82	13 44 48	2199.9	-27.50	73.22
90.00	6 34 58	4103.71	-3.07	166.61	1.52	61.84	7 43 22	3503.7	-6.81	159.93
100.00	14 32 4	2497.00	-29.57	59.43	7.23	94.57	15 13 41	1897.0	-28.63	50.76
100.00	7 43 44	3881.80	-1.85	149.62	.85	60.16	8 48 26	3281.8	-5.81	143.07
110.00	16 7 20	2198.93	-33.08	36.30	6.74	99.17	16 43 59	1598.9	-31.46	27.45
110.00	8 24 57	3752.62	1.14	137.96	358.98	55.83	9 27 30	3152.6	-3.35	131.75

DIFFERENTIAL CORRECTIONS
TDE .0474 TRA -.4783 TC3 3.3930 BAU .6314
RDE -.3148 RRA -.0644 RC3 .4027 FAU .16151
FDE .5880 FRA -.5533 FC-10.1160 BSP 8639
BDE .3183 BRA .4826 BC3 3.4168 FSP 2056

MID-COURSE EXECUTION ACCURACY
SGT 2642.8 SGR 579.8 SG3 659.2
RRT .5239 RRF -.5869 RTF -.9026
SGB 2705.6 R23 -.1141 R13 -.9053
SG1 2660.8 SG2 490.5 THA 6.79

ORBIT DETERMINATION ACCURACY
ST 257.5 SR 486.3 SS 486.5
CRT -.2179 CRS .9156 CST -.4510
LSA 679.8 MSA 257.7 SSA 104.7
EL1 490.6 EL2 249.1 ALF 98.89

LAUNCH DATE DEC 10 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 451.226 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.535 GAL 2.59 AZL 89.41 HCA 139.44 SMA 195.97 ECC .25212 INC .5854 V1 30.243
RP 236.29 LAP .38 LOP 217.42 VP 21.121 GAP 8.56 AZP 90.44 TAL 12.92 TAP 152.36 RCA 146.56 APO 245.38 V2 23.261
RC 193.877 GL 5.31 GP 5.05 ZAL 62.26 ZAP 155.46 ETS 167.34 ZAE 163.07 ETE 18.97 ZAC 95.55 ETC 255.77 CLP 155.95

PLANETOCENTRIC CONIC

C3 13.684 VHL 3.699 DLA 19.81 RAL 144.30 RAD 6567.5 VEL 11.622 PTH 2.04 VHP 5.654 DPA .32 RAP 194.81 ECC 1.2252

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 54 23	2797.52	-28.18	81.64	6.21	92.90	13 41 0	2197.5	-27.48	73.05
90.00	6 31 8	4101.66	-3.13	166.49	.44	61.84	7 39 30	3501.7	-6.87	159.81
100.00	14 28 18	2494.68	-29.56	59.26	6.11	94.66	15 9 52	1894.7	-28.60	50.59
100.00	7 39 54	3879.74	-1.92	149.51	359.76	60.16	8 44 34	3279.7	-5.88	142.96
110.00	16 3 33	2196.64	-33.05	36.13	5.61	99.27	16 40 10	1596.6	-31.42	27.28
110.00	8 21 8	3750.54	1.06	137.85	357.90	55.83	9 23 38	3150.5	-3.43	131.64

DIFFERENTIAL CORRECTIONS

TDE .0252 TRA -.4677 TC3 3.3854 BAU .6246
RDE -.3105 RRA -.0564 RC3 .4425 FAU .16816
FDE .6226 FRA -.6429 FC-10.6386 BSP 9083
BDE .3115 BRA .4711 BC3 3.4142 FSP 2190

MID-COURSE EXECUTION ACCURACY

SGT 2620.6 SGR 589.2 SG3 691.2
RRT .5652 RRF -.6242 RTF -.8997
SGB 2686.0 R23 -.1186 R13 -.9028
SG1 2642.4 SG2 482.0 THA 7.49

ORBIT DETERMINATION ACCURACY

ST 246.0 SR 481.8 SS 509.2
CRT -.0979 CRS .9104 CST -.3637
LSA 688.2 MSA 260.1 SSA 103.5
EL1 482.7 EL2 244.4 ALF 93.85

LAUNCH DATE DEC 10 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 454.785 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.498 GAL 2.66 AZL 89.45 HCA 140.41 SMA 195.27 ECC .24966 INC .5489 V1 30.243
RP 235.94 LAP .35 LOP 218.39 VP 21.102 GAP 8.09 AZP 90.42 TAL 13.38 TAP 153.79 RCA 146.52 APO 244.02 V2 23.297
RC 196.086 GL 5.00 GP 5.28 ZAL 61.43 ZAP 154.49 ETS 167.33 ZAE 163.85 ETE 21.00 ZAC 95.78 ETC 255.76 CLP 155.01

PLANETOCENTRIC CONIC

C3 13.559 VHL 3.682 DLA 19.78 RAL 143.37 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 5.522 DPA .52 RAP 194.93 ECC 1.2232

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 51 2	2794.16	-28.17	81.40	5.11	93.02	13 37 36	2194.2	-27.45	72.81
90.00	6 27 3	4101.02	-3.15	166.46	359.37	61.84	7 35 24	3501.0	-6.89	159.77
100.00	14 24 55	2491.44	-29.54	59.02	5.01	94.78	15 6 26	1891.4	-28.57	50.35
100.00	7 35 52	3878.97	-1.95	149.47	358.71	60.17	8 40 30	3279.0	-5.90	142.91
110.00	16 0 6	2193.63	-33.02	35.90	4.50	99.40	16 36 40	1593.6	-31.37	27.06
110.00	8 17 10	3749.55	1.02	137.80	356.85	55.83	9 19 39	3149.5	-3.47	131.59

DIFFERENTIAL CORRECTIONS

TDE .0228 TRA -.4418 TC3 3.4192 BAU .6260
RDE -.3059 RRA -.0478 RC3 .4862 FAU .17551
FDE .6445 FRA -.7463 FC-11.2061 BSP 9111
BDE .3067 BRA .4444 BC3 3.4536 FSP 2310

MID-COURSE EXECUTION ACCURACY

SGT 2622.1 SGR 600.8 SG3 726.2
RRT .5983 RRF -.6604 RTF -.9005
SGB 2690.1 R23 -.1289 R13 -.9040
SG1 2647.5 SG2 476.8 THA 8.07

ORBIT DETERMINATION ACCURACY

ST 234.5 SR 476.6 SS 523.5
CRT -.0973 CRS .9009 CST -.3808
LSA 693.4 MSA 253.6 SSA 105.6
EL1 477.3 EL2 233.0 ALF 93.60

LAUNCH DATE DEC 10 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 458.365 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.463 GAL 2.73 AZL 89.49 HCA 141.38 SMA 194.60 ECC .24733 INC .5110 V1 30.243
RP 235.59 LAP .32 LOP 219.36 VP 21.087 GAP 7.62 AZP 90.40 TAL 13.83 TAP 155.21 RCA 146.47 APO 242.73 V2 23.333
RC 198.280 GL 4.67 GP 5.52 ZAL 60.63 ZAP 153.51 ETS 167.31 ZAE 164.63 ETE 23.32 ZAC 96.02 ETC 255.76 CLP 154.05

PLANETOCENTRIC CONIC

C3 13.446 VHL 3.667 DLA 19.72 RAL 142.46 RAD 6567.5 VEL 11.612 PTH 2.03 VHP 5.394 DPA .73 RAP 195.04 ECC 1.2213

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 48 8	2789.69	-28.15	81.07	4.04	93.19	13 34 38	2185.7	-27.41	72.48
90.00	6 22 43	4101.84	-3.13	166.50	358.34	61.84	7 31 5	3501.8	-6.87	159.82
100.00	14 21 56	2487.21	-29.52	58.71	3.93	94.95	15 3 23	1887.2	-28.52	50.05
100.00	7 31 36	3879.55	-1.93	149.50	357.67	60.16	8 36 16	3279.5	-5.88	142.95
110.00	15 56 59	2189.84	-32.98	35.61	3.42	99.56	16 33 29	1589.8	-31.30	26.79
110.00	8 13 3	3749.68	1.03	137.81	355.83	55.83	9 15 33	3149.7	-3.46	131.60

DIFFERENTIAL CORRECTIONS

TDE .0223 TRA -.4162 TC3 3.4473 BAU .6270
RDE -.3012 RRA -.0386 RC3 .5331 FAU .18316
FDE .6642 FRA -.8562 FC-11.7934 BSP 9101
BDE .3020 BRA .4180 BC3 3.4883 FSP 2436

MID-COURSE EXECUTION ACCURACY

SGT 2621.1 SGR 615.2 SG3 762.6
RRT .6303 RRF -.6959 RTF -.9012
SGB 2692.3 R23 -.1402 R13 -.9053
SG1 2650.5 SG2 472.3 THA 8.69

ORBIT DETERMINATION ACCURACY

ST 223.4 SR 471.2 SS 536.7
CRT -.1095 CRS .8907 CST -.4075
LSA 698.0 MSA 247.4 SSA 107.6
EL1 472.0 EL2 221.7 ALF 93.82

LAUNCH DATE DEC 10 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 461.965 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.430 GAL 2.79 AZL 89.53 HCA 142.36 SMA 193.97 ECC .24512 INC .4713 V1 30.243
RP 235.24 LAP .29 LOP 220.34 VP 21.074 GAP 7.15 AZP 90.37 TAL 14.26 TAP 156.62 RCA 146.42 APO 241.51 V2 23.369
RC 200.460 GL 4.31 GP 5.78 ZAL 59.85 ZAP 152.49 ETS 167.29 ZAE 165.41 ETE 26.01 ZAC 96.27 ETC 255.75 CLP 153.06

PLANETOCENTRIC CONIC

C3 13.343 VHL 3.653 DLA 19.62 RAL 141.58 RAD 6567.5 VEL 11.607 PTH 2.03 VHP 5.269 DPA .97 RAP 195.14 ECC 1.2196

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 45 41	2784.08	-28.13	80.66	2.99	93.39	13 32 5	2184.1	-27.36	72.08
90.00	6 18 9	4104.10	-3.05	166.63	357.33	61.83	7 26 33	3504.1	-6.80	159.95
100.00	14 19 22	2481.96	-29.49	58.32	2.88	95.15	15 0 44	1882.0	-28.46	49.67
100.00	7 27 8	3881.46	-1.86	149.60	356.67	60.16	8 31 50	3281.5	-5.82	143.05
110.00	15 54 12	2185.24	-32.92	35.26	2.35	99.76	16 30 38	1585.2	-31.23	26.45
110.00	8 8 47	3750.94	1.08	137.87	354.83	55.83	9 11 18	3150.9	-3.41	131.66

DIFFERENTIAL CORRECTIONS

TDE .0308 TRA -.3829 TC3 3.4931 BAU .6318
RDE -.2963 RRA -.0285 RC3 .5846 FAU .19148
FDE .6759 FRA -.9804 FC-12.4237 BSP 8886
BDE .2979 BRA .3840 BC3 3.5417 FSP 2553

MID-COURSE EXECUTION ACCURACY

SGT 2630.8 SGR 633.0 SG3 802.0
RRT .6592 RRF -.7304 RTF -.9037
SGB 2705.9 R23 -.1529 R13 -.9085
SG1 2664.8 SG2 469.9 THA 9.30

ORBIT DETERMINATION ACCURACY

ST 211.6 SR 465.2 SS 545.9
CRT -.1902 CRS .8771 CST -.4886
LSA 700.4 MSA 237.1 SSA 111.5
EL1 467.4 EL2 206.8 ALF 96.15

LAUNCH DATE DEC 10 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 465.583 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.399 GAL 2.85 AZL 89.57 HCA 143.34 SMA 193.37 ECC .24304 INC .4294 V1 30.243
RP 234.89 LAP .26 LOP 221.32 VP 21.065 GAP 6.70 AZP 90.34 TAL 14.68 TAP 158.02 RCA 146.37 APO 240.37 V2 23.405
RC 202.623 GL 3.94 GP 6.05 ZAL 59.12 ZAP 151.45 ETS 167.25 ZAE 166.17 ETE 29.13 ZAC 96.53 ETC 255.74 CLP 152.04

PLANETOCENTRIC CONIC

C3 13.249 VHL 3.640 DLA 19.49 RAL 140.73 RAD 6567.5 VEL 11.603 PTH 2.03 VHP 5.149 DPA 1.24 RAP 195.22 ECC 1.2180

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 43 43	2777.23	-28.10	80.16	1.97	93.64	13 30 0	2177.2	-27.30	71.59
90.00	6 13 19	4107.89	-2.93	166.84	356.34	61.82	7 21 47	3507.9	-6.68	160.16
100.00	14 17 15	2475.58	-29.45	57.85	1.85	95.39	14 58 31	1875.6	-28.39	49.21
100.00	7 22 27	3884.76	-1.75	149.79	355.69	60.15	8 27 12	3284.8	-5.71	143.23
110.00	15 51 49	2179.75	-32.86	34.85	1.31	100.00	16 28 8	1579.7	-31.13	26.05
110.00	8 4 23	3753.36	1.17	138.00	353.86	55.83	9 6 57	3153.4	-3.32	131.79

DIFFERENTIAL CORRECTIONS
TDE .0215 TRA -.3708 TC3 3.4761 BAU .6260
RDE -.2920 RRA -.0185 RC3 .6382 FAU .19952
FDE .6988 FRA-1.0951 FC-13.0378 BSP 9122
BDE .2928 BRA .3713 BC3 3.5342 FSP 2708

MID-COURSE EXECUTION ACCURACY
SGT 2605.4 SGR 654.3 SG3 840.5
RRT .6918 RRF -.7634 RTF -.9015
SGB 2686.3 R23 -.1650 R13 -.9071
SG1 2645.7 SG2 465.3 THA 10.17

ORBIT DETERMINATION ACCURACY
ST 203.5 SR 460.0 SS 561.2
CRT -.1361 CRS .8693 CST -.4574
LSA 706.3 MSA 238.9 SSA 110.0
EL1 461.0 EL2 201.2 ALF 94.26

LAUNCH DATE DEC 10 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 469.220 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.369 GAL 2.91 AZL 89.61 HCA 144.33 SMA 192.81 ECC .24106 INC .3858 V1 30.243
RP 234.53 LAP .22 LOP 222.31 VP 21.058 GAP 6.25 AZP 90.31 TAL 15.08 TAP 159.41 RCA 146.33 APO 239.29 V2 23.442
RC 204.770 GL 3.55 GP 6.35 ZAL 58.41 ZAP 150.37 ETS 167.21 ZAE 166.92 ETE 32.77 ZAC 96.80 ETC 255.73 CLP 151.00

PLANETOCENTRIC CONIC

C3 13.163 VHL 3.628 DLA 19.33 RAL 139.90 RAD 6567.5 VEL 11.600 PTH 2.03 VHP 5.031 DPA 1.53 RAP 195.29 ECC 1.2166

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 42 11	2769.19	-28.07	79.58	.97	93.93	13 28 21	2169.2	-27.22	71.01
90.00	6 8 13	4113.13	-2.76	167.13	355.38	61.81	7 16 47	3513.1	-6.51	160.46
100.00	14 15 33	2468.13	-29.40	57.30	.85	95.68	14 56 41	1868.1	-28.30	48.67
100.00	7 17 33	3889.42	-1.59	150.04	354.73	60.15	8 22 22	3289.4	-5.55	143.49
110.00	15 49 46	2173.39	-32.78	34.37	.29	100.28	16 25 59	1573.4	-31.02	25.59
110.00	7 59 50	3756.92	1.30	138.18	352.92	55.84	9 2 27	3156.9	-3.19	131.98

DIFFERENTIAL CORRECTIONS
TDE .0244 TRA -.3497 TC3 3.4783 BAU .6243
RDE -.2872 RRA -.0074 RC3 .6967 FAU .20815
FDE .7095 FRA-1.2247 FC-13.6897 BSP 9093
BDE .2882 BRA .3497 BC3 3.5474 FSP 2852

MID-COURSE EXECUTION ACCURACY
SGT 2591.2 SGR 679.3 SG3 881.7
RRT .7191 RRF -.7941 RTF -.9012
SGB 2678.8 R23 -.1792 R13 -.9079
SG1 2638.4 SG2 463.6 THA 11.02

ORBIT DETERMINATION ACCURACY
ST 195.0 SR 453.8 SS 570.5
CRT -.1773 CRS .8570 CST -.5024
LSA 708.4 MSA 235.2 SSA 111.1
EL1 455.4 EL2 191.3 ALF 95.29

LAUNCH DATE DEC 10 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 472.874 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.340 GAL 2.97 AZL 89.66 HCA 145.31 SMA 192.28 ECC .23920 INC .3394 V1 30.243
RP 234.17 LAP .19 LOP 223.29 VP 21.054 GAP 5.81 AZP 90.28 TAL 15.47 TAP 160.78 RCA 146.28 APO 238.27 V2 23.479
RC 206.900 GL 3.13 GP 6.66 ZAL 57.73 ZAP 149.27 ETS 167.16 ZAE 167.62 ETE 37.00 ZAC 97.09 ETC 255.73 CLP 149.93

PLANETOCENTRIC CONIC

C3 13.086 VHL 3.617 DLA 19.13 RAL 139.10 RAD 6567.5 VEL 11.596 PTH 2.03 VHP 4.917 DPA 1.85 RAP 195.34 ECC 1.2154

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 41 8	2759.89	-28.02	78.90	359.99	94.27	13 27 8	2159.9	-27.13	70.35
90.00	6 2 52	4119.87	-2.55	167.51	354.44	61.79	7 11 32	3519.9	-6.30	160.84
100.00	14 14 17	2459.53	-29.34	56.67	359.86	96.00	14 55 16	1859.5	-28.20	48.05
100.00	7 12 25	3895.46	-1.39	150.37	353.80	60.14	8 17 20	3295.5	-5.35	143.83
110.00	15 48 4	2166.10	-32.69	33.82	359.29	100.59	16 24 10	1566.1	-30.89	25.06
110.00	7 55 7	3761.66	1.49	138.43	352.01	55.85	8 57 48	3161.7	-3.01	132.23

DIFFERENTIAL CORRECTIONS
TDE .0286 TRA -.3300 TC3 3.4734 BAU .6220
RDE -.2822 RRA .0045 RC3 .7600 FAU .21717
FDE .7156 FRA-1.3623 FC-14.3675 BSP 9052
BDE .2837 BRA .3301 BC3 3.5556 FSP 3000

MID-COURSE EXECUTION ACCURACY
SGT 2573.5 SGR 708.7 SG3 924.7
RRT .7442 RRF -.8226 RTF -.9006
SGB 2669.3 R23 -.1944 R13 -.9085
SG1 2628.8 SG2 463.4 THA 11.96

ORBIT DETERMINATION ACCURACY
ST 187.8 SR 447.3 SS 578.0
CRT -.2305 CRS .8434 CST -.5538
LSA 709.2 MSA 232.5 SSA 111.8
EL1 449.8 EL2 181.8 ALF 96.61

LAUNCH DATE DEC 10 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 476.546 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.313 GAL 3.02 AZL 89.71 HCA 146.30 SMA 191.78 ECC .23743 INC .2907 V1 30.243
RP 233.80 LAP .16 LOP 224.28 VP 21.053 GAP 5.37 AZP 90.24 TAL 15.84 TAP 162.14 RCA 146.24 APO 237.31 V2 23.517
RC 209.011 GL 2.69 GP 7.00 ZAL 57.09 ZAP 148.13 ETS 167.11 ZAE 168.26 ETE 41.91 ZAC 97.39 ETC 255.72 CLP 148.83

PLANETOCENTRIC CONIC

C3 13.015 VHL 3.608 DLA 18.90 RAL 138.32 RAD 6567.5 VEL 11.593 PTH 2.03 VHP 4.807 DPA 2.20 RAP 195.38 ECC 1.2142

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 40 33	2749.31	-27.96	78.13	359.03	94.65	13 26 23	2149.3	-27.03	69.59
90.00	5 57 15	4128.11	-2.28	167.97	353.53	61.77	7 6 3	3528.1	-6.04	161.31
100.00	14 13 27	2449.76	-29.27	55.95	358.89	96.38	14 54 17	1849.8	-28.07	47.35
100.00	7 7 3	3902.90	-1.14	150.78	352.90	60.13	8 12 6	3302.9	-5.10	144.24
110.00	15 46 45	2157.84	-32.59	33.19	358.30	100.94	16 22 43	1557.8	-30.74	24.47
110.00	7 50 14	3767.58	1.71	138.74	351.11	55.85	8 53 1	3167.6	-2.78	132.53

DIFFERENTIAL CORRECTIONS
TDE .0339 TRA -.3116 TC3 3.4593 BAU .6189
RDE -.2771 RRA .0174 RC3 .8282 FAU .22651
FDE .7169 FRA-1.5077 FC-15.0668 BSP 9012
BDE .2791 BRA .3121 BC3 3.5571 FSP 3158

MID-COURSE EXECUTION ACCURACY
SGT 2550.8 SGR 742.6 SG3 969.4
RRT .7668 RRF -.8486 RTF -.8997
SGB 2656.7 R23 -.2102 R13 -.9091
SG1 2615.7 SG2 464.9 THA 13.00

ORBIT DETERMINATION ACCURACY
ST 182.0 SR 440.5 SS 584.3
CRT -.2957 CRS .8286 CST -.6092
LSA 709.1 MSA 230.6 SSA 112.2
EL1 444.3 EL2 172.4 ALF 98.21

LAUNCH DATE DEC 10 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 480.234 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.287 GAL 3.07 AZL 89.76 HCA 147.30 SMA 191.30 ECC .23577 INC .2392 V1 30.243
RP 233.44 LAP .13 LOP 225.28 VP 21.055 GAP 4.95 AZP 90.20 TAL 16.20 TAP 163.49 RCA 146.20 APO 236.40 V2 23.555
RC 211.104 GL 2.22 GP 7.35 ZAL 56.47 ZAP 146.96 ETS 167.05 ZAE 168.82 ETE 47.58 ZAC 97.71 ETC 255.71 CLP 147.70

PLANETOCENTRIC CONIC

C3 12.951 VHL 3.599 DLA 18.63 RAL 137.57 RAD 6567.5 VEL 11.590 PTH 2.03 VHP 4.700 DPA 2.58 RAP 195.41 ECC 1.2131

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 40 27	2737.40	-27.90	77.27	358.09	95.08	13 26 4	2137.4	-26.90	68.74
90.00	5 51 22	4137.89	-1.97	168.52	352.64	61.75	7 0 20	3537.9	-5.73	161.86
100.00	14 13 3	2438.76	-29.18	55.15	357.94	96.79	14 53 42	1838.8	-27.93	46.57
100.00	7 1 26	3911.76	-.84	151.27	352.01	60.12	8 6 38	3311.8	-4.81	144.73
110.00	15 45 49	2148.56	-32.47	32.50	357.33	101.34	16 21 37	1548.6	-30.56	23.80
110.00	7 45 10	3774.72	1.99	139.11	350.25	55.87	8 48 5	3174.7	-2.51	132.91

DIFFERENTIAL CORRECTIONS
TDE .0402 TRA -.2959 TC3 3.4347 BAU .6148
RDE -.2716 RRA .0311 RC3 .9016 FAU .23614
FDE .7123 FRA-1.6587 FC-15.7854 BSP 8960
BDE .2746 BRA .2976 BC3 3.5511 FSP 3321

MID-COURSE EXECUTION ACCURACY
SGT 2522.4 SGR 781.6 SG3 1015.5
RRT .7865 RRF -.8719 RTF -.8982
SGB 2640.8 R23 -.2268 R13 -.9095
SG1 2598.9 SG2 468.5 THA 14.17

ORBIT DETERMINATION ACCURACY
ST 178.5 SR 433.1 SS 588.7
CRT -.3699 CRS .8125 CST -.6651
LSA 707.5 MSA 229.9 SSA 112.1
EL1 439.0 EL2 163.6 ALF 100.08

LAUNCH DATE DEC 10 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 483.938 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.263 GAL 3.12 AZL 89.81 HCA 148.29 SMA 190.86 ECC .23419 INC .1856 V1 30.243
RP 233.07 LAP .10 LOP 226.27 VP 21.059 GAP 4.53 AZP 90.16 TAL 16.54 TAP 164.83 RCA 146.16 APO 235.55 V2 23.593
RC 213.179 GL 1.72 GP 7.74 ZAL 55.89 ZAP 145.76 ETS 166.98 ZAE 169.26 ETE 54.02 ZAC 98.05 ETC 255.70 CLP 146.54

PLANETOCENTRIC CONIC

C3 12.893 VHL 3.591 DLA 18.32 RAL 136.84 RAD 6567.5 VEL 11.588 PTH 2.03 VHP 4.597 DPA 3.00 RAP 195.41 ECC 1.2122

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 40 49	2724.11	-27.81	76.31	357.17	95.55	13 26 13	2124.1	-26.75	67.80
90.00	5 45 11	4149.24	-1.60	169.15	351.77	61.72	6 54 20	3549.2	-5.37	162.50
100.00	14 13 7	2426.49	-29.08	54.25	357.01	97.25	14 53 33	1826.5	-27.77	45.69
100.00	6 55 35	3922.09	-.49	151.83	351.15	60.11	8 0 57	3322.1	-4.46	145.30
110.00	15 45 15	2138.23	-32.32	31.73	356.37	101.78	16 20 53	1538.2	-30.37	23.06
110.00	7 39 56	3783.12	2.31	139.55	349.41	55.89	8 42 59	3183.1	-2.19	133.35

DIFFERENTIAL CORRECTIONS
TDE .0477 TRA -.2818 TC3 3.4027 BAU .6104
RDE -.2659 RRA .0460 RC3 .9810 FAU .24611
FDE .7025 FRA-1.8173 FC-16.5261 BSP 8907
BDE .2701 BRA .2855 BC3 3.5413 FSP 3494

MID-COURSE EXECUTION ACCURACY
SGT 2490.2 SGR 826.0 SG3 1063.2
RRT .8034 RRF -.8926 RTF -.8963
SGB 2623.6 R23 -.2438 R13 -.9099
SG1 2580.3 SG2 474.7 THA 15.46

ORBIT DETERMINATION ACCURACY
ST 177.1 SR 425.4 SS 592.2
CRT -.4522 CRS .7952 CST -.7177
LSA 705.4 MSA 230.1 SSA 111.4
EL1 434.0 EL2 154.8 ALF 102.25

LAUNCH DATE DEC 10 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 487.657 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.240 GAL 3.16 AZL 89.87 HCA 149.29 SMA 190.43 ECC .23270 INC .1267 V1 30.243
RP 232.70 LAP .07 LOP 227.27 VP 21.066 GAP 4.11 AZP 90.11 TAL 16.86 TAP 166.15 RCA 146.12 APO 234.75 V2 23.631
RC 215.236 GL 1.18 GP 8.15 ZAL 55.34 ZAP 144.51 ETS 166.91 ZAE 169.55 ETE 61.18 ZAC 98.41 ETC 255.68 CLP 145.34

PLANETOCENTRIC CONIC

C3 12.840 VHL 3.583 DLA 17.96 RAL 136.14 RAD 6567.5 VEL 11.586 PTH 2.03 VHP 4.497 DPA 3.45 RAP 195.41 ECC 1.2113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 41 40	2709.41	-27.71	75.24	356.25	96.08	13 26 49	2109.4	-26.58	66.76
90.00	5 38 43	4182.18	-1.18	169.87	350.93	61.71	6 48 5	3562.2	-4.96	163.22
100.00	14 13 37	2412.90	-28.96	53.26	356.08	97.76	14 53 50	1812.9	-27.58	44.73
100.00	6 49 27	3933.92	-.08	152.48	350.32	60.11	7 55 1	3333.9	-4.06	145.95
110.00	15 45 4	2126.77	-32.16	30.87	355.43	102.26	16 20 31	1526.8	-30.14	22.24
110.00	7 34 29	3792.82	2.68	140.06	348.59	55.91	8 37 42	3192.8	-1.82	133.85

DIFFERENTIAL CORRECTIONS
TDE .0567 TRA -.2697 TC3 3.3608 BAU .6053
RDE -.2595 RRA .0623 RC3 1.0672 FAU .25644
FDE .6826 FRA-1.9848 FC-17.2904 BSP 8821
BDE .2656 BRA .2768 BC3 3.5262 FSP 3665

MID-COURSE EXECUTION ACCURACY
SGT 2452.5 SGR 876.4 SG3 1112.7
RRT .8174 RRF -.9107 RTF -.8939
SGB 2604.4 R23 -.2608 R13 -.9103
SG1 2559.1 SG2 483.8 THA 16.91

ORBIT DETERMINATION ACCURACY
ST 178.7 SR 416.8 SS 593.3
CRT -.5403 CRS .7745 CST -.7632
LSA 701.2 MSA 232.0 SSA 110.2
EL1 429.3 EL2 146.0 ALF 104.80

LAUNCH DATE DEC 10 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 491.391 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.218 GAL 3.20 AZL 89.93 HCA 150.30 SMA 190.04 ECC .23130 INC .0660 V1 30.243
RP 232.32 LAP .03 LOP 228.27 VP 21.074 GAP 3.71 AZP 90.06 TAL 17.17 TAP 167.47 RCA 146.08 APO 233.99 V2 23.670
RC 217.275 GL .62 GP 8.59 ZAL 54.83 ZAP 143.23 ETS 166.83 ZAE 169.66 ETE 68.91 ZAC 98.79 ETC 255.67 CLP 144.11

PLANETOCENTRIC CONIC

C3 12.792 VHL 3.577 DLA 17.56 RAL 135.46 RAD 6567.5 VEL 11.584 PTH 2.03 VHP 4.401 DPA 3.95 RAP 195.39 ECC 1.2105

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 43 0	2693.23	-27.59	74.07	355.35	96.65	13 27 53	2093.2	-26.38	65.61
90.00	5 31 56	4176.77	-.71	170.69	350.10	61.69	6 41 33	3576.8	-4.49	164.04
100.00	14 14 35	2397.92	-28.81	52.17	355.17	98.32	14 54 33	1797.9	-27.36	43.67
100.00	6 43 3	3947.31	.37	153.22	349.50	60.11	7 48 50	3347.3	-3.61	146.69
110.00	15 45 17	2114.13	-31.98	29.93	354.49	102.78	16 20 31	1514.1	-29.89	21.34
110.00	7 28 50	3803.87	3.10	140.63	347.80	55.94	8 32 14	3203.9	-1.39	134.43

DIFFERENTIAL CORRECTIONS
TDE .0668 TRA -.2589 TC3 3.3069 BAU .5993
RDE -.2527 RRA .0800 RC3 1.1597 FAU .26690
FDE .6554 FRA-2.1606 FC-18.0626 BSP 8735
BDE .2614 BRA .2710 BC3 3.5043 FSP 3846

MID-COURSE EXECUTION ACCURACY
SGT 2407.6 SGR 932.8 SG3 1163.1
RRT .8285 RRF -.9263 RTF -.8908
SGB 2581.9 R23 -.2771 R13 -.9109
SG1 2533.8 SG2 496.4 THA 18.53

ORBIT DETERMINATION ACCURACY
ST 183.1 SR 407.5 SS 593.9
CRT -.6275 CRS .7519 CST -.7940
LSA 696.6 MSA 235.5 SSA 108.0
EL1 425.4 EL2 136.6 ALF 107.62

LAUNCH DATE DEC 10 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 495.140 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.197 GAL 3.24 AZL 90.00 HCA 151.30 SMA 189.66 ECC .22997 INC .0121 V1 30.243
RP 231.95 LAP .00 LOP 229.28 VP 21.085 GAP 3.31 AZP 90.00 TAL 17.46 TAP 168.76 RCA 146.05 APO 233.28 V2 23.709
RC 219.295 GL .01 GP 9.07 ZAL 54.35 ZAP 141.92 ETS 166.75 ZAE 169.55 ETE 76.91 ZAC 99.20 ETC 255.66 CLP 142.85

PLANETOCENTRIC CONIC

C3 12.750 VHL 3.571 DLA 17.11 RAL 134.79 RAD 6567.5 VEL 11.582 PTH 2.03 VHP 4.309 DPA 4.49 RAP 195.35 ECC 1.2098

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 44 50	2675.50	-27.44	72.80	354.46	97.27	13 29 26	2075.5	-26.15	64.37
90.00	5 24 51	4193.08	-.18	171.59	349.30	61.68	6 34 44	3593.1	-3.97	164.96
100.00	14 16 0	2381.49	-28.65	50.98	354.27	98.93	14 55 42	1781.5	-27.12	42.51
100.00	6 36 21	3962.32	.88	154.04	348.71	60.12	7 42 24	3362.3	-3.10	147.52
110.00	15 45 54	2100.23	-31.76	28.91	353.56	103.36	16 20 54	1500.2	-29.60	20.36
110.00	7 22 57	3816.34	3.57	141.29	347.03	55.98	8 26 33	3216.3	-.92	135.08

DIFFERENTIAL CORRECTIONS
TDE .0781 TRA -.2513 TC3 3.2442 BAU .5933
RDE -.2451 RRA .0992 RC3 1.2603 FAU .27769
FDE .6178 FRA-2.3420 FC-18.8555 BSP 8644
BDE .2572 BRA .2702 BC3 3.4804 FSP 4032

MID-COURSE EXECUTION ACCURACY
SGT 2358.3 SGR 996.2 SG3 1215.0
RRT .8367 RRF -.9396 RTF -.8869
SGB 2560.0 R23 -.2926 R13 -.9117
SG1 2508.1 SG2 513.0 THA 20.35

ORBIT DETERMINATION ACCURACY
ST 191.2 SR 397.4 SS 593.1
CRT -.7072 CRS .7263 CST -.8060
LSA 690.7 MSA 241.1 SSA 105.1
EL1 422.2 EL2 127.2 ALF 110.76

LAUNCH DATE DEC 10 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 498.902 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.177 GAL 3.27 AZL 90.07 HCA 152.31 SMA 189.31 ECC .22872 INC .0656 V1 30.243
RP 231.57 LAP -.03 LOP 230.29 VP 21.099 GAP 2.92 AZP 89.94 TAL 17.74 TAP 170.05 RCA 146.01 APO 232.61 V2 23.748
RC 221.297 GL -.64 GP 9.58 ZAL 53.90 ZAP 140.56 ETS 166.66 ZAE 169.22 ETE 84.86 ZAC 99.63 ETC 255.64 CLP 141.55

PLANETOCENTRIC CONIC

C3 12.713 VHL 3.565 DLA 16.61 RAL 134.15 RAD 6567.5 VEL 11.580 PTH 2.03 VHP 4.221 DPA 5.07 RAP 195.31 ECC 1.2092

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 47 10	2656.14	-27.27	71.41	353.58	97.95	13 31 26	2056.1	-25.89	63.01
90.00	5 17 24	4211.18	.40	172.60	348.52	61.69	6 27 35	3611.2	-3.39	165.97
100.00	14 17 55	2363.51	-28.45	49.68	353.37	99.58	14 57 18	1763.5	-26.83	41.25
100.00	6 29 21	3979.04	1.45	154.96	347.94	60.14	7 35 40	3379.0	-2.54	148.44
110.00	15 46 56	2084.99	-31.52	27.78	352.63	103.98	16 21 41	1485.0	-29.28	19.30
110.00	7 16 49	3830.33	4.11	142.02	346.28	56.03	8 20 39	3230.3	-.38	135.81

DIFFERENTIAL CORRECTIONS
TDE .0915 TRA -.2450 TC3 3.1713 BAU .5871
RDE -.2363 RRA .1204 RC3 1.3696 FAU .28879
FDE .5634 FRA-2.5353 FC-19.6666 BSP 8544
BDE .2534 BRA .2730 BC3 3.4544 FSP 4218

MID-COURSE EXECUTION ACCURACY
SGT 2303.2 SGR 1067.2 SG3 1268.6
RRT .8422 RRF -.9509 RTF -.8823
SGB 2538.4 R23 -.3060 R13 -.9129
SG1 2481.6 SG2 534.0 THA 22.41

ORBIT DETERMINATION ACCURACY
ST 203.5 SR 385.6 SS 590.7
CRT -.7811 CRS .6938 CST -.7942
LSA 682.7 MSA 250.6 SSA 100.9
EL1 420.1 EL2 116.6 ALF 114.40

LAUNCH DATE DEC 10 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 502.678 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.159 GAL 3.31 AZL 90.14 HCA 153.32 SMA 188.98 ECC .22753 INC .1421 V1 30.243
RP 231.20 LAP -.06 LOP 231.30 VP 21.114 GAP 2.54 AZP 89.87 TAL 18.00 TAP 171.32 RCA 145.98 APO 231.98 V2 23.788
RC 223.281 GL -1.34 GP 10.14 ZAL 53.49 ZAP 139.16 ETS 166.57 ZAE 168.66 ETE 92.42 ZAC 100.10 ETC 255.63 CLP 140.22

PLANETOCENTRIC CONIC

C3 12.681 VHL 3.561 DLA 16.06 RAL 133.53 RAD 6567.5 VEL 11.579 PTH 2.02 VHP 4.136 DPA 5.71 RAP 195.25 ECC 1.2087

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 50 2	2635.05	-27.06	69.90	352.70	98.68	13 33 57	2035.0	-25.58	61.54
90.00	5 9 35	4231.19	1.05	173.72	347.76	61.70	6 20 6	3631.2	-2.75	167.09
100.00	14 20 19	2343.89	-28.22	48.26	352.48	100.29	14 59 23	1743.9	-26.51	39.88
100.00	6 21 59	3997.58	2.07	155.97	347.19	60.17	7 28 37	3397.6	-1.91	149.45
110.00	15 48 23	2068.31	-31.24	26.57	351.71	104.65	16 22 52	1468.3	-28.91	18.14
110.00	7 10 24	3845.92	4.70	142.84	345.56	56.10	8 14 30	3245.9	.21	136.62

DIFFERENTIAL CORRECTIONS
TDE .1043 TRA -.2425 TC3 3.0840 BAU .5804
RDE -.2266 RRA .1434 RC3 1.4873 FAU .29987
FDE .5005 FRA-2.7328 FC-20.4727 BSP 8459
BDE .2495 BRA .2818 BC3 3.4239 FSP 4414

MID-COURSE EXECUTION ACCURACY
SGT 2239.9 SGR 1145.7 SG3 1322.2
RRT .8447 RRF -.9603 RTF -.8762
SGB 2515.9 R23 -.3175 R13 -.9144
SG1 2452.8 SG2 559.9 THA 24.74

ORBIT DETERMINATION ACCURACY
ST 217.5 SR 373.0 SS 589.9
CRT -.8362 CRS .6602 CST -.7617
LSA 675.6 MSA 262.2 SSA 95.8
EL1 418.5 EL2 106.3 ALF 117.96

LAUNCH DATE DEC 10 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 506.468 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.141 GAL 3.34 AZL 90.23 HCA 154.34 SMA 188.66 ECC .22642 INC .2246 V1 30.243
RP 230.82 LAP -.10 LOP 232.32 VP 21.131 GAP 2.16 AZP 89.80 TAL 18.24 TAP 172.58 RCA 145.95 APO 231.38 V2 23.827
RC 225.247 GL -2.10 GP 10.73 ZAL 53.12 ZAP 137.71 ETS 166.48 ZAE 167.87 ETE 99.35 ZAC 100.61 ETC 255.61 CLP 138.85

PLANETOCENTRIC CONIC

C3 12.654 VHL 3.557 DLA 15.44 RAL 132.93 RAD 6567.5 VEL 11.578 PTH 2.02 VHP 4.056 DPA 6.40 RAP 195.18 ECC 1.2083

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 53 25	2612.11	-26.81	68.26	351.82	99.46	13 36 57	2012.1	-25.23	59.95
90.00	5 1 22	4253.41	1.76	174.95	347.02	61.73	6 12 15	3653.4	-2.04	168.32
100.00	14 23 13	2322.52	-27.95	46.73	351.58	101.06	15 1 55	1722.5	-26.14	38.40
100.00	6 14 15	4018.05	2.77	157.10	346.46	60.22	7 21 13	3418.1	-1.22	150.58
110.00	15 50 17	2050.08	-30.91	25.24	350.79	105.37	16 24 27	1450.1	-28.50	16.88
110.00	7 3 40	3863.25	5.35	143.75	344.85	56.19	8 8 3	3263.3	.88	137.53

DIFFERENTIAL CORRECTIONS
TDE .1191 TRA -.2414 TC3 2.9876 BAU .5745
RDE -.2154 RRA .1689 RC3 1.6151 FAU .31109
FDE .4204 FRA-2.9397 FC-21.2838 BSP 8362
BDE .2461 BRA .2946 BC3 3.3962 FSP 4609

MID-COURSE EXECUTION ACCURACY
SGT 2171.9 SGR 1233.0 SG3 1376.7
RRT .8446 RRF -.9681 RTF -.8690
SGB 2497.5 R23 -.3252 R13 -.9169
SG1 2426.6 SG2 590.8 THA 27.38

ORBIT DETERMINATION ACCURACY
ST 235.6 SR 358.8 SS 590.2
CRT -.8825 CRS .6212 CST -.7038
LSA 668.6 MSA 278.5 SSA 89.5
EL1 418.6 EL2 95.0 ALF 121.92

LAUNCH DATE DEC 10 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 510.270 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.125	GAL	3.37	AZL	90.31	HCA	155.36	SMA	188.37	ECC	.22536	INC	.3116
RP	230.43	LAP	-.13	LOP	233.34	VP	21.150	GAP	1.79	AZP	89.72	TAL	18.46	TAP	173.82	RCA	145.92	APO	230.82
RC	227.193	GL	-2.91	GP	11.38	ZAL	52.78	ZAP	136.22	ETS	166.39	ZAE	166.87	ETE	105.49	ZAC	101.16	ETC	255.59

V1 30.243 V2 23.867 CLP 137.44

PLANETOCENTRIC CONIC

C3	12.634	VHL	3.554	DLA	14.75	RAL	132.34	RAD	6567.5	VEL	11.577	PTH	2.02	VHP	3.980	DPA	7.15	RAP	195.10

ECC 1.2079

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 57 22	2587.20	-26.52	66.50	350.94	100.30	13 40 29	1987.2	-24.83	58.24
90.00	4 52 43	4277.44	2.54	176.30	346.31	61.79	6 4 0	3677.4	-1.25	169.67
100.00	14 26 39	2299.25	-27.63	45.07	350.69	101.87	15 4 58	1699.2	-25.72	36.80
100.00	6 6 4	4040.63	3.53	158.35	345.76	60.30	7 13 25	3440.6	-.45	151.83
110.00	15 52 39	2030.17	-30.55	23.81	349.86	106.15	16 26 29	1430.2	-28.03	15.51
110.00	6 56 36	3882.47	6.08	144.76	344.17	56.30	8 1 18	3282.5	1.61	138.53

DIFFERENTIAL CORRECTIONS

TDE	.1343	TRA	-.2439	TC3	2.8792	BAU	.5695
RDE	-.2023	RRA	.1970	RC3	1.7543	FAU	.32246
FDE	.3212	FRA	-3.1528	FC	-22.0972	BSP	8275
BDE	.2428	BRA	.3135	BC3	3.3716	FSP	4802

MID-COURSE EXECUTION ACCURACY

SGT	2098.0	SGR	1330.2	SG3	1431.8		
RRT	-.8415	RRF	-.9746	RTF	-.8601		
SGB	2484.1	R23	-.3290	R13	-.9204		
SG1	2403.6	SG2	627.2	THA	30.37		

ORBIT DETERMINATION ACCURACY

ST	256.0	SR	342.7	SS	593.2
CRT	-.9156	CRS	.5781	CST	-.6238
LSA	662.2	MSA	299.1	SSA	82.5
EL1	419.4	EL2	84.1	ALF	126.05

LAUNCH DATE DEC 10 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 514.085 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.109	GAL	3.39	AZL	90.41	HCA	156.38	SMA	188.10	ECC	.22437	INC	.4078
RP	230.05	LAP	-.16	LOP	234.36	VP	21.171	GAP	1.43	AZP	89.63	TAL	18.67	TAP	175.05	RCA	145.89	APO	230.30
RC	229.120	GL	-3.80	GP	12.09	ZAL	52.48	ZAP	134.69	ETS	166.29	ZAE	165.69	ETE	110.83	ZAC	101.75	ETC	255.57

V1 30.243 V2 23.907 CLP 135.99

PLANETOCENTRIC CONIC

C3	12.620	VHL	3.552	DLA	13.99	RAL	131.76	RAD	6567.5	VEL	11.576	PTH	2.02	VHP	3.908	DPA	7.96	RAP	195.02

ECC 1.2077

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 1 53	2560.14	-26.18	64.59	350.05	101.20	13 44 33	1960.1	-24.37	56.39
90.00	4 43 34	4304.04	3.39	177.79	345.61	61.87	5 55 18	3704.0	-.40	171.16
100.00	14 30 38	2273.02	-27.27	43.28	349.79	102.75	15 8 32	1673.9	-25.24	35.07
100.00	5 57 30	4065.49	4.37	159.71	345.07	60.40	7 5 16	3465.5	.39	153.18
110.00	15 55 29	2008.42	-30.12	22.25	348.93	106.98	16 28 58	1408.4	-27.51	14.04
110.00	6 49 9	3803.76	6.88	145.89	343.52	56.43	7 54 12	3303.8	2.42	139.64

DIFFERENTIAL CORRECTIONS

TDE	.1499	TRA	-.2495	TC3	2.7575	BAU	.5654
RDE	-.1872	RRA	.2278	RC3	1.9042	FAU	.33358
FDE	.2057	FRA	-3.3695	FC	-22.8835	BSP	8222
BDE	.2398	BRA	.3378	BC3	3.3511	FSP	5004

MID-COURSE EXECUTION ACCURACY

SGT	2017.1	SGR	1437.0	SG3	1486.0		
RRT	.8351	RRF	-.9798	RTF	-.8489		
SGB	2476.6	R23	-.3278	R13	-.9251		
SG1	2384.7	SG2	668.6	THA	33.76		

ORBIT DETERMINATION ACCURACY

ST	278.2	SR	325.2	SS	601.3
CRT	-.9369	CRS	.5368	CST	-.5261
LSA	659.2	MSA	323.3	SSA	75.0
EL1	421.3	EL2	75.0	ALF	130.25

LAUNCH DATE DEC 10 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 517.912 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.095	GAL	3.41	AZL	90.51	HCA	157.40	SMA	187.84	ECC	.22343	INC	.5101
RP	229.67	LAP	-.20	LOP	235.38	VP	21.194	GAP	1.07	AZP	89.53	TAL	18.86	TAP	176.27	RCA	145.87	APO	229.81
RC	231.027	GL	-4.76	GP	12.85	ZAL	52.23	ZAP	133.11	ETS	166.19	ZAE	164.33	ETE	115.40	ZAC	102.40	ETC	255.54

V1 30.243 V2 23.948 CLP 134.50

PLANETOCENTRIC CONIC

C3	12.615	VHL	3.552	DLA	13.14	RAL	131.19	RAD	6567.5	VEL	11.576	PTH	2.02	VHP	3.841	DPA	8.84	RAP	194.93

ECC 1.2076

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 7 2	2530.74	-25.77	62.53	349.16	102.15	13 49 13	1930.7	-23.84	54.40
90.00	4 33 53	4333.26	4.33	179.43	344.94	61.99	5 46 6	3733.3	.55	172.79
100.00	14 35 13	2246.35	-26.84	41.34	348.89	103.68	15 12 39	1646.4	-24.69	33.20
100.00	5 48 23	4092.88	5.29	161.23	344.42	60.54	6 56 36	3492.9	1.32	154.68
110.00	15 58 51	1984.67	-29.64	20.57	347.99	107.86	16 31 56	1384.7	-26.91	12.45
110.00	6 41 15	3927.33	7.77	147.14	342.89	56.61	7 46 42	3327.3	3.32	140.87

DIFFERENTIAL CORRECTIONS

TDE	.1863	TRA	-.2577	TC3	2.6222	BAU	.5632
RDE	-.1689	RRA	.2624	RC3	2.0678	FAU	.34469
FDE	.0619	FRA	-3.5981	FC	-23.6559	BSP	8173
BDE	.2371	BRA	.3678	BC3	3.3394	FSP	5188

MID-COURSE EXECUTION ACCURACY

SGT	1929.7	SGR	1555.9	SG3	1540.5		
RRT	.8251	RRF	-.9841	RTF	-.8350		
SGB	2478.8	R23	-.3201	R13	-.9315		
SG1	2373.8	SG2	714.6	THA	37.63		

ORBIT DETERMINATION ACCURACY

ST	302.5	SR	305.3	SS	617.5
CRT	-.9458	CRS	.4976	CST	-.4044
LSA	661.3	MSA	352.4	SSA	67.0
EL1	424.0	EL2	70.7	ALF	134.72

LAUNCH DATE DEC 10 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 521.752 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.081	GAL	3.43	AZL	90.62	HCA	158.43	SMA	187.60	ECC	.22254	INC	.6237
RP	229.28	LAP	-.23	LOP	236.41	VP	21.218	GAP	.72	AZP	89.42	TAL	19.04	TAP	177.47	RCA	145.85	APO	229.34
RC	232.913	GL	-5.81	GP	13.69	ZAL	52.02	ZAP	131.48	ETS	166.10	ZAE	162.81	ETE	119.27	ZAC	103.10	ETC	255.51

V1 30.243 V2 23.988 CLP 132.98

PLANETOCENTRIC CONIC

C3	12.619	VHL	3.552	DLA	12.20	RAL	130.63	RAD	6567.5	VEL	11.576	PTH	2.02	VHP	3.779	DPA	9.81	RAP	194.84

ECC 1.2077

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 12 50	2498.77	-25.30	60.31	348.26	103.17	13 54 29	1898.8	-23.23	52.25
90.00	4 23 35	4365.39	5.35	181.23	344.30	62.15	5 36 21	3765.4	1.58	174.58
100.00	14 40 25	2216.31	-26.34	39.25	347.98	104.68	15 17 22	1616.3	-24.06	31.19
100.00	5 38 42	4123.08	6.29	162.90	343.79	60.72	6 47 25	3523.1	2.34	156.34
110.00	16 2 45	1958.69	-29.08	18.76	347.04	108.81	16 35 24	1358.7	-26.24	10.73
110.00	6 32 51	3953.47	8.75	148.53	342.29	56.82	7 38 45	3353.5	4.32	142.24

DIFFERENTIAL CORRECTIONS

TDE	.1822	TRA	-.2680	TC3	2.4738	BAU	.5634
RDE	-.1477	RRA	.3005	RC3	2.2437	FAU	.35529
FDE	-.1005	FRA	-3.8258	FC	-23.3744	BSP	8105
BDE	.2348	BRA	.4038	BC3	3.3395	FSP	5385

MID-COURSE EXECUTION ACCURACY

SGT	1836.5	SGR	1586.3	SG3	1592.5		
RRT	.8107	RRF	-.9875	RTF	-.8174		
SGB	2493.3	R23	-.3055	R13	-.9385		
SG1	2373.3	SG2	764.0	THA	41.99		

ORBIT DETERMINATION ACCURACY

ST	327.0	SR	284.9	SS	643.4
CRT	-.9375	CRS	.4772	CST	-.2761
LSA	673.4	MSA	380.9	SSA	59.2
EL1	427.0	EL2	75.9	ALF	139.19

LAUNCH DATE DEC 10 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 525.604 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.068 GAL 3.45 AZL 90.75 HCA 159.46 SMA 187.37 ECC .22171 INC .7478 V1 30.243
RP 228.89 LAP -.26 LOP 237.44 VP 21.244 GAP .38 AZP 89.30 TAL 19.20 TAP 178.66 RCA 145.83 APO 228.91 V2 24.029
RC 234.778 GL -6.96 GP 14.60 ZAL 51.86 ZAP 129.80 ETS 166.00 ZAE 161.15 ETE 122.54 ZAC 103.87 ETC 255.47 CLP 131.41

PLANETOCENTRIC CONIC

C3 12.637 VHL 3.555 DLA 11.16 RAL 130.06 RAD 6567.5 VEL 11.577 PTH 2.02 VHP 3.722 DPA 10.85 RAP 194.75 ECC 1.2080

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 19 21	2463.98	-24.73	57.92	347.35	104.24	14 0 25	1864.0	-22.54	49.94
90.00	4 12 36	4400.77	6.47	183.23	343.69	62.37	5 25 57	3800.8	2.72	176.55
100.00	14 46 18	2183.56	-25.75	36.99	347.05	105.73	15 22 41	1583.6	-23.35	29.02
100.00	5 28 20	4156.43	7.40	164.76	343.19	60.96	6 37 37	3556.4	3.47	158.17
110.00	16 7 14	1930.26	-28.44	16.79	346.08	109.81	16 39 24	1330.3	-25.48	8.87
110.00	6 23 53	3982.48	9.82	150.09	341.72	57.09	7 30 15	3382.5	5.42	143.77

DIFFERENTIAL CORRECTIONS
TDE .2070 TRA -.2759 TC3 2.3406 BAU .5716
RDE -.1191 RRA .3462 RC3 2.4434 FAU .36686
FDE -.3240 FRA-4.0905 FC-25.1330 BSP 8073
BDE .2388 BRA .4427 BC3 3.3836 FSP 5505

MID-COURSE EXECUTION ACCURACY
SGT 1756.7 SGR 1838.0 SG3 1650.0
RRT .7957 RRF -.9904 RTF -.8007
SGB 2542.4 R23 -.2803 R13 -.9501
SG1 2409.4 SG2 811.7 THA 46.63

ORBIT DETERMINATION ACCURACY
ST 363.7 SR 262.1 SS 691.5
CRT -.8881 CRS .4819 CST -.0935
LSA 707.5 MSA 419.7 SSA 49.8
EL1 436.9 EL2 100.3 ALF 145.29

LAUNCH DATE DEC 10 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 529.468 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.056 GAL 3.46 AZL 90.89 HCA 160.50 SMA 187.16 ECC .22092 INC .8844 V1 30.243
RP 228.51 LAP -.30 LOP 238.48 VP 21.272 GAP .05 AZP 89.17 TAL 19.34 TAP 179.84 RCA 145.81 APO 228.51 V2 24.070
RC 236.623 GL -8.23 GP 15.60 ZAL 51.76 ZAP 128.07 ETS 165.91 ZAE 159.35 ETE 125.26 ZAC 104.72 ETC 255.43 CLP 129.81

PLANETOCENTRIC CONIC

C3 12.669 VHL 3.559 DLA 9.99 RAL 129.50 RAD 6567.5 VEL 11.578 PTH 2.02 VHP 3.671 DPA 11.99 RAP 194.68 ECC 1.2085

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 26 39	2425.96	-24.07	55.33	346.44	105.38	14 7 5	1826.0	-21.73	47.44
90.00	4 0 49	4439.89	7.70	185.44	343.12	62.67	5 14 49	3839.9	3.98	178.74
100.00	14 52 55	2147.70	-25.07	34.55	346.12	106.84	15 28 43	1547.7	-22.52	26.68
100.00	5 17 13	4193.38	8.62	166.83	342.63	61.27	6 27 7	3593.4	4.72	160.21
110.00	16 12 23	1899.04	-27.70	14.66	345.11	110.87	16 44 2	1299.0	-24.61	6.86
110.00	6 14 15	4014.80	11.01	151.84	341.18	57.43	7 21 10	3414.8	6.64	145.47

DIFFERENTIAL CORRECTIONS
TDE .2194 TRA -.2981 TC3 2.1537 BAU .5782
RDE -.0882 RRA .3940 RC3 2.6483 FAU .37618
FDE -.5454 FRA-4.3237 FC-25.7056 BSP 8271
BDE .2365 BRA .4941 BC3 3.4135 FSP 5684

MID-COURSE EXECUTION ACCURACY
SGT 1647.0 SGR 1997.3 SG3 1696.6
RRT .7680 RRF -.9925 RTF -.7706
SGB 2588.8 R23 -.2510 R13 -.9603
SG1 2440.7 SG2 863.1 THA 52.09

ORBIT DETERMINATION ACCURACY
ST 385.0 SR 246.3 SS 748.3
CRT -.7990 CRS .5438 CST .0280
LSA 761.2 MSA 433.0 SSA 43.5
EL1 438.1 EL2 130.2 ALF 150.01

LAUNCH DATE DEC 10 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 533.340 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.045 GAL 3.48 AZL 91.04 HCA 161.54 SMA 186.96 ECC .22018 INC 1.0372 V1 30.243
RP 228.12 LAP -.33 LOP 239.52 VP 21.301 GAP -.28 AZP 89.02 TAL 19.46 TAP 181.00 RCA 145.80 APO 228.13 V2 24.111
RC 238.446 GL -9.64 GP 16.70 ZAL 51.73 ZAP 126.29 ETS 165.82 ZAE 157.42 ETE 127.54 ZAC 105.66 ETC 255.38 CLP 128.16

PLANETOCENTRIC CONIC

C3 12.721 VHL 3.567 DLA 8.68 RAL 128.93 RAD 6567.5 VEL 11.581 PTH 2.03 VHP 3.626 DPA 13.23 RAP 194.62 ECC 1.2094

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 34 48	2384.35	-23.29	52.53	345.51	106.57	14 14 32	1784.3	-20.80	44.75
90.00	3 48 6	4483.27	9.05	187.92	342.59	63.05	5 2 50	3883.3	5.36	181.18
100.00	15 0 22	2108.38	-24.27	31.90	345.18	108.01	15 35 30	1508.4	-21.58	24.14
100.00	5 5 14	4234.46	9.95	169.15	342.11	61.67	6 15 48	3634.5	6.09	162.49
110.00	16 18 14	1864.72	-26.85	12.36	344.13	112.00	16 49 18	1264.7	-23.63	4.68
110.00	6 3 51	4050.89	12.33	153.80	340.70	57.86	7 11 22	3450.9	8.00	147.39

DIFFERENTIAL CORRECTIONS
TDE .2310 TRA -.3243 TC3 1.9538 BAU .5900
RDE -.0511 RRA .4471 RC3 2.8667 FAU .38432
FDE -.7947 FRA-4.5497 FC-26.1543 BSP 8569
BDE .2366 BRA .5523 BC3 3.4692 FSP 5865

MID-COURSE EXECUTION ACCURACY
SGT 1535.5 SGR 2171.8 SG3 1737.4
RRT .7307 RRF -.9942 RTF -.7313
SGB 2659.8 R23 -.2147 R13 -.9708
SG1 2498.9 SG2 911.1 THA 57.91

ORBIT DETERMINATION ACCURACY
ST 405.5 SR 240.9 SS 820.7
CRT -.6386 CRS .6543 CST .1379
LSA 837.7 MSA 439.3 SSA 37.6
EL1 439.6 EL2 171.0 ALF 155.23

LAUNCH DATE DEC 10 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 537.225 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.034 GAL 3.49 AZL 91.21 HCA 162.58 SMA 186.78 ECC .21949 INC 1.2082 V1 30.243
RP 227.73 LAP -.36 LOP 240.56 VP 21.331 GAP -.60 AZP 88.85 TAL 19.57 TAP 182.15 RCA 145.78 APO 227.77 V2 24.152
RC 240.248 GL -11.20 GP 17.92 ZAL 51.77 ZAP 124.45 ETS 165.74 ZAE 155.36 ETE 129.43 ZAC 106.71 ETC 255.33 CLP 126.48

PLANETOCENTRIC CONIC

C3 12.800 VHL 3.578 DLA 7.22 RAL 128.35 RAD 6567.5 VEL 11.584 PTH 2.03 VHP 3.588 DPA 14.59 RAP 194.59 ECC 1.2107

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 43 56	2338.65	-22.37	49.50	344.57	107.82	14 22 54	1738.7	-19.73	41.82
90.00	3 34 19	4531.60	10.53	190.70	342.11	63.56	4 49 50	3931.6	6.89	183.91
100.00	15 8 44	2065.15	-23.33	29.04	344.22	109.24	15 43 9	1465.1	-20.49	21.39
100.00	4 52 12	4280.34	11.42	171.76	341.65	62.19	6 3 32	3680.3	7.61	165.04
110.00	16 24 52	1826.86	-25.86	9.86	343.14	113.17	16 55 19	1226.9	-22.50	2.32
110.00	5 52 33	4091.39	13.78	156.04	340.27	58.41	7 0 44	3491.4	9.50	149.55

DIFFERENTIAL CORRECTIONS
TDE .2421 TRA -.3532 TC3 1.7421 BAU .6084
RDE -.0056 RRA .5078 RC3 3.0996 FAU .39119
FDE-1.0824 FRA-4.7778 FC-26.4586 BSP 8946
BDE .2421 BRA .6185 BC3 3.5556 FSP 6020

MID-COURSE EXECUTION ACCURACY
SGT 1424.5 SGR 2364.5 SG3 1772.6
RRT .6810 RRF -.9956 RTF -.6800
SGB 2760.5 R23 -.1735 R13 -.9803
SG1 2591.2 SG2 951.9 THA 63.91

ORBIT DETERMINATION ACCURACY
ST 425.4 SR 254.9 SS 913.5
CRT -.3967 CRS .7874 CST .2374
LSA 940.8 MSA 440.7 SSA 32.0
EL1 441.8 EL2 225.3 ALF 161.71

LAUNCH DATE DEC 10 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 541.121 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.024 GAL 3.49 AZL 91.40 HCA 163.63 SMA 186.61 ECC .21883 INC 1.4004 V1 30.243
RP 227.34 LAP -.39 LOP 241.61 VP 21.363 GAP -.92 AZP 88.66 TAL 19.66 TAP 183.29 RCA 145.77 APO 227.44 V2 24.193
RC 242.030 GL -12.95 GP 19.26 ZAL 51.89 ZAP 122.55 ETS 165.66 ZAE 153.16 ETE 130.99 ZAC 107.87 ETC 255.25 CLP 124.75

PLANETOCENTRIC CONIC

C3 12.913 VHL 3.593 DLA 5.56 RAL 127.74 RAD 6567.5 VEL 11.589 PTH 2.03 VHP 3.559 DPA 16.08 RAP 194.59 ECC 1.2125

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 54 9	2288.26	-21.29	46.20	343.63	109.13	14 32 18	1688.3	-18.48	38.65
90.00	3 19 14	4585.77	12.15	193.85	341.71	64.23	4 35 39	3985.8	8.59	186.99
100.00	15 18 8	2017.42	-22.22	25.92	343.27	110.53	15 51 45	1417.4	-19.23	18.41
100.00	4 37 56	4331.85	13.04	174.73	341.26	62.86	5 50 8	3731.8	9.30	167.93
110.00	16 32 24	1784.98	-24.71	7.15	342.14	114.41	17 2 9	1185.0	-21.21	359.76
110.00	5 40 10	4137.05	15.40	158.59	339.91	59.10	6 49 7	3537.0	11.19	152.02

DIFFERENTIAL CORRECTIONS
TDE .2520 TRA -.3861 TC3 1.5189 BAU .6350
RDE .0522 RRA .5780 RC3 3.3497 FAU .39693
FDE-1.4214 FRA-5.0091 FC-26.6111 BSP 9421
BDE .2573 BRA .6951 BC3 3.6780 FSP 6135

MID-COURSE EXECUTION ACCURACY
SGT 1317.4 SGR 2580.7 SG3 1802.6
RRT .6144 RRF -.9966 RTF -.6121
SGB 2897.5 R23 -.1312 R13 -.9879
SG1 2725.2 SG2 984.4 THA 69.85

ORBIT DETERMINATION ACCURACY
ST 443.8 SR 298.8 SS 1031.8
CRT -.1188 CRS .8962 CST .3241
LSA 1076.0 MSA 438.6 SSA 27.0
EL1 446.3 EL2 295.0 ALF 171.84

LAUNCH DATE DEC 10 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 545.027 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.015 GAL 3.50 AZL 91.62 HCA 164.68 SMA 186.45 ECC .21821 INC 1.6188 V1 30.243
RP 226.95 LAP -.43 LOP 242.66 VP 21.395 GAP -1.23 AZP 88.44 TAL 19.74 TAP 184.41 RCA 145.76 APO 227.14 V2 24.235
RC 243.792 GL -14.92 GP 20.76 ZAL 52.12 ZAP 120.60 ETS 165.60 ZAE 150.83 ETE 132.26 ZAC 109.17 ETC 255.17 CLP 122.99

PLANETOCENTRIC CONIC

C3 13.073 VHL 3.616 DLA 3.70 RAL 127.10 RAD 6567.5 VEL 11.596 PTH 2.03 VHP 3.539 DPA 17.72 RAP 194.64 ECC 1.2151

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 5 40	2232.44	+20.00	42.62	342.69	110.48	14 42 53	1632.4	-17.03	35.20
90.00	3 2 36	4646.89	13.93	197.46	341.40	65.10	4 20 3	4046.9	10.46	190.50
100.00	15 28 45	1964.49	-20.92	22.53	342.32	111.86	16 1 29	1364.5	-17.77	15.15
100.00	4 22 13	4390.08	14.82	178.13	340.96	63.74	5 35 23	3790.1	11.17	171.24
110.00	16 40 57	1730.48	-23.37	4.21	341.15	115.69	17 9 56	1138.5	-19.72	356.97
110.00	5 26 29	4188.85	17.19	161.54	339.65	59.99	6 36 18	3588.9	13.07	154.86

DIFFERENTIAL CORRECTIONS
TDE .2594 TRA -.4234 TC3 1.2842 BAU .6700
RDE .1244 RRA .6591 RC3 3.6122 FAU .40071
FDE-1.8063 FRA-5.2355 FC-26.5365 BSP 10016
BDE .2877 BRA .7034 BC3 3.8337 FSP 6210

MID-COURSE EXECUTION ACCURACY
SGT 1218.0 SGR 2820.9 SG3 1823.7
RRT .5247 RRF -.9974 RTF -.5214
SGB 3072.6 R23 -.0918 R13 -.9932
SG1 2902.7 SG2 1007.6 THA 75.44

ORBIT DETERMINATION ACCURACY
ST 458.8 SR 378.9 SS 1174.0
CRT .1143 CRS .9570 CST .3915
LSA 1242.2 MSA 434.5 SSA 22.5
EL1 464.7 EL2 371.6 ALF 15.35

LAUNCH DATE DEC 10 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 548.944 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.007 GAL 3.50 AZL 91.87 HCA 165.73 SMA 186.30 ECC .21763 INC 1.8694 V1 30.243
RP 226.56 LAP -.46 LOP 243.71 VP 21.430 GAP -1.53 AZP 88.19 TAL 19.79 TAP 185.52 RCA 145.76 APO 226.85 V2 24.277
RC 245.534 GL -17.14 GP 22.43 ZAL 52.48 ZAP 118.59 ETS 165.56 ZAE 148.35 ETE 133.28 ZAC 110.63 ETC 255.06 CLP 121.18

PLANETOCENTRIC CONIC

C3 13.296 VHL 3.646 DLA 1.58 RAL 126.41 RAD 6567.5 VEL 11.605 PTH 2.03 VHP 3.530 DPA 19.53 RAP 194.75 ECC 1.2188

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 18 43	2170.23	-18.47	38.69	341.78	111.85	14 54 53	1570.2	-15.34	31.41
90.00	2 44 4	4716.43	15.88	201.63	341.22	66.25	4 2 41	4116.4	12.54	194.55
100.00	15 40 47	1905.48	-19.38	18.82	341.38	113.22	16 12 33	1305.5	-16.07	11.59
100.00	4 4 41	4456.41	16.78	182.08	340.80	64.89	5 18 57	3856.4	13.26	175.06
110.00	16 50 43	1686.60	-21.80	.99	340.17	117.00	17 18 50	1086.6	-18.01	353.92
110.00	5 11 14	4248.05	19.17	164.99	339.52	61.14	6 22 2	3648.0	15.17	158.15

DIFFERENTIAL CORRECTIONS
TDE .2636 TRA -.4658 TC3 1.0419 BAU .7154
RDE .2160 RRA .7542 RC3 3.8872 FAU .40250
FDE-2.2428 FRA-5.4557 FC-26.2074 BSP 10729
BDE .3407 BRA .8865 BC3 4.0244 FSP 6229

MID-COURSE EXECUTION ACCURACY
SGT 1133.6 SGR 3091.5 SG3 1835.4
RRT .4070 RRF -.9981 RTF -.4029
SGB 3292.7 R23 -.0582 R13 -.9964
SG1 3129.9 SG2 1022.7 THA 80.49

ORBIT DETERMINATION ACCURACY
ST 469.3 SR 498.9 SS 1342.0
CRT .2748 CRS .9837 CST .4393
LSA 1444.1 MSA 429.4 SSA 18.6
EL1 548.2 EL2 410.7 ALF 51.27

LAUNCH DATE DEC 10 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 552.874 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.999 GAL 3.50 AZL 92.16 HCA 166.78 SMA 186.17 ECC .21709 INC 2.1607 V1 30.243
RP 226.17 LAP -.49 LOP 244.77 VP 21.465 GAP -1.83 AZP 87.90 TAL 19.84 TAP 186.62 RCA 145.76 APO 226.58 V2 24.318
RC 247.256 GL -19.67 GP 24.29 ZAL 52.99 ZAP 116.52 ETS 165.54 ZAE 145.72 ETE 134.08 ZAC 112.27 ETC 254.92 CLP 119.33

PLANETOCENTRIC CONIC

C3 13.608 VHL 3.689 DLA -.84 RAL 125.66 RAD 6567.5 VEL 11.619 PTH 2.04 VHP 3.534 DPA 21.52 RAP 194.95 ECC 1.2240

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 36	2100.45	-16.65	34.38	340.91	113.24	15 8 37	1500.5	-13.36	27.25
90.00	2 23 11	4796.31	18.01	206.53	341.22	67.77	3 43 7	4196.3	14.84	199.29
100.00	15 54 34	1839.32	-17.55	14.76	340.49	114.59	16 25 13	1239.3	-14.09	7.68
100.00	3 44 55	4532.67	18.92	186.73	340.81	66.42	5 0 27	3932.7	15.57	179.54
110.00	17 1 55	1628.49	-19.96	357.49	339.22	118.34	17 29 3	1028.5	-16.02	350.58
110.00	4 54 3	4316.27	21.36	169.07	339.57	62.65	6 5 59	3716.3	17.52	162.04

DIFFERENTIAL CORRECTIONS
TDE .2700 TRA -.5071 TC3 .8102 BAU .7737
RDE .3365 RRA .8701 RC3 4.1749 FAU .40231
FDE-2.7525 FRA-5.6836 FC-25.5941 BSP 11461
BDE .4314 BRA 1.0071 BC3 4.2527 FSP 6133

MID-COURSE EXECUTION ACCURACY
SGT 1074.0 SGR 3404.0 SG3 1838.5
RRT .2724 RRF -.9986 RTF -.2681
SGB 3569.4 R23 -.0325 R13 -.9980
SG1 3417.8 SG2 1029.2 THA 84.60

ORBIT DETERMINATION ACCURACY
ST 481.6 SR 668.0 SS 1545.3
CRT .3886 CRS .9942 CST .4828
LSA 1698.3 MSA 426.3 SSA 15.2
EL1 709.7 EL2 417.7 ALF 65.29

LAUNCH DATE DEC 10 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 556.809 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.992 GAL 3.50 AZL 92.50 HCA 167.84 SMA 186.05 ECC .21657 INC 2.5020 V1 30.243
RP 225.78 LAP -.53 LOP 245.83 VP 21.501 GAP -2.12 AZP 87.55 TAL 19.86 TAP 187.71 RCA 145.75 APO 226.34 V2 24.360
RC 248.959 GL -22.56 GP 26.40 ZAL 53.70 ZAP 114.39 ETS 165.54 ZAE 142.91 ETE 134.70 ZAC 114.14 ETC 254.74 CLP 117.45

PLANETOCENTRIC CONIC

C3 14.045 VHL 3.748 DLA -3.60 RAL 124.82 RAD 6567.6 VEL 11.637 PTH 2.04 VHP 3.556 DPA 23.73 RAP 195.27 ECC 1.2311

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 52	2021.41	-14.46	29.61	340.13	114.61	15 24 33	1421.4	-11.02	22.62
90.00	1 59 16	4889.20	20.30	212.38	341.46	69.82	3 20 45	4289.2	17.37	204.93
100.00	16 10 31	1764.45	-15.37	10.27	339.69	115.96	16 39 56	1164.4	-11.76	3.34
100.00	3 22 17	4621.39	21.24	192.30	341.08	68.46	4 39 19	4021.4	18.13	184.89
110.00	17 14 54	1562.91	-17.80	353.64	338.35	119.68	17 40 57	962.9	-13.71	346.90
110.00	4 34 24	4395.69	23.76	173.99	339.90	64.67	5 47 40	3795.7	20.15	166.71

DIFFERENTIAL CORRECTIONS
TDE .2541 TRA -.5718 TC3 .5269 BAU .8362
RDE .4785 RRA .9955 RC3 4.4221 FAU .39542
FDE-3.2367 FRA-5.8160 FC-24.3735 BSP 12661
BDE .5418 BRA 1.1480 BC3 4.4534 FSP 6113

MID-COURSE EXECUTION ACCURACY
SGT 1036.4 SGR 3721.1 SG3 1807.4
RRT .0668 RRF -.9989 RTF -.0615
SGB 3862.8 R23 -.0108 R13 -.9989
SG1 3721.8 SG2 1033.9 THA 88.85

ORBIT DETERMINATION ACCURACY
ST 469.2 SR 868.5 SS 1736.0
CRT .4053 CRS .9978 CST .4627
LSA 1952.6 MSA 419.0 SSA 12.6
EL1 895.1 EL2 416.2 ALF 74.13

LAUNCH DATE DEC 10 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 560.755 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.985 GAL 3.49 AZL 92.91 HCA 168.91 SMA 185.93 ECC .21609 INC 2.9095 V1 30.243
RP 225.38 LAP -.56 LOP 246.90 VP 21.538 GAP -2.40 AZP 87.14 TAL 19.87 TAP 188.78 RCA 145.76 APO 226.11 V2 24.402
RC 250.643 GL -25.88 GP 28.78 ZAL 54.65 ZAP 112.19 ETS 165.59 ZAE 139.92 ETE 135.15 ZAC 116.27 ETC 254.51 CLP 115.53

PLANETOCENTRIC CONIC

C3 14.666 VHL 3.830 DLA -6.79 RAL 123.87 RAD 6567.6 VEL 11.664 PTH 2.05 VHP 3.600 DPA 26.20 RAP 195.73 ECC 1.2414

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 11	1930.96	-11.83	24.27	339.51	115.91	15 43 22	1331.0	-8.25	17.42
90.00	1 31 21	4998.77	22.70	219.51	342.06	72.61	2 54 40	4398.8	20.11	211.80
100.00	16 29 17	1679.00	-12.77	5.26	339.03	117.26	16 57 16	1079.0	-9.01	358.48
100.00	2 55 56	4725.97	23.70	199.10	341.70	71.23	4 14 42	4126.0	20.92	191.41
110.00	17 30 8	1488.51	-15.24	349.39	337.61	120.97	17 54 56	888.5	-11.02	342.82
110.00	4 11 35	4489.22	26.35	180.02	340.60	67.39	5 26 24	3889.2	23.05	172.41

DIFFERENTIAL CORRECTIONS
TDE .2344 TRA -.6405 TC3 .2578 BAU .9122
RDE .6648 RRA 1.1489 RC3 4.6456 FAU .38449
FDE-3.7663 FRA-5.9234 FC-22.6970 BSP 13966
BDE .7049 BRA 1.3153 BC3 4.6527 FSP 5981

MID-COURSE EXECUTION ACCURACY
SGT 1045.6 SGR 4079.9 SG3 1757.1
RRT -.1451 RRF -.9992 RTF .1507
SGB 4211.8 R23 .0043 R13 -.9992
SG1 4082.9 SG2 1033.8 THA 92.28

ORBIT DETERMINATION ACCURACY
ST 454.8 SR 1127.1 SS 1947.0
CRT .3885 CRS .9992 CST .4230
LSA 2257.5 MSA 414.1 SSA 10.2
EL1 1143.0 EL2 413.3 ALF 79.73

LAUNCH DATE DEC 10 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 564.709 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.979 GAL 3.49 AZL 93.40 HCA 169.97 SMA 185.83 ECC .21564 INC 3.4036 V1 30.243
RP 224.99 LAP -.59 LOP 247.97 VP 21.577 GAP -2.68 AZP 86.65 TAL 19.87 TAP 189.84 RCA 145.76 APO 225.90 V2 24.444
RC 252.307 GL -29.70 GP 31.48 ZAL 55.90 ZAP 109.93 ETS 165.69 ZAE 136.72 ETE 135.46 ZAC 118.70 ETC 254.21 CLP 113.56

PLANETOCENTRIC CONIC

C3 15.562 VHL 3.945 DLA -10.46 RAL 122.77 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 3.673 DPA 28.94 RAP 196.39 ECC 1.2561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 46	1825.75	-8.63	18.19	339.16	117.07	16 6 11	1225.8	-4.93	11.47
90.00	0 57 57	5130.57	25.10	228.42	343.14	76.45	2 23 27	4530.6	22.99	220.39
100.00	16 51 54	1580.10	-9.62	359.61	338.63	118.44	17 18 14	980.1	-5.74	352.96
100.00	2 24 29	4851.45	26.18	207.59	342.84	75.04	3 45 20	4251.5	23.87	199.55
110.00	17 48 21	1403.35	-12.20	344.66	337.10	122.18	18 11 44	803.3	-7.86	338.25
110.00	3 44 32	4600.97	29.05	187.59	341.85	71.13	5 1 13	4001.0	26.20	179.57

DIFFERENTIAL CORRECTIONS
TDE .2029 TRA -.7205 TC3 -.0040 BAU 1.0014
RDE .9089 RRA 1.3366 RC3 4.8132 FAU .36801
FDE-4.3116 FRA-5.9788 FC-20.4731 BSP 15433
BDE .9313 BRA 1.5185 BC3 4.8132 FSP 5741

MID-COURSE EXECUTION ACCURACY
SGT 1104.2 SGR 4478.9 SG3 1680.0
RRT -.3485 RRF -.9994 RTF .3541
SGB 4613.0 R23 .0147 R13 -.9993
SG1 4496.3 SG2 1031.0 THA 95.18

ORBIT DETERMINATION ACCURACY
ST 434.5 SR 1451.3 SS 2163.1
CRT .3171 CRS .9997 CST .3375
LSA 2608.8 MSA 410.1 SSA 8.3
EL1 1458.4 EL2 410.0 ALF 84.11

LAUNCH DATE DEC 10 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 568.675 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.974 GAL 3.48 AZL 94.02 HCA 171.04 SMA 185.74 ECC .21522 INC 4.0169 V1 30.243
RP 224.60 LAP -.63 LOP 249.04 VP 21.616 GAP -2.95 AZP 86.03 TAL 19.85 TAP 190.89 RCA 145.76 APO 225.71 V2 24.485
RC 253.951 GL -34.13 GP 34.55 ZAL 57.53 ZAP 107.60 ETS 165.87 ZAE 133.28 ETE 135.68 ZAC 121.47 ETC 253.81 CLP 111.54

PLANETOCENTRIC CONIC

C3 16.889 VHL 4.110 DLA -14.69 RAL 121.44 RAD 6567.7 VEL 11.759 PTH 2.08 VHP 3.787 DPA 32.02 RAP 197.32 ECC 1.2779

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 43	1700.03	-4.67	11.08	339.28	117.96	16 35 3	1100.0	-.90	4.43
90.00	0 16 23	5293.59	27.20	239.89	344.87	81.82	1 44 37	4693.6	25.79	231.51
100.00	17 20 10	1463.07	-5.76	353.06	338.68	119.38	17 44 33	863.1	-1.80	346.51
100.00	1 45 38	5005.78	28.43	218.50	344.65	80.35	3 9 4	4405.8	26.80	210.08
110.00	18 10 45	1304.63	-8.57	339.32	336.96	123.22	18 32 29	704.6	-4.14	333.04
110.00	3 11 32	4736.99	31.65	197.32	343.89	76.35	4 30 29	4137.0	29.45	188.81

DIFFERENTIAL CORRECTIONS
TDE .1648 TRA -.8073 TC3 -.2261 BAU 1.1078
RDE 1.2374 RRA 1.5748 RC3 4.9011 FAU .34582
FDE-4.8568 FRA-5.9744 FC-17.7272 BSP 16966
BDE 1.2483 BRA 1.7697 BC3 4.9063 FSP 5341

MID-COURSE EXECUTION ACCURACY
SGT 1200.4 SGR 4935.1 SG3 1575.0
RRT -.5052 RRF -.9995 RTF .5105
SGB 5079.0 R23 .0202 R13 -.9994
SG1 4973.9 SG2 1027.9 THA 97.32

ORBIT DETERMINATION ACCURACY
ST 417.9 SR 1858.6 SS 2375.4
CRT .2034 CRS .9999 CST .2147
LSA 3017.4 MSA 408.7 SSA 6.6
EL1 1860.6 EL2 408.7 ALF 87.25

LAUNCH DATE DEC 10 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 572.647 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.969 GAL 3.47 AZL 94.80 HCA 172.11 SMA 185.65 ECC .21483 INC 4.7972 V1 30.243
RP 224.21 LAP -.66 LOP 250.12 VP 21.656 GAP -3.22 AZP 85.25 TAL 19.82 TAP 191.93 RCA 145.77 APO 225.54 V2 24.527
RC 255.576 GL -39.25 GP 38.05 ZAL 59.62 ZAP 105.22 ETS 166.16 ZAE 129.57 ETE 135.83 ZAC 124.65 ETC 253.26 CLP 109.47

PLANETOCENTRIC CONIC

C3 18.918 VHL 4.350 DLA -19.58 RAL 119.80 RAD 6567.8 VEL 11.845 PTH 2.10 VHP 3.960 DPA 35.44 RAP 198.60 ECC 1.3113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 49	1540.96	.45	2.19	340.28	118.31	17 14 30	941.0	4.23	355.55
90.00	23 17 17	5505.51	28.31	255.27	347.31	89.44	24 49 3	4905.5	27.93	246.63
100.00	17 57 52	1318.16	-.87	345.08	339.55	119.88	18 19 50	718.2	3.11	338.56
100.00	0 54 52	5203.54	29.82	233.02	347.27	87.85	2 21 35	4603.5	29.21	224.27
110.00	18 39 36	1187.35	-4.14	333.12	337.51	123.96	18 59 24	587.3	.34	326.91
110.00	2 29 37	4907.12	33.67	210.17	346.93	83.69	3 51 24	4307.1	32.43	201.16

DIFFERENTIAL CORRECTIONS
TDE .1046 TRA -.9167 TC3 -.4241 BAU 1.2289
RDE 1.6734 RRA 1.8739 RC3 4.8403 FAU .31522
FDE-5.3119 FRA-5.8495 FC-14.4249 BSP 18726
BDE 1.6766 BRA 2.0861 BC3 4.8589 FSP 4829

MID-COURSE EXECUTION ACCURACY
SGT 1340.8 SGR 5427.0 SG3 1428.4
RRT -.6332 RRF -.9996 RTF .6382
SGB 5590.2 R23 .0234 R13 -.9994
SG1 5495.5 SG2 1024.8 THA 99.21

ORBIT DETERMINATION ACCURACY
ST 408.6 SR 2343.7 SS 2540.1
CRT .0002 CRS 1.0000 CST .0055
LSA 3456.1 MSA 408.7 SSA 5.3
EL1 2343.7 EL2 408.6 ALF 90.00

LAUNCH DATE DEC 10 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 576.626 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.965 GAL 3.46 AZL 95.82 HCA 173.18 SMA 185.58 ECC .21446 INC 5.8245 V1 30.243
RP 223.82 LAP -.69 LOP 251.20 VP 21.697 GAP -3.48 AZP 84.22 TAL 19.78 TAP 192.96 RCA 145.78 APO 225.38 V2 24.569
RC 257.180 GL -45.17 GP 42.02 ZAL 62.25 ZAP 102.79 ETS 166.59 ZAE 125.57 ETE 135.97 ZAC 128.26 ETC 252.52 CLP 107.33

PLANETOCENTRIC CONIC

C3 22.167 VHL 4.708 DLA -25.19 RAL 117.71 RAD 6567.9 VEL 11.981 PTH 2.14 VHP 4.223 DPA 39.25 RAP 200.35 ECC 1.3648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 15	1301.83	8.07	348.76	343.25	117.23	18 19 57	701.8	11.66	341.91
90.00	21 51 10	5820.37	26.40	278.03	349.80	100.63	23 28 11	5220.4	27.60	269.57
100.00	18 56 5	1115.12	5.98	333.90	342.12	119.34	19 14 40	515.1	9.85	327.25
100.00	23 36 2	5482.32	28.74	253.61	350.24	98.59	25 7 24	4882.3	29.63	244.92
110.00	19 20 8	1039.64	1.50	325.41	339.34	124.15	19 37 28	439.6	5.97	319.18
110.00	1 32 23	5130.57	33.98	227.57	350.92	93.95	2 57 54	4530.6	34.16	218.33

DIFFERENTIAL CORRECTIONS
TDE .0208 TRA-1.0535 TC3 -.5698 BAU 1.3690
RDE 2.2616 RRA 2.2623 RC3 4.5843 FAU .27582
FDE-5.5907 FRA-5.5697 FC-10.7723 BSP 20680
BDE 2.2617 BRA 2.4955 BC3 4.6196 FSP 4179

MID-COURSE EXECUTION ACCURACY
SGT 1515.2 SGR 5955.3 SG3 1237.9
RRT -.7267 RRF -.9997 RTF .7316
SGB 6145.0 R23 .0246 R13 -.9994
SG1 6059.2 SG2 1023.0 THA 100.79

ORBIT DETERMINATION ACCURACY
ST 426.1 SR 2902.5 SS 2616.4
CRT -.2590 CRS 1.0000 CST -.2578
LSA 3909.3 MSA 411.4 SSA 4.2
EL1 2904.6 EL2 411.2 ALF 92.22

LAUNCH DATE DEC 10 1964 FLIGHT TIME 264.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 580.610 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.961 GAL 3.44 AZL 97.24 HCA 174.26 SMA 185.51 ECC .21413 INC 7.2375 V1 30.243
RP 223.44 LAP -.72 LOP 252.28 VP 21.738 GAP -3.74 AZP 82.80 TAL 19.72 TAP 193.98 RCA 145.79 APO 225.24 V2 24.611
RC 258.763 GL -51.97 GP 46.49 ZAL 65.48 ZAP 100.33 ETS 167.22 ZAE 121.28 ETE 136.19 ZAC 132.32 ETC 251.49 CLP 105.10

PLANETOCENTRIC CONIC

C3 27.697 VHL 5.263 DLA -31.56 RAL 114.91 RAD 6568.1 VEL 12.210 PTH 2.19 VHP 4.630 DPA 43.42 RAP 202.74 ECC 1.4558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.44	17 49 0	1339.46	19.52	357.32	349.65	115.31	18 11 20	739.5	22.77	349.89
104.56	21 38 8	604.26	19.53	302.95	349.66	115.30	21 48 12	4.3	22.78	295.53
75.44	17 49 0	1339.46	19.52	357.32	349.65	115.31	18 11 20	739.5	22.77	349.89
104.56	21 38 8	604.26	19.53	302.95	349.66	115.30	21 48 12	4.3	22.78	295.53
110.00	20 32 28	808.82	10.20	313.21	344.31	122.80	20 45 57	208.8	14.46	306.69
110.00	23 53 51	5470.93	29.43	252.93	353.99	108.23	25 25 2	4870.9	31.63	244.42

DIFFERENTIAL CORRECTIONS
TDE -.0960 TRA-1.2368 TC3 -.6525 BAU 1.5452
RDE 3.0861 RRA 2.8049 RC3 4.1216 FAU .22915
FDE-5.5969 FRA-5.1192 FC3-7.1626 BSP 22292
BDE 3.0875 BRA 3.0655 BC3 4.1729 FSP 3311

MID-COURSE EXECUTION ACCURACY
SGT 1726.2 SGR 6553.8 SG3 1010.4
RRT -.7950 RRF -.9997 RTF .8001
SGB 6777.3 R23 .0241 R13 -.9995
SG1 6699.4 SG2 1024.4 THA 102.11

ORBIT DETERMINATION ACCURACY
ST 485.9 SR 3530.0 SS 2562.5
CRT -.5035 CRS 1.0000 CST -.5051
LSA 4368.9 MSA 419.0 SSA 3.4
EL1 3538.6 EL2 418.8 ALF 94.02

LAUNCH DATE DEC 10 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 584.595 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.957 GAL 3.43 AZL 99.31 HCA 175.33 SMA 185.46 ECC .21382 INC 9.3059 V1 30.243
RP 223.05 LAP -.75 LOP 253.37 VP 21.781 GAP -3.99 AZP 80.72 TAL 19.66 TAP 194.99 RCA 145.80 APO 225.11 V2 24.653
RC 260.326 GL -59.69 GP 51.39 ZAL 69.33 ZAP 97.90 ETS 168.16 ZAE 116.76 ETE 136.64 ZAC 136.73 ETC 250.09 CLP 102.72

PLANETOCENTRIC CONIC

C3 37.973 VHL 6.162 DLA -38.67 RAL 110.96 RAD 6568.5 VEL 12.623 PTH 2.29 VHP 5.289 DPA 47.86 RAP 205.94 ECC 1.6249

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.49	16 17 34	1647.81	20.60	22.23	352.93	123.47	16 45 2	1047.8	24.85	15.30
117.51	22 38 0	5742.68	20.61	269.76	352.94	123.47	24 13 43	5142.7	24.86	262.83
62.49	16 17 34	1647.81	20.60	22.23	352.93	123.47	16 45 2	1047.8	24.85	15.30
117.51	22 38 0	5742.68	20.61	269.76	352.94	123.47	24 13 43	5142.7	24.86	262.83
62.49	16 17 34	1647.81	20.60	22.23	352.93	123.47	16 45 2	1047.8	24.85	15.30
117.51	22 38 0	5742.68	20.61	269.76	352.94	123.47	24 13 43	5142.7	24.86	262.83

DIFFERENTIAL CORRECTIONS
TDE -.2377 TRA-1.4839 TC3 -.6448 BAU 1.7420
RDE 4.1723 RRA 3.5311 RC3 3.3702 FAU .17162
FDE-5.0349 FRA-4.3348 FC3-3.9128 BSP 24905
BDE 4.1790 BRA 3.8302 BC3 3.4313 FSP 2455

MID-COURSE EXECUTION ACCURACY
SGT 1950.1 SGR 7069.8 SG3 732.2
RRT -.8405 RRF -.9997 RTF .8464
SGB 7333.8 R23 .0222 R13 -.9995
SG1 7261.3 SG2 1028.6 THA 103.33

ORBIT DETERMINATION ACCURACY
ST 574.8 SR 4081.2 SS 2254.2
CRT -.6518 CRS 1.0000 CST -.6556
LSA 4677.5 MSA 434.2 SSA 2.7
EL1 4098.5 EL2 434.1 ALF 95.30

LAUNCH DATE DEC 10 1964 FLIGHT TIME 286.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 625.471 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.946 GAL 3.06 AZL 80.63 HCA 186.56 SMA 185.27 ECC .21143 INC 9.3664 V1 30.243
RP 219.25 LAP -1.07 LOP 264.45 VP 22.232 GAP -6.14 AZP 99.31 TAL 17.69 TAP 204.25 RCA 146.10 APO 224.44 V2 25.067
RC 274.906 GL 61.04 GP -44.18 ZAL 71.27 ZAP 86.82 ETS 175.62 ZAE 110.62 ETE 198.92 ZAC 42.69 ETC 251.06 CLP 85.56

PLANETOCENTRIC CONIC

C3 37.452 VHL 6.120 DLA 73.27 RAL 178.16 RAD 6568.5 VEL 12.602 PTH 2.29 VHP 4.301 DPA -34.45 RAP 151.27 ECC 1.6164

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
12.85	9 36 26	4406.35	-45.77	243.04	124.71	16.30	10 49 52	3806.3	-53.39	239.70
12.85	3 10 27	4771.34	-21.65	248.81	35.24	12.16	4 29 58	4171.3	-29.46	247.29
19.08	6 36 2	4577.60	-32.87	239.82	76.98	20.04	7 52 19	3977.6	-40.34	236.65
160.92	17 19 38	2805.90	-32.87	85.86	76.96	20.04	18 6 24	2205.9	-40.33	82.69
19.08	6 36 2	4577.60	-32.87	239.82	76.98	20.04	7 52 19	3977.6	-40.34	236.65
160.92	17 19 38	2805.90	-32.87	85.86	76.96	20.04	18 6 24	2205.9	-40.33	82.69

DIFFERENTIAL CORRECTIONS
TDE 4.7171 TRA .2520 TC3-2.0140 BAU 1.8115
RDE 4.7518 RRA .7406 RC3-3.0055 FAU .28312
FDE 9.7007 FRA 1.5272 FC3-6.5445 BSP 26785
BDE 6.6956 BRA .7823 BC3 3.6179 FSP 3954

MID-COURSE EXECUTION ACCURACY
SGT 5123.7 SGR 6255.3 SG3 1130.9
RRT .9576 RRF .9995 RTF .9532
SGB 8085.8 R23 .1298 R13 .9912
SG1 8003.0 SG2 1154.2 THA 50.92

ORBIT DETERMINATION ACCURACY
ST 4423.8 SR 4508.5 SS 3421.6
CRT .9944 CRS-1.0000 CST -.9942
LSA 7174.0 MSA 370.4 SSA 4.1
EL1 6307.5 EL2 333.6 ALF 45.55

LAUNCH DATE DEC 10 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 629.570 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.947 GAL 3.02 AZL 81.78 HCA 187.68 SMA 185.28 ECC .21131 INC 8.2205 V1 30.243
RP 218.89 LAP -1.10 LOP 265.58 VP 22.279 GAP -6.33 AZP 98.15 TAL 17.45 TAP 205.13 RCA 146.13 APO 224.44 V2 25.108
RC 276.266 GL 57.26 GP -40.16 ZAL 69.70 ZAP 85.20 ETS 174.75 ZAE 110.42 ETE 196.02 ZAC 46.38 ETC 252.40 CLP 83.71

PLANETOCENTRIC CONIC

C3 31.284 VHL 5.593 DLA 70.23 RAL 170.47 RAD 6568.2 VEL 12.355 PTH 2.23 VHP 3.980 DPA -30.66 RAP 153.02 ECC 1.5149

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
22.60	6 12 44	4523.68	-35.05	234.78	65.88	24.41	7 28 8	3923.7	-42.26	230.74
157.40	16 41 35	2769.03	-35.05	84.45	65.86	24.40	17 27 44	2169.0	-42.25	80.41
22.60	6 12 44	4523.68	-35.05	234.78	65.88	24.41	7 28 8	3923.7	-42.26	230.74
157.40	16 41 35	2769.03	-35.05	84.45	65.86	24.40	17 27 44	2169.0	-42.25	80.41
22.60	6 12 44	4523.68	-35.05	234.78	65.88	24.41	7 28 8	3923.7	-42.26	230.74
157.40	16 41 35	2769.03	-35.05	84.45	65.86	24.40	17 27 44	2169.0	-42.25	80.41

DIFFERENTIAL CORRECTIONS
TDE 4.4955 TRA .1000 TC3-2.4757 BAU 1.6952
RDE 4.1354 RRA .5323 RC3-3.2091 FAU .32698
FDE10.9359 FRA 1.4089 FC3-9.0485 BSP 26428
BDE 6.1083 BRA .5416 BC3 4.0531 FSP 4790

MID-COURSE EXECUTION ACCURACY
SGT 5382.2 SGR 5782.1 SG3 1355.6
RRT .9620 RRF .9995 RTF .9582
SGB 7899.4 R23 .1399 R13 .9897
SG1 7824.4 SG2 1085.8 THA 47.13

ORBIT DETERMINATION ACCURACY
ST 4606.8 SR 4265.1 SS 3879.1
CRT .9956 CRS-1.0000 CST -.9955
LSA 7372.0 MSA 339.3 SSA 4.8
EL1 6271.1 EL2 294.8 ALF 42.79

LAUNCH DATE DEC 10 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 633.681 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.948 GAL 2.97 AZL 82.64 HCA 188.81 SMA 185.30 ECC .21121 INC 7.3623 V1 30.243
RP 218.52 LAP -1.12 LOP 266.72 VP 22.326 GAP -6.52 AZP 97.28 TAL 17.19 TAP 206.00 RCA 146.17 APO 224.44 V2 25.148
RC 277.609 GL 54.01 GP -36.60 ZAL 68.44 ZAP 83.49 ETS 174.03 ZAE 109.80 ETE 193.41 ZAC 49.65 ETC 253.39 CLP 81.88

PLANETOCENTRIC CONIC

C3 27.159 VHL 5.211 DLA 67.41 RAL 165.61 RAD 6568.1 VEL 12.187 PTH 2.19 VHP 3.764 DPA -27.26 RAP 154.34 ECC 1.4470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
25.87	6 0 28	4478.83	-36.42	229.91	57.75	28.51	7 15 7	3878.8	-43.34	225.09
154.13	16 15 4	2743.15	-36.42	83.08	57.73	28.51	17 0 47	2143.2	-43.34	78.26
25.87	6 0 28	4478.83	-36.42	229.91	57.75	28.51	7 15 7	3878.8	-43.34	225.09
154.13	16 15 4	2743.15	-36.42	83.08	57.73	28.51	17 0 47	2143.2	-43.34	78.26
25.87	6 0 28	4478.83	-36.42	229.91	57.75	28.51	7 15 7	3878.8	-43.34	225.09
154.13	16 15 4	2743.15	-36.42	83.08	57.73	28.51	17 0 47	2143.2	-43.34	78.26

DIFFERENTIAL CORRECTIONS
TDE 4.2699 TRA -.0256 TC3-2.9667 BAU 1.6207
RDE 3.5362 RRA .3813 RC3-3.3351 FAU .36370
FDE11.4959 FRA 1.2249 FC-11.5937 BSP 25827
BDE 5.5441 BRA .3821 BC3 4.4636 FSP 5424

MID-COURSE EXECUTION ACCURACY
SGT 5621.8 SGR 5328.2 SG3 1540.9
RRT .9655 RRF .9994 RTF .9619
SGB 7745.6 R23 .1499 R13 .9882
SG1 7678.7 SG2 1016.1 THA 43.41

ORBIT DETERMINATION ACCURACY
ST 4695.5 SR 3903.0 SS 4126.4
CRT .9960 CRS-1.0000 CST -.9961
LSA 7362.5 MSA 320.2 SSA 5.5
EL1 6100.0 EL2 266.9 ALF 39.71

LAUNCH DATE DEC 10 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 637.804 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.950 GAL 2.93 AZL 83.30 HCA 189.94 SMA 185.33 ECC .21112 INC 6.6956 V1 30.243
RP 218.16 LAP -1.15 LOP 267.85 VP 22.374 GAP -6.70 AZP 96.60 TAL 16.92 TAP 206.86 RCA 146.20 APO 224.46 V2 25.188
RC 278.933 GL 51.20 GP -33.48 ZAL 67.45 ZAP 81.73 ETS 173.44 ZAE 108.87 ETE 191.11 ZAC 52.52 ETC 254.16 CLP 80.07

PLANETOCENTRIC CONIC

C3 24.238 VHL 4.923 DLA 64.86 RAL 162.37 RAD 6568.0 VEL 12.067 PTH 2.16 VHP 3.615 DPA -24.23 RAP 155.35 ECC 1.3989

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
28.85	5 54 17	4440.67	-37.23	225.37	51.49	32.24	7 8 17	3840.7	-43.85	219.88
151.15	15 55 23	2725.10	-37.22	81.83	51.48	32.24	16 40 48	2125.1	-43.85	76.34
28.85	5 54 17	4440.67	-37.23	225.37	51.49	32.24	7 8 17	3840.7	-43.85	219.88
151.15	15 55 23	2725.10	-37.22	81.83	51.48	32.24	16 40 48	2125.1	-43.85	76.34
28.85	5 54 17	4440.67	-37.23	225.37	51.49	32.24	7 8 17	3840.7	-43.85	219.88
151.15	15 55 23	2725.10	-37.22	81.83	51.48	32.24	16 40 48	2125.1	-43.85	76.34

DIFFERENTIAL CORRECTIONS
TDE 4.0854 TRA -.1244 TC3-3.4661 BAU 1.5708
RDE 3.0262 RRA .2756 RC3-3.3891 FAU .39280
FDE11.6503 FRA 1.0296 FC-14.0299 BSP 25402
BDE 5.0842 BRA .3024 BC3 4.8477 FSP 5903

MID-COURSE EXECUTION ACCURACY
SGT 5862.6 SGR 4910.2 SG3 1690.1
RRT .9684 RRF .9993 RTF .9649
SGB 7647.2 R23 .1592 R13 .9866
SG1 7588.5 SG2 946.0 THA 39.79

ORBIT DETERMINATION ACCURACY
ST 4756.8 SR 3530.6 SS 4245.4
CRT .9963 CRS-1.0000 CST -.9965
LSA 7281.6 MSA 306.1 SSA 6.3
EL1 5918.8 EL2 243.6 ALF 36.55

LAUNCH DATE DEC 10 1964 FLIGHT TIME 294.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 641.936 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.952 GAL 2.88 AZL 83.84 HCA 191.08 SMA 185.36 ECC .21104 INC 6.1625 V1 30.243
RP 217.80 LAP -1.18 LOP 268.99 VP 22.421 GAP -6.88 AZP 96.05 TAL 16.63 TAP 207.71 RCA 146.24 APO 224.48 V2 25.228
RC 280.240 GL 48.76 GP -30.74 ZAL 66.69 ZAP 79.96 ETS 172.96 ZAE 107.70 ETE 189.11 ZAC 55.03 ETC 254.75 CLP 78.30

PLANETOCENTRIC CONIC

C3 22.075 VHL 4.698 DLA 62.56 RAL 160.13 RAD 6567.9 VEL 11.977 PTH 2.13 VHP 3.512 DPA -21.53 RAP 156.13 ECC 1.3633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
31.56	5 51 43	4407.49	-37.65	221.19	46.53	35.58	7 5 11	3807.5	-43.98	215.15
148.44	15 40 5	2712.70	-37.64	80.77	46.52	35.58	16 25 18	2112.7	-43.98	74.72
31.56	5 51 43	4407.49	-37.65	221.19	46.53	35.58	7 5 11	3807.5	-43.98	215.15
148.44	15 40 5	2712.70	-37.64	80.77	46.52	35.58	16 25 18	2112.7	-43.98	74.72
31.56	5 51 43	4407.49	-37.65	221.19	46.53	35.58	7 5 11	3807.5	-43.98	215.15
148.44	15 40 5	2712.70	-37.64	80.77	46.52	35.58	16 25 18	2112.7	-43.98	74.72

DIFFERENTIAL CORRECTIONS
TDE 3.9438 TRA -.2002 TC3-3.9655 BAU 1.5370
RDE 2.6119 RRA .2082 RC3-3.3762 FAU .41372
FDE11.5814 FRA .8746 FC-16.2255 BSP 25357
BDE 4.7302 BRA .2888 BC3 5.2081 FSP 6321

MID-COURSE EXECUTION ACCURACY
SGT 6107.1 SGR 4529.2 SG3 1806.7
RRT .9707 RRF .9991 RTF .9671
SGB 7603.3 R23 .1675 R13 .9851
SG1 7552.1 SG2 880.8 THA 36.32

ORBIT DETERMINATION ACCURACY
ST 4813.3 SR 3190.8 SS 4292.7
CRT .9964 CRS-1.0000 CST -.9966
LSA 7189.4 MSA 298.8 SSA 7.1
EL1 5770.4 EL2 226.3 ALF 33.50

LAUNCH DATE DEC 10 1964 FLIGHT TIME 296.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 646.079 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.954 GAL 2.82 AZL 84.27 HCA 192.22 SMA 185.39 ECC .21098 INC 5.7266 V1 30.243
RP 217.44 LAP -1.21 LOP 270.14 VP 22.469 GAP -7.05 AZP 95.60 TAL 16.33 TAP 208.54 RCA 146.28 APO 224.51 V2 25.268
RC 281.529 GL 46.63 GP -28.33 ZAL 66.13 ZAP 78.19 ETS 172.58 ZAE 106.35 ETE 187.38 ZAC 57.25 ETC 255.23 CLP 76.56

PLANETOCENTRIC CONIC

C3 20.414 VHL 4.518 DLA 60.50 RAL 158.56 RAD 6567.8 VEL 11.908 PTH 2.12 VHP 3.440 DPA -19.12 RAP 156.73 ECC 1.3360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.01	5 51 28	4378.10	-37.80	217.38	42.54	38.55	7 4 26	3778.1	-43.87	210.89
145.99	15 27 48	2704.47	-37.79	79.88	42.52	38.55	16 12 52	2104.5	-43.86	73.39
34.01	5 51 28	4378.10	-37.80	217.38	42.54	38.55	7 4 26	3778.1	-43.87	210.89
145.99	15 27 48	2704.47	-37.79	79.88	42.52	38.55	16 12 52	2104.5	-43.86	73.39
34.01	5 51 28	4378.10	-37.80	217.38	42.54	38.55	7 4 26	3778.1	-43.87	210.89
145.99	15 27 48	2704.47	-37.79	79.88	42.52	38.55	16 12 52	2104.5	-43.86	73.39

DIFFERENTIAL CORRECTIONS
TDE 3.8338 TRA -.2597 TC3-4.4631 BAU 1.5191
RDE 2.2694 RRA .1612 RC3-3.3259 FAU .42908
FDE11.3438 FRA .7390 FC-18.1971 BSP 25490
BDE 4.4552 BRA .3057 BC3 5.5661 FSP 6626

MID-COURSE EXECUTION ACCURACY
SGT 6352.1 SGR 4181.7 SG3 1894.8
RRT .9726 RRF .9989 RTF .9690
SGB 7605.0 R23 .1744 R13 .9836
SG1 7561.0 SG2 816.8 THA 33.07

ORBIT DETERMINATION ACCURACY
ST 4867.4 SR 2882.0 SS 4281.7
CRT .9964 CRS-1.0000 CST -.9967
LSA 7088.4 MSA 291.9 SSA 7.9
EL1 5652.7 EL2 209.9 ALF 30.59

LAUNCH DATE DEC 10 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 650.231 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.956 GAL 2.77 AZL 84.64 HCA 193.36 SMA 185.43 ECC .21093 INC 5.3628 V1 30.243
RP 217.09 LAP -1.24 LOP 271.29 VP 22.516 GAP -7.22 AZP 95.22 TAL 16.00 TAP 209.37 RCA 146.32 APO 224.55 V2 25.307
RC 282.801 GL 44.75 GP -26.20 ZAL 65.72 ZAP 76.44 ETS 172.27 ZAE 104.89 ETE 185.89 ZAC 59.21 ETC 255.62 CLP 74.86

PLANETOCENTRIC CONIC

C3 19.100 VHL 4.370 DLA 58.63 RAL 157.46 RAD 6567.8 VEL 11.852 PTH 2.10 VHP 3.392 DPA -16.98 RAP 157.21 ECC 1.3143

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.25	5 52 47	4351.63	-37.78	213.90	39.27	41.19	7 5 19	3751.6	-43.59	207.05
143.75	15 17 41	2699.34	-37.77	79.17	39.25	41.18	16 2 40	2099.3	-43.57	72.32
36.25	5 52 47	4351.63	-37.78	213.90	39.27	41.19	7 5 19	3751.6	-43.59	207.05
143.75	15 17 41	2699.34	-37.77	79.17	39.25	41.18	16 2 40	2099.3	-43.57	72.32
36.25	5 52 47	4351.63	-37.78	213.90	39.27	41.19	7 5 19	3751.6	-43.59	207.05
143.75	15 17 41	2699.34	-37.77	79.17	39.25	41.18	16 2 40	2099.3	-43.57	72.32

DIFFERENTIAL CORRECTIONS
TDE 3.7446 TRA -.3102 TC3-4.9662 BAU 1.5153
RDE 1.9869 RRA .1286 RC3-3.2487 FAU .43972
FDE11.0061 FRA .6260 FC-19.9313 BSP 25681
BDE 4.2391 BRA .3358 BC3 5.9344 FSP 6829

MID-COURSE EXECUTION ACCURACY
SGT 6599.5 SGR 3867.0 SG3 1959.2
RRT .9742 RRF .9986 RTF .9705
SGB 7648.9 R23 .1796 R13 .9824
SG1 7611.4 SG2 757.1 THA 30.05

ORBIT DETERMINATION ACCURACY
ST 4916.5 SR 2608.1 SS 4233.6
CRT .9964 CRS-1.0000 CST -.9967
LSA 6986.8 MSA 287.2 SSA 8.9
EL1 5562.0 EL2 196.1 ALF 27.90

LAUNCH DATE DEC 10 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 654.392 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.958 GAL 2.71 AZL 84.95 HCA 194.51 SMA 185.48 ECC .21089 INC 5.0545 V1 30.243
RP 216.74 LAP -1.27 LOP 272.44 VP 22.564 GAP -7.39 AZP 94.89 TAL 15.67 TAP 210.18 RCA 146.36 APO 224.59 V2 25.346
RC 284.057 GL 43.08 GP -24.31 ZAL 65.45 ZAP 74.72 ETS 172.02 ZAE 103.35 ETE 184.60 ZAC 60.94 ETC 255.94 CLP 73.19

PLANETOCENTRIC CONIC

C3 18.033 VHL 4.247 DLA 56.94 RAL 156.70 RAD 6567.7 VEL 11.807 PTH 2.09 VHP 3.361 DPA -15.07 RAP 157.59 ECC 1.2968

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.29	5 55 9	4327.53	-37.63	210.72	36.59	43.54	7 7 17	3727.5	-43.20	203.58
141.71	15 9 15	2696.47	-37.62	78.62	36.57	43.53	15 54 11	2096.5	-43.19	71.48
38.29	5 55 9	4327.53	-37.63	210.72	36.59	43.54	7 7 17	3727.5	-43.20	203.58
141.71	15 9 15	2696.47	-37.62	78.62	36.57	43.53	15 54 11	2096.5	-43.19	71.48
38.29	5 55 9	4327.53	-37.63	210.72	36.59	43.54	7 7 17	3727.5	-43.20	203.58
141.71	15 9 15	2696.47	-37.62	78.62	36.57	43.53	15 54 11	2096.5	-43.19	71.48

DIFFERENTIAL CORRECTIONS
TDE 3.6698 TRA -.3534 TC3-5.4729 BAU 1.5228
RDE 1.7512 RRA .1057 RC3-3.1533 FAU .44643
FDE10.5995 FRA .5324 FC-21.4322 BSP 25944
BDE 4.0662 BRA .3689 BC3 6.3163 FSP 6951

MID-COURSE EXECUTION ACCURACY
SGT 6847.4 SGR 3580.9 SG3 2003.3
RRT .9755 RRF .9983 RTF .9717
SGB 7727.2 R23 .1831 R13 .9814
SG1 7695.3 SG2 701.2 THA 27.27

ORBIT DETERMINATION ACCURACY
ST 4960.4 SR 2365.4 SS 4157.5
CRT .9963 CRS-1.0000 CST -.9967
LSA 6885.1 MSA 283.6 SSA 9.8
EL1 5492.4 EL2 184.0 ALF 25.44

LAUNCH DATE DEC 10 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 658.562 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.961 GAL 2.65 AZL 85.21 HCA 195.67 SMA 185.52 ECC .21087 INC 4.7899 V1 30.243
RP 216.39 LAP -1.29 LOP 273.60 VP 22.611 GAP -7.55 AZP 94.61 TAL 15.32 TAP 210.99 RCA 146.40 APO 224.65 V2 25.385
RC 285.296 GL 41.60 GP -22.62 ZAL 65.31 ZAP 73.03 ETS 171.83 ZAE 101.76 ETE 183.50 ZAC 62.48 ETC 256.21 CLP 71.56

PLANETOCENTRIC CONIC

C3 17.149 VHL 4.141 DLA 55.39 RAL 156.20 RAD 6567.7 VEL 11.770 PTH 2.08 VHP 3.343 DPA -13.36 RAP 157.89 ECC 1.2822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.18	5 58 19	4305.30	-37.40	207.80	34.37	45.64	7 10 4	3705.3	-42.75	200.43
139.82	15 2 7	2695.36	-37.39	78.19	34.35	45.63	15 47 2	2095.4	-42.74	70.83
40.18	5 58 19	4305.30	-37.40	207.80	34.37	45.64	7 10 4	3705.3	-42.75	200.43
139.82	15 2 7	2695.36	-37.39	78.19	34.35	45.63	15 47 2	2095.4	-42.74	70.83
40.18	5 58 19	4305.30	-37.40	207.80	34.37	45.64	7 10 4	3705.3	-42.75	200.43
139.82	15 2 7	2695.36	-37.39	78.19	34.35	45.63	15 47 2	2095.4	-42.74	70.83

DIFFERENTIAL CORRECTIONS
TDE 3.6123 TRA -.3842 TC3-5.9711 BAU 1.5364
RDE 1.5553 RRA .0925 RC3-3.0420 FAU .44930
FDE10.1676 FRA .4769 FC-22.6824 BSP 26377
BDE 3.9329 BRA .3951 BC3 6.7013 FSP 7029

MID-COURSE EXECUTION ACCURACY
SGT 7093.1 SGR 3321.0 SG3 2030.3
RRT .9765 RRF .9978 RTF .9727
SGB 7832.1 R23 .1849 R13 .9805
SG1 7805.1 SG2 649.8 THA 24.75

ORBIT DETERMINATION ACCURACY
ST 5008.1 SR 2154.3 SS 4068.4
CRT .9962 CRS-1.0000 CST -.9967
LSA 6796.7 MSA 280.8 SSA 10.7
EL1 5449.0 EL2 173.3 ALF 23.22

LAUNCH DATE DEC 10 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 662.740 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.964 GAL 2.59 AZL 85.44 HCA 196.83 SMA 185.58 ECC .21086 INC 4.5601 V1 30.243
RP 216.05 LAP -1.32 LOP 274.75 VP 22.658 GAP -7.71 AZP 94.37 TAL 14.96 TAP 211.78 RCA 146.45 APO 224.71 V2 25.423
RC 286.520 GL 40.28 GP -21.11 ZAL 65.27 ZAP 71.37 ETS 171.68 ZAE 100.14 ETE 182.54 ZAC 63.87 ETC 256.44 CLP 69.98

PLANETOCENTRIC CONIC

C3 16.401 VHL 4.050 DLA 53.98 RAL 155.91 RAD 6567.7 VEL 11.738 PTH 2.07 VHP 3.337 DPA -11.82 RAP 158.15 ECC 1.2699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.92	6 2 7	4284.49	-37.12	205.10	32.53	47.52	7 13 32	3684.5	-42.26	197.54
138.08	14 55 59	2695.70	-37.10	77.89	32.52	47.51	15 40 55	2095.7	-42.25	70.34
41.92	6 2 7	4284.49	-37.12	205.10	32.53	47.52	7 13 32	3684.5	-42.26	197.54
138.08	14 55 59	2695.70	-37.10	77.89	32.52	47.51	15 40 55	2095.7	-42.25	70.34
41.92	6 2 7	4284.49	-37.12	205.10	32.53	47.52	7 13 32	3684.5	-42.26	197.54
138.08	14 55 59	2695.70	-37.10	77.89	32.52	47.51	15 40 55	2095.7	-42.25	70.34

DIFFERENTIAL CORRECTIONS
TDE 3.5647 TRA -.4079 TC3-6.4689 BAU 1.5565
RDE 1.3907 RRA .0851 RC3-2.9231 FAU .44936
FDE 9.7211 FRA .4470 FC-23.7189 BSP 26888
+ BDE 3.8264 BRA .4167 BC3 7.0987 FSP 7066

MID-COURSE EXECUTION ACCURACY
SGT 7338.3 SGR 3085.2 SG3 2043.5
RRT .9773 RRF .9972 RTF .9735
SGB 7960.5 R23 .1853 R13 .9798
SG1 7937.5 SG2 603.8 THA 22.47

ORBIT DETERMINATION ACCURACY
ST 5054.3 SR 1969.7 SS 3969.4
CRT .9960 CRS-1.0000 CST -.9966
LSA 6715.9 MSA 279.4 SSA 11.7
EL1 5422.0 EL2 164.3 ALF 21.23

LAUNCH DATE DEC 10 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 666.925 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.968 GAL 2.52 AZL 85.64 HCA 197.99 SMA 185.63 ECC .21086 INC 4.3584 V1 30.243
RP 215.71 LAP -1.34 LOP 275.92 VP 22.706 GAP -7.86 AZP 94.15 TAL 14.58 TAP 212.57 RCA 146.49 APO 224.77 V2 25.461
RC 287.729 GL 39.09 GP -19.76 ZAL 65.33 ZAP 69.76 ETS 171.57 ZAE 98.50 ETE 181.72 ZAC 65.11 ETC 256.63 CLP 68.43

PLANETOCENTRIC CONIC

C3 15.759 VHL 3.970 DLA 52.67 RAL 155.78 RAD 6567.6 VEL 11.711 PTH 2.06 VHP 3.338 DPA -10.43 RAP 158.38 ECC 1.2594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.54	6 6 25	4264.89	-36.80	202.59	31.01	49.23	7 17 30	3664.9	-41.75	194.88
136.46	14 50 43	2697.13	-36.78	77.69	31.00	49.22	15 35 40	2097.1	-41.74	69.99
43.54	6 6 25	4264.89	-36.80	202.59	31.01	49.23	7 17 30	3664.9	-41.75	194.88
136.46	14 50 43	2697.13	-36.78	77.69	31.00	49.22	15 35 40	2097.1	-41.74	69.99
43.54	6 6 25	4264.89	-36.80	202.59	31.01	49.23	7 17 30	3664.9	-41.75	194.88
136.46	14 50 43	2697.13	-36.78	77.69	31.00	49.22	15 35 40	2097.1	-41.74	69.99

DIFFERENTIAL CORRECTIONS
TDE 3.5321 TRA -.4176 TC3-6.9480 BAU 1.5773
RDE 1.2551 RRA .0859 RC3-2.7884 FAU .44529
FDE 9.3030 FRA .4734 FC-24.4621 BSP 27645
BDE 3.7484 BRA .4264 BC3 7.4867 FSP 7135

MID-COURSE EXECUTION ACCURACY
SGT 7576.7 SGR 2867.8 SG3 2042.3
RRT .9777 RRF .9965 RTF .9741
SGB 8101.3 R23 .1843 R13 .9793
SG1 8081.6 SG2 564.7 THA 20.41

ORBIT DETERMINATION ACCURACY
ST 5109.2 SR 1813.7 SS 3877.7
CRT .9957 CRS -.9999 CST -.9965
LSA 6659.7 MSA 281.2 SSA 12.6
EL1 5419.3 EL2 157.6 ALF 19.48

LAUNCH DATE DEC 10 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 671.121 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.971 GAL 2.46 AZL 85.82 HCA 199.15 SMA 185.69 ECC .21088 INC 4.1799 V1 30.243
RP 215.38 LAP -1.37 LOP 277.09 VP 22.753 GAP -8.01 AZP 93.95 TAL 14.19 TAP 213.34 RCA 146.53 APO 224.85 V2 25.498
RC 288.924 GL 38.01 GP -18.53 ZAL 65.47 ZAP 68.18 ETS 171.48 ZAE 96.86 ETE 181.01 ZAC 66.24 ETC 256.80 CLP 66.92

PLANETOCENTRIC CONIC

C3 15.200 VHL 3.899 DLA 51.45 RAL 155.79 RAD 6567.6 VEL 11.687 PTH 2.06 VHP 3.347 DPA -9.18 RAP 158.57 ECC 1.2502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.06	6 11 5	4246.27	-36.45	200.24	29.76	50.78	7 21 51	3646.3	-41.23	192.42
134.94	14 46 8	2699.47	-36.43	77.57	29.75	50.77	15 31 8	2099.5	-41.22	69.75
45.06	6 11 5	4246.27	-36.45	200.24	29.76	50.78	7 21 51	3646.3	-41.23	192.42
134.94	14 46 8	2699.47	-36.43	77.57	29.75	50.77	15 31 8	2099.5	-41.22	69.75
45.06	6 11 5	4246.27	-36.45	200.24	29.76	50.78	7 21 51	3646.3	-41.23	192.42
134.94	14 46 8	2699.47	-36.43	77.57	29.75	50.77	15 31 8	2099.5	-41.22	69.75

DIFFERENTIAL CORRECTIONS
TDE 3.4928 TRA -.4314 TC3-7.4499 BAU 1.6084
RDE 1.1325 RRA .0824 RC3-2.6719 FAU .44229
FDE 8.8271 FRA .4590 FC-25.1901 BSP 28134
BDE 3.6718 BRA .4392 BC3 7.9145 FSP 7045

MID-COURSE EXECUTION ACCURACY
SGT 7818.4 SGR 2673.6 SG3 2035.9
RRT .9782 RRF .9956 RTF .9748
SGB 8262.9 R23 .1815 R13 .9789
SG1 8246.1 SG2 526.4 THA 18.57

ORBIT DETERMINATION ACCURACY
ST 5145.0 SR 1666.5 SS 3756.6
CRT .9955 CRS -.9999 CST -.9964
LSA 6578.9 MSA 278.3 SSA 13.7
EL1 5406.1 EL2 149.5 ALF 17.89

LAUNCH DATE DEC 10 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 675.325 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.975 GAL 2.39 AZL 85.98 HCA 200.32 SMA 185.75 ECC .21091 INC 4.0209 V1 30.243
RP 215.05 LAP -1.40 LOP 278.26 VP 22.800 GAP -8.15 AZP 93.77 TAL 13.78 TAP 214.10 RCA 146.58 APO 224.93 V2 25.535
RC 290.105 GL 37.04 GP -17.43 ZAL 65.68 ZAP 66.65 ETS 171.42 ZAE 95.23 ETE 180.40 ZAC 67.26 ETC 256.94 CLP 65.46

PLANETOCENTRIC CONIC

C3 14.708 VHL 3.835 DLA 50.31 RAL 155.93 RAD 6567.6 VEL 11.666 PTH 2.05 VHP 3.362 DPA -8.05 RAP 158.76 ECC 1.2420

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.50	6 16 7	4228.39	-36.08	198.03	28.74	52.20	7 26 36	3628.4	-40.70	190.10
133.50	14 42 8	2702.61	-36.07	77.54	28.72	52.19	15 27 11	2102.6	-40.69	69.62
46.50	6 16 7	4228.39	-36.08	198.03	28.74	52.20	7 26 36	3628.4	-40.70	190.10
133.50	14 42 8	2702.61	-36.07	77.54	28.72	52.19	15 27 11	2102.6	-40.69	69.62
46.50	6 16 7	4228.39	-36.08	198.03	28.74	52.20	7 26 36	3628.4	-40.70	190.10
133.50	14 42 8	2702.61	-36.07	77.54	28.72	52.19	15 27 11	2102.6	-40.69	69.62

DIFFERENTIAL CORRECTIONS
TDE 3.4622 TRA -.4352 TC3-7.9395 BAU 1.6397
RDE 1.0288 RRA .0829 RC3-2.5504 FAU .43693
FDE 8.3740 FRA .4750 FC-25.7189 BSP 28774
BDE 3.6118 BRA .4430 BC3 8.3391 FSP 6968

MID-COURSE EXECUTION ACCURACY
SGT 8054.6 SGR 2495.3 SG3 2020.5
RRT .9784 RRF .9945 RTF .9753
SGB 8432.2 R23 .1773 R13 .9786
SG1 8417.8 SG2 493.1 THA 16.92

ORBIT DETERMINATION ACCURACY
ST 5184.8 SR 1539.2 SS 3639.4
CRT .9953 CRS -.9999 CST -.9963
LSA 6513.0 MSA 276.5 SSA 14.7
EL1 5406.5 EL2 142.6 ALF 16.47

LAUNCH DATE DEC 10 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 679.536 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.979 GAL 2.32 AZL 86.12 HCA 201.50 SMA 185.82 ECC .21096 INC 3.8779 V1 30.243
RP 214.72 LAP -1.42 LOP 279.43 VP 22.846 GAP -8.30 AZP 93.61 TAL 13.36 TAP 214.86 RCA 146.62 APO 225.02 V2 25.572
RC 291.272 GL 36.16 GP -16.42 ZAL 65.97 ZAP 65.16 ETS 171.38 ZAE 93.61 ETE 179.87 ZAC 68.19 ETC 257.06 CLP 64.03

PLANETOCENTRIC CONIC

C3 14.268 VHL 3.777 DLA 49.24 RAL 156.16 RAD 6567.6 VEL 11.647 PTH 2.04 VHP 3.382 DPA -7.03 RAP 158.94 ECC 1.2348

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.86	6 21 28	4211.14	-35.70	195.92	27.90	53.51	7 31 40	3611.1	-40.17	187.92
132.14	14 38 38	2706.41	-35.69	77.57	27.89	53.49	15 23 44	2106.4	-40.16	69.57
47.86	6 21 28	4211.14	-35.70	195.92	27.90	53.51	7 31 40	3611.1	-40.17	187.92
132.14	14 38 38	2706.41	-35.69	77.57	27.89	53.49	15 23 44	2106.4	-40.16	69.57
47.86	6 21 28	4211.14	-35.70	195.92	27.90	53.51	7 31 40	3611.1	-40.17	187.92
132.14	14 38 38	2706.41	-35.69	77.57	27.89	53.49	15 23 44	2106.4	-40.16	69.57

DIFFERENTIAL CORRECTIONS
TDE 3.4331 TRA -.4341 TC3-8.4321 BAU 1.6740
RDE .9388 RRA .0850 RC3-2.4317 FAU .43049
FDE 7.9299 FRA .5047 FC-26.1207 BSP 29385
BDE 3.5591 BRA .4423 BC3 8.7757 FSP 6859

MID-COURSE EXECUTION ACCURACY
SGT 8289.3 SGR 2332.7 SG3 1999.3
RRT .9784 RRF .9932 RTF .9757
SGB 8611.3 R23 .1718 R13 .9784
SG1 8598.7 SG2 465.2 THA 15.44

ORBIT DETERMINATION ACCURACY
ST 5219.7 SR 1426.4 SS 3520.1
CRT .9950 CRS -.9999 CST - 9961
LSA 6449.4 MSA 275.5 SSA 15.7
EL1 5409.3 EL2 136.8 ALF 15.22

LAUNCH DATE DEC 10 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 683.755 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.983 GAL 2.24 AZL 86.25 HCA 202.67 SMA 185.89 ECC .21102 INC 3.7488 V1 30.243
RP 214.40 LAP -1.44 LOP 280.61 VP 22.893 GAP -8.43 AZP 93.46 TAL 12.93 TAP 215.60 RCA 146.66 APO 225.12 V2 25.608
RC 292.426 GL 35.35 GP -15.50 ZAL 66.32 ZAP 63.71 ETS 171.35 ZAE 92.01 ETE 179.40 ZAC 69.04 ETC 257.17 CLP 62.64

PLANETOCENTRIC CONIC

C3 13.873 VHL 3.725 DLA 48.23 RAL 156.48 RAD 6567.5 VEL 11.630 PTH 2.04 VHP 3.406 DPA -6.11 RAP 159.11 ECC 1.2283

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.17	6 27 7	4194.35	-35.32	193.92	27.24	54.72	7 37 1	3594.3	-39.65	185.85
130.83	14 35 33	2710.82	-35.31	77.66	27.23	54.71	15 20 44	2110.8	-39.64	69.60
49.17	6 27 7	4194.35	-35.32	193.92	27.24	54.72	7 37 1	3594.3	-39.65	185.85
130.83	14 35 33	2710.82	-35.31	77.66	27.23	54.71	15 20 44	2110.8	-39.64	69.60
49.17	6 27 7	4194.35	-35.32	193.92	27.24	54.72	7 37 1	3594.3	-39.65	185.85
130.83	14 35 33	2710.82	-35.31	77.66	27.23	54.71	15 20 44	2110.8	-39.64	69.60

DIFFERENTIAL CORRECTIONS
TDE 3.4070 TRA -.4261 TC3-8.9171 BAU 1.7085
RDE .8612 RRA .0888 RC3-2.3128 FAU .42260
FDE 7.5040 FRA .5511 FC-26.3725 BSP 30043
BDE 3.5141 BRA .4353 BC3 9.2121 FSP 6740

MID-COURSE EXECUTION ACCURACY
SGT 8518.2 SGR 2183.0 SG3 1971.8
RRT .9780 RRF .9916 RTF .9761
SGB 8793.4 R23 .1651 R13 .9782
SG1 8782.3 SG2 441.9 THA 14.11

ORBIT DETERMINATION ACCURACY
ST 5253.1 SR 1327.2 SS 3403.0
CRT .9947 CRS -.9998 CST -.9959
LSA 6392.2 MSA 275.3 SSA 16.8
EL1 5416.5 EL2 131.8 ALF 14.12

LAUNCH DATE DEC 10 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 687.981 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.987 GAL 2.17 AZL 86.37 HCA 203.85 SMA 185.96 ECC .21109 INC 3.6313 V1 30.243
RP 214.08 LAP -1.47 LOP 281.79 VP 22.939 GAP -8.57 AZP 93.32 TAL 12.48 TAP 216.33 RCA 146.71 APO 225.22 V2 25.644
RC 293.566 GL 34.61 GP -14.66 ZAL 66.74 ZAP 62.30 ETS 171.34 ZAE 90.44 ETE 179.00 ZAC 69.83 ETC 257.26 CLP 61.28

PLANETOCENTRIC CONIC

C3 13.514 VHL 3.676 DLA 47.27 RAL 156.88 RAD 6567.5 VEL 11.615 PTH 2.04 VHP 3.433 DPA -5.27 RAP 159.29 ECC 1.2224

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.42	6 33 2	4177.90	-34.92	191.99	26.73	55.85	7 42 40	3577.9	-39.12	183.87
129.58	14 32 49	2715.81	-34.91	77.82	26.72	55.84	15 18 5	2115.8	-39.11	69.70
50.42	6 33 2	4177.90	-34.92	191.99	26.73	55.85	7 42 40	3577.9	-39.12	183.87
129.58	14 32 49	2715.81	-34.91	77.82	26.72	55.84	15 18 5	2115.8	-39.11	69.70
50.42	6 33 2	4177.90	-34.92	191.99	26.73	55.85	7 42 40	3577.9	-39.12	183.87
129.58	14 32 49	2715.81	-34.91	77.82	26.72	55.84	15 18 5	2115.8	-39.11	69.70

DIFFERENTIAL CORRECTIONS
TDE 3.3817 TRA -.4128 TC3-9.4028 BAU 1.7446
RDE .7933 RRA .0933 RC3-2.1977 FAU .41399
FDE 7.0922 FRA .6061 FC-26.5213 BSP 30707
BDE 3.4736 BRA .4232 BC3 9.6562 FSP 6616

MID-COURSE EXECUTION ACCURACY
SGT 8744.8 SGR 2045.9 SG3 1940.3
RRT .9773 RRF .9897 RTF .9764
SGB 8980.9 R23 .1572 R13 .9781
SG1 8971.0 SG2 422.8 THA 12.91

ORBIT DETERMINATION ACCURACY
ST 5282.5 SR 1239.1 SS 3286.1
CRT .9944 CRS -.9998 CST -.9957
LSA 6337.4 MSA 275.4 SSA 17.8
EL1 5424.4 EL2 127.4 ALF 13.14

LAUNCH DATE DEC 10 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 692.215 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.991 GAL 2.09 AZL 86.48 HCA 205.04 SMA 186.04 ECC .21118 INC 3.5241 V1 30.243
RP 213.77 LAP -1.49 LOP 282.97 VP 22.984 GAP -8.70 AZP 93.19 TAL 12.02 TAP 217.05 RCA 146.75 APO 225.33 V2 25.679
RC 294.693 GL 33.92 GP -13.89 ZAL 67.21 ZAP 60.93 ETS 171.34 ZAE 88.88 ETE 178.65 ZAC 70.56 ETC 257.33 CLP 59.97

PLANETOCENTRIC CONIC

C3 13.186 VHL 3.631 DLA 46.35 RAL 157.35 RAD 6567.5 VEL 11.601 PTH 2.03 VHP 3.465 DPA -4.51 RAP 159.48 ECC 1.2170

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.63	6 39 14	4161.69	-34.53	190.12	26.35	56.91	7 48 36	3561.7	-38.60	181.96
128.37	14 30 23	2721.36	-34.52	78.02	26.34	56.90	15 15 44	2121.4	-38.59	69.86
51.63	6 39 14	4161.69	-34.53	190.12	26.35	56.91	7 48 36	3561.7	-38.60	181.96
128.37	14 30 23	2721.36	-34.52	78.02	26.34	56.90	15 15 44	2121.4	-38.59	69.86
51.63	6 39 14	4161.69	-34.53	190.12	26.35	56.91	7 48 36	3561.7	-38.60	181.96
128.37	14 30 23	2721.36	-34.52	78.02	26.34	56.90	15 15 44	2121.4	-38.59	69.86

DIFFERENTIAL CORRECTIONS
TDE 3.3584 TRA -.3920 TC3-9.8809 BAU 1.7802
RDE .7339 RRA .0987 RC3-2.0850 FAU .40453
FDE 6.6961 FRA .6729 FC-26.5602 BSP 31423
BDE 3.4377 BRA .4042 BC310.0984 FSP 6486

MID-COURSE EXECUTION ACCURACY
SGT 8965.4 SGR 1919.6 SG3 1904.9
RRT .9762 RRF .9875 RTF .9766
SGB 9168.6 R23 .1483 R13 .9780
SG1 9159.5 SG2 407.5 THA 11.83

ORBIT DETERMINATION ACCURACY
ST 5310.3 SR 1160.9 SS 3170.5
CRT .9941 CRS -.9998 CST -.9955
LSA 6286.7 MSA 275.9 SSA 18.8
EL1 5434.3 EL2 123.4 ALF 12.27

LAUNCH DATE DEC 10 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 696.456 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 32.996 GAL 2.01 AZL 86.57 HCA 206.22 SMA 186.12 ECC .21129 INC 3.4256 V1 30.243
RP 213.46 LAP -1.51 LOP 284.16 VP 23.030 GAP -8.83 AZP 93.07 TAL 11.54 TAP 217.77 RCA 146.79 APO 225.44 V2 25.714
RC 295.805 GL 33.29 GP -13.18 ZAL 67.73 ZAP 59.60 ETS 171.35 ZAE 87.35 ETE 178.35 ZAC 71.23 ETC 257.40 CLP 58.69

PLANETOCENTRIC CONIC

C3 12.884 VHL 3.589 DLA 45.47 RAL 157.89 RAD 6567.5 VEL 11.588 PTH 2.03 VHP 3.499 DPA -3.83 RAP 159.68 ECC 1.2120

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.81	6 45 41	4145.65	-34.12	188.31	26.08	57.91	7 54 47	3545.6	-38.08	180.11
127.19	14 28 12	2727.43	-34.11	78.28	26.08	57.90	15 13 40	2127.4	-38.07	70.09
52.81	6 45 41	4145.65	-34.12	188.31	26.08	57.91	7 54 47	3545.6	-38.08	180.11
127.19	14 28 12	2727.43	-34.11	78.28	26.08	57.90	15 13 40	2127.4	-38.07	70.09
52.81	6 45 41	4145.65	-34.12	188.31	26.08	57.91	7 54 47	3545.6	-38.08	180.11
127.19	14 28 12	2727.43	-34.11	78.28	26.08	57.90	15 13 40	2127.4	-38.07	70.09

DIFFERENTIAL CORRECTIONS
TDE 3.3337 TRA -.3670 TC-10.3605 BAU 1.8168
RDE .6812 RRA .1042 RC3-1.9775 FAU .39485
FDE 6.3117 FRA .7428 FC-26.5308 BSP 32087
BDE 3.4026 BRA .3815 BC310.5476 FSP 6334

MID-COURSE EXECUTION ACCURACY
SGT 9183.4 SGR 1803.9 SG3 1867.4
RRT .9747 RRF .9848 RTF .9767
SGB 9358.9 R23 .1387 R13 .9779
SG1 9350.6 SG2 395.8 THA 10.86

ORBIT DETERMINATION ACCURACY
ST 5331.9 SR 1090.6 SS 3054.2
CRT .9937 CRS -.9997 CST -.9952
LSA 6234.6 MSA 276.5 SSA 19.8
EL1 5441.0 EL2 119.8 ALF 11.49

LAUNCH DATE DEC 10 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 700.704 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.001 GAL 1.92 AZL 86.67 HCA 207.42 SMA 186.20 ECC .21140 INC 3.3349 V1 30.243
RP 213.16 LAP -1.53 LOP 285.35 VP 23.075 GAP -8.96 AZP 92.96 TAL 11.05 TAP 218.47 RCA 146.84 APO 225.57 V2 25.748
RC 296.904 GL 32.71 GP -12.53 ZAL 68.31 ZAP 58.31 ETS 171.36 ZAE 85.85 ETE 178.08 ZAC 71.86 ETC 257.45 CLP 57.45

PLANETOCENTRIC CONIC

C3 12.606 VHL 3.550 DLA 44.61 RAL 158.48 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 3.535 DPA -3.21 RAP 159.89 ECC 1.2075

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.97	6 52 27	4129.58	-33.71	186.52	25.93	58.86	8 1 16	3529.6	-37.56	178.30
126.03	14 26 13	2734.13	-33.70	78.59	25.92	58.84	15 11 47	2134.1	-37.55	70.37
53.97	6 52 27	4129.58	-33.71	186.52	25.93	58.86	8 1 16	3529.6	-37.56	178.30
126.03	14 26 13	2734.13	-33.70	78.59	25.92	58.84	15 11 47	2134.1	-37.55	70.37
53.97	6 52 27	4129.58	-33.71	186.52	25.93	58.86	8 1 16	3529.6	-37.56	178.30
126.03	14 26 13	2734.13	-33.70	78.59	25.92	58.84	15 11 47	2134.1	-37.55	70.37

DIFFERENTIAL CORRECTIONS
TDE 3.3089 TRA -.3357 TC-10.8376 BAU 1.8536
RDE .6347 RRA .1100 RC3-1.8738 FAU .38480
FDE 5.9435 FRA .8185 FC-26.4265 BSP 32779
BDE 3.3692 BRA .3533 BC310.9984 FSP 6186

MID-COURSE EXECUTION ACCURACY
SGT 9397.6 SGR 1697.6 SG3 1827.9
RRT .9728 RRF .9817 RTF .9769
SGB 9549.7 R23 .1285 R13 .9778
SG1 9541.9 SG2 387.2 THA 9.98

ORBIT DETERMINATION ACCURACY
ST 5349.5 SR 1027.8 SS 2939.7
CRT .9933 CRS -.9997 CST -.9948
LSA 6183.7 MSA 277.4 SSA 20.7
EL1 5446.1 EL2 116.4 ALF 10.81

LAUNCH DATE DEC 10 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 704.960 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.006 GAL 1.84 AZL 86.75 HCA 208.61 SMA 186.29 ECC .21154 INC 3.2510 V1 30.243
RP 212.87 LAP -1.56 LOP 286.55 VP 23.120 GAP -9.08 AZP 92.85 TAL 10.55 TAP 219.16 RCA 146.88 APO 225.69 V2 25.782
RC 297.989 GL 32.17 GP -11.93 ZAL 68.93 ZAP 57.06 ETS 171.38 ZAE 84.38 ETE 177.85 ZAC 72.45 ETC 257.49 CLP 56.24

PLANETOCENTRIC CONIC

C3 12.348 VHL 3.514 DLA 43.77 RAL 159.13 RAD 6567.5 VEL 11.564 PTH 2.02 VHP 3.574 DPA -2.65 RAP 160.11 ECC 1.2032

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.11	6 59 29	4113.43	-33.30	184.76	25.87	59.76	8 8 3	3513.4	-37.03	176.52
124.89	14 24 22	2741.45	-33.29	78.96	25.86	59.75	15 10 4	2141.5	-37.02	70.72
55.11	6 59 29	4113.43	-33.30	184.76	25.87	59.76	8 8 3	3513.4	-37.03	176.52
124.89	14 24 22	2741.45	-33.29	78.96	25.86	59.75	15 10 4	2141.5	-37.02	70.72
55.11	6 59 29	4113.43	-33.30	184.76	25.87	59.76	8 8 3	3513.4	-37.03	176.52
124.89	14 24 22	2741.45	-33.29	78.96	25.86	59.75	15 10 4	2141.5	-37.02	70.72

DIFFERENTIAL CORRECTIONS
TDE 3.2843 TRA -.2980 TC-11.3072 BAU 1.8894
RDE .5937 RRA .1162 RC3-1.7726 FAU .37423
FDE 5.5931 FRA .9022 FC-26.2388 BSP 33479
BDE 3.3375 BRA .3198 BC311.4453 FSP 6032

MID-COURSE EXECUTION ACCURACY
SGT 9606.2 SGR 1599.3 SG3 1786.1
RRT .9703 RRF .9780 RTF .9769
SGB 9738.4 R23 .1182 R13 .9777
SG1 9730.9 SG2 382.0 THA 9.19

ORBIT DETERMINATION ACCURACY
ST 5364.3 SR 972.0 SS 2828.0
CRT .9929 CRS -.9997 CST -.9944
LSA 6135.1 MSA 279.0 SSA 21.7
EL1 5450.5 EL2 113.4 ALF 10.20

LAUNCH DATE DEC 10 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 709.222 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.011	GAL	1.75	AZL	86.83	HCA	209.81	SMA	186.37	ECC	.21169	INC	3.1729	V1	30.243
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.164	GAP	-9.20	AZP	92.75	TAL	10.03	TAP	219.84	RCA	146.92	APO	225.83	V2	25.815
RC	299.061	GL	31.66	GP	-11.37	ZAL	69.61	ZAP	55.84	ETS	171.41	ZAE	82.93	ETE	177.64	ZAC	73.00	ETC	257.52	CLP	55.06

PLANETOCENTRIC CONIC

C3	12.107	VHL	3.480	DLA	42.96	RAL	159.84	RAD	6567.5	VEL	11.554	PTH	2.02	VHP	3.616	DPA	-2.14	RAP	160.35	ECC	1.1993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.23	7 6 49	4097.15	-32.88	183.02	25.89	60.63	8 15 7	3497.2	-36.51	174.76
123.77	14 22 39	2749.41	-32.87	79.39	25.88	60.61	15 8 29	2149.4	-36.50	71.13
56.23	7 6 49	4097.15	-32.88	183.02	25.89	60.63	8 15 7	3497.2	-36.51	174.76
123.77	14 22 39	2749.41	-32.87	79.39	25.88	60.61	15 8 29	2149.4	-36.50	71.13
56.23	7 6 49	4097.15	-32.88	183.02	25.89	60.63	8 15 7	3497.2	-36.51	174.76
123.77	14 22 39	2749.41	-32.87	79.39	25.88	60.61	15 8 29	2149.4	-36.50	71.13

DIFFERENTIAL CORRECTIONS

TDE	3.2567	TRA	-.2561	TC-11.7758	BAU	1.9252	SGT	9810.5	SGR	1508.3	SG3 1742.8
RDE	.5567	RRA	.1219	RC3-1.6753	FAU	.36352	RRT	.9672	RRF	.9737	RTF .9770
FDE	5.2519	FRA	.9823	FC-25.9935	BSP	34148	SGB	9925.8	R23	.1075	R13 .9776
BDE	3.3040	BRA	.2836	BC311.8943	FSP	5871	SG1	9918.5	SG2	378.7	THA 8.47

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	5371.1	SR	921.1	SS	2714.9
CRT	.9926	CRS	-.9996	CST	-.9940
LSA	6081.8	MSA	280.2	SSA	22.6
EL1	5448.4	EL2	110.4	ALF	9.66

LAUNCH DATE DEC 10 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 713.491 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.016	GAL	1.66	AZL	86.90	HCA	211.01	SMA	186.47	ECC	.21186	INC	3.1003	V1	30.243
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.207	GAP	-9.32	AZP	92.66	TAL	9.50	TAP	220.51	RCA	146.96	APO	225.97	V2	25.847
RC	300.120	GL	31.18	GP	-10.85	ZAL	70.33	ZAP	54.66	ETS	171.44	ZAE	81.51	ETE	177.47	ZAC	73.52	ETC	257.55	CLP	53.92

PLANETOCENTRIC CONIC

C3	11.883	VHL	3.447	DLA	42.16	RAL	160.59	RAD	6567.5	VEL	11.544	PTH	2.01	VHP	3.659	DPA	-1.69	RAP	160.61	ECC	1.1956

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.36	7 14 29	4080.61	-32.45	181.28	26.00	61.46	8 22 29	3480.6	-35.98	173.01
122.64	14 21 1	2758.08	-32.44	79.87	25.99	61.44	15 6 59	2158.1	-35.97	71.60
57.36	7 14 29	4080.61	-32.45	181.28	26.00	61.46	8 22 29	3480.6	-35.98	173.01
122.64	14 21 1	2758.08	-32.44	79.87	25.99	61.44	15 6 59	2158.1	-35.97	71.60
57.36	7 14 29	4080.61	-32.45	181.28	26.00	61.46	8 22 29	3480.6	-35.98	173.01
122.64	14 21 1	2758.08	-32.44	79.87	25.99	61.44	15 6 59	2158.1	-35.97	71.60

DIFFERENTIAL CORRECTIONS

TDE	3.2289	TRA	-.2084	TC-12.2402	BAU	1.9607	SGT	10011.7	SGR	1424.8	SG3 1699.1
RDE	.5241	RRA	.1276	RC3-1.5818	FAU	.35274	RRT	.9635	RRF	.9687	RTF .9771
FDE	4.9295	FRA	1.0636	FC-25.6989	BSP	34834	SGB	10112.6	R23	.0968	R13 .9776
BDE	3.2712	BRA	.2444	BC312.3420	FSP	5713	SG1	10105.5	SG2	377.7	THA 7.82

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	5374.6	SR	875.9	SS	2605.5
CRT	.9922	CRS	-.9996	CST	-.9935
LSA	6030.2	MSA	281.5	SSA	23.5
EL1	5444.5	EL2	107.5	ALF	9.19

LAUNCH DATE DEC 10 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 717.766 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.021	GAL	1.56	AZL	86.97	HCA	212.21	SMA	186.56	ECC	.21204	INC	3.0323	V1	30.243
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.251	GAP	-9.43	AZP	92.57	TAL	8.96	TAP	221.17	RCA	147.00	APO	226.12	V2	25.879
RC	301.167	GL	30.74	GP	-10.37	ZAL	71.10	ZAP	53.52	ETS	171.47	ZAE	80.12	ETE	177.31	ZAC	74.01	ETC	257.57	CLP	52.81

PLANETOCENTRIC CONIC

C3	11.674	VHL	3.417	DLA	41.37	RAL	161.39	RAD	6567.4	VEL	11.535	PTH	2.01	VHP	3.704	DPA	-1.28	RAP	160.89	ECC	1.1921

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.48	7 22 28	4063.69	-32.01	179.53	26.18	62.26	8 30 12	3463.7	-35.44	171.25
121.52	14 19 24	2767.54	-32.00	80.42	26.17	62.25	15 5 32	2167.5	-35.43	72.14
58.48	7 22 28	4063.69	-32.01	179.53	26.18	62.26	8 30 12	3463.7	-35.44	171.25
121.52	14 19 24	2767.54	-32.00	80.42	26.17	62.25	15 5 32	2167.5	-35.43	72.14
58.48	7 22 28	4063.69	-32.01	179.53	26.18	62.26	8 30 12	3463.7	-35.44	171.25
121.52	14 19 24	2767.54	-32.00	80.42	26.17	62.25	15 5 32	2167.5	-35.43	72.14

DIFFERENTIAL CORRECTIONS

TDE	3.1970	TRA	-.1555	TC-12.7027	BAU	1.9961	SGT	10208.3	SGR	1347.4	SG3 1654.7
RDE	.4944	RRA	.1333	RC3-1.4920	FAU	.34196	RRT	.9590	RRF	.9629	RTF .9771
FDE	4.6151	FRA	1.1475	FC-25.3601	BSP	35471	SGB	10296.8	R23	.0868	R13 .9775
BDE	3.2350	BRA	.2048	BC312.7900	FSP	5548	SG1	10289.9	SG2	378.8	THA 7.22

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	5368.5	SR	834.5	SS	2494.6
CRT	.9919	CRS	-.9995	CST	-.9928
LSA	5971.6	MSA	283.4	SSA	24.4
EL1	5432.0	EL2	104.7	ALF	8.77

LAUNCH DATE DEC 10 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 722.048 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.027	GAL	1.47	AZL	87.03	HCA	213.42	SMA	186.65	ECC	.21224	INC	2.9685	V1	30.243
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.293	GAP	-9.54	AZP	92.48	TAL	8.40	TAP	221.82	RCA	147.04	APO	226.27	V2	25.911
RC	302.203	GL	30.31	GP	-9.92	ZAL	71.91	ZAP	52.41	ETS	171.51	ZAE	78.76	ETE	177.17	ZAC	74.48	ETC	257.58	CLP	51.73

PLANETOCENTRIC CONIC

C3	11.478	VHL	3.388	DLA	40.59	RAL	162.24	RAD	6567.4	VEL	11.527	PTH	2.01	VHP	3.751	DPA	-.92	RAP	161.18	ECC	1.1889

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.62	7 30 49	4046.31	-31.56	177.76	26.43	63.04	8 38 15	3446.3	-34.90	169.48
120.38	14 17 47	2777.86	-31.55	81.03	26.43	63.02	15 4 5	2177.9	-34.89	72.75
59.62	7 30 49	4046.31	-31.56	177.76	26.43	63.04	8 38 15	3446.3	-34.90	169.48
120.38	14 17 47	2777.86	-31.55	81.03	26.43	63.02	15 4 5	2177.9	-34.89	72.75
59.62	7 30 49	4046.31	-31.56	177.76	26.43	63.04	8 38 15	3446.3	-34.90	169.48
120.38	14 17 47	2777.86	-31.55	81.03	26.43	63.02	15 4 5	2177.9	-34.89	72.75

DIFFERENTIAL CORRECTIONS

TDE	3.1640	TRA	-.0965	TC-13.1599	BAU	2.0309	SGT	10401.4	SGR	1276.2	SG3 1610.1
RDE	.4677	RRA	.1389	RC3-1.4057	FAU	.33122	RRT	.9537	RRF	.9563	RTF .9770
FDE	4.3134	FRA	1.2317	FC-24.9829	BSP	36143	SGB	10479.4	R23	.0772	R13 .9774
BDE	3.1984	BRA	.1692	BC313.2348	FSP	5392	SG1	10472.5	SG2	381.3	THA 6.68

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	5358.0	SR	797.0	SS	2384.9
CRT	.9916	CRS	-.9994	CST	-.9921
LSA	5911.8	MSA	285.5	SSA	25.3
EL1	5416.0	EL2	101.8	ALF	8.39

LAUNCH DATE DEC 10 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 726.336 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.032 GAL 1.37 AZL 87.09 HCA 214.63 SMA 186.75 ECC .21246 INC 2.9086 V1 30.243
RP 211.47 LAP -1.65 LOP 292.57 VP 23.335 GAP -9.65 AZP 92.39 TAL 7.83 TAP 222.46 RCA 147.07 APO 226.43 V2 25.941
RC 303.228 GL 29.91 GP -9.50 ZAL 72.77 ZAP 51.33 ETS 171.54 ZAE 77.43 ETE 177.05 ZAC 74.92 ETC 257.58 CLP 50.69

PLANETOCENTRIC CONIC

C3 11.295 VHL 3.361 DLA 39.81 RAL 163.12 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 3.800 DPA -.60 RAP 161.49 ECC 1.1859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.77	7 39 35	4028.25	-31.10	175.96	26.75	63.79	8 46 43	3428.3	-34.35	167.68
119.23	14 16 5	2789.25	-31.09	81.73	26.75	63.78	15 2 34	2189.3	-34.34	73.45
60.77	7 39 35	4028.25	-31.10	175.96	26.75	63.79	8 46 43	3428.3	-34.35	167.68
119.23	14 16 5	2789.25	-31.09	81.73	26.75	63.78	15 2 34	2189.3	-34.34	73.45
60.77	7 39 35	4028.25	-31.10	175.96	26.75	63.79	8 46 43	3428.3	-34.35	167.68
119.23	14 16 5	2789.25	-31.09	81.73	26.75	63.78	15 2 34	2189.3	-34.34	73.45

DIFFERENTIAL CORRECTIONS
TDE 3.1295 TRA -.0321 TC-13.6092 BAU 2.0647
RDE .4441 RRA .1442 RC3-1.3220 FAU .32042
FDE 4.0295 FRA 1.3121 FC-24.5602 BSP 36800
BDE 3.1608 BRA .1477 BC313.6732 FSP 5231

MID-COURSE EXECUTION ACCURACY
SGT10589.9 SGR 1210.4 SG3 1565.2
RRT .9475 RRF .9486 RTF .9771
SGB10658.9 R23 .0677 R13 .9774
SG110651.9 SG2 384.9 THA 6.19

ORBIT DETERMINATION ACCURACY
ST 5342.4 SR 763.6 SS 2279.1
CRT .9914 CRS -.9993 CST -.9913
LSA 5851.1 MSA 287.2 SSA 26.2
EL1 5395.8 EL2 98.8 ALF 8.07

LAUNCH DATE DEC 10 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 730.627 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.038 GAL 1.27 AZL 87.15 HCA 215.84 SMA 186.85 ECC .21270 INC 2.8521 V1 30.243
RP 211.20 LAP -1.67 LOP 293.79 VP 23.377 GAP -9.76 AZP 92.31 TAL 7.25 TAP 223.09 RCA 147.11 APO 226.59 V2 25.971
RC 304.242 GL 29.52 GP -9.11 ZAL 73.68 ZAP 50.28 ETS 171.58 ZAE 76.12 ETE 176.95 ZAC 75.34 ETC 257.58 CLP 49.67

PLANETOCENTRIC CONIC

C3 11.124 VHL 3.335 DLA 39.03 RAL 164.05 RAD 6567.4 VEL 11.511 PTH 2.01 VHP 3.849 DPA -.32 RAP 161.82 ECC 1.1831

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.94	7 48 47	4009.45	-30.63	174.11	27.14	64.53	8 55 37	3409.5	-33.78	165.83
118.06	14 14 17	2801.75	-30.62	82.51	27.13	64.52	15 0 59	2201.7	-33.77	74.24
61.94	7 48 47	4009.45	-30.63	174.11	27.14	64.53	8 55 37	3409.5	-33.78	165.83
118.06	14 14 17	2801.75	-30.62	82.51	27.13	64.52	15 0 59	2201.7	-33.77	74.24
61.94	7 48 47	4009.45	-30.63	174.11	27.14	64.53	8 55 37	3409.5	-33.78	165.83
118.06	14 14 17	2801.75	-30.62	82.51	27.13	64.52	15 0 59	2201.7	-33.77	74.24

DIFFERENTIAL CORRECTIONS
TDE 3.1083 TRA .0551 TC-13.9952 BAU 2.0893
RDE .4249 RRA .1520 RC3-1.2317 FAU .30767
FDE 3.7921 FRA 1.4363 FC-23.9454 BSP 37855
BDE 3.1372 BRA .1617 BC314.0493 FSP 5155

MID-COURSE EXECUTION ACCURACY
SGT10755.4 SGR 1149.3 SG3 1515.5
RRT .9391 RRF .9399 RTF .9769
SGB10816.6 R23 .0618 R13 .9771
SG110809.4 SG2 392.8 THA 5.74

ORBIT DETERMINATION ACCURACY
ST 5347.3 SR 737.3 SS 2195.5
CRT .9913 CRS -.9992 CST -.9903
LSA 5819.8 MSA 293.5 SSA 26.6
EL1 5397.0 EL2 95.9 ALF 7.79

LAUNCH DATE DEC 10 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 734.927 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.044 GAL 1.17 AZL 87.20 HCA 217.06 SMA 186.95 ECC .21296 INC 2.7986 V1 30.243
RP 210.95 LAP -1.69 LOP 295.01 VP 23.418 GAP -9.87 AZP 92.23 TAL 6.65 TAP 223.71 RCA 147.14 APO 226.77 V2 26.001
RC 305.247 GL 29.15 GP -8.75 ZAL 74.63 ZAP 49.26 ETS 171.62 ZAE 74.84 ETE 176.86 ZAC 75.74 ETC 257.57 CLP 48.68

PLANETOCENTRIC CONIC

C3 10.965 VHL 3.311 DLA 38.25 RAL 165.01 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 3.901 DPA -.07 RAP 162.17 ECC 1.1804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.14	7 58 27	3989.74	-30.15	172.21	27.58	65.25	9 4 57	3389.7	-33.21	163.94
116.86	14 12 18	2815.54	-30.13	83.39	27.57	65.24	14 59 14	2215.5	-33.20	75.12
63.14	7 58 27	3989.74	-30.15	172.21	27.58	65.25	9 4 57	3389.7	-33.21	163.94
116.86	14 12 18	2815.54	-30.13	83.39	27.57	65.24	14 59 14	2215.5	-33.20	75.12
63.14	7 58 27	3989.74	-30.15	172.21	27.58	65.25	9 4 57	3389.7	-33.21	163.94
116.86	14 12 18	2815.54	-30.13	83.39	27.57	65.24	14 59 14	2215.5	-33.20	75.12

DIFFERENTIAL CORRECTIONS
TDE 3.0591 TRA .1220 TC-14.4621 BAU 2.1267
RDE .4042 RRA .1556 RC3-1.1594 FAU .29824
FDE 3.5098 FRA 1.4929 FC-23.5482 BSP 38284
BDE 3.0857 BRA .1977 BC314.5085 FSP 4954

MID-COURSE EXECUTION ACCURACY
SGT10946.3 SGR 1093.7 SG3 1473.6
RRT .9312 RRF .9300 RTF .9769
SGB11000.8 R23 .0525 R13 .9771
SG110993.6 SG2 397.0 THA 5.32

ORBIT DETERMINATION ACCURACY
ST 5301.6 SR 707.3 SS 2079.7
CRT .9912 CRS -.9989 CST -.9892
LSA 5731.1 MSA 293.9 SSA 27.6
EL1 5347.8 EL2 92.6 ALF 7.54

LAUNCH DATE DEC 10 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 739.233 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.050 GAL 1.06 AZL 87.25 HCA 218.28 SMA 187.06 ECC .21324 INC 2.7480 V1 30.243
RP 210.70 LAP -1.70 LOP 296.23 VP 23.458 GAP -9.97 AZP 92.16 TAL 6.04 TAP 224.32 RCA 147.17 APO 226.95 V2 26.029
RC 306.243 GL 28.80 GP -8.40 ZAL 75.62 ZAP 48.27 ETS 171.65 ZAE 73.59 ETE 176.78 ZAC 76.13 ETC 257.56 CLP 47.71

PLANETOCENTRIC CONIC

C3 10.817 VHL 3.289 DLA 37.46 RAL 166.01 RAD 6567.4 VEL 11.498 PTH 2.00 VHP 3.954 DPA .15 RAP 162.54 ECC 1.1780

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.37	8 8 39	3968.93	-29.64	170.24	28.07	65.96	9 14 48	3368.9	-32.62	161.98
115.63	14 10 6	2830.80	-29.63	84.38	28.07	65.95	14 57 17	2230.8	-32.61	76.12
64.37	8 8 39	3968.93	-29.64	170.24	28.07	65.96	9 14 48	3368.9	-32.62	161.98
115.63	14 10 6	2830.80	-29.63	84.38	28.07	65.95	14 57 17	2230.8	-32.61	76.12
64.37	8 8 39	3968.93	-29.64	170.24	28.07	65.96	9 14 48	3368.9	-32.62	161.98
115.63	14 10 6	2830.80	-29.63	84.38	28.07	65.95	14 57 17	2230.8	-32.61	76.12

DIFFERENTIAL CORRECTIONS
TDE 3.0112 TRA .1996 TC-14.9096 BAU 2.1618
RDE .3862 RRA .1599 RC3-1.0877 FAU .28852
FDE 3.2507 FRA 1.5626 FC-23.0926 BSP 38823
BDE 3.0358 BRA .2557 BC314.9492 FSP 4789

MID-COURSE EXECUTION ACCURACY
SGT11130.6 SGR 1042.9 SG3 1431.6
RRT .9218 RRF .9190 RTF .9769
SGB11179.4 R23 .0448 R13 .9771
SG111172.1 SG2 402.9 THA 4.94

ORBIT DETERMINATION ACCURACY
ST 5255.7 SR 681.3 SS 1972.3
CRT .9913 CRS -.9986 CST -.9879
LSA 5646.9 MSA 296.2 SSA 28.5
EL1 5298.9 EL2 89.1 ALF 7.32

LAUNCH DATE DEC 10 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 743.544 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.056 GAL .95 AZL 87.30 HCA 219.50 SMA 187.17 ECC .21354 INC 2.7000 V1 30.243
RP 210.46 LAP -1.72 LOP 297.45 VP 23.498 GAP -10.07 AZP 92.08 TAL 5.41 TAP 224.92 RCA 147.20 APO 227.13 V2 26.057
RC 307.229 GL 28.45 GP -8.08 ZAL 76.65 ZAP 47.31 ETS 171.69 ZAE 72.36 ETE 176.71 ZAC 76.50 ETC 257.54 CLP 46.78

PLANETOCENTRIC CONIC

C3 10.680 VHL 3.268 DLA 36.67 RAL 167.05 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 4.008 DPA .33 RAP 162.93 ECC 1.1758

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.66	8 19 29	3946.64	-29.13	168.17	28.63	66.66	9 25 15	3346.6	-32.02	159.92
114.34	14 7 32	2847.90	-29.11	85.51	28.62	66.64	14 54 59	2247.9	-32.01	77.26
65.66	8 19 29	3946.64	-29.13	168.17	28.63	66.66	9 25 15	3346.6	-32.02	159.92
114.34	14 7 32	2847.90	-29.11	85.51	28.62	66.64	14 54 59	2247.9	-32.01	77.26
65.66	8 19 29	3946.64	-29.13	168.17	28.63	66.66	9 25 15	3346.6	-32.02	159.92
114.34	14 7 32	2847.90	-29.11	85.51	28.62	66.64	14 54 59	2247.9	-32.01	77.26

DIFFERENTIAL CORRECTIONS
TDE 2.9605 TRA .2827 TC-15.3417 BAU 2.1953
RDE .3698 RRA .1638 RC3-1.0168 FAU .27860
FDE 3.0016 FRA 1.6273 FC-22.5842 BSP 39351
BDE 2.9835 BRA .3267 BC315.3753 FSP 4617

MID-COURSE EXECUTION ACCURACY
SGT11308.0 SGR 995.1 SG3 1388.4
RRT .9109 RRF .9065 RTF .9769
SGB11351.7 R23 .0373 R13 .9771
SG111344.3 SG2 409.2 THA 4.59

ORBIT DETERMINATION ACCURACY
ST 5202.5 SR 657.5 SS 1865.7
CRT .9914 CRS -.9980 CST -.9863
LSA 5557.8 MSA 298.1 SSA 29.4
EL1 5243.2 EL2 85.4 ALF 7.14

LAUNCH DATE DEC 10 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 747.860 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.062 GAL .84 AZL 87.35 HCA 220.73 SMA 187.27 ECC .21386 INC 2.6542 V1 30.243
RP 210.22 LAP -1.73 LOP 298.68 VP 23.537 GAP -10.17 AZP 92.01 TAL 4.78 TAP 225.50 RCA 147.22 APO 227.32 V2 26.085
RC 308.206 GL 28.11 GP -7.78 ZAL 77.73 ZAP 46.38 ETS 171.72 ZAE 71.15 ETE 176.65 ZAC 76.86 ETC 257.51 CLP 45.87

PLANETOCENTRIC CONIC

C3 10.554 VHL 3.249 DLA 35.87 RAL 168.12 RAD 6567.4 VEL 11.487 PTH 2.00 VHP 4.063 DPA .48 RAP 163.33 ECC 1.1737

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.99	8 30 58	3922.78	-28.59	166.00	29.23	67.34	9 36 21	3322.8	-31.40	157.76
113.01	14 4 34	2866.93	-28.58	86.78	29.23	67.33	14 52 21	2266.9	-31.39	78.54
66.99	8 30 58	3922.78	-28.59	166.00	29.23	67.34	9 36 21	3322.8	-31.40	157.76
113.01	14 4 34	2866.93	-28.58	86.78	29.23	67.33	14 52 21	2266.9	-31.39	78.54
66.99	8 30 58	3922.78	-28.59	166.00	29.23	67.34	9 36 21	3322.8	-31.40	157.76
113.01	14 4 34	2866.93	-28.58	86.78	29.23	67.33	14 52 21	2266.9	-31.39	78.54

DIFFERENTIAL CORRECTIONS
TDE 2.9076 TRA .3740 TC-15.7573 BAU 2.2273
RDE .3551 RRA .1681 RC3 -.9475 FAU .26870
FDE 2.7654 FRA 1.6977 FC-22.0411 BSP 39920
BDE 2.9292 BRA .4100 BC315.7857 FSP 4463

MID-COURSE EXECUTION ACCURACY
SGT11479.4 SGR 951.3 SG3 1345.5
RRT .8985 RRF .8925 RTF .9769
SGB11518.8 R23 .0311 R13 .9770
SG111511.2 SG2 416.5 THA 4.26

ORBIT DETERMINATION ACCURACY
ST 5142.9 SR 636.1 SS 1762.3
CRT .9916 CRS -.9972 CST -.9843
LSA 5465.2 MSA 301.5 SSA 30.2
EL1 5181.5 EL2 81.5 ALF 6.99

LAUNCH DATE DEC 10 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 752.180 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.069 GAL .73 AZL 87.39 HCA 221.95 SMA 187.39 ECC .21420 INC 2.6106 V1 30.243
RP 209.99 LAP -1.75 LOP 299.90 VP 23.575 GAP -10.27 AZP 91.94 TAL 4.12 TAP 226.08 RCA 147.25 APO 227.52 V2 26.111
RC 309.174 GL 27.78 GP -7.50 ZAL 78.84 ZAP 45.47 ETS 171.76 ZAE 69.97 ETE 176.60 ZAC 77.21 ETC 257.49 CLP 44.98

PLANETOCENTRIC CONIC

C3 10.439 VHL 3.231 DLA 35.06 RAL 169.22 RAD 6567.4 VEL 11.482 PTH 2.00 VHP 4.119 DPA .61 RAP 163.76 ECC 1.1718

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.40	8 43 16	3896.86	-28.03	163.68	29.89	68.02	9 48 13	3296.9	-30.76	155.46
111.60	14 1 3	2888.43	-28.02	88.22	29.89	68.01	14 49 12	2288.4	-30.75	80.01
68.40	8 43 16	3896.86	-28.03	163.68	29.89	68.02	9 48 13	3296.9	-30.76	155.46
111.60	14 1 3	2888.43	-28.02	88.22	29.89	68.01	14 49 12	2288.4	-30.75	80.01
68.40	8 43 16	3896.86	-28.03	163.68	29.89	68.02	9 48 13	3296.9	-30.76	155.46
111.60	14 1 3	2888.43	-28.02	88.22	29.89	68.01	14 49 12	2288.4	-30.75	80.01

DIFFERENTIAL CORRECTIONS
TDE 2.8524 TRA .4707 TC-16.1622 BAU 2.2589
RDE .3422 RRA .1721 RC3 -.8802 FAU .25891
FDE 2.5464 FRA 1.7650 FC-21.4722 BSP 40475
BDE 2.8729 BRA .5012 BC316.1861 FSP 4308

MID-COURSE EXECUTION ACCURACY
SGT11649.1 SGR 911.4 SG3 1303.3
RRT .8844 RRF .8770 RTF .9769
SGB11684.7 R23 .0256 R13 .9769
SG111676.9 SG2 424.4 THA 3.96

ORBIT DETERMINATION ACCURACY
ST 5077.2 SR 617.3 SS 1664.9
CRT .9920 CRS -.9959 CST -.9820
LSA 5370.0 MSA 304.9 SSA 31.0
EL1 5114.0 EL2 77.3 ALF 6.88

LAUNCH DATE DEC 10 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 756.505 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.075 GAL .61 AZL 87.43 HCA 223.19 SMA 187.50 ECC .21457 INC 2.5689 V1 30.243
RP 209.77 LAP -1.76 LOP 301.14 VP 23.612 GAP -10.37 AZP 91.87 TAL 3.46 TAP 226.64 RCA 147.27 APO 227.73 V2 26.137
RC 310.132 GL 27.46 GP -7.23 ZAL 80.00 ZAP 44.59 ETS 171.79 ZAE 68.81 ETE 176.55 ZAC 77.54 ETC 257.46 CLP 44.12

PLANETOCENTRIC CONIC

C3 10.335 VHL 3.215 DLA 34.24 RAL 170.35 RAD 6567.4 VEL 11.477 PTH 2.00 VHP 4.177 DPA .71 RAP 164.20 ECC 1.1701

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.89	8 56 30	3868.40	-27.46	161.19	30.60	68.69	10 0 59	3268.4	-30.10	152.99
110.11	13 56 51	2912.85	-27.45	89.88	30.59	68.68	14 45 23	2312.9	-30.09	81.68
69.89	8 56 30	3868.40	-27.46	161.19	30.60	68.69	10 0 59	3268.4	-30.10	152.99
110.11	13 56 51	2912.85	-27.45	89.88	30.59	68.68	14 45 23	2312.9	-30.09	81.68
69.89	8 56 30	3868.40	-27.46	161.19	30.60	68.69	10 0 59	3268.4	-30.10	152.99
110.11	13 56 51	2912.85	-27.45	89.88	30.59	68.68	14 45 23	2312.9	-30.09	81.68

DIFFERENTIAL CORRECTIONS
TDE 2.7938 TRA .5738 TC-16.5539 BAU 2.2900
RDE .3304 RRA .1759 RC3 -.8156 FAU .24946
FDE 2.3340 FRA 1.8293 FC-20.8962 BSP 41055
BDE 2.8132 BRA .6002 BC316.5739 FSP 4162

MID-COURSE EXECUTION ACCURACY
SGT11815.6 SGR 874.9 SG3 1262.1
RRT .8689 RRF .8600 RTF .9768
SGB11847.9 R23 .0203 R13 .9769
SG111840.0 SG2 432.2 THA 3.69

ORBIT DETERMINATION ACCURACY
ST 5003.2 SR 599.9 SS 1567.6
CRT .9925 CRS -.9941 CST -.9792
LSA 5268.1 MSA 308.7 SSA 31.8
EL1 5038.5 EL2 72.7 ALF 6.79

LAUNCH DATE DEC 10 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 760.834 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.082	GAL	.49	AZL	87.47	HCA	224.42	SMA	187.61	ECC	.21496	INC	2.5290
RP	209.55	LAP	-1.77	LOP	302.37	VP	23.649	GAP	-10.46	AZP	91.81	TAL	2.78	TAP	227.20	RCA	147.28	APO	227.94
RC	311.080	GL	27.14	GP	-6.98	ZAL	81.21	ZAP	43.73	ETS	171.82	ZAE	67.67	ETE	176.51	ZAC	77.87	ETC	257.42

V1	30.243	V2	26.162	CLP	43.28														

PLANETOCENTRIC CONIC

C3	10.242	VHL	3.200	DLA	33.41	RAL	171.51	RAD	6567.4	VEL	11.473	PTH	1.99	VHP	4.236	DPA	.78	RAP	164.66
ECC	1.1686																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.49	9 10 54	3836.71	-26.87	158.47	31.35	69.35	10 14 51	3236.7	-29.42	150.28
108.51	13 51 42	2940.92	-26.85	91.81	31.35	69.34	14 40 43	2340.9	-29.41	83.63
71.49	9 10 54	3836.71	-26.87	158.47	31.35	69.35	10 14 51	3236.7	-29.42	150.28
108.51	13 51 42	2940.92	-26.85	91.81	31.35	69.34	14 40 43	2340.9	-29.41	83.63
110.00	14 55 57	2744.04	-31.05	78.07	32.89	74.92	15 41 41	2144.0	-32.80	69.29
110.00	13 5 49	3081.58	-22.82	100.80	29.42	63.83	13 57 11	2481.6	-26.14	93.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.7315	TRA	.6826	TC-16.9317	BAU	2.3208	SGT11979.5	SGR	841.6	SG3	1221.4	ST	4920.7	SR	584.3	SS	1473.5
RDE	.3198	RRA	.1795	RC3 -.7528	FAU	.24016	RRT .8516	RRF	.8412	RTF	.9768	CRT	.9932	CRS	-.9914	CST	-.9758
FDE	2.1326	FRA	1.8914	FC-20.2991	BSP	41609	SGB12009.1	R23	.0158	R13	.9768	LSA	5160.1	MSA	313.1	SSA	32.5
BDE	2.7502	BRA	.7058	BC316.9484	FSP	4021	SG112001.0	SG2	440.4	THA	3.43	EL1	4954.8	EL2	67.7	ALF	6.73

LAUNCH DATE DEC 10 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 765.168 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.088	GAL	.37	AZL	87.51	HCA	225.65	SMA	187.73	ECC	.21537	INC	2.4907
RP	209.34	LAP	-1.78	LOP	303.61	VP	23.685	GAP	-10.56	AZP	91.74	TAL	2.09	TAP	227.74	RCA	147.30	APO	228.16
RC	312.019	GL	26.81	GP	-6.74	ZAL	82.45	ZAP	42.90	ETS	171.85	ZAE	66.56	ETE	176.48	ZAC	78.18	ETC	257.38

V1	30.243	V2	26.186	CLP	42.47														

PLANETOCENTRIC CONIC

C3	10.161	VHL	3.188	DLA	32.56	RAL	172.70	RAD	6567.4	VEL	11.470	PTH	1.99	VHP	4.296	DPA	.83	RAP	165.14
ECC	1.1672																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.22	9 26 41	3800.98	-26.25	155.46	32.15	70.01	10 30 2	3201.0	-28.73	147.30
106.78	13 45 24	2973.44	-26.24	94.06	32.15	70.00	14 34 57	2373.4	-28.72	85.90
73.22	9 26 41	3800.98	-26.25	155.46	32.15	70.01	10 30 2	3201.0	-28.73	147.30
106.78	13 45 24	2973.44	-26.24	94.06	32.15	70.00	14 34 57	2373.4	-28.72	85.90
110.00	15 25 9	2665.91	-32.29	72.32	34.13	78.12	16 9 34	2065.9	-33.59	63.33
110.00	12 46 6	3156.51	-20.50	105.37	29.37	62.03	13 38 43	2556.5	-24.07	98.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.6659	TRA	.7993	TC-17.2857	BAU	2.3500	SGT12137.1	SGR	811.0	SG3	1180.4	ST	4830.4	SR	570.3	SS	1382.7
RDE	.3104	RRA	.1831	RC3 -.6907	FAU	.23077	RRT .8322	RRF	.8207	RTF	.9767	CRT	.9939	CRS	-.9876	CST	-.9715
FDE	1.9412	FRA	1.9542	FC-19.6617	BSP	42150	SGB12164.2	R23	.0122	R13	.9767	LSA	5046.5	MSA	318.4	SSA	33.2
BDE	2.6839	BRA	.8200	BC317.2995	FSP	3875	SG112155.9	SG2	448.9	THA	3.19	EL1	4863.5	EL2	62.4	ALF	6.69

LAUNCH DATE DEC 10 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 769.501 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.095	GAL	.24	AZL	87.55	HCA	226.89	SMA	187.85	ECC	.21581	INC	2.4540
RP	209.14	LAP	-1.79	LOP	304.84	VP	23.720	GAP	-10.65	AZP	91.68	TAL	1.38	TAP	228.27	RCA	147.31	APO	228.38
RC	312.950	GL	26.49	GP	-6.52	ZAL	83.73	ZAP	42.09	ETS	171.88	ZAE	65.46	ETE	176.45	ZAC	78.49	ETC	257.34

V1	30.243	V2	26.209	CLP	41.67														

PLANETOCENTRIC CONIC

C3	10.091	VHL	3.177	DLA	31.69	RAL	173.91	RAD	6567.4	VEL	11.466	PTH	1.99	VHP	4.356	DPA	.86	RAP	165.63
ECC	1.1661																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.14	9 44 24	3759.47	-25.61	152.04	33.01	70.66	10 47 3	3159.5	-28.01	143.91
104.86	13 37 23	3012.18	-25.60	96.76	33.00	70.65	14 27 35	2412.2	-28.00	88.62
75.14	9 44 24	3759.47	-25.61	152.04	33.01	70.66	10 47 3	3159.5	-28.01	143.91
104.86	13 37 23	3012.18	-25.60	96.76	33.00	70.65	14 27 35	2412.2	-28.00	88.62
110.00	15 48 42	2604.80	-33.05	67.72	35.18	80.74	16 32 7	2004.8	-33.98	58.60
110.00	12 32 15	3214.85	-18.60	108.83	29.59	60.79	13 25 49	2614.9	-22.34	101.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.6206	TRA	.9484	TC-17.5093	BAU	2.3636	SGT12252.7	SGR	783.8	SG3	1134.3	ST	4776.8	SR	559.9	SS	1312.0
RDE	.3032	RRA	.1882	RC3 -.6221	FAU	.21953	RRT .8104	RRF	.7986	RTF	.9762	CRT	.9949	CRS	-.9824	CST	-.9666
FDE	1.7816	FRA	2.0473	FC-18.8346	BSP	43444	SGB12277.8	R23	.0109	R13	.9762	LSA	4974.4	MSA	326.9	SSA	33.3
BDE	2.6381	BRA	.9669	BC317.5203	FSP	3843	SG112269.2	SG2	458.5	THA	2.97	EL1	4809.1	EL2	56.1	ALF	6.65

LAUNCH DATE DEC 10 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 773.844 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.102	GAL	.12	AZL	87.58	HCA	228.13	SMA	187.97	ECC	.21628	INC	2.4186
RP	208.94	LAP	-1.80	LOP	306.09	VP	23.755	GAP	-10.74	AZP	91.61	TAL	.66	TAP	228.79	RCA	147.31	APO	228.62
RC	313.871	GL	26.17	GP	-6.31	ZAL	85.05	ZAP	41.30	ETS	171.91	ZAE	64.39	ETE	176.42	ZAC	78.79	ETC	257.30

V1	30.243	V2	26.232	CLP	40.90														

PLANETOCENTRIC CONIC

C3	10.033	VHL	3.168	DLA	30.81	RAL	175.15	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	4.418	DPA	.87	RAP	166.14
ECC	1.1651																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.32	10 4 42	3709.93	-24.95	148.06	33.90	71.31	11 6 32	3109.9	-27.27	139.94
102.68	13 26 56	3059.44	-24.94	100.07	33.89	71.29	14 17 56	2459.4	-27.26	91.96
77.32	10 4 42	3709.93	-24.95	148.06	33.90	71.31	11 6 32	3109.9	-27.27	139.94
102.68	13 26 56	3059.44	-24.94	100.07	33.89	71.29	14 17 56	2459.4	-27.26	91.96
110.00	16 9 27	2552.20	-33.56	63.69	36.14	83.07	16 52 0	1952.2	-34.15	54.50
110.00	12 21 21	3265.17	-16.90	111.75	29.99	59.83	13 15 46	2665.2	-20.78	104.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.5315	TRA	1.0618	TC-17.8899	BAU	2.4009	SGT12426.4	SGR	757.9	SG3	1100.0	ST	4640.4	SR	545.6	SS	1206.2
RDE	.2942	RRA	.1900	RC3 -.5716	FAU	.21243	RRT .7895	RRF	.7744	RTF	.9762	CRT	.9957	CRS	-.9743	CST	-.9593
FDE	1.5776	FRA	2.0753	FC-18.3296	BSP	43675	SGB12449.4	R23	.0042	R13	.9762	LSA	4814.0	MSA	331.8	SSA	34.3
BDE	2.5485	BRA	1.0787	BC317.8990	FSP	3664	SG112440.8	SG2	464.6	THA	2.76	EL1	4672.1	EL2	50.4	ALF	6.68

LAUNCH DATE DEC 10 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 778.188 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.109 GAL -.01 AZL 87.62 HCA 229.38 SMA 188.09 ECC .21677 INC 2.3846 V1 30.243
RP 208.76 LAP -1.81 LOP 307.33 VP 23.788 GAP -10.84 AZP 91.55 TAL 359.93 TAP 229.30 RCA 147.31 APO 228.86 V2 26.254
RC 314.784 GL 25.84 GP -6.11 ZAL 86.41 ZAP 40.53 ETS 171.93 ZAE 63.33 ETE 176.40 ZAC 79.09 ETC 257.25 CLP 40.14

PLANETOCENTRIC CONIC

C3 9.988 VHL 3.160 DLA 29.91 RAL 176.41 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 4.481 DPA .85 RAP 166.67 ECC 1.1644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.94	10 29 7	3647.37	-24.27	143.13	34.84	71.95	11 29 54	3047.4	-26.50	135.05
100.06	13 12 33	3120.20	-24.25	104.36	34.83	71.94	14 4 33	2520.2	-26.50	96.27
79.94	10 29 7	3647.37	-24.27	143.13	34.84	71.95	11 29 54	3047.4	-26.50	135.05
100.06	13 12 33	3120.20	-24.25	104.36	34.83	71.94	14 4 33	2520.2	-26.50	96.27
110.00	16 28 31	2504.79	-33.89	60.03	37.06	85.21	17 10 15	1904.8	-34.18	50.80
110.00	12 12 20	3310.78	-15.32	114.34	30.51	59.06	13 7 31	2710.8	-19.31	107.49

DIFFERENTIAL CORRECTIONS
TDE 2.5182 TRA 1.1856 TC-18.1366 BAU 2.4227
RDE .2996 RRA .1935 RC3 -.5021 FAU .20041
FDE 1.6650 FRA 2.1428 FC-17.3709 BSP 43920
BDE 2.5359 BRA 1.2013 BC318.1436 FSP 3427

MID-COURSE EXECUTION ACCURACY
SGT12586.1 SGR 748.1 SG3 1057.3
RRT .7564 RRF .7579 RTF .9789
SGB12608.3 R23 .0251 R13 .9789
SG112598.8 SG2 488.9 THA 2.58

ORBIT DETERMINATION ACCURACY
ST 4638.2 SR 556.7 SS 1285.8
CRT .9967 CRS -.9770 CST -.9670
LSA 4834.7 MSA 317.1 SSA 34.7
EL1 4671.3 EL2 45.1 ALF 6.82

LAUNCH DATE DEC 10 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 782.537 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.116 GAL -.15 AZL 87.65 HCA 230.62 SMA 188.21 ECC .21730 INC 2.3516 V1 30.243
RP 208.58 LAP -1.82 LOP 308.58 VP 23.821 GAP -10.93 AZP 91.49 TAL 359.18 TAP 229.80 RCA 147.31 APO 229.11 V2 26.274
RC 315.690 GL 25.51 GP -5.92 ZAL 87.81 ZAP 39.78 ETS 171.96 ZAE 62.29 ETE 176.38 ZAC 79.38 ETC 257.20 CLP 39.41

PLANETOCENTRIC CONIC

C3 9.956 VHL 3.155 DLA 28.99 RAL 177.69 RAD 6567.4 VEL 11.461 PTH 1.99 VHP 4.545 DPA .82 RAP 167.21 ECC 1.1638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.50	11 2 7	3557.26	-23.56	136.22	35.82	72.59	12 1 24	2957.3	-25.72	128.16
96.50	12 49 46	3209.01	-23.55	110.68	35.81	72.58	13 43 15	2609.0	-25.71	102.62
100.00	14 18 46	2923.28	-27.72	90.76	37.01	78.35	15 7 30	2323.3	-29.05	82.21
100.00	12 15 47	3318.23	-19.51	117.14	34.21	66.90	13 11 6	2718.2	-22.47	109.60
110.00	16 46 25	2460.95	-34.08	56.62	37.95	87.22	17 27 26	1861.0	-34.09	47.38
110.00	12 4 38	3353.32	-13.82	116.72	31.14	58.42	13 0 32	2753.3	-17.89	109.98

DIFFERENTIAL CORRECTIONS
TDE 2.3634 TRA 1.3210 TC-18.5123 BAU 2.4647
RDE .2824 RRA .1950 RC3 -.4642 FAU .19601
FDE 1.2637 FRA 2.1653 FC-17.0445 BSP 44361
BDE 2.3802 BRA 1.3353 BC318.5182 FSP 3383

MID-COURSE EXECUTION ACCURACY
SGT12744.2 SGR 716.0 SG3 1026.5
RRT .7379 RRF .7226 RTF .9763
SGB12764.3 R23 .0017 R13 .9763
SG112755.2 SG2 482.8 THA 2.38

ORBIT DETERMINATION ACCURACY
ST 4383.9 SR 527.0 SS 1052.9
CRT .9971 CRS -.9506 CST -.9419
LSA 4526.0 MSA 345.0 SSA 35.8
EL1 4415.3 EL2 40.0 ALF 6.84

LAUNCH DATE DEC 10 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 786.887 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.123 GAL -.28 AZL 87.68 HCA 231.87 SMA 188.33 ECC .21785 INC 2.3199 V1 30.243
RP 208.40 LAP -1.82 LOP 309.82 VP 23.853 GAP -11.02 AZP 91.43 TAL 358.42 TAP 230.29 RCA 147.30 APO 229.36 V2 26.294
RC 316.588 GL 25.17 GP -5.74 ZAL 89.24 ZAP 39.05 ETS 171.98 ZAE 61.27 ETE 176.36 ZAC 79.66 ETC 257.15 CLP 38.69

PLANETOCENTRIC CONIC

C3 9.937 VHL 3.152 DLA 28.06 RAL 178.99 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 4.610 DPA .77 RAP 167.76 ECC 1.1635

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 34 40	3273.84	-24.99	115.87	37.49	76.24	13 29 14	2673.8	-26.64	107.59
90.00	11 27 35	3491.67	-20.69	130.37	36.08	70.22	12 25 46	2891.7	-23.20	122.60
100.00	14 50 11	2836.96	-28.75	84.56	38.32	81.46	15 37 28	2237.0	-29.64	75.86
100.00	11 54 45	3403.78	-17.14	122.39	34.54	65.13	12 51 29	2803.8	-20.35	115.07
110.00	17 3 28	2419.78	-34.17	53.41	38.84	89.12	17 43 48	1819.8	-33.92	44.17
110.00	11 57 57	3393.73	-12.36	118.95	31.86	57.87	12 54 30	2793.7	-16.52	112.30

DIFFERENTIAL CORRECTIONS
TDE 2.2703 TRA 1.4657 TC-18.7506 BAU 2.4915
RDE .2763 RRA .1968 RC3 -.4106 FAU .18747
FDE 1.0865 FRA 2.1974 FC-16.3337 BSP 44840
BDE 2.2870 BRA 1.4789 BC318.7551 FSP 3249

MID-COURSE EXECUTION ACCURACY
SGT12879.6 SGR 695.3 SG3 986.7
RRT .7097 RRF .6916 RTF .9759
SGB12898.4 R23 -.0028 R13 .9759
SG112889.1 SG2 489.5 THA 2.20

ORBIT DETERMINATION ACCURACY
ST 4239.6 SR 516.7 SS 962.5
CRT .9974 CRS -.9284 CST -.9262
LSA 4363.5 MSA 355.1 SSA 36.4
EL1 4270.8 EL2 36.9 ALF 6.93

LAUNCH DATE DEC 10 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 791.239 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.130 GAL -.42 AZL 87.71 HCA 233.12 SMA 188.46 ECC .21844 INC 2.2891 V1 30.243
RP 208.24 LAP -1.83 LOP 311.07 VP 23.884 GAP -11.11 AZP 91.37 TAL 357.64 TAP 230.76 RCA 147.29 APO 229.63 V2 26.314
RC 317.480 GL 24.83 GP -5.57 ZAL 90.70 ZAP 38.34 ETS 172.00 ZAE 60.27 ETE 176.34 ZAC 79.94 ETC 257.10 CLP 38.00

PLANETOCENTRIC CONIC

C3 9.931 VHL 3.151 DLA 27.11 RAL 180.30 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 4.676 DPA .71 RAP 168.34 ECC 1.1634

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 18 58	3145.52	-26.77	106.90	39.09	80.40	14 11 24	2545.5	-27.82	98.39
90.00	10 53 46	3619.78	-17.53	138.44	36.21	67.40	11 54 6	3019.8	-20.44	130.98
100.00	15 15 42	2769.22	-29.34	79.61	39.48	84.00	16 1 51	2169.2	-29.86	70.84
100.00	11 39 43	3471.31	-15.17	126.43	35.10	63.93	12 37 34	2871.3	-18.55	119.27
110.00	17 19 52	2380.67	-34.17	50.36	39.74	90.93	17 59 33	1780.7	-33.67	41.15
110.00	11 52 2	3432.62	-10.95	121.07	32.66	57.41	12 49 15	2832.6	-15.17	114.51

DIFFERENTIAL CORRECTIONS
TDE 2.1834 TRA 1.6147 TC-18.9805 BAU 2.5205
RDE .2726 RRA .1983 RC3 -.3624 FAU .18006
FDE .9539 FRA 2.2231 FC-15.6965 BSP 45346
BDE 2.2004 BRA 1.6269 BC318.9839 FSP 3126

MID-COURSE EXECUTION ACCURACY
SGT13028.7 SGR 679.6 SG3 952.4
RRT .6817 RRF .6619 RTF .9763
SGB13046.5 R23 -.0063 R13 .9763
SG113037.0 SG2 496.9 THA 2.04

ORBIT DETERMINATION ACCURACY
ST 4106.8 SR 510.4 SS 899.0
CRT .9973 CRS -.9044 CST -.9125
LSA 4219.3 MSA 360.9 SSA 36.9
EL1 4138.2 EL2 37.5 ALF 7.07

LAUNCH DATE DEC 10 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 795.593 EARTH TO MARS
RL 147.31 LAL .00 LOL 77.98 VL 33.137 GAL -.56 AZL 87.74 HCA 234.37 SMA 188.59 ECC .21906 INC 2.2593 V1 30.243
RP 208.08 LAP -1.84 LOP 312.33 VP 23.914 GAP -11.20 AZP 91.32 TAL 356.86 TAP 231.22 RCA 147.27 APO 229.90 V2 26.332
RC 318.367 GL 24.48 GP -5.41 ZAL 92.20 ZAP 37.65 ETS 172.01 ZAE 59.29 ETE 176.33 ZAC 80.22 ETC 257.05 CLP 37.32
PLANETOCENTRIC CONIC
C3 9.941 VHL 3.153 DLA 26.14 RAL 181.63 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 4.743 DPA .62 RAP 168.92 ECC 1.1636

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 49 2	3062.98	-27.57	100.99	40.37	83.26	14 40 5	2463.0	-28.21	92.38
90.00	10 34 19	3702.69	-15.29	143.50	36.74	65.87	11 36 2	3102.7	-18.42	136.22
100.00	15 38 16	2710.84	-29.68	75.30	40.59	86.24	16 23 27	2110.8	-29.88	66.50
100.00	11 27 46	3530.06	-13.38	129.88	35.79	63.02	12 26 36	2930.1	-16.89	122.85
110.00	17 35 45	2343.24	-34.09	47.43	40.64	92.66	18 14 48	1743.2	-33.35	38.27
110.00	11 46 46	3470.43	-9.55	123.11	33.54	57.02	12 44 37	2870.4	-13.83	116.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY
TDE 2.0872 TRA 1.7732 TC-19.1701 BAU 2.5480 SGT13168.0 SGR 665.2 SG3 917.4 ST 3959.6 SR 503.8 SS 834.2
RDE .2690 RRA .2001 RC3 -.3144 FAU .17243 RRT .6513 RRF .6303 RTF .9761 CRT .9963 CRS -.8682 CST -.8911
FDE .8127 FRA 2.2590 FC-15.0166 BSP 45815 SGB13184.7 R23 -.0085 R13 .9761 LSA 4060.4 MSA 373.3 SSA 37.3
BDE 2.1045 BRA 1.7844 BC319.1727 FSP 3006 SG113175.1 SG2 504.5 THA 1.89 EL1 3991.3 EL2 43.1 ALF 7.23

LAUNCH DATE DEC 10 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 799.949 EARTH TO MARS
RL 147.31 LAL .00 LOL 77.98 VL 33.144 GAL -.71 AZL 87.77 HCA 235.62 SMA 188.71 ECC .21971 INC 2.2303 V1 30.243
RP 207.93 LAP -1.84 LOP 313.58 VP 23.943 GAP -11.29 AZP 91.26 TAL 356.06 TAP 231.68 RCA 147.25 APO 230.18 V2 26.349
RC 319.247 GL 24.12 GP -5.26 ZAL 93.73 ZAP 36.98 ETS 172.03 ZAE 58.32 ETE 176.32 ZAC 80.49 ETC 257.00 CLP 36.66
PLANETOCENTRIC CONIC
C3 9.965 VHL 3.157 DLA 25.15 RAL 182.98 RAD 6567.4 VEL 11.461 PTH 1.99 VHP 4.811 DPA .52 RAP 169.52 ECC 1.1640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 14 17	2995.87	-28.01	96.13	41.56	85.66	15 4 13	2395.9	-28.32	87.48
90.00	10 19 47	3770.79	-13.35	147.56	37.44	64.80	11 22 38	3170.8	-16.64	140.43
100.00	15 58 59	2658.34	-29.85	71.41	41.67	88.28	16 43 17	2058.3	-29.77	62.60
100.00	11 17 47	3583.55	-11.71	132.97	36.60	62.30	12 17 30	2983.6	-15.32	126.04
110.00	17 51 13	2307.22	-33.94	44.63	41.56	94.31	18 29 40	1707.2	-32.97	35.53
110.00	11 42 2	3507.43	-8.18	125.09	34.49	56.69	12 40 30	2907.4	-12.50	118.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY
TDE 1.9895 TRA 1.9385 TC-19.3241 BAU 2.5747 SGT13304.0 SGR 652.5 SG3 882.6 ST 3812.2 SR 498.6 SS 778.3
RDE .2664 RRA .2016 RC3 -.2677 FAU .16485 RRT .6197 RRF .5975 RTF .9759 CRT .9941 CRS -.8227 CST -.8661
FDE .6833 FRA 2.2881 FC-14.3215 BSP 46335 SGB13320.0 R23 -.0104 R13 .9759 LSA 3903.4 MSA 385.9 SSA 37.7
BDE 2.0073 BRA 1.9489 BC319.3260 FSP 2896 SG113310.1 SG2 511.9 THA 1.74 EL1 3844.3 EL2 53.6 ALF 7.41

LAUNCH DATE DEC 10 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 804.306 EARTH TO MARS
RL 147.31 LAL .00 LOL 77.98 VL 33.151 GAL -.86 AZL 87.80 HCA 236.87 SMA 188.84 ECC .22040 INC 2.2022 V1 30.243
RP 207.79 LAP -1.84 LOP 314.83 VP 23.971 GAP -11.37 AZP 91.20 TAL 355.24 TAP 232.11 RCA 147.22 APO 230.46 V2 26.366
RC 320.122 GL 23.75 GP -5.11 ZAL 95.29 ZAP 36.32 ETS 172.04 ZAE 57.37 ETE 176.31 ZAC 80.76 ETC 256.94 CLP 36.01
PLANETOCENTRIC CONIC
C3 10.006 VHL 3.163 DLA 24.14 RAL 184.33 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 4.880 DPA .41 RAP 170.13 ECC 1.1647

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 54	2937.23	-28.24	91.86	42.71	87.79	15 25 52	2337.2	-28.25	83.19
90.00	10 7 59	3831.03	-11.58	151.10	38.27	63.98	11 11 50	3231.0	-14.99	144.08
100.00	16 18 25	2609.96	-29.89	67.81	42.74	90.17	17 1 55	2010.0	-29.55	59.02
100.00	11 9 10	3633.54	-10.11	135.82	37.50	61.72	12 9 43	3033.5	-13.81	128.98
110.00	18 6 18	2272.40	-33.73	41.94	42.50	95.89	18 44 11	1672.4	-32.55	32.90
110.00	11 37 46	3543.86	-6.81	127.03	35.51	56.42	12 36 50	2943.9	-11.18	120.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY
TDE 1.8879 TRA 2.1085 TC-19.4486 BAU 2.6017 SGT13438.6 SGR 641.5 SG3 848.4 ST 3661.5 SR 494.2 SS 730.0
RDE .2646 RRA .2027 RC3 -.2231 FAU .15752 RRT .5869 RRF .5637 RTF .9758 CRT .9902 CRS -.7658 CST -.8370
FDE .5623 FRA 2.3107 FC-13.6291 BSP 46812 SGB13453.9 R23 -.0122 R13 .9758 LSA 3744.7 MSA 399.3 SSA 38.0
BDE 1.9064 BRA 2.1182 BC319.4499 FSP 2785 SG113443.9 SG2 519.2 THA 1.61 EL1 3694.1 EL2 68.3 ALF 7.62

LAUNCH DATE DEC 10 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 808.663 EARTH TO MARS
RL 147.31 LAL .00 LOL 77.98 VL 33.159 GAL -1.01 AZL 87.83 HCA 238.13 SMA 188.97 ECC .22112 INC 2.1749 V1 30.243
RP 207.66 LAP -1.85 LOP 316.09 VP 23.998 GAP -11.46 AZP 91.15 TAL 354.41 TAP 232.54 RCA 147.19 APO 230.76 V2 26.381
RC 320.992 GL 23.37 GP -4.97 ZAL 96.87 ZAP 35.68 ETS 172.06 ZAE 56.44 ETE 176.30 ZAC 81.03 ETC 256.89 CLP 35.38
PLANETOCENTRIC CONIC
C3 10.063 VHL 3.172 DLA 23.12 RAL 185.70 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 4.950 DPA .28 RAP 170.76 ECC 1.1656

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 57 48	2884.16	-28.32	87.98	43.85	89.73	15 45 52	2284.2	-28.05	79.32
90.00	9 57 59	3886.38	-9.91	154.30	39.20	63.34	11 2 46	3286.4	-13.41	147.38
100.00	16 36 52	2564.70	-29.84	64.45	43.82	91.94	17 19 37	1964.7	-29.25	55.69
100.00	11 1 36	3681.07	-8.56	138.50	38.49	61.25	12 2 57	3081.1	-12.34	131.74
110.00	18 21 5	2238.66	-33.47	39.34	43.47	97.41	18 58 24	1638.7	-32.08	30.38
110.00	11 33 52	3579.87	-5.45	128.93	36.58	56.20	12 33 32	2979.9	-9.85	122.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY
TDE 1.7823 TRA 2.2859 TC-19.5336 BAU 2.6280 SGT13568.4 SGR 631.7 SG3 815.0 ST 3509.3 SR 490.5 SS 688.0
RDE .2633 RRA .2036 RC3 -.1804 FAU .15039 RRT .5535 RRF .5287 RTF .9756 CRT .9840 CRS -.6928 CST -.8007
FDE .4437 FRA 2.3305 FC-12.9384 BSP 47296 SGB13583.1 R23 -.0145 R13 .9755 LSA 3585.3 MSA 416.1 SSA 38.1
BDE 1.8016 BRA 2.2949 BC319.5344 FSP 2676 SG113572.9 SG2 526.0 THA 1.48 EL1 3542.4 EL2 86.4 ALF 7.84

LAUNCH DATE DEC 10 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 813.022 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.166 GAL -1.17 AZL 87.85 HCA 239.39 SMA 189.11 ECC .22189 INC 2.1482 V1 30.243
RP 207.54 LAP -1.85 LOP 317.35 VP 24.024 GAP -11.55 AZP 91.09 TAL 353.57 TAP 232.96 RCA 147.15 APO 231.07 V2 26.396
RC 321.856 GL 22.98 GP -4.84 ZAL 98.48 ZAP 35.06 ETS 172.06 ZAE 55.52 ETE 176.29 ZAC 81.29 ETC 256.83 CLP 34.77

PLANETOCENTRIC CONIC

C3 10.137 VHL 3.184 DLA 22.09 RAL 187.07 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 5.021 DPA .14 RAP 171.40 ECC 1.1668

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 27	2835.11	-28.28	84.39	44.98	91.53	16 4 42	2235.1	-27.77	75.76
90.00	9 49 18	3938.38	-8.31	157.28	40.22	62.83	10 54 56	3338.4	-11.88	150.43
100.00	16 54 35	2521.92	-29.69	61.28	44.91	93.61	17 36 37	1921.9	-28.88	52.57
100.00	10 54 51	3726.80	-7.06	141.06	39.55	60.88	11 56 58	3126.8	-10.89	134.37
110.00	18 35 36	2205.89	-33.15	36.83	44.46	98.86	19 12 22	1605.9	-31.57	27.96
110.00	11 30 19	3615.60	-4.09	130.80	37.72	56.03	12 30 35	3015.6	-8.52	124.52

DIFFERENTIAL CORRECTIONS
TDE 1.6744 TRA 2.4711 TC-19.5827 BAU 2.6541
RDE .2629 RRA .2043 RC3 -.1397 FAU .14345
FDE .3376 FRA 2.3489 FC-12.2506 BSP 47800
BDE 1.6949 BRA 2.4796 BC319.5832 FSP 2577

MID-COURSE EXECUTION ACCURACY
SGT13697.1 SGR 623.9 SG3 782.6
RRT .5195 RRF .4940 RTF .9754
SGB13711.3 R23 -.0158 R13 .9753
SG113700.9 SG2 532.9 THA 1.36

ORBIT DETERMINATION ACCURACY
ST 3360.3 SR 487.9 SS 657.4
CRT .9747 CRS -.6099 CST -.7636
LSA 3431.0 MSA 433.9 SSA 38.2
EL1 3393.8 EL2 108.0 ALF 8.06

LAUNCH DATE DEC 10 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 817.380 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.174 GAL -1.33 AZL 87.88 HCA 240.65 SMA 189.24 ECC .22269 INC 2.1222 V1 30.243
RP 207.42 LAP -1.85 LOP 318.61 VP 24.049 GAP -11.64 AZP 91.04 TAL 352.71 TAP 233.36 RCA 147.10 APO 231.38 V2 26.409
RC 322.714 GL 22.58 GP -4.72 ZAL 100.12 ZAP 34.45 ETS 172.07 ZAE 54.61 ETE 176.28 ZAC 81.55 ETC 256.78 CLP 34.17

PLANETOCENTRIC CONIC

C3 10.230 VHL 3.199 DLA 21.04 RAL 188.45 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 5.092 DPA -.02 RAP 172.05 ECC 1.1684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 36 10	2789.17	-28.15	81.03	46.12	93.21	16 22 39	2189.2	-27.41	72.45
90.00	9 41 35	3987.99	-6.75	160.10	41.31	62.43	10 48 3	3388.0	-10.39	153.31
100.00	17 11 40	2481.20	-29.48	58.27	46.01	95.18	17 53 1	1881.2	-28.45	49.61
100.00	10 48 46	3771.19	-5.58	143.53	40.67	60.59	11 51 37	3171.2	-9.46	136.88
110.00	18 49 51	2174.03	-32.79	34.41	45.49	100.25	19 26 5	1574.0	-31.03	25.64
110.00	11 27 4	3651.13	-2.74	132.66	38.91	55.91	12 27 55	3051.1	-7.19	126.41

DIFFERENTIAL CORRECTIONS
TDE 1.5622 TRA 2.6621 TC-19.5939 BAU 2.6799
RDE .2631 RRA .2046 RC3 -.1006 FAU .13658
FDE .2340 FRA 2.3607 FC-11.5578 BSP 48271
BDE 1.5842 BRA 2.6700 BC319.5941 FSP 2473

MID-COURSE EXECUTION ACCURACY
SGT13821.9 SGR 616.9 SG3 750.1
RRT .4847 RRF .4580 RTF .9750
SGB13835.6 R23 -.0175 R13 .9750
SG113825.1 SG2 539.4 THA 1.24

ORBIT DETERMINATION ACCURACY
ST 3212.8 SR 485.9 SS 633.4
CRT .9612 CRS -.5120 CST -.7221
LSA 3278.9 MSA 454.6 SSA 38.1
EL1 3246.6 EL2 132.7 ALF 8.28

LAUNCH DATE DEC 10 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 821.738 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.181 GAL -1.49 AZL 87.90 HCA 241.91 SMA 189.37 ECC .22354 INC 2.0968 V1 30.243
RP 207.31 LAP -1.85 LOP 319.87 VP 24.074 GAP -11.74 AZP 90.99 TAL 351.85 TAP 233.75 RCA 147.04 APO 231.71 V2 26.422
RC 323.566 GL 22.17 GP -4.60 ZAL 101.77 ZAP 33.86 ETS 172.08 ZAE 53.72 ETE 176.27 ZAC 81.81 ETC 256.72 CLP 33.58

PLANETOCENTRIC CONIC

C3 10.343 VHL 3.216 DLA 19.98 RAL 189.83 RAD 6567.4 VEL 11.477 PTH 2.00 VHP 5.165 DPA -.19 RAP 172.72 ECC 1.1702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 54 7	2745.74	-27.94	77.87	47.28	94.78	16 39 53	2145.7	-26.99	69.34
90.00	9 34 40	4035.81	-5.24	162.80	42.48	62.13	10 41 56	3435.8	-8.93	156.06
100.00	17 28 14	2442.24	-29.21	55.40	47.14	96.66	18 8 56	1842.2	-27.98	46.82
100.00	10 43 14	3814.54	-4.12	145.92	41.86	60.37	11 46 49	3214.5	-8.04	139.32
110.00	19 3 52	2143.02	-32.39	32.08	46.54	101.57	19 39 35	1543.0	-30.46	23.40
110.00	11 24 5	3686.52	-1.39	134.51	40.16	55.84	12 25 32	3086.5	-5.86	128.28

DIFFERENTIAL CORRECTIONS
TDE 1.4468 TRA 2.8605 TC-19.5687 BAU 2.7059
RDE .2641 RRA .2046 RC3 -.0642 FAU .13005
FDE .1389 FRA 2.3696 FC-10.8858 BSP 48739
BDE 1.4707 BRA 2.8678 BC319.5688 FSP 2376

MID-COURSE EXECUTION ACCURACY
SGT13945.4 SGR 611.3 SG3 719.1
RRT .4501 RRF .4223 RTF .9747
SGB13958.8 R23 -.0191 R13 .9747
SG113948.1 SG2 545.7 THA 1.13

ORBIT DETERMINATION ACCURACY
ST 3071.4 SR 484.7 SS 618.6
CRT .9422 CRS -.4072 CST -.6834
LSA 3134.0 MSA 476.8 SSA 37.9
EL1 3105.2 EL2 160.7 ALF 8.48

LAUNCH DATE DEC 10 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 826.095 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.189 GAL -1.65 AZL 87.93 HCA 243.17 SMA 189.51 ECC .22442 INC 2.0719 V1 30.243
RP 207.21 LAP -1.85 LOP 321.13 VP 24.097 GAP -11.83 AZP 90.94 TAL 350.96 TAP 234.13 RCA 146.98 APO 232.04 V2 26.434
RC 324.413 GL 21.75 GP -4.48 ZAL 103.43 ZAP 33.28 ETS 172.08 ZAE 52.84 ETE 176.27 ZAC 82.07 ETC 256.66 CLP 33.01

PLANETOCENTRIC CONIC

C3 10.475 VHL 3.237 DLA 18.91 RAL 191.22 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 5.239 DPA -.37 RAP 173.39 ECC 1.1724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 11 26	2704.43	-27.67	74.88	48.46	96.25	16 56 31	2104.4	-26.52	66.41
90.00	9 28 24	4082.26	-3.75	165.41	43.71	61.91	10 36 26	3482.3	-7.48	158.71
100.00	17 44 21	2404.84	-28.88	52.67	48.29	98.06	18 24 26	1804.8	-27.47	44.15
100.00	10 38 11	3857.08	-2.69	148.26	43.12	60.22	11 42 28	3257.1	-6.63	141.70
110.00	19 17 41	2112.84	-31.96	29.84	47.63	102.84	19 52 53	1512.8	-29.86	21.25
110.00	11 21 20	3721.85	-.04	136.35	41.46	55.82	12 23 22	3121.8	-4.52	130.14

DIFFERENTIAL CORRECTIONS
TDE 1.3295 TRA 3.0656 TC-19.5041 BAU 2.7315
RDE .2658 RRA .2044 RC3 -.0296 FAU .12361
FDE .0502 FRA 2.3741 FC-10.2153 BSP 49210
BDE 1.3558 BRA 3.0724 BC319.5041 FSP 2278

MID-COURSE EXECUTION ACCURACY
SGT14065.8 SGR 606.7 SG3 688.3
RRT .4152 RRF .3864 RTF .9743
SGB14078.9 R23 -.0206 R13 .9743
SG114068.0 SG2 551.8 THA 1.03

ORBIT DETERMINATION ACCURACY
ST 2940.1 SR 484.3 SS 611.3
CRT .9165 CRS -.2980 CST -.6493
LSA 3000.0 MSA 501.0 SSA 37.6
EL1 2973.6 EL2 191.5 ALF 8.62

LAUNCH DATE DEC 10 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 830.451 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.196	GAL	-1.82	AZL	87.95	HCA	244.43	SMA	189.65	ECC	.22536	INC	2.0476
RP	207.12	LAP	-1.85	LOP	322.40	VP	24.119	GAP	-11.92	AZP	90.88	TAL	350.07	TAP	234.50	RCA	146.91	APO	232.38
RC	325.253	GL	21.32	GP	-4.37	ZAL	105.11	ZAP	32.72	ETS	172.09	ZAE	51.97	ETE	176.26	ZAC	82.33	ETC	256.61

V1 30.243 V2 26.444 CLP 32.46

PLANETOCENTRIC CONIC

C3	10.629	VHL	3.260	DLA	17.83	RAL	192.61	RAD	6567.4	VEL	11.490	PTH	2.00	VHP	5.314	DPA	-.56	RAP	174.08

ECC 1.1749

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 28 14	2664.97	-27.35	72.04	49.66	97.64	17 12 39	2065.0	-26.01	63.63
90.00	9 22 40	4127.64	-2.30	167.94	45.00	61.77	10 31 28	3527.6	-6.05	161.28
100.00	18 0 4	2368.85	-28.51	50.06	49.47	99.39	18 39 32	1768.9	-26.92	41.62
100.00	10 33 32	3898.99	-1.27	150.57	44.43	60.13	11 38 31	3299.0	-5.23	144.02
110.00	19 31 16	2083.48	-31.49	27.67	48.75	104.04	20 6 0	1483.5	-29.24	19.19
110.00	11 18 48	3757.13	1.31	138.19	42.81	55.84	12 21 25	3157.1	-3.18	131.99

DIFFERENTIAL CORRECTIONS

TDE	1.2102	TRA	3.2795	TC-19.3997	BAU	2.7568	
RDE	.2682	RRA	.2039	RC3 .0029	FAU	.11734	
FDE	-.0310	FRA	2.3774	FC3-9.5571	BSP	49694	
BDE	1.2396	BRA	3.2858	BC319.3997	FSP	2188	

MID-COURSE EXECUTION ACCURACY

SGT14184.2	SGR	603.3	SG3	658.6		
RRT .3808	RRF	.3512	RTF	.9738		
SGB14197.1	R23	-.0218	R13	.9738		
SG114186.1	SG2	557.8	THA	.93		

ORBIT DETERMINATION ACCURACY

ST	2822.4	SR	484.7	SS	611.1
CRT	.8827	CRS	-.1907	CST	-.6246
LSA	2880.3	MSA	526.6	SSA	37.2
EL1	2854.9	EL2	225.2	ALF	8.67

LAUNCH DATE DEC 10 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 834.805 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.204	GAL	-1.99	AZL	87.98	HCA	245.70	SMA	189.78	ECC	.22634	INC	2.0238
RP	207.04	LAP	-1.84	LOP	323.66	VP	24.140	GAP	-12.01	AZP	90.83	TAL	349.16	TAP	234.86	RCA	146.83	APO	232.74
RC	326.088	GL	20.88	GP	-4.27	ZAL	106.81	ZAP	32.17	ETS	172.09	ZAE	51.12	ETE	176.25	ZAC	82.58	ETC	256.55

V1 30.243 V2 26.454 CLP 31.91

PLANETOCENTRIC CONIC

C3	10.806	VHL	3.287	DLA	16.75	RAL	193.99	RAD	6567.4	VEL	11.498	PTH	2.00	VHP	5.390	DPA	-.76	RAP	174.78

ECC 1.1778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 33	2627.16	-26.98	69.34	50.89	98.95	17 28 20	2027.2	-25.46	60.99
90.00	9 17 24	4172.16	-.86	170.43	46.35	61.69	10 26 56	3572.2	-4.64	163.78
100.00	18 15 25	2334.17	-28.10	47.56	50.67	100.64	18 54 19	1734.2	-26.34	39.20
100.00	10 29 14	3940.38	.13	152.84	45.79	60.11	11 34 54	3340.4	-3.84	146.31
110.00	19 44 40	2054.92	-31.00	25.59	49.91	105.18	20 18 55	1454.9	-28.61	17.21
110.00	11 16 28	3792.40	2.66	140.04	44.22	55.91	12 19 40	3192.4	-1.83	133.83

DIFFERENTIAL CORRECTIONS

TDE	1.0869	TRA	3.4995	TC-19.2593	BAU	2.7823	
RDE	.2713	RRA	.2031	RC3 .0332	FAU	.11122	
FDE	-.1070	FRA	2.3752	FC3-8.9106	BSP	50163	
BDE	1.1202	BRA	3.5053	BC319.2593	FSP	2097	

MID-COURSE EXECUTION ACCURACY

SGT14299.9	SGR	600.7	SG3	629.3		
RRT .3463	RRF	.3160	RTF	.9732		
SGB14312.5	R23	-.0230	R13	.9732		
SG114301.4	SG2	563.5	THA	.83		

ORBIT DETERMINATION ACCURACY

ST	2717.4	SR	485.7	SS	615.7
CRT	.8391	CRS	-.0865	CST	-.6101
LSA	2773.5	MSA	552.9	SSA	36.7
EL1	2748.1	EL2	261.3	ALF	8.61

LAUNCH DATE DEC 10 1964 FLIGHT TIME 386.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 839.157 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.212	GAL	-2.17	AZL	88.00	HCA	246.96	SMA	189.92	ECC	.22736	INC	2.0004
RP	206.96	LAP	-1.84	LOP	324.93	VP	24.160	GAP	-12.11	AZP	90.78	TAL	348.23	TAP	235.20	RCA	146.74	APO	233.10
RC	326.917	GL	20.44	GP	-4.17	ZAL	108.51	ZAP	31.63	ETS	172.09	ZAE	50.28	ETE	176.24	ZAC	82.84	ETC	256.50

V1 30.243 V2 26.463 CLP 31.39

PLANETOCENTRIC CONIC

C3	11.006	VHL	3.318	DLA	15.66	RAL	195.37	RAD	6567.4	VEL	11.506	PTH	2.00	VHP	5.468	DPA	-.98	RAP	175.48

ECC 1.1811

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 0 27	2590.86	-26.57	66.76	52.15	100.18	17 43 38	1990.9	-24.89	58.49
90.00	9 12 32	4215.97	.55	172.87	47.75	61.69	10 22 48	3616.0	-3.23	166.24
100.00	18 30 26	2300.71	-27.66	45.18	51.91	101.82	19 8 46	1700.7	-25.75	36.90
100.00	10 25 15	3981.35	1.52	155.08	47.21	60.14	11 31 36	3381.4	-2.46	148.56
110.00	19 57 51	2027.17	-30.49	23.59	51.10	106.26	20 31 38	1427.2	-27.96	15.31
110.00	11 14 18	3827.66	4.00	141.88	45.67	56.02	12 18 6	3227.7	-.48	135.67

DIFFERENTIAL CORRECTIONS

TDE	.9621	TRA	3.7264	TC-19.0832	BAU	2.8080	
RDE	.2751	RRA	.2020	RC3 .0612	FAU	.10531	
FDE	-.1764	FRA	2.3688	FC3-8.2834	BSP	50618	
BDE	1.0006	BRA	3.7318	BC319.0833	FSP	2009	

MID-COURSE EXECUTION ACCURACY

SGT14413.8	SGR	598.9	SG3	600.8		
RRT .3124	RRF	.2813	RTF	.9726		
SGB14426.2	R23	-.0243	R13	.9726		
SG114415.0	SG2	568.9	THA	.74		

ORBIT DETERMINATION ACCURACY

ST	2631.6	SR	487.4	SS	624.0
CRT	.7850	CRS	.0100	CST	-.6077
LSA	2686.4	MSA	578.5	SSA	36.1
EL1	2659.7	EL2	298.8	ALF	8.38

LAUNCH DATE DEC 10 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 843.506 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.219	GAL	-2.35	AZL	88.02	HCA	248.23	SMA	190.06	ECC	.22844	INC	1.9774
RP	206.89	LAP	-1.84	LOP	326.20	VP	24.180	GAP	-12.20	AZP	90.73	TAL	347.30	TAP	235.53	RCA	146.64	APO	233.48
RC	327.742	GL	19.98	GP	-4.08	ZAL	110.21	ZAP	31.11	ETS	172.08	ZAE	49.46	ETE	176.23	ZAC	83.09	ETC	256.45

V1 30.243 V2 26.471 CLP 30.87

PLANETOCENTRIC CONIC

C3	11.231	VHL	3.351	DLA	14.57	RAL	196.75	RAD	6567.4	VEL	11.516	PTH	2.01	VHP	5.546	DPA	-1.20	RAP	176.20

ECC 1.1848

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 59	2555.96	-26.12	64.30	53.44	101.34	17 58 35	1956.0	-24.30	56.11
90.00	9 8 0	4259.22	1.95	175.28	49.21	61.74	10 19 0	3659.2	-1.84	168.66
100.00	18 45 8	2268.44	-27.18	42.89	53.18	102.94	19 22 57	1668.4	-25.13	34.70
100.00	10 21 32	4021.97	2.90	157.32	48.68	60.24	11 28 34	3422.0	-1.08	150.79
110.00	20 10 51	2000.23	-29.96	21.67	52.33	107.28	20 44 11	1400.2	-27.30	13.49
110.00	11 12 19	3862.94	5.34	143.73	47.17	56.19	12 16 42	3262.9	.87	137.51

DIFFERENTIAL CORRECTIONS

TDE	.8349	TRA	3.9616	TC-18.8688	BAU	2.8332	
RDE	.2795	RRA	.2005	RC3 .0871	FAU	.09951	
FDE	-.2416	FRA	2.3581	FC3-7.6704	BSP	51094	
BDE	.8804	BRA	3.9667	BC318.8690	FSP	1924	

MID-COURSE EXECUTION ACCURACY

SGT14524.3	SGR	597.7	SG3	572.8		
RRT .2790	RRF	.2467	RTF	.9718		
SGB14536.6	R23	-.0259	R13	.9718		
SG114525.3	SG2	573.9	THA	.66		

ORBIT DETERMINATION ACCURACY

ST	2566.9	SR	489.6	SS	635.0
CRT	.7198	CRS	.1000	CST	-.6152
LSA	2620.4	MSA	603.2	SSA	35.3
EL1	2591.3	EL2	336.6	ALF	7.95

LAUNCH DATE DEC 10 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 847.852 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.227 GAL -2.54 AZL 88.05 HCA 249.50 SMA 190.20 ECC .22957 INC 1.9549 V1 30.243
RP 206.84 LAP -1.83 LOP 327.46 VP 24.198 GAP -12.30 AZP 90.68 TAL 346.35 TAP 235.85 RCA 146.54 APO 233.87 V2 26.477
RC 328.562 GL 19.52 GP -3.99 ZAL 111.92 ZAP 30.60 ETS 172.08 ZAE 48.64 ETE 176.23 ZAC 83.34 ETC 256.40 CLP 30.36

PLANETOCENTRIC CONIC

C3 11.483 VHL 3.389 DLA 13.48 RAL 198.13 RAD 6567.4 VEL 11.527 PTH 2.01 VHP 5.625 DPA -1.44 RAP 176.93 ECC 1.1890

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 9	2522.39	-25.65	61.95	54.75	102.42	18 13 11	1922.4	-23.69	53.84
90.00	9 3 48	4301.96	3.32	177.67	50.72	61.86	10 15 30	3702.0	-.46	171.04
100.00	18 59 33	2237.30	-26.69	40.71	54.48	103.98	19 36 50	1637.3	-24.50	32.59
100.00	10 18 5	4062.29	4.26	159.54	50.21	60.38	11 25 47	3462.3	.28	153.00
110.00	20 23 39	1974.13	-29.42	19.83	53.59	108.25	20 56 33	1374.1	-26.64	11.75
110.00	11 10 28	3898.22	6.68	145.59	48.71	56.40	12 15 26	3298.2	2.21	139.35

DIFFERENTIAL CORRECTIONS
TDE .7065 TRA 4.2036 TC-18.6205 BAU 2.8585
RDE .2847 RRA .1987 RC3 .1109 FAU .09384
FDE -.2995 FRA 2.3441 FC3-7.0753 BSP 51535
BDE .7617 BRA 4.2083 BC318.6208 FSP 1838

MID-COURSE EXECUTION ACCURACY
SGT14632.1 SGR 597.2 SG3 545.5
RRT .2462 RRF .2132 RTF .9709
SGB14644.2 R23 -.0270 R13 .9709
SG114632.8 SG2 578.8 THA .58

ORBIT DETERMINATION ACCURACY
ST 2525.5 SR 492.4 SS 647.0
CRT .6445 CRS .1790 CST -.6337
LSA 2578.4 MSA 624.4 SSA 34.6
EL1 2545.8 EL2 373.5 ALF 7.32

LAUNCH DATE DEC 10 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 852.194 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.235 GAL -2.72 AZL 88.07 HCA 250.76 SMA 190.34 ECC .23076 INC 1.9327 V1 30.243
RP 206.79 LAP -1.82 LOP 328.73 VP 24.215 GAP -12.40 AZP 90.64 TAL 345.39 TAP 236.15 RCA 146.42 APO 234.27 V2 26.483
RC 329.378 GL 19.05 GP -3.90 ZAL 113.62 ZAP 30.10 ETS 172.08 ZAE 47.84 ETE 176.22 ZAC 83.59 ETC 256.35 CLP 29.87

PLANETOCENTRIC CONIC

C3 11.762 VHL 3.430 DLA 12.39 RAL 199.49 RAD 6567.4 VEL 11.539 PTH 2.01 VHP 5.706 DPA -1.68 RAP 177.67 ECC 1.1936

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 59	2490.10	-25.16	59.72	56.10	103.44	18 27 29	1890.1	-23.06	51.67
90.00	8 59 51	4344.27	4.68	180.04	52.28	62.04	10 12 15	3744.3	.90	173.40
100.00	19 13 41	2207.27	-26.18	38.63	55.81	104.97	19 50 28	1607.3	-23.87	30.59
100.00	10 14 51	4102.33	5.60	161.75	51.78	60.59	11 23 13	3502.3	1.64	155.20
110.00	20 36 16	1948.87	-28.87	18.07	54.88	109.16	21 8 45	1348.9	-25.98	10.08
110.00	11 8 45	3933.50	8.00	147.47	50.30	56.66	12 14 18	3333.5	3.56	141.20

DIFFERENTIAL CORRECTIONS
TDE .5761 TRA 4.4541 TC-18.3396 BAU 2.8838
RDE .2905 RRA .1966 RC3 .1325 FAU .08832
FDE -.3525 FRA 2.3261 FC3-6.5012 BSP 51980
BDE .6452 BRA 4.4584 BC318.3400 FSP 1757

MID-COURSE EXECUTION ACCURACY
SGT14737.9 SGR 597.3 SG3 518.8
RRT .2142 RRF .1803 RTF .9699
SGB14750.0 R23 -.0284 R13 .9699
SG114738.4 SG2 583.4 THA .50

ORBIT DETERMINATION ACCURACY
ST 2508.5 SR 495.7 SS 659.5
CRT .5602 CRS .2500 CST -.6591
LSA 2561.3 MSA 641.6 SSA 33.7
EL1 2524.2 EL2 408.0 ALF 6.49

LAUNCH DATE DEC 10 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 856.531 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.243 GAL -2.92 AZL 88.09 HCA 252.03 SMA 190.49 ECC .23200 INC 1.9108 V1 30.243
RP 206.75 LAP -1.82 LOP 330.00 VP 24.231 GAP -12.50 AZP 90.59 TAL 344.41 TAP 236.44 RCA 146.29 APO 234.68 V2 26.488
RC 330.190 GL 18.58 GP -3.82 ZAL 115.33 ZAP 29.62 ETS 172.07 ZAE 47.05 ETE 176.21 ZAC 83.84 ETC 256.30 CLP 29.39

PLANETOCENTRIC CONIC

C3 12.070 VHL 3.474 DLA 11.30 RAL 200.85 RAD 6567.5 VEL 11.552 PTH 2.02 VHP 5.788 DPA -1.93 RAP 178.42 ECC 1.1986

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 31	2459.04	-24.65	57.58	57.48	104.39	18 41 30	1859.0	-22.43	49.61
90.00	8 56 10	4386.20	6.01	182.40	53.89	62.28	10 9 16	3786.2	2.25	175.74
100.00	19 27 33	2178.35	-25.66	36.64	57.18	105.89	20 3 51	1578.3	-23.23	28.68
100.00	10 11 49	4142.13	6.93	163.96	53.39	60.85	11 20 51	3542.1	2.99	157.39
110.00	20 48 41	1924.47	-28.31	16.39	56.21	110.01	21 20 45	1324.5	-25.32	8.49
110.00	11 7 10	3968.78	9.32	149.35	51.94	56.96	12 13 19	3368.8	4.90	143.05

DIFFERENTIAL CORRECTIONS
TDE .4439 TRA 4.7119 TC-18.0308 BAU 2.9096
RDE .2969 RRA .1941 RC3 .1518 FAU .08299
FDE -.4003 FRA 2.3047 FC3-5.9526 BSP 52425
BDE .5340 BRA 4.7159 BC318.0315 FSP 1677

MID-COURSE EXECUTION ACCURACY
SGT14842.3 SGR 597.9 SG3 493.1
RRT .1830 RRF .1482 RTF .9687
SGB14854.3 R23 -.0298 R13 .9687
SG114842.7 SG2 587.8 THA .42

ORBIT DETERMINATION ACCURACY
ST 2515.7 SR 499.4 SS 671.5
CRT .4697 CRS .3128 CST -.6890
LSA 2569.1 MSA 654.0 SSA 32.9
EL1 2527.0 EL2 438.9 ALF 5.49

LAUNCH DATE DEC 10 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 860.864 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.251 GAL -3.11 AZL 88.11 HCA 253.30 SMA 190.63 ECC .23330 INC 1.8892 V1 30.243
RP 206.71 LAP -1.81 LOP 331.27 VP 24.246 GAP -12.61 AZP 90.54 TAL 343.42 TAP 236.72 RCA 146.16 APO 235.10 V2 26.492
RC 331.000 GL 18.10 GP -3.74 ZAL 117.02 ZAP 29.14 ETS 172.06 ZAE 46.27 ETE 176.19 ZAC 84.09 ETC 256.25 CLP 28.92

PLANETOCENTRIC CONIC

C3 12.409 VHL 3.523 DLA 10.22 RAL 202.20 RAD 6567.5 VEL 11.567 PTH 2.02 VHP 5.871 DPA -2.19 RAP 179.18 ECC 1.2042

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 44	2429.19	-24.13	55.55	58.89	105.28	18 55 13	1829.2	-21.80	47.65
90.00	8 52 41	4427.79	7.32	184.76	55.55	62.57	10 6 29	3827.8	3.59	178.06
100.00	19 41 9	2150.51	-25.12	34.74	58.57	106.75	20 16 59	1550.5	-22.59	26.86
100.00	10 8 58	4181.71	8.23	166.17	55.06	61.16	11 18 40	3581.7	4.32	159.57
110.00	21 0 54	1900.94	-27.75	14.79	57.58	110.81	21 32 35	1300.9	-24.67	6.98
110.00	11 5 42	4004.04	10.62	151.25	53.62	57.32	12 12 26	3404.0	6.24	144.90

DIFFERENTIAL CORRECTIONS
TDE .3110 TRA 4.9770 TC-17.6969 BAU 2.9359
RDE .3041 RRA .1912 RC3 .1690 FAU .07781
FDE -.4427 FRA 2.2777 FC3-5.4290 BSP 52868
BDE .4349 BRA 4.9807 BC317.6977 FSP 1598

MID-COURSE EXECUTION ACCURACY
SGT14945.3 SGR 598.9 SG3 467.8
RRT .1526 RRF .1166 RTF .9674
SGB14957.3 R23 -.0316 R13 .9674
SG114945.6 SG2 591.9 THA .35

ORBIT DETERMINATION ACCURACY
ST 2546.6 SR 503.6 SS 681.9
CRT .3765 CRS .3685 CST -.7202
LSA 2601.1 MSA 661.2 SSA 31.9
EL1 2553.9 EL2 465.2 ALF 4.40

LAUNCH DATE DEC 10 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 865.191 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.259 GAL -3.31 AZL 88.13 HCA 254.57 SMA 190.77 ECC .23466 INC 1.8679 V1 30.243
RP 206.69 LAP -1.80 LOP 332.54 VP 24.260 GAP -12.71 AZP 90.50 TAL 342.42 TAP 236.99 RCA 146.01 APO 235.54 V2 26.494
RC 331.806 GL 17.62 GP -3.66 ZAL 118.71 ZAP 28.68 ETS 172.05 ZAE 45.50 ETE 176.18 ZAC 84.34 ETC 256.20 CLP 28.46

PLANETOCENTRIC CONIC

C3 12.780 VHL 3.575 DLA 9.15 RAL 203.53 RAD 6567.5 VEL 11.583 PTH 2.03 VHP 5.955 DPA -2.46 RAP 179.95 ECC 1.2103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 40	2400.52	-23.60	53.62	60.33	106.11	19 8 41	1800.5	-21.17	45.79
90.00	8 49 25	4469.05	8.61	187.11	57.25	62.92	10 3 54	3869.1	4.91	180.38
100.00	19 54 29	2123.75	-24.59	32.93	60.00	107.56	20 29 53	1523.7	-21.95	25.13
100.00	10 6 17	4221.06	9.52	168.39	56.77	61.53	11 16 38	3621.1	5.64	161.74
110.00	21 12 55	1878.31	-27.19	13.27	58.97	111.56	21 44 13	1278.3	-24.02	5.54
110.00	11 4 21	4039.26	11.91	153.17	55.34	57.72	12 11 40	3439.3	7.56	146.77

DIFFERENTIAL CORRECTIONS
TDE .1753 TRA 5.2495 TC-17.3393 BAU 2.9627
RDE .3118 RRA .1880 RC3 .1841 FAU .07276
FDE -.4803 FRA 2.2476 FC3-4.9291 BSP 53279
BDE .3578 BRA 5.2529 BC317.3402 FSP 1521

MID-COURSE EXECUTION ACCURACY
SGT15046.4 SGR 600.2 SG3 443.3
RRT .1228 RRF .0860 RTF .9659
SGB15058.4 R23 -.0330 R13 .9659
SG115046.6 SG2 595.7 THA .28

ORBIT DETERMINATION ACCURACY
ST 2598.8 SR 508.1 SS 690.7
CRT .2825 CRS .4177 CST -.7515
LSA 2654.8 MSA 663.4 SSA 31.1
EL1 2602.9 EL2 486.7 ALF 3.28

LAUNCH DATE DEC 10 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 869.512 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.266 GAL -3.52 AZL 88.15 HCA 255.84 SMA 190.92 ECC .23608 INC 1.8469 V1 30.243
RP 206.68 LAP -1.79 LOP 333.81 VP 24.272 GAP -12.82 AZP 90.45 TAL 341.41 TAP 237.25 RCA 145.85 APO 235.99 V2 26.496
RC 332.609 GL 17.14 GP -3.59 ZAL 120.39 ZAP 28.23 ETS 172.04 ZAE 44.75 ETE 176.17 ZAC 84.59 ETC 256.16 CLP 28.02

PLANETOCENTRIC CONIC

C3 13.185 VHL 3.631 DLA 8.09 RAL 204.86 RAD 6567.5 VEL 11.600 PTH 2.03 VHP 6.041 DPA -2.74 RAP 180.73 ECC 1.2170

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 20	2373.02	-23.07	51.78	61.80	106.89	19 21 53	1773.0	-20.54	44.02
90.00	8 46 20	4510.01	9.87	189.45	59.00	63.32	10 1 30	3910.0	6.21	182.69
100.00	20 7 35	2098.06	-24.05	31.22	61.46	108.31	20 42 33	1498.1	-21.32	23.48
100.00	10 3 46	4260.21	10.78	170.61	58.52	61.95	11 14 46	3660.2	6.95	163.92
110.00	21 24 45	1856.59	-26.64	11.82	60.40	112.25	21 55 41	1256.6	-23.39	4.17
110.00	11 3 6	4074.44	13.18	155.10	57.11	58.17	12 11 0	3474.4	8.88	148.64

DIFFERENTIAL CORRECTIONS
TDE .0412 TRA 5.5315 TC-16.9547 BAU 2.9889
RDE .3202 RRA .1844 RC3 .1974 FAU .06779
FDE -.5136 FRA 2.2137 FC3-4.4514 BSP 53707
BDE .3229 BRA 5.5346 BC316.9558 FSP 1447

MID-COURSE EXECUTION ACCURACY
SGT15143.8 SGR 601.9 SG3 419.3
RRT .0942 RRF .0561 RTF .9640
SGB15155.7 R23 -.0350 R13 .9640
SG115143.9 SG2 599.2 THA .21

ORBIT DETERMINATION ACCURACY
ST 2671.2 SR 513.0 SS 697.6
CRT .1930 CRS .4618 CST -.7793
LSA 2728.7 MSA 662.2 SSA 30.2
EL1 2673.1 EL2 503.0 ALF 2.20

LAUNCH DATE DEC 10 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 873.825 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.274 GAL -3.73 AZL 88.17 HCA 257.11 SMA 191.07 ECC .23757 INC 1.8261 V1 30.243
RP 206.67 LAP -1.78 LOP 335.08 VP 24.284 GAP -12.93 AZP 90.41 TAL 340.38 TAP 237.49 RCA 145.67 APO 236.46 V2 26.497
RC 333.409 GL 16.66 GP -3.52 ZAL 122.05 ZAP 27.79 ETS 172.03 ZAE 44.00 ETE 176.16 ZAC 84.84 ETC 256.12 CLP 27.58

PLANETOCENTRIC CONIC

C3 13.626 VHL 3.691 DLA 7.04 RAL 206.17 RAD 6567.5 VEL 11.619 PTH 2.04 VHP 6.128 DPA -3.02 RAP 181.51 ECC 1.2243

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 43	2346.67	-22.54	50.03	63.29	107.61	19 34 50	1746.7	-19.92	42.33
90.00	8 43 25	4550.67	11.10	191.80	60.79	63.78	9 59 16	3950.7	7.49	184.99
100.00	20 20 26	2073.45	-23.51	29.58	62.94	109.01	20 54 59	1473.5	-20.70	21.92
100.00	10 1 24	4299.12	12.02	172.84	60.31	62.42	11 13 3	3699.1	8.23	166.09
110.00	21 36 22	1835.79	-26.10	10.45	61.85	112.90	22 6 58	1235.8	-22.77	2.87
110.00	11 1 57	4109.54	14.43	157.05	58.91	58.67	12 10 26	3509.5	10.18	150.53

DIFFERENTIAL CORRECTIONS
TDE -.0950 TRA 5.8204 TC-16.5574 BAU 3.0166
RDE .3293 RRA .1804 RC3 .2087 FAU .06302
FDE -.5421 FRA 2.1751 FC3-4.0041 BSP 54101
BDE .3427 BRA 5.8232 BC316.5588 FSP 1373

MID-COURSE EXECUTION ACCURACY
SGT15241.7 SGR 603.8 SG3 396.1
RRT .0663 RRF .0269 RTF .9620
SGB15253.6 R23 -.0371 R13 .9620
SG115241.7 SG2 602.5 THA .15

ORBIT DETERMINATION ACCURACY
ST 2759.3 SR 518.1 SS 701.9
CRT .1078 CRS .5010 CST -.8047
LSA 2818.1 MSA 657.6 SSA 29.3
EL1 2759.9 EL2 514.9 ALF 1.20

LAUNCH DATE DEC 10 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 878.131 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.282 GAL -3.94 AZL 88.19 HCA 258.38 SMA 191.21 ECC .23913 INC 1.8055 V1 30.243
RP 206.67 LAP -1.77 LOP 336.35 VP 24.295 GAP -13.05 AZP 90.36 TAL 339.34 TAP 237.72 RCA 145.49 APO 236.94 V2 26.497
RC 334.204 GL 16.17 GP -3.45 ZAL 123.69 ZAP 27.36 ETS 172.02 ZAE 43.26 ETE 176.14 ZAC 85.09 ETC 256.08 CLP 27.16

PLANETOCENTRIC CONIC

C3 14.106 VHL 3.756 DLA 6.01 RAL 207.47 RAD 6567.6 VEL 11.640 PTH 2.04 VHP 6.217 DPA -3.32 RAP 182.31 ECC 1.2321

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 51	2321.46	-22.01	48.37	64.82	108.28	19 47 32	1721.5	-19.31	40.74
90.00	8 40 40	4591.03	12.31	194.16	62.62	64.30	9 57 11	3991.0	8.75	187.29
100.00	20 33 2	2049.91	-22.98	28.04	64.46	109.66	21 7 12	1449.9	-20.09	20.43
100.00	9 59 9	4337.82	13.23	175.07	62.15	62.95	11 11 27	3737.8	9.49	168.27
110.00	21 47 48	1815.93	-25.57	9.15	63.34	113.50	22 18 4	1215.9	-22.17	1.65
110.00	11 0 53	4144.57	15.66	159.02	60.76	59.22	12 9 57	3544.6	11.46	152.43

DIFFERENTIAL CORRECTIONS
TDE -.2321 TRA 6.1173 TC-16.1410 BAU 3.0442
RDE .3390 RRA .1761 RC3 .2182 FAU .05833
FDE -.5658 FRA 2.1331 FC3-3.5799 BSP 54484
BDE .4108 BRA 6.1198 BC316.1425 FSP 1301

MID-COURSE EXECUTION ACCURACY
SGT15335.6 SGR 606.0 SG3 373.5
RRT .0392 RRF -.0013 RTF .9597
SGB15347.5 R23 -.0389 R13 .9597
SG115335.6 SG2 605.5 THA .09

ORBIT DETERMINATION ACCURACY
ST 2860.5 SR 523.4 SS 703.4
CRT .0289 CRS .5356 CST -.8271
LSA 2920.1 MSA 650.5 SSA 28.4
EL1 2860.5 EL2 523.2 ALF .31

LAUNCH DATE DEC 10 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 882.429 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.290 GAL -4.16 AZL 88.21 HCA 259.64 SMA 191.36 ECC .24076 INC 1.7851 V1 30.243
RP 206.68 LAP -1.76 LOP 337.62 VP 24.304 GAP -13.17 AZP 90.32 TAL 338.29 TAP 237.94 RCA 145.29 APO 237.43 V2 26.495
RC 334.996 GL 15.69 GP -3.39 ZAL 125.32 ZAP 26.94 ETS 172.00 ZAE 42.53 ETE 176.13 ZAC 85.34 ETC 256.04 CLP 26.74

PLANETOCENTRIC CONIC

C3 14.625 VHL 3.824 DLA 4.99 RAL 208.76 RAD 6567.6 VEL 11.662 PTH 2.05 VHP 6.306 DPA -3.61 RAP 183.11 ECC 1.2407

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 43	2297.39	-21.49	46.80	66.37	108.90	20 0 0	1697.4	-18.71	39.22
90.00	8 38 3	4631.11	13.48	196.52	64.49	64.86	9 55 14	4031.1	9.98	189.59
100.00	20 45 24	2027.45	-22.46	26.57	66.00	110.26	21 19 12	1427.4	-19.50	19.03
100.00	9 57 3	4376.29	14.41	177.32	64.03	63.52	11 9 59	3776.3	10.73	170.45
110.00	21 59 2	1797.01	-25.05	7.93	64.85	114.06	22 28 59	1197.0	-21.58	[illegible].49
110.00	10 59 54	4179.49	16.87	161.01	62.65	59.82	12 9 34	3579.5	12.73	154.34

DIFFERENTIAL CORRECTIONS
TDE -.3696 TRA 6.4223 TC-15.7136 BAU 3.0727
RDE .3492 RRA .1713 RC3 .2260 FAU .05377
FDE -.5863 FRA 2.0861 FC3-3.1830 BSP 54854
BDE .5085 BRA 6.4246 BC315.7152 FSP 1229

MID-COURSE EXECUTION ACCURACY
SGT15428.6 SGR 608.3 SG3 351.4
RRT .0129 RRF -.0292 RTF .9569
SGB15440.6 R23 -.0415 R13 .9569
SG115428.6 SG2 608.2 THA .03

ORBIT DETERMINATION ACCURACY
ST 2972.0 SR 528.9 SS 702.6
CRT -.0430 CRS .5677 CST -.8454
LSA 3031.9 MSA 642.6 SSA 27.6
EL1 2972.1 EL2 528.4 ALF 179.55

LAUNCH DATE DEC 10 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 886.717 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.299 GAL -4.39 AZL 88.24 HCA 260.91 SMA 191.51 ECC .24247 INC 1.7648 V1 30.243
RP 206.70 LAP -1.74 LOP 338.89 VP 24.313 GAP -13.29 AZP 90.28 TAL 337.23 TAP 238.14 RCA 145.07 APO 237.94 V2 26.493
RC 335.784 GL 15.21 GP -3.33 ZAL 126.93 ZAP 26.53 ETS 171.99 ZAE 41.82 ETE 176.11 ZAC 85.59 ETC 256.01 CLP 26.34

PLANETOCENTRIC CONIC

C3 15.187 VHL 3.897 DLA 3.99 RAL 210.03 RAD 6567.6 VEL 11.686 PTH 2.06 VHP 6.398 DPA -3.92 RAP 183.92 ECC 1.2499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 20	2274.43	-20.97	45.31	67.95	109.47	20 12 14	1674.4	-18.13	37.79
90.00	8 35 34	4670.90	14.62	198.89	66.40	65.47	9 53 25	4070.9	11.19	191.89
100.00	20 57 32	2006.04	-21.95	25.19	67.57	110.82	21 30 58	1406.0	-18.92	17.70
100.00	9 55 3	4414.53	15.55	179.58	65.95	64.15	11 8 37	3814.5	11.95	172.64
110.00	22 10 4	1779.05	-24.54	6.77	66.39	114.58	22 39 43	1179.0	-21.02	359.40
110.00	10 59 1	4214.28	18.05	163.02	64.58	60.46	12 9 15	3614.3	13.98	156.27

DIFFERENTIAL CORRECTIONS
TDE -.5077 TRA 6.7354 TC-15.2763 BAU 3.1019
RDE .3601 RRA .1662 RC3 .2322 FAU .04934
FDE -.6024 FRA 2.0359 FC3-2.8126 BSP 55194
BDE .6224 BRA 6.7374 BC315.2781 FSP 1159

MID-COURSE EXECUTION ACCURACY
SGT15519.6 SGR 610.7 SG3 330.1
RRT -.0126 RRF -.0561 RTF .9538
SGB15531.6 R23 .0441 R13 -.9538
SG115519.6 SG2 610.7 THA 179.97

ORBIT DETERMINATION ACCURACY
ST 3090.8 SR 534.5 SS 699.0
CRT -.1079 CRS .5964 CST -.8610
LSA 3150.4 MSA 633.8 SSA 26.8
EL1 3091.4 EL2 531.3 ALF 178.90

LAUNCH DATE DEC 10 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 890.996 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.307 GAL -4.62 AZL 88.26 HCA 262.18 SMA 194.66 ECC .24425 INC 1.7447 V1 30.243
RP 206.73 LAP -1.73 LOP 340.16 VP 24.320 GAP -13.41 AZP 90.24 TAL 336.15 TAP 238.33 RCA 144.85 APO 238.47 V2 26.490
RC 336.567 GL 14.74 GP -3.27 ZAL 128.51 ZAP 26.13 ETS 171.97 ZAE 41.11 ETE 176.09 ZAC 85.84 ETC 255.97 CLP 25.94

PLANETOCENTRIC CONIC

C3 15.793 VHL 3.974 DLA 3.00 RAL 211.28 RAD 6567.6 VEL 11.712 PTH 2.06 VHP 6.491 DPA -4.23 RAP 184.74 ECC 1.2599

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 42	2252.59	-20.47	43.90	69.56	110.00	20 24 14	1652.6	-17.56	36.44
90.00	8 33 13	4710.40	15.72	201.26	68.36	66.14	9 51 44	4110.4	12.36	194.19
100.00	21 9 26	1985.70	-21.45	23.88	69.16	111.34	21 42 32	1385.7	-18.36	16.45
100.00	9 53 10	4452.52	16.67	181.85	67.90	64.82	11 7 22	3852.5	13.14	174.84
110.00	22 20 54	1762.04	-24.06	5.69	67.95	115.05	22 50 16	1162.0	-20.48	358.37
110.00	10 58 12	4248.94	19.20	165.04	66.55	61.16	12 9 0	3648.9	15.20	158.20

DIFFERENTIAL CORRECTIONS
TDE -.6458 TRA 7.0577 TC-14.8313 BAU 3.1318
RDE .3715 RRA .1606 RC3 .2370 FAU .04501
FDE -.6146 FRA 1.9812 FC3-2.4672 BSP 55527
BDE .7450 BRA 7.0596 BC314.8332 FSP 1090

MID-COURSE EXECUTION ACCURACY
SGT15609.3 SGR 613.3 SG3 309.3
RRT -.0372 RRF -.0824 RTF .9501
SGB15621.3 R23 .0470 R13 -.9501
SG115609.3 SG2 612.9 THA 179.92

ORBIT DETERMINATION ACCURACY
ST 3215.0 SR 540.2 SS 692.5
CRT -.1659 CRS .6226 CST -.8737
LSA 3273.6 MSA 624.9 SSA 26.0
EL1 3216.3 EL2 532.5 ALF 178.36

LAUNCH DATE DEC 10 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 895.263 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.315 GAL -4.85 AZL 88.28 HCA 263.45 SMA 191.81 ECC .24611 INC 1.7248 V1 30.243
RP 206.77 LAP -1.71 LOP 341.43 VP 24.327 GAP -13.54 AZP 90.20 TAL 335.06 TAP 238.51 RCA 144.60 APO 239.01 V2 26.485
RC 337.346 GL 14.26 GP -3.21 ZAL 130.08 ZAP 25.75 ETS 171.95 ZAE 40.41 ETE 176.07 ZAC 86.09 ETC 255.95 CLP 25.56

PLANETOCENTRIC CONIC

C3 16.446 VHL 4.055 DLA 2.04 RAL 212.52 RAD 6567.7 VEL 11.740 PTH 2.07 VHP 6.585 DPA -4.55 RAP 185.57 ECC 1.2707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 49	2231.83	-19.98	42.58	71.18	110.49	20 36 1	1631.8	-17.02	35.16
90.00	8 30 59	4749.60	16.78	203.65	70.34	66.85	9 50 9	4149.6	13.51	196.50
100.00	21 21 7	1966.40	-20.97	22.65	70.78	111.81	21 53 53	1366.4	-17.82	15.27
100.00	9 51 23	4490.27	17.75	184.13	69.90	65.54	11 6 13	3890.3	14.30	177.04
110.00	22 31 32	1745.99	-23.59	4.68	69.54	115.49	23 0 38	1146.0	-19.96	357.41
110.00	10 57 27	4283.45	20.32	167.09	68.56	61.90	12 8 50	3683.4	16.40	160.16

DIFFERENTIAL CORRECTIONS
TDE -.7828 TRA 7.3882 TC-14.3813 BAU 3.1625
RDE .3836 RRA .1546 RC3 .2403 FAU .04079
FDE -.6229 FRA 1.9222 FC3-2.1473 BSP 55863
BDE .8717 BRA 7.3898 BC314.3833 FSP 1023

MID-COURSE EXECUTION ACCURACY
SGT15696.4 SGR 616.0 SG3 289.0
RRT -.0610 RRF -.1079 RTF .9459
SGB15708.5 R23 .0502 R13 -.9459
SG115696.5 SG2 614.8 THA 179.86

ORBIT DETERMINATION ACCURACY
ST 3341.3 SR 545.9 SS 683.2
CRT -.2171 CRS .6465 CST -.8838
LSA 3398.3 MSA 616.1 SSA 25.3
EL1 3343.5 EL2 532.5 ALF 177.92

LAUNCH DATE DEC 10 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 899.519 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.323 GAL -5.09 AZL 88.30 HCA 264.72 SMA 191.96 ECC .24805 INC 1.7049 V1 30.243
RP 206.81 LAP -1.70 LOP 342.69 VP 24.332 GAP -13.67 AZP 90.16 TAL 333.96 TAP 238.68 RCA 144.34 APO 239.57 V2 26.480
RC 338.120 GL 13.80 GP -3.16 ZAL 131.61 ZAP 25.37 ETS 171.94 ZAE 39.73 ETE 176.05 ZAC 86.34 ETC 255.92 CLP 25.18

PLANETOCENTRIC CONIC

C3 17.149 VHL 4.141 DLA 1.09 RAL 213.75 RAD 6567.7 VEL 11.770 PTH 2.08 VHP 6.681 DPA -4.87 RAP 186.40 ECC 1.2822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 43	2212.17	-19.51	41.33	72.83	110.94	20 47 35	1612.2	-16.49	33.96
90.00	8 28 51	4788.50	17.81	206.04	72.37	67.61	9 48 40	4188.5	14.62	198.82
100.00	21 32 34	1948.15	-20.50	21.50	72.42	112.25	22 5 2	1348.1	-17.30	14.16
100.00	9 49 42	4527.75	18.79	186.43	71.93	66.31	11 5 9	3927.8	15.43	179.25
110.00	22 41 58	1730.89	-23.14	3.73	71.14	115.89	23 10 49	1130.9	-19.47	356.52
110.00	10 56 46	4317.77	21.40	169.16	70.60	62.69	12 8 44	3717.8	17.57	162.13

DIFFERENTIAL CORRECTIONS
TDE -.9213 TRA 7.7265 TC-13.9307 BAU 3.1943
RDE .3961 RRA .1482 RC3 .2424 FAU .03667
FDE -.6282 FRA 1.8595 FC3-1.8512 BSP 56135
BDE 1.0029 BRA 7.7280 BC313.9328 FSP 957

MID-COURSE EXECUTION ACCURACY
SGT15781.9 SGR 618.7 SG3 269.5
RRT -.0842 RRF -.1329 RTF .9409
SGB15794.0 R23 .0538 R13 -.9409
SG115782.0 SG2 616.5 THA 179.81

ORBIT DETERMINATION ACCURACY
ST 3469.0 SR 551.6 SS 671.6
CRT -.2631 CRS .6688 CST -.8920
LSA 3524.1 MSA 607.6 SSA 24.6
EL1 3472.1 EL2 531.7 ALF 177.55

LAUNCH DATE DEC 10 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 903.762 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.331 GAL -5.33 AZL 88.31 HCA 265.99 SMA 192.11 ECC .25008 INC 1.6852 V1 30.243
RP 206.87 LAP -1.68 LOP 343.96 VP 24.336 GAP -13.81 AZP 90.12 TAL 332.85 TAP 238.83 RCA 144.07 APO 240.15 V2 26.474
RC 338.890 GL 13.34 GP -3.10 ZAL 133.13 ZAP 25.00 ETS 171.92 ZAE 39.05 ETE 176.02 ZAC 86.59 ETC 255.90 CLP 24.82

PLANETOCENTRIC CONIC

C3 17.904 VHL 4.231 DLA .17 RAL 214.95 RAD 6567.7 VEL 11.802 PTH 2.09 VHP 6.779 DPA -5.20 RAP 187.25 ECC 1.2947

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 22 22	2193.56	-19.05	40.15	74.50	111.35	20 58 55	1593.6	-15.98	32.82
90.00	8 26 50	4827.10	18.79	208.45	74.43	68.42	9 47 17	4227.1	15.70	201.14
100.00	21 43 47	1930.93	-20.05	20.41	74.07	112.65	22 15 58	1330.9	-16.81	13.12
100.00	9 48 6	4564.97	19.79	188.74	74.00	67.13	11 4 11	3965.0	16.52	181.47
110.00	22 52 13	1716.74	-22.72	2.85	72.77	116.25	23 20 49	1116.7	-19.01	355.68
110.00	10 56 10	4351.91	22.45	171.26	72.68	63.52	12 8 42	3751.9	18.72	164.12

DIFFERENTIAL CORRECTIONS
TDE-1.0584 TRA 8.0747 TC-13.4790 BAU 3.2269
RDE .4093 RRA .1414 RC3 .2433 FAU .03264
FDE -.6301 FRA 1.7921 FC3-1.5784 BSP 56424
BDE 1.1348 BRA 8.0759 BC313.4812 FSP 892

MID-COURSE EXECUTION ACCURACY
SGT15865.7 SGR 621.4 SG3 250.4
RRT -.1065 RRF -.1573 RTF .9349
SGB15877.8 R23 .0579 R13 -.9349
SG115865.8 SG2 617.9 THA 179.76

ORBIT DETERMINATION ACCURACY
ST 3595.9 SR 557.2 SS 657.3
CRT -.3035 CRS .6897 CST -.8981
LSA 3648.6 MSA 599.7 SSA 24.0
EL1 3599.9 EL2 530.3 ALF 177.25

LAUNCH DATE DEC 10 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 907.991 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.339 GAL -5.58 AZL 88.33 HCA 267.25 SMA 192.26 ECC .25219 INC 1.6655 V1 30.243
RP 206.93 LAP -1.66 LOP 345.23 VP 24.339 GAP -13.95 AZP 90.08 TAL 331.72 TAP 238.97 RCA 143.77 APO 240.75 V2 26.466
RC 339.657 GL 12.88 GP -3.05 ZAL 134.62 ZAP 24.64 ETS 171.90 ZAE 38.38 ETE 176.00 ZAC 86.84 ETC 255.88 CLP 24.47

PLANETOCENTRIC CONIC

C3 18.715 VHL 4.326 DLA -.73 RAL 216.14 RAD 6567.8 VEL 11.836 PTH 2.10 VHP 6.879 DPA -5.53 RAP 188.10 ECC 1.3080

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 33 47	2176.01	-18.61	39.05	76.19	111.73	21 10 3	1576.0	-15.50	31.76
90.00	8 24 55	4865.38	19.73	210.86	76.52	69.27	9 46 0	4265.4	16.74	203.47
100.00	21 54 47	1914.72	-19.62	19.40	75.75	113.01	22 26 42	1314.7	-16.34	12.15
100.00	9 46 36	4601.90	20.75	191.06	76.10	67.99	11 3 18	4001.9	17.58	183.70
110.00	23 2 15	1703.54	-22.32	2.03	74.42	116.59	23 30 39	1103.5	-18.57	354.91
110.00	10 55 37	4385.85	23.47	173.37	74.80	64.40	12 8 43	3785.8	19.83	166.12

DIFFERENTIAL CORRECTIONS
TDE-1.1958 TRA 8.4305 TC-13.0312 BAU 3.2611
RDE .4229 RRA .1341 RC3 .2432 FAU .02873
FDE -.6288 FRA 1.7213 FC3-1.3288 BSP 56664
BDE 1.2684 BRA 8.4316 BC313.0335 FSP 828

MID-COURSE EXECUTION ACCURACY
SGT15947.5 SGR 624.2 SG3 232.1
RRT -.1282 RRF -.1810 RTF .9278
SGB15959.7 R23 .0624 R13 -.9278
SG115947.7 SG2 619.0 THA 179.71

ORBIT DETERMINATION ACCURACY
ST 3720.8 SR 562.7 SS 640.8
CRT -.3394 CRS .7091 CST -.9028
LSA 3771.0 MSA 592.2 SSA 23.4
EL1 3725.8 EL2 528.6 ALF 177.00

LAUNCH DATE DEC 10 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 912.206 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.347 GAL -5.84 AZL 88.35 HCA 268.52 SMA 192.41 ECC .25440 INC 1.6458 V1 30.243
RP 207.00 LAP -1.65 LOP 346.50 VP 24.342 GAP -14.10 AZP 90.04 TAL 330.58 TAP 239.10 RCA 143.46 APO 241.36 V2 26.458
RC 340.420 GL 12.43 GP -3.00 ZAL 136.08 ZAP 24.30 ETS 171.88 ZAE 37.72 ETE 175.97 ZAC 87.09 ETC 255.86 CLP 24.12

PLANETOCENTRIC CONIC

C3 19.585 VHL 4.425 DLA -1.61 RAL 217.32 RAD 6567.8 VEL 11.873 PTH 2.11 VHP 6.980 DPA -5.87 RAP 188.96 ECC 1.3223

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 44 59	2159.48	-18.19	38.02	77.90	112.08	21 20 59	1559.5	-15.04	30.77
90.00	8 23 5	4903.35	20.63	213.29	78.64	70.16	9 44 48	4303.3	17.74	205.81
100.00	22 5 35	1899.51	-19.22	18.45	77.45	113.35	22 37 15	1299.5	-15.89	11.24
100.00	9 45 10	4638.56	21.67	193.40	78.23	68.89	11 2 29	4038.6	18.60	185.94
110.00	23 12 7	1691.26	-21.95	1.28	76.08	116.89	23 40 18	1091.3	-18.16	354.19
110.00	10 55 8	4419.57	24.44	175.50	76.95	65.33	12 8 48	3819.6	20.91	168.14

DIFFERENTIAL CORRECTIONS
TDE-1.3335 TRA 8.7951 TC-12.5871 BAU 3.2963
RDE .4371 RRA .1264 RC3 .2422 FAU .02487
FDE -.6245 FRA 1.6460 FC3-1.0995 BSP 56879
BDE 1.4033 BRA 8.7961 BC312.5894 FSP 765

MID-COURSE EXECUTION ACCURACY
SGT16026.9 SGR 626.9 SG3 214.2
RRT -.1493 RRF -.2040 RTF .9192
SGB16039.1 R23 .0673 R13 -.9193
SG116027.2 SG2 619.9 THA 179.66

ORBIT DETERMINATION ACCURACY
ST 3843.3 SR 568.1 SS 622.0
CRT -.3716 CRS .7277 CST -.9060
LSA 3890.7 MSA 585.1 SSA 22.8
EL1 3849.2 EL2 526.6 ALF 176.80

LAUNCH DATE DEC 10 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 916.405 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.356 GAL -6.10 AZL 88.37 HCA 269.78 SMA 192.57 ECC .25671 INC 1.6262 V1 30.243
RP 207.08 LAP -1.63 LOP 347.76 VP 24.343 GAP -14.25 AZP 90.01 TAL 329.44 TAP 239.22 RCA 143.13 APO 242.00 V2 26.449
RC 341.179 GL 11.99 GP -2.96 ZAL 137.51 ZAP 23.96 ETS 171.86 ZAE 37.07 ETE 175.94 ZAC 87.34 ETC 255.84 CLP 23.78

PLANETOCENTRIC CONIC

C3 20.516 VHL 4.529 DLA -2.47 RAL 218.48 RAD 6567.8 VEL 11.912 PTH 2.12 VHP 7.083 DPA -6.22 RAP 189.83 ECC 1.3376

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 55 58	2143.96	-17.79	37.06	79.62	112.40	21 31 42	1544.0	-14.60	29.84
90.00	8 21 20	4940.99	21.48	215.72	80.80	71.09	9 43 41	4341.0	18.70	208.15
100.00	22 16 10	1885.28	-18.83	17.57	79.16	113.65	22 47 35	1285.3	-15.47	10.39
100.00	9 43 50	4674.91	22.54	195.75	80.39	69.83	11 1 44	4074.9	19.59	188.20
110.00	23 21 46	1679.90	-21.59	.59	77.76	117.17	23 49 46	1079.9	-17.78	353.53
110.00	10 54 43	4453.05	25.38	177.65	79.14	66.29	12 8 56	3853.1	21.95	170.18

DIFFERENTIAL CORRECTIONS
TDE-1.4705 TRA 9.1701 TC-12.1485 BAU 3.3327
RDE .4518 RRA .1183 RC3 .2404 FAU .02113
FDE -.6174 FRA 1.5665 FC3 -.8915 BSP 57093
BDE 1.5383 BRA 9.1709 BC312.1509 FSP 704

MID-COURSE EXECUTION ACCURACY
SGT16105.3 SGR 629.7 SG3 197.0
RRT -.1696 RRF -.2265 RTF .9089
SGB16117.6 R23 .0731 R13 -.9090
SG116105.7 SG2 620.5 THA 179.62

ORBIT DETERMINATION ACCURACY
ST 3962.5 SR 573.3 SS 601.1
CRT -.4000 CRS .7455 CST -.9079
LSA 4007.0 MSA 578.7 SSA 22.2
EL1 3969.3 EL2 524.6 ALF 176.63

LAUNCH DATE DEC 10 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 7 1966

HELIOCENTRIC CONIC DISTANCE 920.587 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.364 GAL -6.37 AZL 88.39 HCA 271.05 SMA 192.72 ECC .25911 INC 1.6066 V1 30.243
RP 207.17 LAP -1.61 LOP 349.02 VP 24.343 GAP -14.40 AZP 89.97 TAL 328.28 TAP 239.32 RCA 142.79 APO 242.66 V2 26.438
RC 341.936 GL 11.56 GP -2.91 ZAL 138.92 ZAP 23.63 ETS 171.84 ZAE 36.43 ETE 175.91 ZAC 87.58 ETC 255.83 CLP 23.46

PLANETOCENTRIC CONIC

C3 21.513 VHL 4.638 DLA -3.30 RAL 219.62 RAD 6567.9 VEL 11.954 PTH 2.13 VHP 7.189 DPA -6.56 RAP 190.70 ECC 1.3540

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 6 44	2129.43	-17.42	36.16	81.36	112.69	21 42 14	1529.4	-14.19	28.97
90.00	8 19 40	4978.31	22.28	218.16	82.98	72.06	9 42 39	4378.3	19.62	210.50
100.00	22 26 32	1872.00	-18.46	16.76	80.89	113.93	22 57 44	1272.0	-15.08	9.60
100.00	9 42 33	4710.97	23.37	198.11	82.58	70.81	11 1 4	4111.0	20.53	190.46
110.00	23 31 15	1669.44	-21.27	359.95	79.46	117.41	23 59 4	1069.4	-17.43	352.93
110.00	10 54 20	4486.30	26.27	179.83	81.36	67.30	12 9 7	3886.3	22.96	172.23

DIFFERENTIAL CORRECTIONS
TDE-1.6074 TRA 9.5531 TC-11.7175 BAU 3.3707
RDE .4670 RRA .1097 RC3 .2378 FAU .01744
FDE -.6077 FRA 1.4827 FC3 -.7019 BSP 57243
BDE 1.6738 BRA 9.5538 BC311.7199 FSP 644

MID-COURSE EXECUTION ACCURACY
SGT16180.8 SGR 632.3 SG3 180.3
RRT -.1894 RRF -.2483 RTF .8961
SGB16193.2 R23 .0797 R13 -.8962
SG116181.3 SG2 620.9 THA 179.58

ORBIT DETERMINATION ACCURACY
ST 4077.3 SR 578.3 SS 578.3
CRT -.4254 CRS .7628 CST -.9085
LSA 4118.8 MSA 572.7 SSA 21.7
EL1 4084.8 EL2 522.4 ALF 176.49

LAUNCH DATE DEC 10 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 9 1966

HELIOCENTRIC CONIC DISTANCE 924.751 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.372 GAL -6.64 AZL 88.41 HCA 272.31 SMA 192.88 ECC .26161 INC 1.5870 V1 30.243
RP 207.27 LAP -1.59 LOP 350.29 VP 24.342 GAP -14.56 AZP 89.94 TAL 327.10 TAP 239.41 RCA 142.42 APO 243.33 V2 26.427
RC 342.690 GL 11.14 GP -2.87 ZAL 140.30 ZAP 23.31 ETS 171.82 ZAE 35.80 ETE 175.88 ZAC 87.83 ETC 255.83 CLP 23.14

PLANETOCENTRIC CONIC

C3 22.579 VHL 4.752 DLA -4.11 RAL 220.74 RAD 6567.9 VEL 11.998 PTH 2.14 VHP 7.296 DPA -6.92 RAP 191.59 ECC 1.3716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 17 18	2115.85	-17.06	35.33	83.12	112.95	21 52 34	1515.8	-13.80	28.16
90.00	8 18 5	5015.30	23.04	220.61	85.18	73.06	9 41 41	4415.3	20.50	212.86
100.00	22 36 43	1859.66	-18.12	16.00	82.63	114.19	23 7 42	1259.7	-14.70	8.88
100.00	9 41 22	4746.71	24.15	200.48	84.80	71.82	11 0 28	4146.7	21.44	192.73
110.00	23 40 32	1659.85	-20.97	359.37	81.17	117.64	24 8 12	1059.9	-17.10	352.38
110.00	10 54 1	4519.29	27.12	182.02	83.61	68.34	12 9 21	3919.3	23.93	174.30

DIFFERENTIAL CORRECTIONS
TDE-1.7417 TRA 9.9470 TC-11.2938 BAU 3.4098
RDE .4826 RRA .1007 RC3 .2346 FAU .01384
FDE -.5954 FRA 1.3948 FC3 -.5306 BSP 57399
BDE 1.8073 BRA 9.9475 BC311.2962 FSP 584

MID-COURSE EXECUTION ACCURACY
SGT16254.4 SGR 634.9 SG3 164.2
RRT -.2084 RRF -.2692 RTF .8803
SGB16266.8 R23 .0874 R13 -.8803
SG116255.0 SG2 621.0 THA 179.53

ORBIT DETERMINATION ACCURACY
ST 4186.7 SR 583.1 SS 553.7
CRT -.4475 CRS .7798 CST -.9076
LSA 4225.2 MSA 567.3 SSA 21.2
EL1 4194.9 EL2 520.4 ALF 176.38

LAUNCH DATE DEC 10 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 11 1966

HELIOCENTRIC CONIC DISTANCE 928.895 EARTH TO MARS

RL 147.31 LAL .00 LOL 77.98 VL 33.381 GAL -6.93 AZL 88.43 HCA 273.57 SMA 193.03 ECC .26423 INC 1.5674 V1 30.243
RP 207.37 LAP -1.56 LOP 351.55 VP 24.340 GAP -14.73 AZP 89.90 TAL 325.92 TAP 239.49 RCA 142.03 APO 244.03 V2 26.415
RC 343.441 GL 10.73 GP -2.83 ZAL 141.66 ZAP 23.00 ETS 171.80 ZAE 35.18 ETE 175.85 ZAC 88.08 ETC 255.82 CLP 22.83

PLANETOCENTRIC CONIC

C3 23.718 VHL 4.870 DLA -4.90 RAL 221.85 RAD 6568.0 VEL 12.046 PTH 2.15 VHP 7.405 DPA -7.27 RAP 192.48 ECC 1.3903

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 27 39	2103.20	-16.72	34.55	84.89	113.19	22 2 42	1503.2	-13.44	27.41
90.00	8 16 35	5051.94	23.74	223.07	87.41	74.10	9 40 47	4451.9	21.33	215.22
100.00	22 46 41	1848.23	-17.80	15.30	84.39	114.42	23 17 29	1248.2	-14.36	8.20
100.00	9 40 14	4782.14	24.88	202.85	87.05	72.87	10 59 56	4182.1	22.30	195.01
110.00	23 49 39	1651.12	-20.69	358.84	82.89	117.84	24 17 10	1051.1	-16.80	351.87
110.00	10 53 46	4552.01	27.92	184.22	85.89	69.43	12 9 38	3952.0	24.86	176.38

DIFFERENTIAL CORRECTIONS
TDE-1.8768 TRA10.3495 TC-10.8809 BAU 3.4510
RDE .4987 RRA .0912 RC3 .2308 FAU .01031
FDE -.5806 FRA 1.3026 FC3 -.3762 BSP 57519
BDE 1.9419 BRA10.3499 BC310.8833 FSP 526

MID-COURSE EXECUTION ACCURACY
SGT16326.1 SGR 637.5 SG3 148.8
RRT -.2269 RRF -.2891 RTF .8602
SGB16338.5 R23 .0962 R13 -.8602
SG116326.7 SG2 620.8 THA 179.49

ORBIT DETERMINATION ACCURACY
ST 4291.5 SR 587.6 SS 527.5
CRT -.4676 CRS .7967 CST -.9054
LSA 4327.1 MSA 562.3 SSA 20.7
EL1 4300.4 EL2 518.4 ALF 176.28

LAUNCH DATE DEC 10 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 13 1966

HELIOCENTRIC CONIC DISTANCE 933.019 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.389	GAL	-7.21	AZL	88.45	HCA	274.83	SMA	193.19	ECC	.26695	INC	1.5478	V1	30.243
RP	207.48	LAP	-1.54	LOP	352.81	VP	24.337	GAP	-14.90	AZP	89.87	TAL	324.73	TAP	239.56	RCA	141.62	APO	244.76	V2	26.402
RC	344.188	GL	10.32	GP	-2.79	ZAL	142.98	ZAP	22.70	ETS	171.78	ZAE	34.57	ETE	175.81	ZAC	88.33	ETC	255.82	CLP	22.53

PLANETOCENTRIC CONIC

C3	24.935	VHL	4.993	DLA	-5.66	RAL	222.94	RAD	6568.0	VEL	12.096	PTH	2.17	VHP	7.517	DPA	-7.63	RAP	193.38	ECC	1.4104

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 37 48	2091.45	-16.40	33.83	86.66	113.41	22 12 39	1491.4	-13.10	26.72
90.00	8 15 9	5088.25	24.40	225.52	89.67	75.16	9 39 57	4488.2	22.12	217.59
100.00	22 56 28	1837.68	-17.50	14.66	86.15	114.62	23 27 6	1237.7	-14.04	7.58
100.00	9 39 10	4817.24	25.56	205.24	89.31	73.95	10 59 27	4217.2	23.11	197.30
110.00	0 2 30	1643.23	-20.44	358.37	84.62	118.02	0 29 54	1043.2	-16.53	351.42
110.00	10 53 33	4584.46	28.68	186.45	88.19	70.54	12 9 57	3984.5	25.76	178.49

DIFFERENTIAL CORRECTIONS

TDE	-2.0109	TRA	10.7620	TC	-10.4771	BAU	3.4934
RDE	.5152	RRA	.0813	RC3	.2266	FAU	.00682
FDE	-.5633	FRA	1.2064	FC3	-.2367	BSP	57587
BDE	2.0759	BRA	10.7623	BC3	10.4795	FSP	469

MID-COURSE EXECUTION ACCURACY

SGT	16394.9	SGR	639.9	SG3	134.1		
RRT	-.2448	RRF	-.3073	RTF	.8342		
SGB	16407.4	R23	.1060	R13	-.8343		
SG1	16395.6	SG2	620.4	THA	179.45		

ORBIT DETERMINATION ACCURACY

ST	4391.0	SR	591.9	SS	499.7		
CRT	-.4854	CRS	.8134	CST	-.9019		
LSA	4423.8	MSA	557.5	SSA	20.3		
EL1	4400.5	EL2	516.4	ALF	176.20		

LAUNCH DATE DEC 10 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 15 1966

HELIOCENTRIC CONIC DISTANCE 937.120 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.397	GAL	-7.51	AZL	88.47	HCA	276.09	SMA	193.34	ECC	.26979	INC	1.5281	V1	30.243
RP	207.61	LAP	-1.52	LOP	354.07	VP	24.333	GAP	-15.08	AZP	89.84	TAL	323.52	TAP	239.61	RCA	141.18	APO	245.51	V2	26.387
RC	344.932	GL	9.93	GP	-2.75	ZAL	144.28	ZAP	22.41	ETS	171.76	ZAE	33.96	ETE	175.77	ZAC	88.58	ETC	255.83	CLP	22.24

PLANETOCENTRIC CONIC

C3	26.233	VHL	5.122	DLA	-6.41	RAL	224.02	RAD	6568.1	VEL	12.149	PTH	2.18	VHP	7.630	DPA	-7.99	RAP	194.29	ECC	1.4317

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 46	2080.57	-16.11	33.17	88.45	113.61	22 22 26	1480.6	-12.78	26.08
90.00	8 13 47	5124.21	25.00	227.99	91.93	76.25	9 39 11	4524.2	22.87	219.97
100.00	23 6 3	1827.99	-17.23	14.07	87.93	114.81	23 36 31	1228.0	-13.74	7.02
100.00	9 38 10	4852.02	26.19	207.63	91.60	75.05	10 59 2	4252.0	23.88	199.59
110.00	0 11 16	1636.14	-20.21	357.94	86.36	118.17	0 38 32	1036.1	-16.29	351.02
110.00	10 53 23	4616.63	29.39	188.68	90.52	71.69	12 10 20	4016.6	26.60	180.60

DIFFERENTIAL CORRECTIONS

TDE	-2.1428	TRA	11.1859	TC	-10.0847	BAU	3.5377
RDE	.5322	RRA	.0709	RC3	.2220	FAU	.00340
FDE	-.5439	FRA	1.1058	FC3	-.1123	BSP	57665
BDE	2.2079	BRA	11.1861	BC3	10.0872	FSP	413

MID-COURSE EXECUTION ACCURACY

SGT	16462.6	SGR	642.3	SG3	120.1		
RRT	-.2621	RRF	-.3236	RTF	.8005		
SGB	16475.1	R23	.1176	R13	-.8005		
SG1	16463.5	SG2	619.8	THA	179.41		

ORBIT DETERMINATION ACCURACY

ST	4484.6	SR	595.8	SS	470.7		
CRT	-.5010	CRS	.8305	CST	-.8965		
LSA	4514.6	MSA	553.3	SSA	19.8		
EL1	4494.7	EL2	514.5	ALF	176.14		

LAUNCH DATE DEC 10 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 17 1966

HELIOCENTRIC CONIC DISTANCE 941.198 EARTH TO MARS

RL	147.31	LAL	.00	LOL	77.98	VL	33.406	GAL	-7.81	AZL	88.49	HCA	277.34	SMA	193.50	ECC	.27274	INC	1.5084	V1	30.243
RP	207.74	LAP	-1.50	LOP	355.33	VP	24.328	GAP	-15.27	AZP	89.81	TAL	322.31	TAP	239.65	RCA	140.73	APO	246.28	V2	26.372
RC	345.671	GL	9.54	GP	-2.71	ZAL	145.56	ZAP	22.12	ETS	171.74	ZAE	33.37	ETE	175.73	ZAC	88.83	ETC	255.84	CLP	21.96

PLANETOCENTRIC CONIC

C3	27.619	VHL	5.255	DLA	-7.12	RAL	225.08	RAD	6568.1	VEL	12.206	PTH	2.19	VHP	7.747	DPA	-8.36	RAP	195.20	ECC	1.4545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 32	2070.53	-15.83	32.56	90.25	113.79	22 32 2	1470.5	-12.48	25.49
90.00	8 12 29	5159.81	25.55	230.45	94.22	77.37	9 38 29	4559.8	23.56	222.34
100.00	23 15 28	1819.11	-16.97	13.54	89.71	114.98	23 45 47	1219.1	-13.47	6.50
100.00	9 37 14	4886.46	26.77	210.02	93.90	76.19	10 58 41	4286.5	24.61	201.89
110.00	0 19 51	1629.84	-20.01	357.57	88.11	118.31	0 47 0	1029.8	-16.07	350.66
110.00	10 53 16	4648.50	30.05	190.93	92.87	72.87	12 10 45	4048.5	27.41	182.73

DIFFERENTIAL CORRECTIONS

TDE	-2.2741	TRA	11.6196	TC3	-9.7030	BAU	3.5836
RDE	.5495	RRA	.0601	RC3	.2171	FAU	.00002
FDE	-.5225	FRA	1.0008	FC3	-.0007	BSP	57695
BDE	2.3396	BRA	11.6197	BC3	9.7055	FSP	359

MID-COURSE EXECUTION ACCURACY

SGT	16527.1	SGR	644.5	SG3	107.0		
RRT	-.2788	RRF	-.3368	RTF	.7553		
SGB	16539.7	R23	.1312	R13	-.7553		
SG1	16528.1	SG2	618.9	THA	179.38		

ORBIT DETERMINATION ACCURACY

ST	4572.7	SR	599.5	SS	440.6		
CRT	-.5150	CRS	.8483	CST	-.8890		
LSA	4600.1	MSA	549.3	SSA	19.4		
EL1	4583.2	EL2	512.7	ALF	176.09		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 140.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 366.667 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	35.646	GAL	-.36	AZL	88.78	HCA	112.66	SMA	249.75	ECC	.41027	INC	1.2243	V1	30.247
RP	244.34	LAP	1.13	LOP	191.66	VP	23.557	GAP	24.19	AZP	90.47	TAL	358.77	TAP	111.43	RCA	147.29	APO	352.22	V2	22.451
RC	131.411	GL	8.04	GP	1.93	ZAL	90.26	ZAP	174.81	ETS	156.83	ZAE	152.45	ETE	1.56	ZAC	91.07	ETC	255.98	CLP	175.18

PLANETOCENTRIC CONIC

C3	29.641	VHL	5.444	DLA	11.64	RAL	173.34	RAD	6568.2	VEL	12.289	PTH	2.21	VHP	11.036	DPA	.19	RAP	187.58	ECC	1.4878

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 0	2680.59	-27.49	73.16	45.76	97.10	16 48 41	2080.6	-26.22	64.72
90.00	7 5 18	4585.05	12.13	193.81	39.32	64.22	8 21 43	3985.0	8.56	186.95
100.00	17 31 14	2399.24	-28.83	52.26	45.56	98.27	18 11 13	1799.2	-27.38	43.76
100.00	8 20 45	4341.63	13.34	175.30	38.70	63.00	9 33 6	3741.6	9.62	168.49
110.00	18 52 49	2143.96	-32.40	32.15	44.83	101.53	19 28 33	1544.0	-30.48	23.47
110.00	9 15 39	4169.67	16.53	160.45	36.90	59.64	10 25 9	3569.7	12.37	153.80

DIFFERENTIAL CORRECTIONS

TDE	.4465	TRA	-1.3098	TC3	.9914	BAU	.3930
RDE	-.5498	RRA	-.2423	RC3	-.0187	FAU	.05795
FDE	-.0248	FRA	.5253	FC3	-1.6925	BSP	5901
BDE	.7082	BRA	1.3321	BC3	.9916	FSP	450

MID-COURSE EXECUTION ACCURACY

SGT	1834.9	SGR	634.8	SG3	166.5		
RRT	.0623	RRF	-.0771	RTF	-.7906		
SGB	1941.6	R23	-.0212	R13	-.7908		
SG1	1835.4	SG2	633.4	THA	1.40		

ORBIT DETERMINATION ACCURACY

ST	632.5	SR	583.8	SS	171.7
CRT	-.6469	CRS	-.0184	CST	.7514
LSA	786.0	MSA	388.7	SSA	38.5
EL1	781.8	EL2	360.2	ALF	138.53

LAUNCH DATE DEC 11 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 368.567 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	35.514	GAL	-.20	AZL	88.79	HCA	113.57	SMA	245.40	ECC	.39979	INC	1.2071	V1	30.247
RP	244.11	LAP	1.11	LOP	192.57	VP	23.378	GAP	23.56	AZP	90.48	TAL	359.30	TAP	112.87	RCA	147.29	APO	343.51	V2	22.475
RC	133.550	GL	8.10	GP	1.99	ZAL	89.20	ZAP	174.27	ETS	158.36	ZAE	152.34	ETE	1.81	ZAC	91.21	ETC	255.96	CLP	174.63

PLANETOCENTRIC CONIC

C3	28.224	VHL	5.313	DLA	12.11	RAL	172.37	RAD	6568.1	VEL	12.231	PTH	2.20	VHP	10.765	DPA	.09	RAP	187.93	ECC	1.4645

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 56 10	2684.20	-27.52	73.42	44.07	96.97	16 40 54	2084.2	-26.26	64.98
90.00	7 5 23	4556.93	11.29	192.17	37.59	63.86	8 21 20	3956.9	7.69	185.34
100.00	17 23 42	2401.92	-28.85	52.46	43.87	98.17	18 3 44	1801.9	-27.42	43.95
100.00	8 20 33	4314.45	12.50	173.72	36.97	62.62	9 32 27	3714.4	8.73	166.95
110.00	18 45 54	2144.68	-32.41	32.21	43.16	101.50	19 21 39	1544.7	-30.49	23.52
110.00	9 14 50	4144.45	15.66	159.01	35.16	59.22	10 23 54	3544.5	11.46	152.42

DIFFERENTIAL CORRECTIONS

TDE	.4241	TRA	-1.2819	TC3	1.0725	BAU	.4047
RDE	-.5350	RRA	-.2347	RC3	-.0160	FAU	.05995
FDE	-.0101	FRA	.5165	FC3	-1.8390	BSP	6104
BDE	.6827	BRA	1.3032	BC3	1.0726	FSP	479

MID-COURSE EXECUTION ACCURACY

SGT	1872.7	SGR	632.6	SG3	175.9		
RRT	.0698	RRF	-.0838	RTF	-.7968		
SGB	1976.7	R23	-.0211	R13	-.7970		
SG1	1873.3	SG2	630.8	THA	1.52		

ORBIT DETERMINATION ACCURACY

ST	624.8	SR	582.2	SS	168.4
CRT	-.6351	CRS	.0660	CST	.7029
LSA	775.6	MSA	393.0	SSA	39.9
EL1	772.7	EL2	363.6	ALF	138.18

LAUNCH DATE DEC 11 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 370.616 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	35.387	GAL	-.04	AZL	88.81	HCA	114.48	SMA	241.40	ECC	.38983	INC	1.1897	V1	30.247
RP	243.87	LAP	1.08	LOP	193.48	VP	23.209	GAP	22.94	AZP	90.49	TAL	359.84	TAP	114.32	RCA	147.30	APO	335.51	V2	22.498
RC	135.719	GL	8.14	GP	2.05	ZAL	88.12	ZAP	173.72	ETS	159.63	ZAE	152.28	ETE	2.06	ZAC	91.34	ETC	255.95	CLP	174.07

PLANETOCENTRIC CONIC

C3	26.918	VHL	5.188	DLA	12.58	RAL	171.37	RAD	6568.1	VEL	12.178	PTH	2.19	VHP	10.502	DPA	.00	RAP	188.27	ECC	1.4430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 11	2688.40	-27.55	73.73	42.39	96.82	16 33 0	2088.4	-26.32	65.27
90.00	7 5 25	4529.16	10.45	190.56	35.87	63.53	8 20 54	3929.2	6.82	183.77
100.00	17 16 0	2405.17	-28.88	52.70	42.20	98.05	17 56 6	1805.2	-27.47	44.18
100.00	8 20 17	4287.62	11.65	172.18	35.24	62.28	9 31 45	3687.6	7.85	165.45
110.00	18 38 52	2145.92	-32.43	32.30	41.49	101.45	19 14 37	1545.9	-30.51	23.61
110.00	9 13 55	4119.63	14.79	157.61	33.43	58.82	10 22 35	3519.6	10.55	151.08

DIFFERENTIAL CORRECTIONS

TDE	.3826	TRA	-1.2627	TC3	1.1463	BAU	.4125
RDE	-.5212	RRA	-.2272	RC3	-.0130	FAU	.06187
FDE	.0213	FRA	.5085	FC3	-1.9897	BSP	6671
BDE	.6466	BRA	1.2830	BC3	1.1463	FSP	521

MID-COURSE EXECUTION ACCURACY

SGT	1906.5	SGR	630.6	SG3	185.2		
RRT	.0900	RRF	-.0989	RTF	-.7997		
SGB	2008.1	R23	-.0183	R13	-.7999		
SG1	1907.5	SG2	627.7	THA	1.91		

ORBIT DETERMINATION ACCURACY

ST	602.9	SR	580.8	SS	167.8
CRT	-.6002	CRS	.2499	CST	.5943
LSA	749.9	MSA	406.1	SSA	41.3
EL1	749.0	EL2	373.9	ALF	136.79

LAUNCH DATE DEC 11 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 372.805 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	35.266	GAL	.11	AZL	88.83	HCA	115.39	SMA	237.71	ECC	.38037	INC	1.1719	V1	30.247
RP	243.63	LAP	1.06	LOP	194.39	VP	23.048	GAP	22.31	AZP	90.50	TAL	.39	TAP	115.78	RCA	147.30	APO	328.13	V2	22.522
RC	137.915	GL	8.18	GP	2.11	ZAL	87.02	ZAP	173.17	ETS	160.69	ZAE	152.26	ETE	2.32	ZAC	91.48	ETC	255.94	CLP	173.50

PLANETOCENTRIC CONIC

C3	25.716	VHL	5.071	DLA	13.05	RAL	170.35	RAD	6568.0	VEL	12.128	PTH	2.17	VHP	10.246	DPA	-.09	RAP	188.61	ECC	1.4232

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 40 4	2693.15	-27.59	74.07	40.72	96.65	16 24 57	2093.1	-26.38	65.61
90.00	7 5 23	4501.78	9.62	188.98	34.17	63.24	8 20 25	3901.8	5.95	182.22
100.00	17 8 12	2408.95	-28.92	52.97	40.53	97.91	17 48 21	1808.9	-27.52	44.45
100.00	8 19 56	4261.22	10.81	170.67	33.54	61.96	9 30 58	3661.2	6.98	163.98
110.00	18 31 42	2147.65	-32.45	32.43	39.83	101.38	19 7 30	1547.7	-30.55	23.73
110.00	9 12 55	4095.27	13.92	156.25	31.72	58.46	10 21 11	3495.3	9.65	149.76

DIFFERENTIAL CORRECTIONS

TDE	.3882	TRA	-1.2110	TC3	1.2579	BAU	.4325
RDE	-.5073	RRA	-.2197	RC3	-.0091	FAU	.06428
FDE	.0179	FRA	.4857	FC3	-2.1638	BSP	6345
BDE	.6388	BRA	1.2308	BC3	1.2579	FSP	532

MID-COURSE EXECUTION ACCURACY

SGT	1947.5	SGR	627.3	SG3	195.8		
RRT	.0776	RRF	-.0950	RTF	-.8118		
SGB	2046.1	R23	-.0248	R13	-.8120		
SG1	1948.2	SG2	625.2	THA	1.60		

ORBIT DETERMINATION ACCURACY

ST	609.4	SR	578.2	SS	161.6
CRT	-.6220	CRS	.2323	CST	.5830
LSA	757.8	MSA	394.7	SSA	42.9
EL1	756.9	EL2	364.5	ALF	137.42

LAUNCH DATE DEC 11 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 375.115 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 35.151 GAL .26 AZL 88.85 HCA 116.30 SMA 234.31 ECC .37137 INC 1.1538 V1 30.247
RP 243.38 LAP 1.03 LOP 195.30 VP 22.895 GAP 21.69 AZP 90.51 TAL .95 TAP 117.25 RCA 147.29 APO 321.32 V2 22.547
RC 140.134 GL 8.20 GP 2.18 ZAL 85.90 ZAP 172.60 ETS 161.59 ZAE 152.29 ETE 2.59 ZAC 91.62 ETC 255.93 CLP 172.93

PLANETOCENTRIC CONIC

C3 24.611 VHL 4.961 DLA 13.52 RAL 169.30 RAD 6568.0 VEL 12.083 PTH 2.16 VHP 9.997 DPA -.17 RAP 188.95 ECC 1.4050

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 50	2698.39	-27.63	74.45	39.06	96.47	16 16 49	2098.4	-26.44	65.98
90.00	7 5 16	4474.86	8.79	187.44	32.48	62.97	8 19 51	3874.9	5.10	180.71
100.00	17 0 16	2413.20	-28.96	53.28	38.87	97.75	17 40 29	1813.2	-27.58	44.75
100.00	8 19 31	4235.29	9.98	169.19	31.85	61.68	9 30 7	3635.3	6.12	162.53
110.00	18 24 26	2149.83	-32.48	32.59	38.18	101.28	19 0 16	1549.8	-30.59	23.89
110.00	9 11 50	4071.42	13.07	154.93	30.02	58.13	10 19 42	3471.4	8.76	148.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3657 TRA-1.1833 TC3 1.3400 BAU .4409 SGT 1980.4 SGR 624.3 SG3 206.0 ST 598.2 SR 576.0 SS 160.3
RDE -.4944 RRA -.2126 RC3 -.0048 FAU .06639 RRT .0869 RRF -.1023 RTF -.8155 CRT -.6073 CRS .3254 CST .5146
FDE .0335 FRA .4705 FC3-2.3356 BSP 6451 SGB 2076.5 R23 -.0237 R13 -.8157 LSA 744.9 MSA 398.0 SSA 44.5
BDE .6149 BRA 1.2023 BC3 1.3400 FSP 560 SG1 1981.2 SG2 621.7 THA 1.74 EL1 744.6 EL2 367.6 ALF 136.79

LAUNCH DATE DEC 11 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 377.536 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 35.041 GAL .40 AZL 88.86 HCA 117.22 SMA 231.15 ECC .36283 INC 1.1354 V1 30.247
RP 243.12 LAP 1.01 LOP 196.22 VP 22.751 GAP 21.08 AZP 90.52 TAL 1.51 TAP 118.73 RCA 147.28 APO 315.02 V2 22.572
RC 142.373 GL 8.22 GP 2.24 ZAL 84.77 ZAP 172.02 ETS 162.36 ZAE 152.35 ETE 2.87 ZAC 91.76 ETC 255.92 CLP 172.34

PLANETOCENTRIC CONIC

C3 23.593 VHL 4.857 DLA 13.98 RAL 168.23 RAD 6568.0 VEL 12.040 PTH 2.15 VHP 9.754 DPA -.25 RAP 189.28 ECC 1.3883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 31	2704.10	-27.67	74.86	37.41	96.27	16 8 35	2104.1	-26.51	66.38
90.00	7 5 5	4448.47	7.97	185.93	30.82	62.74	8 19 13	3848.5	4.25	179.22
100.00	16 52 16	2417.89	-29.00	53.62	37.22	97.58	17 32 34	1817.9	-27.65	45.08
100.00	8 19 1	4209.90	9.16	167.76	30.18	61.42	9 29 11	3609.9	5.27	161.13
110.00	18 17 6	2152.43	-32.52	32.79	36.55	101.17	18 52 59	1552.4	-30.64	24.08
110.00	9 10 40	4048.13	12.23	153.65	28.35	57.83	10 18 8	3448.1	7.89	147.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3454 TRA-1.1527 TC3 1.4409 BAU .4545 SGT 2022.1 SGR 621.2 SG3 217.4 ST 586.9 SR 573.6 SS 161.2
RDE -.4821 RRA -.2056 RC3 .0004 FAU .06883 RRT .0947 RRF -.1110 RTF -.8226 CRT -.5946 CRS .4272 CST .4287
FDE .0514 FRA .4549 FC3-2.5258 BSP 6576 SGB 2115.3 R23 -.0252 R13 -.8229 LSA 732.9 MSA 400.3 SSA 46.2
BDE .5931 BRA 1.1709 BC3 1.4409 FSP 596 SG1 2023.0 SG2 618.1 THA 1.84 EL1 732.9 EL2 369.4 ALF 136.10

LAUNCH DATE DEC 11 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 380.059 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 34.936 GAL .54 AZL 88.88 HCA 118.14 SMA 228.23 ECC .35472 INC 1.1167 V1 30.247
RP 242.87 LAP .98 LOP 197.14 VP 22.614 GAP 20.46 AZP 90.53 TAL 2.08 TAP 120.22 RCA 147.27 APO 309.18 V2 22.598
RC 144.629 GL 8.22 GP 2.31 ZAL 83.62 ZAP 171.44 ETS 163.02 ZAE 152.47 ETE 3.16 ZAC 91.90 ETC 255.91 CLP 171.75

PLANETOCENTRIC CONIC

C3 22.658 VHL 4.760 DLA 14.44 RAL 167.15 RAD 6567.9 VEL 12.002 PTH 2.14 VHP 9.517 DPA -.32 RAP 189.60 ECC 1.3729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 7	2710.20	-27.72	75.30	35.77	96.05	16 0 18	2110.2	-26.59	66.81
90.00	7 4 48	4422.65	7.16	184.46	29.18	62.53	8 18 31	3822.6	3.43	177.78
100.00	16 44 11	2422.97	-29.05	53.99	35.59	97.39	17 24 34	1823.0	-27.72	45.44
100.00	8 18 26	4185.11	8.34	166.36	28.54	61.19	9 28 11	3585.1	4.44	159.76
110.00	18 9 42	2155.38	-32.56	33.01	34.93	101.05	18 45 38	1555.4	-30.69	24.29
110.00	9 9 24	4025.46	11.40	152.42	26.70	57.55	10 16 29	3425.5	7.04	146.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3244 TRA-1.1214 TC3 1.5326 BAU .4643 SGT 2055.3 SGR 618.0 SG3 228.7 ST 573.8 SR 571.2 SS 164.6
RDE -.4706 RRA -.1988 RC3 .0061 FAU .07119 RRT .1037 RRF -.1212 RTF -.8275 CRT -.5802 CRS .5335 CST .3296
FDE .0717 FRA .4373 FC3-2.7201 BSP 6740 SGB 2146.2 R23 -.0271 R13 -.8278 LSA 720.0 MSA 402.5 SSA 47.9
BDE .5716 BRA 1.1389 BC3 1.5326 FSP 636 SG1 2056.4 SG2 614.3 THA 1.96 EL1 719.7 EL2 370.9 ALF 135.22

LAUNCH DATE DEC 11 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 382.675 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 34.835 GAL .68 AZL 88.90 HCA 119.06 SMA 225.51 ECC .34701 INC 1.0976 V1 30.247
RP 242.60 LAP .96 LOP 198.06 VP 22.485 GAP 19.85 AZP 90.53 TAL 2.65 TAP 121.71 RCA 147.26 APO 303.76 V2 22.624
RC 146.900 GL 8.22 GP 2.39 ZAL 82.46 ZAP 170.84 ETS 163.60 ZAE 152.62 ETE 3.47 ZAC 92.04 ETC 255.90 CLP 171.15

PLANETOCENTRIC CONIC

C3 21.799 VHL 4.669 DLA 14.88 RAL 166.04 RAD 6567.9 VEL 11.966 PTH 2.13 VHP 9.287 DPA -.38 RAP 189.93 ECC 1.3587

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 6 41	2716.64	-27.76	75.76	34.15	95.82	15 51 57	2116.6	-26.66	67.27
90.00	7 4 26	4397.47	6.37	183.04	27.55	62.35	8 17 44	3797.5	2.62	176.37
100.00	16 36 4	2428.38	-29.09	54.39	33.97	97.18	17 16 32	1828.4	-27.79	45.83
100.00	8 17 44	4160.96	7.55	165.01	26.91	60.99	9 27 5	3561.0	3.62	158.42
110.00	18 2 16	2158.66	-32.60	33.26	33.32	100.91	18 38 15	1558.7	-30.75	24.52
110.00	9 8 2	4003.44	10.60	151.22	25.07	57.31	10 14 45	3403.4	6.21	144.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3034 TRA-1.0896 TC3 1.6315 BAU .4755 SGT 2091.3 SGR 614.6 SG3 241.0 ST 559.4 SR 568.7 SS 169.6
RDE -.4595 RRA -.1921 RC3 .0128 FAU .07380 RRT .1134 RRF -.1315 RTF -.8329 CRT -.5644 CRS .6267 CST .2332
FDE .0920 FRA .4166 FC3-2.9309 BSP 6885 SGB 2179.7 R23 -.0284 R13 -.8332 LSA 706.7 MSA 403.9 SSA 49.8
BDE .5506 BRA 1.1064 BC3 1.6315 FSP 675 SG1 2092.6 SG2 610.2 THA 2.09 EL1 705.5 EL2 372.2 ALF 134.17

LAUNCH DATE DEC 11 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 385.375 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 34.739 GAL .82 AZL 88.92 HCA 119.98 SMA 222.98 ECC .33968 INC 1.0781 V1 30.247
RP 242.34 LAP .93 LOP 198.98 VP 22.363 GAP 19.25 AZP 90.54 TAL 3.23 TAP 123.21 RCA 147.24 APO 298.72 V2 22.651
RC 149.184 GL 8.20 GP 2.47 ZAL 81.30 ZAP 170.23 ETS 164.10 ZAE 152.81 ETE 3.79 ZAC 92.18 ETC 255.89 CLP 170.54

PLANETOCENTRIC CONIC

C3 21.009 VHL 4.584 DLA 15.32 RAL 164.92 RAD 6567.9 VEL 11.933 PTH 2.12 VHP 9.062 DPA -.44 RAP 190.24 ECC 1.3458

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 58 13	2723.36	-27.81	76.25	32.54	95.58	15 43 36	2123.4	-26.74	67.75
90.00	7 3 59	4372.98	5.59	181.66	25.95	62.20	8 16 52	3773.0	1.83	175.00
100.00	16 27 56	2434.05	-29.14	54.80	32.37	96.97	17 8 30	1834.0	-27.87	46.23
100.00	8 16 57	4137.52	6.77	163.70	25.31	60.82	9 25 55	3537.5	2.83	157.13
110.00	17 54 49	2162.20	-32.64	33.52	31.74	100.76	18 30 51	1562.2	-30.82	24.78
110.00	9 6 34	3982.13	9.81	150.07	23.46	57.09	10 12 56	3382.1	5.41	143.75

DIFFERENTIAL CORRECTIONS

TDE .2829 TRA-1.0562 TC3 1.7329 BAU .4867
RDE -.4491 RRA -.1855 RC3 .0203 FAU .07653
FDE .1131 FRA .3925 FC3-3.1537 BSP 7031
BDE .5307 BRA 1.0723 BC3 1.7330 FSP 718

MID-COURSE EXECUTION ACCURACY

SGT 2126.6 SGR 611.0 SG3 253.9
RRT .1233 RRF -.1423 RTF -.8383
SGB 2212.6 R23 -.0300 R13 -.8386
SG1 2128.0 SG2 605.9 THA 2.21

ORBIT DETERMINATION ACCURACY

ST 544.0 SR 566.0 SS 176.5
CRT -.5484 CRS .7088 CST .1371
LSA 694.0 MSA 403.9 SSA 51.8
EL1 691.0 EL2 372.6 ALF 132.94

LAUNCH DATE DEC 11 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 388.153 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 34.648 GAL .95 AZL 88.94 HCA 120.90 SMA 220.62 ECC .33273 INC 1.0583 V1 30.247
RP 242.06 LAP .91 LOP 199.90 VP 22.248 GAP 18.65 AZP 90.54 TAL 3.81 TAP 124.71 RCA 147.22 APO 294.03 V2 22.678
RC 151.478 GL 8.17 GP 2.55 ZAL 80.13 ZAP 169.61 ETS 164.53 ZAE 153.04 ETE 4.12 ZAC 92.33 ETC 255.88 CLP 169.92

PLANETOCENTRIC CONIC

C3 20.285 VHL 4.504 DLA 15.74 RAL 163.79 RAD 6567.8 VEL 11.902 PTH 2.11 VHP 8.844 DPA -.50 RAP 190.55 ECC 1.3338

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 49 45	2730.29	-27.85	76.75	30.95	95.33	15 35 16	2130.3	-26.82	68.24
90.00	7 3 25	4349.25	4.84	180.32	24.38	62.07	8 15 54	3749.2	1.06	173.68
100.00	16 19 47	2439.93	-29.19	55.23	30.79	96.75	17 0 27	1839.9	-27.95	46.65
100.00	8 16 4	4114.84	6.02	162.44	23.73	60.66	9 24 39	3514.8	2.07	155.89
110.00	17 47 21	2165.95	-32.69	33.81	30.16	100.60	18 23 27	1566.0	-30.88	25.05
110.00	9 4 59	3961.58	9.05	148.97	21.88	56.89	10 11 1	3361.6	4.63	142.67

DIFFERENTIAL CORRECTIONS

TDE .2628 TRA-1.0225 TC3 1.8314 BAU .4967
RDE -.4392 RRA -.1790 RC3 .0286 FAU .07932
FDE .1356 FRA .3660 FC3-3.3853 BSP 7196
BDE .5118 BRA 1.0380 BC3 1.8317 FSP 764

MID-COURSE EXECUTION ACCURACY

SGT 2158.6 SGR 607.3 SG3 267.2
RRT .1339 RRF -.1541 RTF -.8429
SGB 2242.4 R23 -.0321 R13 -.8433
SG1 2160.3 SG2 601.3 THA 2.34

ORBIT DETERMINATION ACCURACY

ST 527.8 SR 563.2 SS 185.9
CRT -.5315 CRS .7790 CST .0444
LSA 682.0 MSA 402.9 SSA 53.9
EL1 676.0 EL2 372.5 ALF 131.52

LAUNCH DATE DEC 11 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 391.004 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 34.560 GAL 1.08 AZL 88.96 HCA 121.83 SMA 218.42 ECC .32611 INC 1.0379 V1 30.247
RP 241.79 LAP .88 LOP 200.83 VP 22.140 GAP 18.05 AZP 90.55 TAL 4.39 TAP 126.22 RCA 147.19 APO 289.65 V2 22.706
RC 153.781 GL 8.12 GP 2.63 ZAL 78.95 ZAP 168.98 ETS 164.92 ZAE 153.30 ETE 4.48 ZAC 92.48 ETC 255.87 CLP 169.29

PLANETOCENTRIC CONIC

C3 19.620 VHL 4.429 DLA 16.16 RAL 162.65 RAD 6567.8 VEL 11.874 PTH 2.11 VHP 8.630 DPA -.54 RAP 190.85 ECC 1.3229

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 41 18	2737.39	-27.90	77.27	29.37	95.08	15 26 56	2137.4	-26.90	68.74
90.00	7 2 44	4326.29	4.10	179.03	22.82	61.96	8 14 51	3726.3	.32	172.40
100.00	16 11 40	2445.97	-29.24	55.68	29.22	96.52	16 52 26	1846.0	-28.03	47.08
100.00	8 15 4	4092.93	5.29	161.23	22.17	60.54	9 23 16	3492.9	1.32	154.69
110.00	17 39 55	2169.88	-32.74	34.10	28.61	100.43	18 16 4	1569.9	-30.96	25.33
110.00	9 3 18	3941.79	8.31	147.91	20.32	56.72	10 9 0	3341.8	3.87	141.63

DIFFERENTIAL CORRECTIONS

TDE .2527 TRA -.9786 TC3 1.9541 BAU .5127
RDE -.4299 RRA -.1727 RC3 .0378 FAU .08226
FDE .1612 FRA .3383 FC3-3.6300 BSP 7080
BDE .4987 BRA .9938 BC3 1.9545 FSP 813

MID-COURSE EXECUTION ACCURACY

SGT 2200.1 SGR 603.7 SG3 281.2
RRT .1377 RRF -.1678 RTF -.8518
SGB 2281.5 R23 -.0416 R13 -.8523
SG1 2201.8 SG2 597.5 THA 2.34

ORBIT DETERMINATION ACCURACY

ST 515.6 SR 560.5 SS 199.3
CRT -.5333 CRS .8382 CST -.0659
LSA 678.1 MSA 395.9 SSA 55.8
EL1 667.8 EL2 366.1 ALF 130.55

LAUNCH DATE DEC 11 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 393.919 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 34.477 GAL 1.21 AZL 88.98 HCA 122.76 SMA 216.36 ECC .31984 INC 1.0171 V1 30.247
RP 241.51 LAP .86 LOP 201.76 VP 22.038 GAP 17.46 AZP 90.55 TAL 4.98 TAP 127.74 RCA 147.16 APO 285.57 V2 22.734
RC 156.092 GL 8.07 GP 2.72 ZAL 77.78 ZAP 168.33 ETS 165.25 ZAE 153.61 ETE 4.86 ZAC 92.63 ETC 255.86 CLP 168.65

PLANETOCENTRIC CONIC

C3 19.010 VHL 4.360 DLA 16.55 RAL 161.50 RAD 6567.8 VEL 11.849 PTH 2.10 VHP 8.423 DPA -.58 RAP 191.15 ECC 1.3129

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 32 56	2744.50	-27.94	77.78	27.82	94.82	15 18 41	2144.5	-26.98	69.25
90.00	7 1 57	4304.25	3.40	177.80	21.30	61.87	8 13 41	3704.3	-.39	171.17
100.00	16 3 38	2452.04	-29.28	56.12	27.68	96.29	16 44 30	1852.0	-28.10	47.52
100.00	8 13 56	4071.94	4.58	160.07	20.65	60.43	9 21 48	3471.9	.61	153.53
110.00	17 32 32	2173.86	-32.79	34.40	27.08	100.25	18 8 46	1573.9	-31.03	25.62
110.00	9 1 31	3922.89	7.60	146.90	18.78	56.57	10 6 54	3322.9	3.15	140.64

DIFFERENTIAL CORRECTIONS

TDE .2286 TRA -.9510 TC3 2.0463 BAU .5202
RDE -.4209 RRA -.1663 RC3 .0485 FAU .08550
FDE .1838 FRA .3064 FC3-3.8935 BSP 7330
BDE .4790 BRA .9655 BC3 2.0468 FSP 859

MID-COURSE EXECUTION ACCURACY

SGT 2230.3 SGR 599.8 SG3 296.3
RRT .1544 RRF -.1813 RTF -.8542
SGB 2309.5 R23 -.0398 R13 -.8547
SG1 2232.3 SG2 592.0 THA 2.56

ORBIT DETERMINATION ACCURACY

ST 496.1 SR 557.3 SS 211.7
CRT -.5039 CRS .8782 CST -.1236
LSA 664.7 MSA 395.2 SSA 58.5
EL1 649.1 EL2 367.9 ALF 128.48

LAUNCH DATE DEC 11 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 396.895 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	34.397	GAL	1.33	AZL	89.00	HCA	123.69	SMA	214.44	ECC	.31389	INC	.9959	V1	30.247
RP	241.22	LAP	.83	LOP	202.69	VP	21.943	GAP	16.87	AZP	90.55	TAL	5.56	TAP	129.25	RCA	147.13	APO	281.75	V2	22.762
RC	158.408	GL	8.00	GP	2.81	ZAL	76.62	ZAP	167.67	ETS	165.55	ZAE	153.94	ETE	5.26	ZAC	92.78	ETC	255.86	CLP	168.00

PLANETOCENTRIC CONIC

C3	18.452	VHL	4.296	DLA	16.93	RAL	160.35	RAD	6567.7	VEL	11.825	PTH	2.09	VHP	8.220	DPA	-.61	RAP	191.44	ECC	1.3037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 24 40	2751.61	-27.98	78.30	26.29	94.57	15 10 31	2151.6	-27.05	69.76
90.00	7 1 1	4283.13	2.72	176.62	19.80	61.80	8 12 24	3683.1	-1.07	169.99
100.00	15 55 40	2458.12	-29.33	56.57	26.15	96.06	16 36 38	1858.1	-28.18	47.95
100.00	8 12 42	4051.85	3.91	158.96	19.14	60.34	9 20 14	3451.9	-.07	152.43
110.00	17 25 14	2177.89	-32.84	34.71	25.57	100.08	18 1 32	1577.9	-31.10	25.92
110.00	8 59 37	3904.85	6.93	145.95	17.28	56.44	10 4 42	3304.8	2.47	139.70

DIFFERENTIAL CORRECTIONS

TDE	.2066	TRA	-.9206	TC3	2.1424	BAU	.5287
RDE	-.4124	RRA	-.1600	RC3	.0602	FAU	.08886
FDE	.2089	FRA	.2720	FC3	-4.1694	BSP	7534
BDE	.4613	BRA	.9344	BC3	2.1432	FSP	910

MID-COURSE EXECUTION ACCURACY

SGT	2260.8	SGR	595.9	SG3	312.1		
RRT	.1707	RRF	-.1965	RTF	-.8574		
SGB	2338.0	R23	-.0402	R13	-.8580		
SG1	2263.2	SG2	586.5	THA	2.76		

ORBIT DETERMINATION ACCURACY

ST	476.8	SR	554.2	SS	227.0
CRT	-.4760	CRS	.9094	CST	-.1775
LSA	654.5	MSA	392.2	SSA	61.2
EL1	631.8	EL2	367.8	ALF	126.20

LAUNCH DATE DEC 11 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 399.927 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	34.320	GAL	1.45	AZL	89.03	HCA	124.62	SMA	212.64	ECC	.30824	INC	.9741	V1	30.247
RP	240.93	LAP	.80	LOP	203.62	VP	21.853	GAP	16.29	AZP	90.55	TAL	6.14	TAP	130.77	RCA	147.10	APO	278.18	V2	22.791
RC	160.729	GL	7.92	GP	2.91	ZAL	75.45	ZAP	167.00	ETS	165.81	ZAE	154.32	ETE	5.69	ZAC	92.93	ETC	255.85	CLP	167.33

PLANETOCENTRIC CONIC

C3	17.941	VHL	4.236	DLA	17.29	RAL	159.19	RAD	6567.7	VEL	11.804	PTH	2.09	VHP	8.023	DPA	-.63	RAP	191.73	ECC	1.2953

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 16 29	2758.64	-28.01	78.81	24.79	94.31	15 2 28	2158.6	-27.12	70.26
90.00	6 59 58	4262.97	2.07	175.49	18.32	61.75	8 11 1	3663.0	-1.72	168.87
100.00	15 47 49	2464.13	-29.37	57.01	24.65	95.83	16 28 53	1864.1	-28.25	48.38
100.00	8 11 20	4032.71	3.26	157.91	17.66	60.27	9 18 32	3432.7	-.72	151.38
110.00	17 18 2	2181.89	-32.88	35.01	24.08	99.91	17 54 23	1581.9	-31.17	26.21
110.00	8 57 36	3887.72	6.28	145.04	15.79	56.33	10 2 24	3287.7	1.81	138.80

DIFFERENTIAL CORRECTIONS

TDE	.1871	TRA	-.8885	TC3	2.2409	BAU	.5378
RDE	-.4044	RRA	-.1538	RC3	.0730	FAU	.09239
FDE	.2343	FRA	.2343	FC3	-4.4581	BSP	7677
BDE	.4456	BRA	.9017	BC3	2.2421	FSP	963

MID-COURSE EXECUTION ACCURACY

SGT	2291.8	SGR	592.1	SG3	328.7		
RRT	.1866	RRF	-.2128	RTF	-.8610		
SGB	2367.0	R23	-.0418	R13	-.8616		
SG1	2294.6	SG2	580.9	THA	2.95		

ORBIT DETERMINATION ACCURACY

ST	458.2	SR	550.9	SS	243.3
CRT	-.4504	CRS	.9313	CST	-.2250
LSA	647.3	MSA	386.6	SSA	63.9
EL1	616.2	EL2	365.8	ALF	123.81

LAUNCH DATE DEC 11 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 403.012 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	34.248	GAL	1.56	AZL	89.05	HCA	125.56	SMA	210.95	ECC	.30287	INC	.9517	V1	30.247
RP	240.64	LAP	.77	LOP	204.56	VP	21.769	GAP	15.72	AZP	90.55	TAL	6.73	TAP	132.28	RCA	147.06	APO	274.84	V2	22.821
RC	163.052	GL	7.82	GP	3.02	ZAL	74.30	ZAP	166.32	ETS	166.04	ZAE	154.72	ETE	6.15	ZAC	93.09	ETC	255.84	CLP	166.65

PLANETOCENTRIC CONIC

C3	17.473	VHL	4.180	DLA	17.63	RAL	158.04	RAD	6567.7	VEL	11.784	PTH	2.08	VHP	7.830	DPA	-.64	RAP	192.00	ECC	1.2876

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 8 28	2765.50	-28.05	79.31	23.30	94.06	14 54 33	2165.5	-27.19	70.75
90.00	6 58 46	4243.83	1.45	174.43	16.88	61.72	8 9 30	3643.8	-2.34	167.80
100.00	15 40 6	2469.99	-29.41	57.44	23.17	95.61	16 21 16	1870.0	-28.32	48.81
100.00	8 9 49	4014.57	2.65	156.91	16.21	60.21	9 16 44	3414.6	-1.34	150.39
110.00	17 10 56	2185.80	-32.93	35.30	22.62	99.74	17 47 22	1585.8	-31.24	26.49
110.00	8 55 29	3871.53	5.67	144.19	14.34	56.23	10 0 0	3271.5	1.19	137.96

DIFFERENTIAL CORRECTIONS

TDE	.1690	TRA	-.8557	TC3	2.3392	BAU	.5468
RDE	-.3968	RRA	-.1476	RC3	.0870	FAU	.09609
FDE	.2609	FRA	.1940	FC3	-4.7608	BSP	7826
BDE	.4313	BRA	.8683	BC3	2.3408	FSP	1021

MID-COURSE EXECUTION ACCURACY

SGT	2322.2	SGR	588.3	SG3	346.1		
RRT	.2031	RRF	-.2305	RTF	-.8647		
SGB	2395.6	R23	-.0443	R13	-.8654		
SG1	2325.5	SG2	575.3	THA	3.14		

ORBIT DETERMINATION ACCURACY

ST	439.8	SR	547.6	SS	261.3
CRT	-.4249	CRS	.9461	CST	-.2644
LSA	642.7	MSA	379.4	SSA	66.8
EL1	601.6	EL2	362.3	ALF	121.26

LAUNCH DATE DEC 11 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 406.145 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	34.178	GAL	1.67	AZL	89.07	HCA	126.49	SMA	209.37	ECC	.29778	INC	.9288	V1	30.247
RP	240.34	LAP	.75	LOP	205.49	VP	21.691	GAP	15.15	AZP	90.55	TAL	7.31	TAP	133.80	RCA	147.02	APO	271.71	V2	22.851
RC	165.375	GL	7.71	GP	3.12	ZAL	73.16	ZAP	165.62	ETS	166.24	ZAE	155.16	ETE	6.64	ZAC	93.25	ETC	255.84	CLP	165.96

PLANETOCENTRIC CONIC

C3	17.046	VHL	4.129	DLA	17.95	RAL	156.88	RAD	6567.7	VEL	11.766	PTH	2.08	VHP	7.643	DPA	-.64	RAP	192.29	ECC	1.2805

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 0 36	2772.11	-28.08	79.79	21.84	93.82	14 46 49	2172.1	-27.25	71.22
90.00	6 57 25	4225.77	.87	173.42	15.46	61.70	8 7 51	3625.8	-2.92	166.79
100.00	15 32 33	2475.64	-29.45	57.86	21.72	95.39	16 13 48	1875.6	-28.39	49.21
100.00	8 8 10	3997.48	2.07	155.97	14.79	60.17	9 14 48	3397.5	-1.91	149.45
110.00	17 3 59	2189.57	-32.97	35.59	21.17	99.57	17 40 28	1589.6	-31.30	26.77
110.00	8 53 14	3856.30	5.09	143.38	12.91	56.15	9 57 30	3256.3	.61	137.16

DIFFERENTIAL CORRECTIONS

TDE	.1515	TRA	-.8231	TC3	2.4344	BAU	.5552
RDE	-.3896	RRA	-.1414	RC3	.1023	FAU	.09993
FDE	.2885	FRA	.1506	FC3	-5.0753	BSP	7944
BDE	.4180	BRA	.8352	BC3	2.4365	FSP	1082

MID-COURSE EXECUTION ACCURACY

SGT	2350.9	SGR	584.8	SG3	364.2		
RRT	.2209	RRF	-.2497	RTF	-.8681		
SGB	2422.5	R23	-.0472	R13	-.8689		
SG1	2354.6	SG2	569.4	THA	3.34		

ORBIT DETERMINATION ACCURACY

ST	421.5	SR	544.2	SS	280.5
CRT	-.3979	CRS	.9554	CST	-.2953
LSA	640.3	MSA	370.9	SSA	69.7
EL1	588.0	EL2	357.9	ALF	118.50

LAUNCH DATE DEC 11 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 409.323 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	34.112	GAL	1.78	AZL	89.09	HCA	127.43	SMA	207.88	ECC	.29295	INC	.9053	V1	30.247
RP	240.04	LAP	.72	LOP	206.43	VP	21.619	GAP	14.58	AZP	90.55	TAL	7.88	TAP	135.32	RCA	146.98	APO	268.78	V2	22.881
RC	167.697	GL	7.59	GP	3.24	ZAL	72.03	ZAP	164.91	ETS	166.42	ZAE	155.64	ETE	7.18	ZAC	93.41	ETC	255.83	CLP	165.25

PLANETOCENTRIC CONIC

C3	16.655	VHL	4.081	DLA	18.25	RAL	155.73	RAD	6567.7	VEL	11.749	PTH	2.07	VHP	7.460	DPA	-.64	RAP	192.53	ECC	1.2741

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 52 57	2778.40	-28.11	80.25	20.41	93.60	14 39 16	2178.4	-27.31	71.67
90.00	6 55 55	4200.82	.32	172.47	14.06	61.68	8 6 4	3608.8	-3.46	165.84
100.00	15 25 11	2480.99	-29.48	58.25	20.29	95.19	16 6 32	1881.0	-28.45	49.60
100.00	8 6 23	3981.46	1.53	155.09	13.39	60.14	9 12 44	3381.5	-2.46	148.57
110.00	16 57 11	2193.14	-33.01	35.86	19.76	99.42	17 33 44	1593.1	-31.36	27.03
110.00	8 50 52	3842.08	4.55	142.64	11.51	56.08	9 54 54	3242.1	.07	136.42

DIFFERENTIAL CORRECTIONS

TDE	.1353	TRA	-.7899	TC3	2.5286	BAU	.5637
RDE	-.3827	RRA	-.1351	RC3	.1189	FAU	.10400
FDE	.3163	FRA	.1033	FC3	-5.4057	BSP	8041
BDE	.4059	BRA	.8014	BC3	2.5314	FSP	1144

MID-COURSE EXECUTION ACCURACY

SGT	2378.9	SGR	581.4	SG3	383.4		
RRT	.2397	RRF	-.2704	RTF	-.8716		
SGB	2449.0	R23	-.0504	R13	-.8724		
SG1	2383.3	SG2	563.4	THA	3.55		

ORBIT DETERMINATION ACCURACY

ST	403.3	SR	540.7	SS	300.1		
CRT	-.3709	CRS	.9602	CST	-.3200		
LSA	639.9	MSA	360.9	SSA	72.7		
EL1	575.4	EL2	351.9	ALF	115.63		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 412.544 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	34.048	GAL	1.89	AZL	89.12	HCA	128.38	SMA	206.48	ECC	.28837	INC	.8810	V1	30.247
RP	239.73	LAP	.69	LOP	207.38	VP	21.551	GAP	14.03	AZP	90.55	TAL	8.45	TAP	136.83	RCA	146.94	APO	266.02	V2	22.912
RC	170.016	GL	7.45	GP	3.36	ZAL	70.92	ZAP	164.18	ETS	166.57	ZAE	156.14	ETE	7.76	ZAC	93.58	ETC	255.82	CLP	164.53

PLANETOCENTRIC CONIC

C3	16.299	VHL	4.037	DLA	18.52	RAL	154.59	RAD	6567.7	VEL	11.734	PTH	2.07	VHP	7.281	DPA	-.62	RAP	192.78	ECC	1.2682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 45 32	2784.29	-28.13	80.68	19.00	93.38	14 31 56	2184.3	-27.36	72.10
90.00	6 54 15	4193.03	-.19	171.59	12.70	61.68	8 4 8	3593.0	-3.97	164.96
100.00	15 18 2	2485.99	-29.51	58.62	18.88	94.99	15 59 28	1886.0	-28.51	49.96
100.00	8 4 26	3966.56	1.02	154.27	12.02	60.12	9 10 32	3366.6	-2.96	147.75
110.00	16 50 34	2196.45	-33.05	36.11	18.37	99.27	17 27 11	1596.4	-31.42	27.27
110.00	8 48 22	3828.87	4.05	141.94	10.14	56.03	9 52 11	3228.9	-.44	135.73

DIFFERENTIAL CORRECTIONS

TDE	.1196	TRA	-.7570	TC3	2.6206	BAU	.5718
RDE	-.3762	RRA	-.1289	RC3	.1371	FAU	.10829
FDE	.3449	FRA	.0524	FC3	-5.7520	BSP	8162
BDE	.3948	BRA	.7679	BC3	2.6242	FSP	1212

MID-COURSE EXECUTION ACCURACY

SGT	2406.2	SGR	578.4	SG3	403.5		
RRT	.2602	RRF	-.2927	RTF	-.8749		
SGB	2474.8	R23	-.0540	R13	-.8758		
SG1	2411.2	SG2	557.3	THA	3.78		

ORBIT DETERMINATION ACCURACY

ST	385.2	SR	537.1	SS	320.5		
CRT	-.3421	CRS	.9618	CST	-.3377		
LSA	641.2	MSA	350.3	SSA	75.9		
EL1	563.9	EL2	344.8	ALF	112.66		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 415.804 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.988	GAL	1.99	AZL	89.14	HCA	129.32	SMA	205.17	ECC	.28403	INC	.8561	V1	30.247
RP	239.42	LAP	.66	LOP	208.32	VP	21.489	GAP	13.48	AZP	90.54	TAL	9.02	TAP	138.34	RCA	146.89	APO	263.44	V2	22.943
RC	172.331	GL	7.30	GP	3.48	ZAL	69.82	ZAP	163.44	ETS	166.71	ZAE	156.68	ETE	8.40	ZAC	93.75	ETC	255.82	CLP	163.80

PLANETOCENTRIC CONIC

C3	15.974	VHL	3.997	DLA	18.78	RAL	153.46	RAD	6567.6	VEL	11.720	PTH	2.06	VHP	7.107	DPA	-.59	RAP	193.02	ECC	1.2629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 38 21	2789.71	-28.15	81.07	17.62	93.19	14 24 51	2189.7	-27.41	72.49
90.00	6 52 24	4178.44	-.66	170.78	11.36	61.69	8 2 2	3578.4	-4.44	164.14
100.00	15 11 7	2490.58	-29.54	58.96	17.51	94.82	15 52 37	1890.6	-28.56	50.29
100.00	8 2 19	3952.80	.56	153.52	10.68	60.11	9 8 12	3352.8	-3.43	146.99
110.00	16 44 10	2199.45	-33.08	36.34	17.00	99.14	17 20 49	1599.4	-31.47	27.49
110.00	8 45 46	3816.69	3.59	141.31	8.79	55.98	9 49 22	3216.7	-.90	135.10

DIFFERENTIAL CORRECTIONS

TDE	.1073	TRA	-.7220	TC3	2.7137	BAU	.5805
RDE	-.3700	RRA	-.1225	RC3	.1567	FAU	.11278
FDE	.3735	FRA	-.0029	FC3	-6.1122	BSP	8216
BDE	.3853	BRA	.7324	BC3	2.7182	FSP	1283

MID-COURSE EXECUTION ACCURACY

SGT	2434.0	SGR	575.7	SG3	424.7		
RRT	.2803	RRF	-.3163	RTF	-.8786		
SGB	2501.1	R23	-.0591	R13	-.8797		
SG1	2439.6	SG2	551.4	THA	4.00		

ORBIT DETERMINATION ACCURACY

ST	368.1	SR	533.4	SS	340.9		
CRT	-.3216	CRS	.9608	CST	-.3587		
LSA	644.7	MSA	338.1	SSA	79.1		
EL1	554.7	EL2	335.2	ALF	110.14		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 419.101 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.930	GAL	2.09	AZL	89.17	HCA	130.27	SMA	203.93	ECC	.27991	INC	.8305	V1	30.247
RP	239.11	LAP	.63	LOP	209.27	VP	21.431	GAP	12.93	AZP	90.54	TAL	9.58	TAP	139.85	RCA	146.85	APO	261.01	V2	22.975
RC	174.639	GL	7.13	GP	3.62	ZAL	68.75	ZAP	162.67	ETS	166.82	ZAE	157.25	ETE	9.09	ZAC	93.92	ETC	255.81	CLP	163.04

PLANETOCENTRIC CONIC

C3	15.677	VHL	3.959	DLA	19.00	RAL	152.35	RAD	6567.6	VEL	11.707	PTH	2.06	VHP	6.938	DPA	-.55	RAP	193.26	ECC	1.2580

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 31 28	2794.56	-28.17	81.43	16.27	93.01	14 18 2	2194.6	-27.46	72.83
90.00	6 50 22	4165.10	-1.09	170.03	10.05	61.70	7 59 47	3565.1	-4.86	163.39
100.00	15 4 28	2494.65	-29.56	59.26	16.16	94.66	15 46 3	1894.7	-28.60	50.59
100.00	8 0 3	3940.23	.13	152.83	9.37	60.11	9 5 43	3340.2	-3.85	146.30
110.00	16 37 59	2202.07	-33.11	36.54	15.66	99.03	17 14 41	1602.1	-31.51	27.68
110.00	8 43 1	3805.58	3.16	140.72	7.48	55.95	9 46 27	3205.6	-1.33	134.52

DIFFERENTIAL CORRECTIONS

TDE	.0908	TRA	-.6920	TC3	2.7926	BAU	.5865
RDE	-.3641	RRA	-.1160	RC3	.1779	FAU	.11750
FDE	.4036	FRA	-.0615	FC3	-6.4888	BSP	8361
BDE	.3753	BRA	.7017	BC3	2.7983	FSP	1357

MID-COURSE EXECUTION ACCURACY

SGT	2455.5	SGR	573.6	SG3	446.9		
RRT	.3056	RRF	-.3421	RTF	-.8808		
SGB	2521.6	R23	-.0619	R13	-.8819		
SG1	2462.1	SG2	544.7	THA	4.29		

ORBIT DETERMINATION ACCURACY

ST	350.2	SR	529.6	SS	362.4		
CRT	-.2806	CRS	.9582	CST	-.3566		
LSA	648.2	MSA	328.0	SSA	82.3		
EL1	544.1	EL2	327.1	ALF	106.70		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 422.433 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.875 GAL 2.19 AZL 89.20 HCA 131.22 SMA 202.76 ECC .27600 INC .8041 V1 30.247
RP 238.79 LAP .60 LOP 210.22 VP 21.378 GAP 12.39 AZP 90.53 TAL 10.13 TAP 141.35 RCA 146.80 APO 258.73 V2 23.007
RC 176.939 GL 6.95 GP 3.76 ZAL 67.69 ZAP 161.89 ETS 166.92 ZAE 157.84 ETE 9.85 ZAC 94.10 ETC 255.81 CLP 162.28

PLANETOCENTRIC CONIC

C3 15.407 VHL 3.925 DLA 19.20 RAL 151.24 RAD 6567.6 VEL 11.696 PTH 2.06 VHP 6.772 DPA -.49 RAP 193.48 ECC 1.2536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 24 53	2798.80	-28.18	81.74	14.94	92.85	14 11 31	2198.8	-27.49	73.14
90.00	6 48 9	4153.02	-1.48	169.36	8.77	61.72	7 57 22	3553.0	-5.25	162.71
100.00	14 58 6	2498.19	-29.58	59.52	14.84	94.52	15 39 44	1898.2	-28.64	50.84
100.00	7 57 37	3928.86	-.26	152.20	8.09	60.11	9 3 6	3328.9	-4.23	145.67
110.00	16 32 2	2204.29	-33.13	36.71	14.35	98.93	17 8 47	1604.3	-31.55	27.84
110.00	8 40 10	3795.53	2.78	140.20	6.19	55.92	9 43 25	3195.5	-1.71	133.99

DIFFERENTIAL CORRECTIONS
TDE .0787 TRA -.6608 TC3 2.8726 BAU .5931
RDE -.3584 RRA -.1095 RC3 .2009 FAU .12245
FDE .4324 FRA -.1234 FC3-6.8806 BSP 8461
BDE .3670 BRA .6698 BC3 2.8796 FSP 1437

MID-COURSE EXECUTION ACCURACY
SGT 2478.3 SGR 572.1 SG3 470.2
RRT .3304 RRF -.3693 RTF -.8834
SGB 2543.4 R23 -.0667 R13 -.8847
SG1 2485.8 SG2 538.3 THA 4.58

ORBIT DETERMINATION ACCURACY
ST 334.2 SR 525.7 SS 382.8
CRT -.2519 CRS .9541 CST -.3619
LSA 653.2 MSA 317.1 SSA 85.4
EL1 536.1 EL2 317.1 ALF 104.13

LAUNCH DATE DEC 11 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 425.797 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.822 GAL 2.28 AZL 89.22 HCA 132.17 SMA 201.66 ECC .27230 INC .7766 V1 30.247
RP 238.47 LAP .58 LOP 211.17 VP 21.330 GAP 11.86 AZP 90.52 TAL 10.68 TAP 142.85 RCA 146.75 APO 256.58 V2 23.040
RC 179.231 GL 6.76 GP 3.91 ZAL 66.66 ZAP 161.09 ETS 167.01 ZAE 158.47 ETE 10.70 ZAC 94.28 ETC 255.80 CLP 161.49

PLANETOCENTRIC CONIC

C3 15.162 VHL 3.894 DLA 19.38 RAL 150.15 RAD 6567.6 VEL 11.685 PTH 2.06 VHP 6.611 DPA -.43 RAP 193.69 ECC 1.2495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 18 37	2802.36	-28.20	82.00	13.65	92.72	14 5 19	2202.4	-27.52	73.40
90.00	6 45 44	4142.24	-1.83	168.76	7.52	61.74	7 54 46	3542.2	-5.59	162.10
100.00	14 52 2	2501.12	-29.59	59.74	13.55	94.41	15 33 43	1901.1	-28.67	51.06
100.00	7 55 0	3918.71	-.60	151.65	6.84	60.11	9 0 19	3318.7	-4.57	145.11
110.00	16 26 21	2206.05	-33.15	36.84	13.06	98.85	17 3 7	1606.0	-31.57	27.97
110.00	8 37 11	3786.55	2.44	139.73	4.94	55.89	9 40 17	3186.5	-2.06	133.53

DIFFERENTIAL CORRECTIONS
TDE .0695 TRA -.6259 TC3 2.9560 BAU .6009
RDE -.3530 RRA -.1028 RC3 .2256 FAU .12770
FDE .4617 FRA -.1927 FC3-7.2918 BSP 8479
BDE .3598 BRA .6343 BC3 2.9646 FSP 1518

MID-COURSE EXECUTION ACCURACY
SGT 2502.6 SGR 571.3 SG3 494.8
RRT .3553 RRF -.3981 RTF -.8868
SGB 2567.0 R23 -.0729 R13 -.8882
SG1 2511.2 SG2 532.2 THA 4.85

ORBIT DETERMINATION ACCURACY
ST 317.8 SR 521.7 SS 403.4
CRT -.2331 CRS .9486 CST -.3747
LSA 659.6 MSA 304.7 SSA 88.8
EL1 529.6 EL2 304.4 ALF 102.15

LAUNCH DATE DEC 11 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 429.192 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.772 GAL 2.37 AZL 89.25 HCA 133.12 SMA 200.63 ECC .26880 INC .7484 V1 30.247
RP 238.14 LAP .55 LOP 212.12 VP 21.286 GAP 11.34 AZP 90.51 TAL 11.22 TAP 144.34 RCA 146.70 APO 254.56 V2 23.073
RC 181.513 GL 6.55 GP 4.06 ZAL 65.65 ZAP 160.28 ETS 167.08 ZAE 159.12 ETE 11.63 ZAC 94.46 ETC 255.80 CLP 160.68

PLANETOCENTRIC CONIC

C3 14.938 VHL 3.865 DLA 19.53 RAL 149.09 RAD 6567.6 VEL 11.676 PTH 2.05 VHP 6.454 DPA -.35 RAP 193.89 ECC 1.2458

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 12 42	2805.15	-28.21	82.20	12.38	92.62	13 59 28	2205.2	-27.54	73.60
90.00	6 43 7	4132.80	-2.13	168.23	6.30	61.76	7 52 0	3532.8	-5.89	161.57
100.00	14 46 18	2503.37	-29.61	59.90	12.28	94.32	15 28 1	1903.4	-28.69	51.22
100.00	7 52 13	3909.81	-.90	151.16	5.61	60.12	8 57 23	3309.8	-4.87	144.62
110.00	16 20 56	2207.29	-33.17	36.94	11.80	98.80	16 57 43	1607.3	-31.59	28.06
110.00	8 34 4	3778.66	2.14	139.32	3.72	55.88	9 37 3	3178.7	-2.36	133.11

DIFFERENTIAL CORRECTIONS
TDE .0565 TRA -.5977 TC3 3.0181 BAU .6049
RDE -.3478 RRA -.0959 RC3 .2522 FAU .13313
FDE .4912 FRA -.2643 FC3-7.7152 BSP 8622
BDE .3523 BRA .6054 BC3 3.0286 FSP 1606

MID-COURSE EXECUTION ACCURACY
SGT 2516.7 SGR 571.4 SG3 520.3
RRT .3849 RRF -.4287 RTF -.8882
SGB 2580.8 R23 -.0772 R13 -.8898
SG1 2526.8 SG2 525.3 THA 5.22

ORBIT DETERMINATION ACCURACY
ST 302.4 SR 517.5 SS 423.9
CRT -.1915 CRS .9425 CST -.3636
LSA 665.6 MSA 295.8 SSA 91.6
EL1 522.3 EL2 294.1 ALF 99.39

LAUNCH DATE DEC 11 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 432.616 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.724 GAL 2.46 AZL 89.28 HCA 134.08 SMA 199.65 ECC .26548 INC .7193 V1 30.247
RP 237.81 LAP .52 LOP 213.08 VP 21.246 GAP 10.82 AZP 90.50 TAL 11.74 TAP 145.82 RCA 146.65 APO 252.66 V2 23.106
RC 183.786 GL 6.33 GP 4.23 ZAL 64.67 ZAP 159.44 ETS 167.14 ZAE 159.79 ETE 12.67 ZAC 94.65 ETC 255.79 CLP 159.86

PLANETOCENTRIC CONIC

C3 14.735 VHL 3.839 DLA 19.65 RAL 148.04 RAD 6567.6 VEL 11.667 PTH 2.05 VHP 6.301 DPA -.25 RAP 194.08 ECC 1.2425

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 7 10	2807.15	-28.21	82.35	11.14	92.55	13 53 57	2207.1	-27.56	73.74
90.00	6 40 18	4124.70	-2.39	167.78	5.10	61.78	7 49 2	3524.7	-6.15	161.11
100.00	14 40 53	2504.91	-29.61	60.02	11.05	94.27	15 22 38	1904.9	-28.71	51.33
100.00	7 49 15	3902.17	-1.16	150.74	4.42	60.13	8 54 17	3302.2	-5.13	144.20
110.00	16 15 47	2208.00	-33.17	36.99	10.57	98.77	16 52 35	1608.0	-31.61	28.11
110.00	8 30 50	3771.85	1.88	138.96	2.52	55.86	9 33 42	3171.8	-2.62	132.76

DIFFERENTIAL CORRECTIONS
TDE .0466 TRA -.5676 TC3 3.0817 BAU .6096
RDE -.3427 RRA -.0888 RC3 .2807 FAU .13882
FDE .5209 FRA -.3411 FC3-8.1558 BSP 8694
BDE .3459 BRA .5745 BC3 3.0944 FSP 1697

MID-COURSE EXECUTION ACCURACY
SGT 2532.1 SGR 572.7 SG3 547.1
RRT .4144 RRF -.4608 RTF -.8901
SGB 2596.1 R23 -.0832 R13 -.8920
SG1 2543.7 SG2 518.8 THA 5.59

ORBIT DETERMINATION ACCURACY
ST 287.6 SR 513.3 SS 444.3
CRT -.1606 CRS .9359 CST -.3599
LSA 672.8 MSA 286.4 SSA 94.4
EL1 516.3 EL2 282.2 ALF 97.35

LAUNCH DATE DEC 11 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 436.068 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.678	GAL	2.54	AZL	89.31	HCA	135.04	SMA	198.73	ECC	.26233	INC	.6890	V1	30.247
RP	237.48	LAP	.49	LOP	214.04	VP	21.210	GAP	10.31	AZP	90.49	TAL	12.26	TAP	147.30	RCA	146.60	APO	250.87	V2	23.140
RC	186.049	GL	6.09	GP	4.40	ZAL	63.72	ZAP	158.58	ETS	167.18	ZAE	160.50	ETE	13.83	ZAC	94.85	ETC	255.79	CLP	159.02

PLANETOCENTRIC CONIC

C3	14.551	VHL	3.815	DLA	19.75	RAL	147.01	RAD	6567.6	VEL	11.659	PTH	2.05	VHP	6.152	DPA	-.14	RAP	194.26	ECC	1.2395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 2 0	2808.28	-28.21	82.43	9.94	92.51	13 48 48	2208.3	-27.57	73.82
90.00	6 37 15	4117.96	-2.61	167.40	3.94	61.79	7 45 53	3518.0	-6.36	160.73
100.00	14 35 50	2505.69	-29.62	60.08	9.84	94.24	15 17 36	1905.7	-28.72	51.39
100.00	7 46 6	3895.79	-1.38	150.39	3.25	60.14	8 51 2	3295.8	-5.34	143.85
110.00	16 10 57	2208.12	-33.17	37.00	9.37	98.76	16 47 45	1608.1	-31.61	28.12
110.00	8 27 29	3766.13	1.66	138.66	1.36	55.85	9 30 15	3166.1	-2.84	132.46

DIFFERENTIAL CORRECTIONS

TDE	.0381	TRA	-.5383	TC3	3.1406	BAU	.6140														
RDE	-.3379	RRA	-.0814	RC3	.3115	FAU	.14482														
FDE	.5498	FRA	-.4230	FC3	-8.6164	BSP	8767														
BDE	.3400	BRA	.5444	BC3	3.1560	FSP	1794														

MID-COURSE EXECUTION ACCURACY

SGT	2546.0	SGR	575.2	SG3	575.4				
RRT	.4452	RRF	-.4943	RTF	-.8920				
SGB	2610.2	R23	-.0898	R13	-.8940				
SG1	2559.4	SG2	512.4	THA	5.98				

ORBIT DETERMINATION ACCURACY

ST	273.6	SR	509.0	SS	464.0		
CRT	-.1327	CRS	.9286	CST	-.3571		
LSA	680.2	MSA	277.8	SSA	97.0		
EL1	510.8	EL2	270.2	ALF	95.67		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 439.546 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.634	GAL	2.62	AZL	89.34	HCA	136.00	SMA	197.86	ECC	.25935	INC	.6578	V1	30.247
RP	237.15	LAP	.46	LOP	215.00	VP	21.179	GAP	9.80	AZP	90.47	TAL	12.77	TAP	148.77	RCA	146.55	APO	249.18	V2	23.174
RC	188.300	GL	5.84	GP	4.59	ZAL	62.79	ZAP	157.70	ETS	167.21	ZAE	161.22	ETE	15.13	ZAC	95.05	ETC	255.78	CLP	158.15

PLANETOCENTRIC CONIC

C3	14.384	VHL	3.793	DLA	19.81	RAL	146.00	RAD	6567.6	VEL	11.652	PTH	2.05	VHP	6.007	DPA	-.01	RAP	194.42	ECC	1.2367

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 57 14	2808.51	-28.22	82.45	8.76	92.50	13 44 3	2208.5	-27.57	73.84
90.00	6 34 0	4112.60	-2.78	167.10	2.80	61.81	7 42 33	3512.6	-6.53	160.43
100.00	14 31 9	2505.66	-29.62	60.07	8.67	94.24	15 12 55	1905.7	-28.72	51.39
100.00	7 42 46	3890.69	-1.55	150.11	2.11	60.14	8 47 37	3290.7	-5.51	143.56
110.00	16 6 25	2207.62	-33.17	36.96	8.19	98.78	16 43 12	1607.6	-31.60	28.09
110.00	8 24 0	3761.49	1.48	138.42	.22	55.84	9 26 41	3161.5	-3.01	132.22

DIFFERENTIAL CORRECTIONS

TDE	.0325	TRA	-.5083	TC3	3.1967	BAU	.6183														
RDE	-.3331	RRA	-.0738	RC3	.3445	FAU	.15111														
FDE	.5770	FRA	-.5111	FC3	-9.0953	BSP	8802														
BDE	.3347	BRA	.5136	BC3	3.2153	FSP	1896														

MID-COURSE EXECUTION ACCURACY

SGT	2558.9	SGR	579.2	SG3	605.0				
RRT	.4760	RRF	-.5287	RTF	-.8939				
SGB	2623.7	R23	-.0976	R13	-.8962				
SG1	2574.3	SG2	506.4	THA	6.40				

ORBIT DETERMINATION ACCURACY

ST	260.1	SR	504.5	SS	482.2		
CRT	-.1176	CRS	.9205	CST	-.3642		
LSA	687.2	MSA	269.3	SSA	99.7		
EL1	505.8	EL2	257.7	ALF	94.69		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 443.049 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.593	GAL	2.70	AZL	89.37	HCA	136.97	SMA	197.04	ECC	.25653	INC	.6250	V1	30.247
RP	236.81	LAP	.43	LOP	215.97	VP	21.150	GAP	9.31	AZP	90.46	TAL	13.26	TAP	150.23	RCA	146.49	APO	247.59	V2	23.209
RC	190.540	GL	5.57	GP	4.78	ZAL	61.89	ZAP	156.80	ETS	167.24	ZAE	161.96	ETE	16.60	ZAC	95.26	ETC	255.78	CLP	157.27

PLANETOCENTRIC CONIC

C3	14.232	VHL	3.773	DLA	19.85	RAL	145.02	RAD	6567.6	VEL	11.645	PTH	2.04	VHP	5.865	DPA	.14	RAP	194.58	ECC	1.2342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 52 52	2807.80	-28.21	82.39	7.61	92.53	13 39 40	2207.8	-27.56	73.79
90.00	6 30 31	4108.63	-2.91	166.88	1.69	61.82	7 39 0	3508.6	-6.65	160.20
100.00	14 26 50	2504.80	-29.61	60.01	7.52	94.27	15 8 35	1904.8	-28.71	51.32
100.00	7 39 14	3886.86	-1.68	149.90	1.00	60.15	8 44 1	3286.9	-5.64	143.35
110.00	16 2 11	2206.49	-33.16	36.88	7.04	98.83	16 38 58	1606.5	-31.58	28.00
110.00	8 20 23	3757.94	1.34	138.24	359.12	55.84	9 23 1	3157.9	-3.15	132.03

DIFFERENTIAL CORRECTIONS

TDE	.0316	TRA	-.4756	TC3	3.2584	BAU	.6242														
RDE	-.3283	RRA	-.0656	RC3	.3804	FAU	.15786														
FDE	.6006	FRA	-.6070	FC3	-9.6025	BSP	8720														
BDE	.3298	BRA	.4801	BC3	3.2805	FSP	1995														

MID-COURSE EXECUTION ACCURACY

SGT	2576.1	SGR	585.0	SG3	636.6				
RRT	.5063	RRF	-.5638	RTF	-.8965				
SGB	2641.7	R23	-.1067	R13	-.8992				
SG1	2593.7	SG2	501.0	THA	6.81				

ORBIT DETERMINATION ACCURACY

ST	246.6	SR	499.7	SS	498.0		
CRT	-.1294	CRS	.9110	CST	-.3938		
LSA	693.2	MSA	259.7	SSA	102.9		
EL1	501.0	EL2	243.9	ALF	94.79		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 446.574 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.553	GAL	2.77	AZL	89.41	HCA	137.94	SMA	196.27	ECC	.25387	INC	.5911	V1	30.247
RP	236.46	LAP	.40	LOP	216.93	VP	21.126	GAP	8.82	AZP	90.44	TAL	13.74	TAP	151.68	RCA	146.44	APO	246.10	V2	23.244
RC	192.768	GL	5.29	GP	4.99	ZAL	61.03	ZAP	155.87	ETS	167.25	ZAE	162.72	ETE	18.27	ZAC	95.48	ETC	255.77	CLP	156.36

PLANETOCENTRIC CONIC

C3	14.094	VHL	3.754	DLA	19.86	RAL	144.06	RAD	6567.6	VEL	11.640	PTH	2.04	VHP	5.727	DPA	.30	RAP	194.72	ECC	1.2320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 48 57	2806.06	-28.21	82.27	6.50	92.59	13 35 43	2206.1	-27.55	73.66
90.00	6 26 49	4106.08	-2.99	166.74	.60	61.83	7 35 15	3506.1	-6.73	160.06
100.00	14 22 56	2503.02	-29.60	59.88	6.40	94.34	15 4 39	1903.0	-28.69	51.19
100.00	7 35 32	3884.35	-1.77	149.76	359.93	60.15	8 40 16	3284.3	-5.72	143.21
110.00	15 58 18	2204.64	-33.14	36.74	5.92	98.91	16 35 3	1604.6	-31.55	27.87
110.00	8 16 39	3755.49	1.25	138.11	358.04	55.84	9 19 14	3155.5	-3.24	131.90

DIFFERENTIAL CORRECTIONS

TDE	.0205	TRA	-.4548	TC3	3.2823	BAU	.6235														
RDE	-.3239	RRA	-.0574	RC3	.4182	FAU	.16463														
FDE	.6301	FRA	-.7024	FC-10	.1121	BSP	8907														
BDE	.3245	BRA	.4584	BC3	3.3088	FSP	2113														

MID-COURSE EXECUTION ACCURACY

SGT	2572.8	SGR	593.0	SG3	668.5				
RRT	.5421	RRF	-.6001	RTF	-.8962				
SGB	2640.3	R23	-.1137	R13	-.8993				
SG1	2593.6	SG2	494.3	THA	7.39				

ORBIT DETERMINATION ACCURACY

ST	235.5	SR	495.2	SS	517.5		
CRT	-.0738	CRS	.9036	CST	-.3614		
LSA	701.2	MSA	257.2	SSA	103.5		
EL1	495.6	EL2	234.7	ALF	92.59		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 450.122 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.516	GAL	2.84	AZL	89.44	HCA	138.91	SMA	195.54	ECC	.25134	INC	.5560	V1	30.247
RP	236.12	LAP	.37	LOP	217.90	VP	21.105	GAP	8.33	AZP	90.42	TAL	14.21	TAP	153.12	RCA	146.39	APO	244.68	V2	23.279
RC	194.983	GL	4.99	GP	5.21	ZAL	60.19	ZAP	154.92	ETS	167.26	ZAE	163.49	ETE	20.18	ZAC	95.70	ETC	255.76	CLP	155.43

PLANETOCENTRIC CONIC

C3	13.969	VHL	3.738	DLA	19.84	RAL	143.13	RAD	6567.5	VEL	11.634	PTH	2.04	VHP	5.593	DPA	.48	RAP	194.84	ECC	1.2299

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 45 27	2803.30	-28.20	82.07	5.41	92.69	13 32 10	2203.3	-27.53	73.46
90.00	6 22 53	4104.91	-3.03	166.67	359.55	61.83	7 31 18	3504.9	-6.77	159.99
100.00	14 19 24	2500.34	-29.59	59.68	5.31	94.44	15 1 4	1900.3	-28.66	51.00
100.00	7 31 37	3883.11	-1.81	149.69	358.87	60.16	8 36 20	3283.1	-5.77	143.14
110.00	15 54 44	2202.09	-33.11	36.54	4.82	99.03	16 31 26	1602.1	-31.51	27.68
110.00	8 12 47	3754.12	1.20	138.04	356.99	55.84	9 15 21	3154.1	-3.29	131.83

DIFFERENTIAL CORRECTIONS

TDE	.0172	TRA	-.4280	TC3	3.3149	BAU	.6250
RDE	-.3194	RRA	-.0485	RC3	.4590	FAU	.17178
FDE	.6550	FRA	-.8084	FC-10.6463		BSP	8934
BDE	.3199	BRA	.4307	BC3	3.3465	FSP	2231

MID-COURSE EXECUTION ACCURACY

SGT	2574.3	SGR	603.1	SG3	702.3		
RRT	.5748	RRF	-.6360	RTF	-.8972		
SGB	2644.0	R23	-.1234	R13	-.9007		
SG1	2598.4	SG2	488.9	THA	7.95		

ORBIT DETERMINATION ACCURACY

ST	223.6	SR	490.3	SS	534.1
CRT	-.0653	CRS	.8945	CST	-.3698
LSA	708.0	MSA	251.8	SSA	105.0
EL1	490.6	EL2	223.0	ALF	92.15

LAUNCH DATE DEC 11 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 453.692 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.480	GAL	2.91	AZL	89.48	HCA	139.88	SMA	194.85	ECC	.24895	INC	.5192	V1	30.247
RP	235.77	LAP	.33	LOP	218.88	VP	21.087	GAP	7.86	AZP	90.40	TAL	14.67	TAP	154.55	RCA	146.34	APO	243.36	V2	23.315
RC	197.185	GL	4.67	GP	5.45	ZAL	59.38	ZAP	153.94	ETS	167.25	ZAE	164.27	ETE	22.37	ZAC	95.93	ETC	255.76	CLP	154.47

PLANETOCENTRIC CONIC

C3	13.856	VHL	3.722	DLA	19.80	RAL	142.23	RAD	6567.5	VEL	11.629	PTH	2.04	VHP	5.463	DPA	.69	RAP	194.96	ECC	1.2280

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 42 23	2799.48	-28.19	81.79	4.34	92.83	13 29 3	2199.5	-27.50	73.19
90.00	6 18 43	4105.15	-3.02	166.69	358.52	61.83	7 27 9	3505.2	-6.76	160.01
100.00	14 16 17	2496.71	-29.57	59.41	4.24	94.58	14 57 54	1896.7	-28.62	50.74
100.00	7 27 31	3883.16	-1.81	149.70	357.85	60.16	8 32 14	3283.2	-5.76	143.15
110.00	15 51 30	2198.80	-33.07	36.29	3.75	99.17	16 28 9	1598.8	-31.46	27.44
110.00	8 8 47	3753.84	1.19	138.02	355.98	55.83	9 11 21	3153.8	-3.30	131.82

DIFFERENTIAL CORRECTIONS

TDE	.0155	TRA	-.4035	TC3	3.3426	BAU	.6261
RDE	-.3149	RRA	-.0393	RC3	.5030	FAU	.17934
FDE	.6768	FRA	-.9187	FC-11.2055		BSP	8957
BDE	.3153	BRA	.4054	BC3	3.3802	FSP	2354

MID-COURSE EXECUTION ACCURACY

SGT	2574.6	SGR	615.8	SG3	737.9		
RRT	.6071	RRF	-.6716	RTF	-.8979		
SGB	2647.2	R23	-.1340	R13	-.9020		
SG1	2602.6	SG2	484.1	THA	8.56		

ORBIT DETERMINATION ACCURACY

ST	213.0	SR	485.2	SS	548.7
CRT	-.0668	CRS	.8849	CST	-.3855
LSA	713.6	MSA	247.5	SSA	106.2
EL1	485.5	EL2	212.4	ALF	92.08

LAUNCH DATE DEC 11 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 457.282 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.446	GAL	2.97	AZL	89.52	HCA	140.86	SMA	194.20	ECC	.24669	INC	.4810	V1	30.247
RP	235.42	LAP	.30	LOP	219.85	VP	21.073	GAP	7.39	AZP	90.37	TAL	15.11	TAP	155.97	RCA	146.29	APO	242.10	V2	23.351
RC	199.372	GL	4.33	GP	5.69	ZAL	58.60	ZAP	152.93	ETS	167.24	ZAE	165.05	ETE	24.89	ZAC	96.17	ETC	255.75	CLP	153.49

PLANETOCENTRIC CONIC

C3	13.753	VHL	3.709	DLA	19.72	RAL	141.35	RAD	6567.5	VEL	11.625	PTH	2.04	VHP	5.336	DPA	.92	RAP	195.05	ECC	1.2263

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 39 46	2794.57	-28.17	81.43	3.31	93.01	13 26 20	2194.6	-27.46	72.84
90.00	6 14 20	4106.80	-2.97	166.78	357.52	61.83	7 22 47	3506.8	-6.71	160.10
100.00	14 13 34	2492.10	-29.55	59.07	3.20	94.76	14 55 6	1892.1	-28.57	50.40
100.00	7 23 13	3884.51	-1.76	149.77	356.85	60.15	8 27 57	3284.5	-5.72	143.22
110.00	15 48 36	2194.74	-33.03	35.98	2.69	99.35	16 25 11	1594.7	-31.39	27.14
110.00	8 4 39	3754.64	1.22	138.06	354.99	55.84	9 7 14	3154.6	-3.27	131.86

DIFFERENTIAL CORRECTIONS

TDE	.0161	TRA	-.3784	TC3	3.3663	BAU	.6272
RDE	-.3104	RRA	-.0293	RC3	.5502	FAU	.18723
FDE	.6964	FRA	-1.0374	FC-11.7856		BSP	8927
BDE	.3108	BRA	.3795	BC3	3.4110	FSP	2481

MID-COURSE EXECUTION ACCURACY

SGT	2573.0	SGR	631.5	SG3	775.0		
RRT	.6382	RRF	-.7063	RTF	-.8986		
SGB	2649.4	R23	-.1456	R13	-.9034		
SG1	2605.5	SG2	480.1	THA	9.22		

ORBIT DETERMINATION ACCURACY

ST	202.3	SR	479.9	SS	562.3
CRT	-.0855	CRS	.8744	CST	-.4143
LSA	718.8	MSA	243.3	SSA	107.4
EL1	480.3	EL2	201.4	ALF	92.51

LAUNCH DATE DEC 11 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 460.892 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.413	GAL	3.03	AZL	89.56	HCA	141.84	SMA	193.58	ECC	.24456	INC	.4406	V1	30.247
RP	235.06	LAP	.27	LOP	220.83	VP	21.062	GAP	6.93	AZP	90.35	TAL	15.54	TAP	157.37	RCA	146.24	APO	240.92	V2	23.387
RC	201.544	GL	3.98	GP	5.96	ZAL	57.86	ZAP	151.90	ETS	167.22	ZAE	165.83	ETE	27.81	ZAC	96.42	ETC	255.74	CLP	152.49

PLANETOCENTRIC CONIC

C3	13.660	VHL	3.696	DLA	19.61	RAL	140.49	RAD	6567.5	VEL	11.621	PTH	2.04	VHP	5.213	DPA	1.17	RAP	195.14	ECC	1.2248

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 37 35	2788.53	-28.15	80.99	2.29	93.23	13 24 4	2188.5	-27.40	72.40
90.00	6 9 42	4109.87	-2.87	166.95	356.54	61.82	7 18 12	3509.9	-6.61	160.27
100.00	14 11 16	2486.47	-29.51	58.66	2.18	94.98	14 52 42	1886.5	-28.51	49.99
100.00	7 18 43	3887.17	-1.67	149.92	355.88	60.15	8 23 30	3287.2	-5.63	143.37
110.00	15 46 4	2189.86	-32.98	35.61	1.67	99.56	16 22 34	1589.9	-31.31	26.79
110.00	8 0 24	3756.53	1.29	138.16	354.03	55.84	9 3 0	3156.5	-3.20	131.96

DIFFERENTIAL CORRECTIONS

TDE	.0150	TRA	-.3572	TC3	3.3728	BAU	.6256
RDE	-.3059	RRA	-.0188	RC3	.6008	FAU	.19535
FDE	.7148	FRA	-1.1624	FC-12.3814		BSP	8954
BDE	.3062	BRA	.3577	BC3	3.4259	FSP	2615

MID-COURSE EXECUTION ACCURACY

SGT	2561.5	SGR	650.4	SG3	813.5		
RRT	.6688	RRF	-.7398	RTF	-.8984		
SGB	2642.8	R23	-.1579	R13	-.9039		
SG1	2599.5	SG2	476.5	THA	9.98		

ORBIT DETERMINATION ACCURACY

ST	193.0	SR	474.5	SS	575.5
CRT	-.0919	CRS	.8640	CST	-.4319
LSA	723.7	MSA	241.4	SSA	107.6
EL1	474.9	EL2	192.0	ALF	92.56

LAUNCH DATE DEC 11 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 464.520 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.382 GAL 3.09 AZL 89.60 HCA 142.82 SMA 193.00 ECC .24254 INC .3985 V1 30.247
RP 234.71 LAP .24 LOP 221.81 VP 21.054 GAP 6.47 AZP 90.32 TAL 15.95 TAP 158.77 RCA 146.19 APO 239.81 V2 23.424
RC 203.699 GL 3.61 GP 6.24 ZAL 57.15 ZAP 150.83 ETS 167.19 ZAE 166.59 ETE 31.21 ZAC 96.69 ETC 255.74 CLP 151.45

PLANETOCENTRIC CONIC

C3 13.575 VHL 3.684 DLA 19.46 RAL 139.67 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 5.093 DPA 1.45 RAP 195.21 ECC 1.2234

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 35 52	2781.34	-28.12	80.46	1.31	93.49	13 22 13	2181.3	-27.34	71.88
90.00	6 4 50	4114.34	-2.72	167.20	355.59	61.80	7 13 24	3514.3	-6.47	160.53
100.00	14 9 22	2479.80	-29.47	58.16	1.19	95.23	14 50 42	1879.8	-28.44	49.51
100.00	7 14 0	3891.12	-1.54	150.13	354.93	60.14	8 18 52	3291.1	-5.50	143.59
110.00	15 43 52	2184.16	-32.91	35.18	.66	99.81	16 20 16	1584.2	-31.21	26.37
110.00	7 56 0	3759.52	1.40	138.32	353.09	55.84	8 58 40	3159.5	-3.09	132.11

DIFFERENTIAL CORRECTIONS
TDE .0171 TRA -.3365 TC3 3.3774 BAU .6244
RDE -.3013 RRA -.0077 RC3 .6553 FAU .20388
FDE .7288 FRA-1.2930 FC-13.0023 BSP 8944
BDE .3017 BRA .3366 BC3 3.4404 FSP 2757

MID-COURSE EXECUTION ACCURACY
SGT 2550.0 SGR 672.9 SG3 853.7
RRT .6972 RRF -.7716 RTF -.8982
SGB 2637.3 R23 -.1715 R13 -.9047
SG1 2594.3 SG2 474.2 THA 10.79

ORBIT DETERMINATION ACCURACY
ST 184.4 SR 468.7 SS 586.6
CRT -.1241 CRS .8527 CST -.4686
LSA 727.2 MSA 239.3 SSA 107.9
EL1 469.4 EL2 182.7 ALF 93.30

LAUNCH DATE DEC 11 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 468.167 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.353 GAL 3.15 AZL 89.65 HCA 143.80 SMA 192.45 ECC .24063 INC .3544 V1 30.247
RP 234.35 LAP .21 LOP 222.80 VP 21.048 GAP 6.03 AZP 90.29 TAL 16.35 TAP 160.15 RCA 146.14 APO 238.76 V2 23.461
RC 205.837 GL 3.21 GP 6.54 ZAL 56.47 ZAP 149.74 ETS 167.16 ZAE 167.32 ETE 35.16 ZAC 96.96 ETC 255.73 CLP 150.39

PLANETOCENTRIC CONIC

C3 13.498 VHL 3.674 DLA 19.29 RAL 138.87 RAD 6567.5 VEL 11.614 PTH 2.04 VHP 4.977 DPA 1.75 RAP 195.26 ECC 1.2221

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 34 35	2772.97	-28.08	79.85	.34	93.79	13 20 48	2173.0	-27.26	71.28
90.00	5 59 44	4120.24	-2.53	167.53	354.66	61.79	7 8 24	3520.2	-6.29	160.86
100.00	14 7 54	2472.06	-29.42	57.59	.22	95.53	14 49 6	1872.1	-28.35	48.96
100.00	7 9 6	3896.38	-1.36	150.42	354.01	60.14	8 14 2	3296.4	-5.32	143.88
110.00	15 42 1	2177.59	-32.83	34.68	359.67	100.09	16 18 19	1577.6	-31.09	25.89
110.00	7 51 28	3763.62	1.56	138.53	352.19	55.85	8 54 12	3163.6	-2.93	132.33

DIFFERENTIAL CORRECTIONS
TDE .0215 TRA -.3161 TC3 3.3755 BAU .6226
RDE -.2965 RRA .0044 RC3 .7140 FAU .21276
FDE .7380 FRA-1.4326 FC-13.6457 BSP 8896
BDE .2972 BRA .3161 BC3 3.4502 FSP 2902

MID-COURSE EXECUTION ACCURACY
SGT 2534.9 SGR 699.3 SG3 895.7
RRT .7232 RRF -.8014 RTF -.8979
SGB 2629.6 R23 -.1861 R13 -.9056
SG1 2586.7 SG2 473.3 THA 11.68

ORBIT DETERMINATION ACCURACY
ST 176.7 SR 462.6 SS 595.8
CRT -.1793 CRS .8400 CST -.5206
LSA 729.4 MSA 237.5 SSA 108.1
EL1 463.9 EL2 173.3 ALF 94.55

LAUNCH DATE DEC 11 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 471.831 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.325 GAL 3.20 AZL 89.69 HCA 144.79 SMA 191.93 ECC .23882 INC .3082 V1 30.247
RP 233.98 LAP .18 LOP 223.79 VP 21.046 GAP 5.59 AZP 90.25 TAL 16.73 TAP 161.52 RCA 146.09 APO 237.77 V2 23.498
RC 207.958 GL 2.80 GP 6.86 ZAL 55.82 ZAP 148.62 ETS 167.12 ZAE 167.99 ETE 39.76 ZAC 97.25 ETC 255.72 CLP 149.30

PLANETOCENTRIC CONIC

C3 13.428 VHL 3.664 DLA 19.08 RAL 138.09 RAD 6567.5 VEL 11.611 PTH 2.03 VHP 4.865 DPA 2.09 RAP 195.30 ECC 1.2210

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 33 46	2763.39	-28.04	79.16	359.40	94.14	13 19 49	2163.4	-27.17	70.60
90.00	5 54 23	4127.56	-2.30	167.94	353.76	61.77	7 3 10	3527.6	-6.06	161.27
100.00	14 6 51	2463.21	-29.36	56.94	359.27	95.86	14 47 54	1863.2	-28.24	48.32
100.00	7 3 58	3902.97	-1.13	150.78	353.12	60.13	8 9 1	3303.0	-5.10	144.24
110.00	15 40 32	2170.12	-32.74	34.12	358.70	100.42	16 16 42	1570.1	-30.96	25.35
110.00	7 46 47	3768.83	1.76	138.80	351.31	55.86	8 49 36	3168.8	-2.73	132.60

DIFFERENTIAL CORRECTIONS
TDE .0259 TRA -.2978 TC3 3.3635 BAU .6197
RDE -.2915 RRA .0173 RC3 .7772 FAU .22196
FDE .7439 FRA-1.5799 FC-14.3102 BSP 8864
BDE .2927 BRA .2984 BC3 3.4521 FSP 3056

MID-COURSE EXECUTION ACCURACY
SGT 2514.1 SGR 730.1 SG3 939.3
RRT .7472 RRF -.8289 RTF -.8971
SGB 2618.0 R23 -.2014 R13 -.9062
SG1 2574.8 SG2 473.8 THA 12.68

ORBIT DETERMINATION ACCURACY
ST 170.2 SR 456.2 SS 604.3
CRT -.2378 CRS .8268 CST -.5712
LSA 731.1 MSA 236.9 SSA 107.7
EL1 458.3 EL2 164.6 ALF 95.82

LAUNCH DATE DEC 11 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 475.511 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.298 GAL 3.25 AZL 89.74 HCA 145.78 SMA 191.44 ECC .23712 INC .2583 V1 30.247
RP 233.62 LAP .15 LOP 224.78 VP 21.046 GAP 5.16 AZP 90.21 TAL 17.10 TAP 162.88 RCA 146.05 APO 236.84 V2 23.536
RC 210.060 GL 2.36 GP 7.20 ZAL 55.20 ZAP 147.46 ETS 167.07 ZAE 168.59 ETE 45.09 ZAC 97.56 ETC 255.71 CLP 148.18

PLANETOCENTRIC CONIC

C3 13.365 VHL 3.656 DLA 18.84 RAL 137.35 RAD 6567.5 VEL 11.608 PTH 2.03 VHP 4.756 DPA 2.45 RAP 195.33 ECC 1.2199

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 33 24	2752.57	-27.98	78.37	358.48	94.53	13 19 17	2152.6	-27.06	69.82
90.00	5 48 47	4136.32	-2.02	168.43	352.88	61.75	6 57 43	3536.3	-5.78	161.77
100.00	14 6 14	2453.23	-29.29	56.21	358.34	96.24	14 47 7	1853.2	-28.12	47.60
100.00	6 58 38	3910.89	-.87	151.22	352.24	60.12	8 3 49	3310.9	-4.84	144.68
110.00	15 39 24	2161.70	-32.64	33.49	357.75	100.78	16 15 26	1561.7	-30.81	24.74
110.00	7 41 57	3775.18	2.00	139.14	350.45	55.87	8 44 52	3175.2	-2.49	132.93

DIFFERENTIAL CORRECTIONS
TDE .0314 TRA -.2827 TC3 3.3418 BAU .6159
RDE -.2864 RRA .0311 RC3 .8453 FAU .23150
FDE .7446 FRA-1.7324 FC-14.9963 BSP 8819
BDE .2881 BRA .2844 BC3 3.4470 FSP 3214

MID-COURSE EXECUTION ACCURACY
SGT 2488.3 SGR 765.5 SG3 984.4
RRT .7685 RRF -.8539 RTF -.8956
SGB 2603.4 R23 -.2177 R13 -.9065
SG1 2559.4 SG2 476.2 THA 13.79

ORBIT DETERMINATION ACCURACY
ST 165.9 SR 449.4 SS 611.0
CRT -.3070 CRS .8127 CST -.6250
LSA 731.5 MSA 237.2 SSA 107.1
EL1 452.7 EL2 156.7 ALF 97.35

LAUNCH DATE DEC 11 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 479.208 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.273	GAL	3.30	AZL	89.79	HCA	146.78	SMA	190.98	ECC	.23551	INC	.2074
RP	233.25	LAP	.11	LOP	225.77	VP	21.049	GAP	4.73	AZP	90.17	TAL	17.45	TAP	164.22	RCA	146.00	APO	235.96
RC	212.144	GL	1.89	GP	7.57	ZAL	54.81	ZAP	146.27	ETS	167.02	ZAE	169.09	ETE	51.18	ZAC	97.88	ETC	255.70

V1	30.247	V2	23.574	CLP	147.03														

PLANETOCENTRIC CONIC

C3	13.307	VML	3.648	DLA	18.56	RAL	136.62	RAD	6567.5	VEL	11.606	PTH	2.03	VHP	4.651	DPA	2.85	RAP	195.33

ECC	1.2190	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	12 33 30	2740.47	-27.91	77.49	357.57	94.97	13 19 10	2140.5	-26.93	68.96							
		90.00	5 42 55	4146.54	-1.69	169.00	352.03	61.73	6 52 2	3546.5	-5.45	162.34							
		100.00	14 6 2	2442.07	-29.21	55.39	357.42	96.67	14 46 44	1842.1	-27.98	46.80							
		100.00	6 53 4	3920.18	-.55	151.73	351.40	60.11	7 58 24	3320.2	-4.52	145.19							
		110.00	15 38 39	2152.31	-32.52	32.78	356.82	101.18	16 14 31	1552.3	-30.63	24.07							
		110.00	7 36 57	3782.70	2.29	139.53	349.62	55.88	8 39 59	3182.7	-2.20	133.32							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0388	TRA	-.2684	TC3	3.3128	BAU	.6116	SGT	2458.3	SGR	805.9	SG3	1031.0	ST	163.6	SR	442.2	SS	616.3
RDE	-.2809	RRA	.0460	RC3	.9185	FAU	.24133	RRT	.7868	RRF	-.8763	RTF	-.8938	CRT	-.3937	CRS	.7972	CST	-.6832
FDE	.7392	FRA	-1.8935	FC	-15.7005	BSP	8762	SGB	2587.0	R23	-.2347	R13	-.9068	LSA	730.9	MSA	238.0	SSA	106.2
BDE	.2835	BRA	.2724	BC3	3.4378	FSP	3381	SG1	2541.9	SG2	481.0	THA	15.01	EL1	447.5	EL2	148.7	ALF	99.33

LAUNCH DATE DEC 11 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 482.920 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.249	GAL	3.34	AZL	89.85	HCA	147.78	SMA	190.55	ECC	.23398	INC	.1529
RP	232.88	LAP	.08	LOP	226.77	VP	21.054	GAP	4.32	AZP	90.13	TAL	17.78	TAP	165.56	RCA	145.96	APO	235.13
RC	214.210	GL	1.39	GP	7.96	ZAL	54.06	ZAP	145.04	ETS	166.97	ZAE	169.46	ETE	58.05	ZAC	98.22	ETC	255.69

V1	30.247	V2	23.612	CLP	145.84														

PLANETOCENTRIC CONIC

C3	13.255	VML	3.641	DLA	18.24	RAL	135.93	RAD	6567.5	VEL	11.603	PTH	2.03	VHP	4.549	DPA	3.28	RAP	195.33

ECC	1.2181	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	12 34 3	2727.06	-27.83	76.52	356.68	95.45	13 19 30	2127.1	-26.78	68.01							
		90.00	5 36 48	4158.25	-1.31	169.65	351.20	61.71	6 46 6	3558.3	-5.08	163.00							
		100.00	14 6 16	2429.68	-29.11	54.48	356.52	97.13	14 46 45	1829.7	-27.81	45.92							
		100.00	6 47 16	3930.86	-.19	152.31	350.57	60.11	7 52 47	3330.9	-4.16	145.78							
		110.00	15 38 15	2141.89	-32.38	32.00	355.89	101.62	16 13 57	1541.9	-30.44	23.32							
		110.00	7 31 46	3791.42	2.62	139.90	348.82	55.91	8 34 58	3191.4	-1.87	133.78							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0466	TRA	-.2564	TC3	3.2734	BAU	.6064	SGT	2422.2	SGR	851.8	SG3	1079.1	ST	163.5	SR	434.6	SS	620.8
RDE	-.2751	RRA	.0621	RC3	.9975	FAU	.25145	RRT	.8025	RRF	-.8961	RTF	-.8914	CRT	-.4801	CRS	.7810	CST	-.7321
FDE	.7289	FRA	-2.0614	FC	-16.4233	BSP	8699	SGB	2567.6	R23	-.2517	R13	-.9072	LSA	729.8	MSA	239.6	SSA	104.8
BDE	.2790	BRA	.2638	BC3	3.4220	FSP	3554	SG1	2520.7	SG2	488.4	THA	16.39	EL1	442.5	EL2	140.9	ALF	101.41

LAUNCH DATE DEC 11 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 486.647 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.227	GAL	3.39	AZL	89.91	HCA	148.78	SMA	190.14	ECC	.23254	INC	.0967
RP	232.51	LAP	.05	LOP	227.77	VP	21.061	GAP	3.91	AZP	90.08	TAL	18.10	TAP	166.87	RCA	145.92	APO	234.35
RC	216.258	GL	.87	GP	8.37	ZAL	53.54	ZAP	143.77	ETS	166.91	ZAE	169.66	ETE	65.56	ZAC	98.58	ETC	255.68

V1	30.247	V2	23.650	CLP	144.63														

PLANETOCENTRIC CONIC

C3	13.208	VHL	3.634	DLA	17.88	RAL	135.25	RAD	6567.5	VEL	11.601	PTH	2.03	VHP	4.451	DPA	3.75	RAP	195.31

ECC	1.2174	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	12 35 4	2712.28	-27.73	75.45	355.80	95.97	13 20 16	2112.3	-26.61	66.96							
		90.00	5 30 25	4171.48	-.88	170.39	350.39	61.70	6 39 56	3571.5	-4.66	163.75							
		100.00	14 6 56	2416.02	-28.99	53.49	355.63	97.65	14 47 12	1816.0	-27.62	44.95							
		100.00	6 41 13	3942.97	.22	152.98	349.77	60.11	7 46 56	3343.0	-3.76	146.45							
		110.00	15 38 13	2130.38	-32.21	31.14	354.98	102.11	16 13 44	1530.4	-30.21	22.50							
		110.00	7 26 25	3801.38	3.00	140.50	348.04	55.93	8 29 46	3201.4	-1.49	134.30							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0561	TRA	-.2466	TC3	3.2234	BAU	.6004	SGT	2379.9	SGR	903.3	SG3	1128.4	ST	166.7	SR	426.3	SS	623.3
RDE	-.2688	RRA	.0795	RC3	1.0825	FAU	.26180	RRT	.8150	RRF	-.9134	RTF	-.8883	CRT	-.5721	CRS	.7623	CST	-.7731
FDE	.7093	FRA	-2.2370	FC	-17.1607	BSP	8617	SGB	2545.6	R23	-.2689	R13	-.9076	LSA	727.0	MSA	242.4	SSA	103.0
BDE	.2746	BRA	.2591	BC3	3.4003	FSP	3731	SG1	2496.2	SG2	499.0	THA	17.93	EL1	437.9	EL2	133.1	ALF	103.92

LAUNCH DATE DEC 11 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 490.389 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.205	GAL	3.42	AZL	89.97	HCA	149.78	SMA	189.75	ECC	.23119	INC	.0321
RP	232.14	LAP	.02	LOP	228.78	VP	21.071	GAP	3.50	AZP	90.03	TAL	18.40	TAP	168.18	RCA	145.88	APO	233.62
RC	218.287	GL	.30	GP	8.82	ZAL	53.05	ZAP	142.47	ETS	166.84	ZAE	169.66	ETE	73.50	ZAC	98.96	ETC	255.67

V1	30.247	V2	23.689	CLP	143.37														

PLANETOCENTRIC CONIC

C3	13.165	VHL	3.628	DLA	17.47	RAL	134.60	RAD	6567.5	VEL	11.600	PTH	2.03	VHP	4.357	DPA	4.26	RAP	195.27

ECC	1.2167	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	12 36 33	2696.08	-27.61	74.28	354.94	96.55	13 21 29	2096.1	-26.42	65.82							
		90.00	5 23 44	4186.29	-.40	171.22	349.60	61.69	6 33 30	3586.3	-4.19	164.58							
		100.00	14 8 2	2401.03	-28.84	52.39	354.76	98.20	14 48 3	1801.0	-27.41	43.89							
		100.00	6 34 55	3956.57	.68	153.72	349.00	60.11	7 40 52	3356.6	-3.30	147.20							
		110.00	15 38 35	2117.74	-32.03	30.20	354.08	102.63	16 13 53	1517.7	-29.96	21.60							
		110.00	7 20 52	3812.63	3.43	141.09	347.28	55.97	8 24 24	3212.6	-1.06	134.89							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0673	TRA	-.2381	TC3	3.1673	BAU	.5946	SGT	2334.4	SGR	961.6	SG3	1180.0	ST	173.3	SR	416.9	SS	624.0
RDE	-.2617	RRA	.0987	RC3	1.1752	FAU	.27264	RRT	.8249	RRF	-.9284	RTF	-.8847	CRT	-.6636	CRS	.7398	CST	-.7979
FDE	.6777	FRA	-2.4243	FC	-17.9287	BSP	8511	SGB	2524.7	R23	-.2849	R13	-.9083	LSA	722.5	MSA	247.2	SSA	100.7
BDE	.2702	BRA	.2578	BC3	3.3783	FSP	3907	SG1	2472.0	SG2	513.3	THA	19.65	EL1	433.9	EL2	124.6	ALF	106.85

LAUNCH DATE DEC 11 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 494.146 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.185	GAL	3.46	AZL	90.03	HCA	150.79	SMA	189.39	ECC	.22990	INC	.0271
RP	231.76	LAP	-.02	LOP	229.78	VP	21.083	GAP	3.11	AZP	89.97	TAL	18.68	TAP	169.47	RCA	145.85	APO	232.93
RC	220.299	GL	-.30	GP	9.31	ZAL	52.60	ZAP	141.13	ETS	166.78	ZAE	169.44	ETE	81.55	ZAC	99.37	ETC	255.65

V1	30.247	V2	23.728	CLP	142.09														

PLANETOCENTRIC CONIC

C3	13.127	VHL	3.623	DLA	17.02	RAL	133.97	RAD	6567.5	VEL	11.598	PTH	2.03	VHP	4.267	DPA	4.81	RAP	195.22

ECC	1.2160	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	12 38 30	2678.40	-27.47	73.00	354.08	97.19	13 23 9	2078.4	-26.19	64.57							
		90.00	5 16 45	4202.73	.13	172.13	348.84	61.68	6 26 47	3602.7	-3.66	165.50							
		100.00	14 9 36	2384.64	-28.68	51.20	353.89	98.81	14 49 20	1784.6	-27.16	42.73							
		100.00	6 28 20	3971.72	1.20	154.56	348.24	60.13	7 34 32	3371.7	-2.79	148.03							
		110.00	15 39 20	2103.88	-31.82	29.17	353.18	103.21	16 14 24	1503.9	-29.68	20.62							
		110.00	7 15 5	3825.25	3.91	141.75	346.55	56.01	8 18 51	3225.2	-.58	135.54							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0789	TRA	-.2331	TC3	3.0977	BAU	.5879	SGT	2281.0	SGR	1026.3	SG3	1232.0	ST	182.9	SR	406.8	SS	624.2
RDE	-.2539	RRA	.1193	RC3	1.2746	FAU	.28354	RRT	.8318	RRF	-.9412	RTF	-.8800	CRT	-.7398	CRS	.7161	CST	-.8024
FDE	.6382	FRA	-2.6153	FC	-18.6990	BSP	8425	SGB	2501.2	R23	-.3001	R13	-.9091	LSA	717.6	MSA	253.3	SSA	97.7
BDE	.2659	BRA	.2619	BC3	3.5497	FSP	4096	SG1	2444.1	SG2	531.7	THA	21.59	EL1	430.6	EL2	116.3	ALF	109.91

LAUNCH DATE DEC 11 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 497.916 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.166	GAL	3.49	AZL	90.10	HCA	151.80	SMA	189.04	ECC	.22869	INC	.1021
RP	231.38	LAP	-.05	LOP	230.79	VP	21.098	GAP	2.72	AZP	89.91	TAL	18.95	TAP	170.75	RCA	145.81	APO	232.28
RC	222.292	GL	-.94	GP	9.82	ZAL	52.18	ZAP	139.75	ETS	166.71	ZAE	169.00	ETE	89.36	ZAC	99.81	ETC	255.64

V1	30.247	V2	23.768	CLP	140.77														

PLANETOCENTRIC CONIC

C3	13.094	VHL	3.619	DLA	16.52	RAL	133.36	RAD	6567.5	VEL	11.597	PTH	2.03	VHP	4.180	DPA	5.41	RAP	195.15

ECC	1.2155	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	12 40 57	2659.15	-27.30	71.62	353.23	97.85	13 25 16	2059.2	-25.93	63.22							
		90.00	5 9 26	4220.88	.71	173.14	348.09	61.69	6 19 47	3620.9	-3.08	166.51							
		100.00	14 11 37	2366.77	-28.49	49.91	353.03	99.47	14 51 3	1766.8	-26.88	41.47							
		100.00	6 21 27	3988.50	1.77	155.48	347.51	60.15	7 27 56	3388.5	-2.22	148.96							
		110.00	15 40 29	2088.73	-31.58	28.06	352.29	103.83	16 15 17	1488.7	-29.36	19.56							
		110.00	7 9 5	3839.30	4.45	142.49	345.84	56.07	8 13 4	3239.3	-.04	136.28							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0912	TRA	-.2306	TC3	3.0184	BAU	.5842	SGT	2222.1	SGR	1008.4	SG3	1285.1	ST	195.4	SR	395.8	SS	624.4
RDE	-.2453	RRA	.1418	RC3	1.3823	FAU	.29465	RRT	.8358	RRF	-.9520	RTF	-.8742	CRT	-.8031	CRS	.6899	CST	-.7871
FDE	.5877	FRA	-2.8140	FC	-19.4813	BSP	8334	SGB	2478.7	R23	-.3132	R13	-.9103	LSA	712.4	MSA	261.5	SSA	94.1
BDE	.2617	BRA	.2707	BC3	3.3198	FSP	4288	SG1	2415.9	SG2	554.6	THA	23.78	EL1	428.1	EL2	107.6	ALF	113.18

LAUNCH DATE DEC 11 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 501.699 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.148	GAL	3.52	AZL	90.10	HCA	152.81	SMA	188.72	ECC	.22755	INC	.1774
RP	231.01	LAP	-.08	LOP	231.81	VP	21.114	GAP	2.34	AZP	89.84	TAL	19.20	TAP	172.01	RCA	145.78	APO	231.67
RC	224.266	GL	-1.63	GP	10.38	ZAL	51.80	ZAP	138.33	ETS	166.63	ZAE	168.32	ETE	96.64	ZAC	100.28	ETC	255.62

V1	30.247	V2	23.807	CLP	139.41														

PLANETOCENTRIC CONIC

C3	13.066	VHL	3.615	DLA	15.97	RAL	132.77	RAD	6567.5	VEL	11.595	PTH	2.03	VHP	4.097	DPA	6.08	RAP	195.08

ECC	1.2150	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	12 43 53	2638.25	-27.09	70.13	352.38	98.57	13 27 51	2038.3	-25.63	61.76							
		90.00	5 1 47	4240.84	1.36	174.26	347.37	61.71	6 12 27	3640.8	-2.43	167.63							
		100.00	14 14 6	2347.33	-28.26	48.51	352.17	100.17	14 53 13	1747.3	-26.57	40.12							
		100.00	6 14 15	4007.00	2.39	156.49	346.79	60.19	7 21 2	3407.0	-1.59	149.97							
		110.00	15 42 2	2072.20	-31.30	26.85	351.40	104.49	16 16 34	1472.2	-29.00	18.41							
		110.00	7 2 48	3854.89	5.04	143.31	345.15	56.15	8 7 3	3254.9	.56	137.09							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1058	TRA	-.2297	TC3	2.9301	BAU	.5749	SGT	2158.3	SGR	1178.6	SG3	1339.5	ST	212.3	SR	383.2	SS	624.0
RDE	-.2352	RRA	.1667	RC3	1.4991	FAU	.30598	RRT	.8370	RRF	-.9611	RTF	-.8673	CRT	-.8582	CRS	.6582	CST	-.7484
FDE	.5196	FRA	-3.0228	FC	-20.2742	BSP	8220	SGB	2459.2	R23	-.3232	R13	-.9124	LSA	706.0	MSA	273.5	SSA	89.4
BDE	.2579	BRA	.2838	BC3	3.2913	FSP	4479	SG1	2389.1	SG2	582.6	THA	26.24	EL1	427.0	EL2	97.8	ALF	116.95

LAUNCH DATE DEC 11 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 505.496 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.131	GAL	3.55	AZL	90.26	HCA	153.83	SMA	188.42	ECC	.22647	INC	.2588
RP	230.62	LAP	-.11	LOP	232.83	VP	21.132	GAP	1.96	AZP	89.77	TAL	19.43	TAP	173.26	RCA	145.75	APO	231.09
RC	226.222	GL	-2.37	GP	10.99	ZAL	51.45	ZAP	136.86	ETS	166.56	ZAE	167.43	ETE	103.19	ZAC	100.78	ETC	255.61

V1	30.247	V2	23.847	CLP	138.01														

PLANETOCENTRIC CONIC

C3	13.043	VHL	3.611	DLA	15.35	RAL	132.20	RAD	6567.5	VEL	11.594	PTH	2.03	VHP	4.019	DPA	6.76	RAP	194.99

ECC	1.2146	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	12 47 20	2615.59	-26.85	68.51	351.54	99.34	13 30 56	2015.6	-25.29	60.19							
		90.00	4 53 44	4262.74	2.06	175.48	346.67	61.75	6 4 47	3662.7	-1.73	168.85							
		100.00	14 17 5	2326.20	-28.00	46.99	351.31	100.93	14 55 51	1726.2	-26.20	38.65							
		100.00	6 6 41	4027.37	3.08	157.61	346.10	60.25	7 13 49	3427.4	-.90	151.09							
		110.00	15 44 1	2054.18	-30.99	25.54	350.51	105.21	16 18 15	1454.2	-28.59	17.16							
		110.00	6 56 14	3872.15	5.69	144.22	344.48	56.24	8 0 46	3272.1	1.22	137.99							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1200	TRA	-.2319	TC3	2.8286	BAU	.5688	SGT	2087.1	SGR	1267.2	SG3	1394.0	ST	230.4	SR	369.6	SS	626.0
RDE	-.2239	RRA	.1939	RC3	1.6251	FAU	.31730	RRT	.8352	RRF	-.9687	RTF	-.8587	CRT	-.8973	CRS	.6257	CST	-.6928
FDE	.4398	FRA	-3.2384	FC	-21.0617	BSP	8127	SGB	2441.6	R23	-.3296	R13	-.9154	LSA	701.1	MSA	287.9	SSA	84.0
BDE	.2540	BRA	.3022	BC3	3.2622	FSP	4674	SG1	2362.8	SG2	615.6	THA	29.05	EL1	426.5	EL2	88.1	ALF	120.67

LAUNCH DATE DEC 11 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 509.305 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.115	GAL	3.58	AZL	90.35	HCA	154.85	SMA	188.13	ECC	.22546	INC	.3457	V1	30.247
RP	230.24	LAP	-.15	LOP	233.85	VP	21.152	GAP	1.60	AZP	89.69	TAL	19.65	TAP	174.50	RCA	145.72	APO	230.55	V2	23.887
RC	228.159	GL	-3.17	GP	11.64	ZAL	51.14	ZAP	135.35	ETS	166.49	ZAE	166.34	ETE	108.95	ZAC	101.33	ETC	255.59	CLP	136.58

PLANETOCENTRIC CONIC

C3	13.025	VHL	3.609	DLA	14.67	RAL	131.64	RAD	6567.5	VEL	11.594	PTH	2.03	VHP	3.944	DPA	7.52	RAP	194.90	ECC	1.2144

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 51 20	2591.03	-26.57	66.77	350.69	100.17	13 34 31	1991.0	-24.89	58.50
90.00	4 45 17	4286.72	2.84	176.82	345.99	61.81	5 56 44	3686.7	-.96	170.19
100.00	14 20 34	2303.25	-27.69	45.36	350.45	101.73	14 58 57	1703.3	-25.79	37.07
100.00	5 58 44	4049.73	3.84	158.84	345.43	60.33	7 6 14	3449.7	-.14	152.32
110.00	15 46 26	2034.54	-30.63	24.12	349.62	105.98	16 20 21	1434.5	-28.14	15.81
110.00	6 49 21	3891.20	6.41	145.22	343.84	56.35	7 54 12	3291.2	1.95	138.98

DIFFERENTIAL CORRECTIONS

TDE	.1347	TRA	-.2378	TC3	2.7145	BAU	.5635
RDE	-.2108	RRA	.2235	RC3	1.7613	FAU	.32858
FDE	.3425	FRA	-3.4572	FC	-21.8400	BSP	8066
BDE	.2502	BRA	.3264	BC3	3.2358	FSP	4875

MID-COURSE EXECUTION ACCURACY

SGT	2009.2	SGR	1364.8	SG3	1448.3		
RRT	.8300	RRF	-.9749	RTF	-.8479		
SGB	2428.9	R23	-.3316	R13	-.9194		
SG1	2339.3	SG2	653.8	THA	32.23		

ORBIT DETERMINATION ACCURACY

ST	250.8	SR	354.4	SS	629.9
CRT	-.9251	CRS	.5914	CST	-.6207
LSA	697.0	MSA	305.5	SSA	78.1
EL1	426.9	EL2	79.0	ALF	124.57

LAUNCH DATE DEC 11 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 513.127 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.100	GAL	3.60	AZL	90.44	HCA	155.87	SMA	187.87	ECC	.22450	INC	.4405	V1	30.247
RP	229.86	LAP	-.18	LOP	234.87	VP	21.174	GAP	1.24	AZP	89.60	TAL	19.85	TAP	175.72	RCA	145.69	APO	230.04	V2	23.927
RC	230.076	GL	-4.03	GP	12.34	ZAL	50.87	ZAP	133.79	ETS	166.42	ZAE	165.08	ETE	113.91	ZAC	101.92	ETC	255.56	CLP	135.11

PLANETOCENTRIC CONIC

C3	13.014	VHL	3.607	DLA	13.92	RAL	131.09	RAD	6567.5	VEL	11.593	PTH	2.03	VHP	3.874	DPA	8.35	RAP	194.79	ECC	1.2142

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 55 52	2564.41	-26.23	64.89	349.85	101.06	13 38 37	1964.4	-24.44	56.68
90.00	4 36 22	4312.97	3.68	178.29	345.33	61.90	5 48 15	3713.0	-.11	171.65
100.00	14 24 34	2278.34	-27.33	43.59	349.59	102.60	15 2 33	1678.3	-25.32	35.37
100.00	5 50 21	4074.27	4.66	160.20	344.79	60.44	6 58 15	3474.3	.69	153.66
110.00	15 49 20	2013.15	-30.22	22.59	348.72	106.80	16 22 53	1413.2	-27.62	14.36
110.00	6 42 5	3912.23	7.20	146.34	343.22	56.49	7 47 17	3312.2	2.75	140.08

DIFFERENTIAL CORRECTIONS

TDE	.1503	TRA	-.2463	TC3	2.5910	BAU	.5600
RDE	-.1955	RRA	.2564	RC3	1.9093	FAU	.33989
FDE	.2259	FRA	-3.6836	FC	-22.6104	BSP	8002
BDE	.2466	BRA	.3555	BC3	3.2185	FSP	5070

MID-COURSE EXECUTION ACCURACY

SGT	1927.2	SGR	1473.1	SG3	1502.9		
RRT	.8214	RRF	-.9800	RTF	-.8347		
SGB	2425.7	R23	-.3277	R13	-.9250		
SG1	2323.5	SG2	696.9	THA	35.84		

ORBIT DETERMINATION ACCURACY

ST	273.4	SR	337.6	SS	638.5
CRT	-.9429	CRS	.5578	CST	-.5309
LSA	695.9	MSA	327.1	SSA	71.6
EL1	428.4	EL2	71.8	ALF	128.65

LAUNCH DATE DEC 11 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 516.961 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.085	GAL	3.62	AZL	90.54	HCA	156.90	SMA	187.62	ECC	.22359	INC	.5425	V1	30.247
RP	229.47	LAP	-.21	LOP	235.90	VP	21.197	GAP	.88	AZP	89.50	TAL	20.03	TAP	176.93	RCA	145.67	APO	229.57	V2	23.968
RC	231.973	GL	-4.97	GP	13.11	ZAL	50.65	ZAP	132.19	ETS	166.34	ZAE	163.65	ETE	118.14	ZAC	102.56	ETC	255.54	CLP	133.60

PLANETOCENTRIC CONIC

C3	13.011	VHL	3.607	DLA	13.09	RAL	130.55	RAD	6567.5	VEL	11.593	PTH	2.03	VHP	3.809	DPA	9.24	RAP	194.69	ECC	1.2141

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 1 0	2535.56	-25.84	62.87	348.99	102.00	13 43 16	1935.6	-23.93	54.72
90.00	4 26 56	4341.72	4.60	179.90	344.70	62.03	5 39 18	3741.7	.82	173.26
100.00	14 29 9	2251.29	-26.92	41.69	348.72	103.52	15 6 41	1651.3	-24.79	33.54
100.00	5 41 29	4101.23	5.56	161.69	344.17	60.58	6 49 50	3501.2	1.60	155.14
110.00	15 52 43	1989.83	-29.75	20.94	347.82	107.67	16 25 52	1389.8	-27.04	12.79
110.00	6 34 25	3935.44	8.07	147.57	342.63	56.67	7 40 0	3335.4	3.63	141.30

DIFFERENTIAL CORRECTIONS

TDE	.1653	TRA	-.2587	TC3	2.4512	BAU	.5579
RDE	-.1775	RRA	.2928	RC3	2.0687	FAU	.35087
FDE	.0870	FRA	-3.9155	FC	-23.3466	BSP	7989
BDE	.2425	BRA	.3907	BC3	3.2074	FSP	5262

MID-COURSE EXECUTION ACCURACY

SGT	1836.8	SGR	1592.0	SG3	1556.3		
RRT	.8082	RRF	-.9842	RTF	-.8176		
SGB	2430.7	R23	-.3173	R13	-.9324		
SG1	2314.0	SG2	744.1	THA	39.97		

ORBIT DETERMINATION ACCURACY

ST	296.2	SR	319.4	SS	653.6
CRT	-.9488	CRS	.5297	CST	-.4282
LSA	699.7	MSA	350.9	SSA	64.8
EL1	430.0	EL2	69.5	ALF	132.73

LAUNCH DATE DEC 11 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 520.809 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.072	GAL	3.64	AZL	90.65	HCA	157.93	SMA	187.38	ECC	.22274	INC	.6544	V1	30.247
RP	229.09	LAP	-.25	LOP	236.93	VP	21.222	GAP	.54	AZP	89.39	TAL	20.20	TAP	178.13	RCA	145.65	APO	229.12	V2	24.009
RC	233.848	GL	-6.00	GP	13.95	ZAL	50.46	ZAP	130.54	ETS	166.28	ZAE	162.08	ETE	121.72	ZAC	103.26	ETC	255.51	CLP	132.05

PLANETOCENTRIC CONIC

C3	13.018	VHL	3.608	DLA	12.17	RAL	130.02	RAD	6567.5	VEL	11.593	PTH	2.03	VHP	3.749	DPA	10.21	RAP	194.58	ECC	1.2142

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 6 45	2504.31	-25.38	60.70	348.13	102.99	13 48 30	1904.3	-23.34	52.62
90.00	4 16 56	4373.21	5.60	181.67	344.09	62.20	5 29 49	3773.2	1.84	175.01
100.00	14 34 19	2221.91	-26.43	39.64	347.84	104.49	15 11 21	1621.9	-24.18	31.56
100.00	5 32 3	4130.84	6.55	163.33	343.57	60.77	6 40 54	3530.8	2.61	156.77
110.00	15 56 36	1964.43	-29.21	19.16	346.91	108.60	16 29 20	1364.4	-26.39	11.11
110.00	6 26 16	3961.08	9.03	148.94	342.06	56.89	7 32 17	3361.1	4.61	142.64

DIFFERENTIAL CORRECTIONS

TDE	.1949	TRA	-.2601	TC3	2.3435	BAU	.5658
RDE	-.1518	RRA	.3372	RC3	2.2531	FAU	.36351
FDE	-.1225	FRA	-4.1959	FC	-24.1740	BSP	7723
BDE	.2471	BRA	.4259	BC3	3.2509	FSP	5359

MID-COURSE EXECUTION ACCURACY

SGT	1770.3	SGR	1732.5	SG3	1618.2		
RRT	.7966	RRF	-.9876	RTF	-.8046		
SGB	2477.0	R23	-.2947	R13	-.9431		
SG1	2347.8	SG2	789.7	THA	44.22		

ORBIT DETERMINATION ACCURACY

ST	338.3	SR	295.9	SS	686.5
CRT	-.9291	CRS	.5017	CST	-.2405
LSA	715.5	MSA	397.9	SSA	54.7
EL1	441.5	EL2	83.8	ALF	139.11

LAUNCH DATE DEC 11 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 524.666 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.060 GAL 3.65 AZL 90.78 HCA 158.97 SMA 187.17 ECC .22193 INC .7766 V1 30.247
RP 228.70 LAP -.28 LOP 237.96 VP 21.249 GAP .20 AZP 89.27 TAL 20.35 TAP 179.31 RCA 145.63 APO 228.70 V2 24.049
RC 235.703 GL -7.12 GP 14.85 ZAL 50.33 ZAP 128.84 ETS 166.21 ZAE 160.37 ETE 124.74 ZAC 104.02 ETC 255.48 CLP 130.46

PLANETOCENTRIC CONIC

C3 13.036 VHL 3.611 DLA 11.14 RAL 129.49 RAD 6567.5 VEL 11.594 PTH 2.03 VHP 3.694 DPA 11.26 RAP 194.47 ECC 1.2145

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 13 12	2470.27	-24.84	58.35	347.26	104.05	13 54 23	1870.3	-22.66	50.36
90.00	4 6 16	4407.84	6.70	183.63	343.52	62.42	5 19 44	3807.8	2.95	176.95
100.00	14 40 9	2189.87	-25.87	37.43	346.96	105.53	15 16 39	1589.9	-23.49	29.44
100.00	5 22 1	4163.47	7.63	165.15	343.01	61.01	6 31 24	3563.5	3.71	158.56
110.00	16 1 5	1936.63	-28.59	17.23	345.99	109.59	16 33 21	1336.6	-25.65	9.28
110.00	6 17 34	3989.48	10.08	150.47	341.53	57.16	7 24 4	3389.5	5.69	144.14

DIFFERENTIAL CORRECTIONS
TDE .2051 TRA -.2848 TC3 2.1632 BAU .5678
RDE -.1269 RRA .3812 RC3 2.4365 FAU .37316
FDE -.3041 FRA-4.4227 FC-24.7816 BSP 7921
BDE .2412 BRA .4758 BC3 3.2582 FSP 5563

MID-COURSE EXECUTION ACCURACY
SGT 1660.7 SGR 1875.2 SG3 1665.6
RRT .7703 RRF -.9903 RTF -.7751
SGB 2504.9 R23 -.2703 R13 -.9529
SG1 2359.2 SG2 841.7 THA 49.49

ORBIT DETERMINATION ACCURACY
ST 356.7 SR 278.4 SS 722.5
CRT -.8922 CRS .5204 CST -.1415
LSA 743.5 MSA 414.3 SSA 49.1
EL1 440.9 EL2 101.7 ALF 142.83

LAUNCH DATE DEC 11 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 528.534 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.048 GAL 3.67 AZL 90.91 HCA 160.00 SMA 186.96 ECC .22118 INC .9123 V1 30.247
RP 228.31 LAP -.31 LOP 239.00 VP 21.277 GAP -.14 AZP 89.14 TAL 20.48 TAP 180.48 RCA 145.61 APO 228.31 V2 24.090
RC 237.537 GL -8.35 GP 15.85 ZAL 50.26 ZAP 127.10 ETS 166.15 ZAE 158.54 ETE 127.27 ZAC 104.86 ETC 255.44 CLP 128.83

PLANETOCENTRIC CONIC

C3 13.069 VHL 3.615 DLA 10.01 RAL 128.96 RAD 6567.5 VEL 11.595 PTH 2.03 VHP 3.644 DPA 12.40 RAP 194.38 ECC 1.2151

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 20 24	2433.21	-24.20	55.82	346.38	105.16	14 0 57	1833.2	-21.89	47.92
90.00	3 54 51	4445.99	7.89	185.79	342.98	62.72	5 8 57	3846.0	4.17	179.08
100.00	14 46 41	2154.92	-25.21	35.04	346.06	106.62	15 22 36	1554.9	-22.69	27.15
100.00	5 11 15	4199.51	8.82	167.17	342.49	61.32	6 21 15	3599.5	4.92	160.55
110.00	16 6 10	1906.20	-27.88	15.15	345.06	110.63	16 37 56	1306.2	-24.81	7.32
110.00	6 8 16	4021.00	11.24	152.17	341.03	57.50	7 15 17	3421.0	6.87	145.80

DIFFERENTIAL CORRECTIONS
TDE .2153 TRA -.3116 TC3 1.9718 BAU .5746
RDE -.0972 RRA .4302 RC3 2.6322 FAU .38185
FDE -.5110 FRA-4.6497 FC-25.2951 BSP 8165
BDE .2363 BRA .5312 BC3 3.2888 FSP 5758

MID-COURSE EXECUTION ACCURACY
SGT 1549.3 SGR 2031.0 SG3 1708.7
RRT .7352 RRF -.9924 RTF -.7375
SGB 2554.5 R23 -.2371 R13 -.9637
SG1 2394.1 SG2 891.0 THA 55.22

ORBIT DETERMINATION ACCURACY
ST 375.4 SR 264.9 SS 771.1
CRT -.8187 CRS .5748 CST -.0412
LSA 788.3 MSA 427.1 SSA 43.5
EL1 440.8 EL2 129.5 ALF 146.75

LAUNCH DATE DEC 11 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 532.414 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.037 GAL 3.68 AZL 91.06 HCA 161.04 SMA 186.77 ECC .22046 INC 1.0624 V1 30.247
RP 227.92 LAP -.35 LOP 240.04 VP 21.307 GAP -.46 AZP 89.00 TAL 20.59 TAP 181.63 RCA 145.60 APO 227.95 V2 24.132
RC 239.350 GL -9.71 GP 16.93 ZAL 50.25 ZAP 125.30 ETS 166.10 ZAE 156.58 ETE 129.39 ZAC 105.79 ETC 255.39 CLP 127.16

PLANETOCENTRIC CONIC

C3 13.121 VHL 3.622 DLA 8.74 RAL 128.42 RAD 6567.5 VEL 11.598 PTH 2.03 VHP 3.601 DPA 13.64 RAP 194.30 ECC 1.2159

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 28 24	2392.75	-23.46	53.09	345.49	106.34	14 8 17	1792.8	-20.99	45.29
90.00	3 42 34	4488.17	9.20	188.20	342.49	63.10	4 57 22	3888.2	5.52	181.45
100.00	14 54 0	2116.70	-24.44	32.46	345.16	107.77	15 29 17	1516.7	-21.78	24.67
100.00	4 59 39	4239.46	10.11	169.43	342.00	61.72	6 10 19	3639.5	6.26	162.76
110.00	16 11 56	1872.83	-27.06	12.90	344.11	111.74	16 43 8	1272.8	-23.86	5.19
110.00	5 58 13	4056.10	12.52	154.09	340.58	57.93	7 5 49	3456.1	8.19	147.67

DIFFERENTIAL CORRECTIONS
TDE .2264 TRA -.3411 TC3 1.7731 BAU .5880
RDE -.0602 RRA .4858 RC3 2.8445 FAU .38996
FDE -.7602 FRA-4.8817 FC-25.7295 BSP 8471
BDE .2342 BRA .5936 BC3 3.3518 FSP 5927

MID-COURSE EXECUTION ACCURACY
SGT 1440.9 SGR 2204.6 SG3 1749.3
RRT .6889 RRF -.9941 RTF -.6893
SGB 2633.7 R23 -.1970 R13 -.9744
SG1 2462.1 SG2 935.2 THA 61.23

ORBIT DETERMINATION ACCURACY
ST 395.6 SR 259.4 SS 837.9
CRT -.6812 CRS .6682 CST .0641
LSA 856.6 MSA 436.7 SSA 37.8
EL1 441.4 EL2 170.2 ALF 151.27

LAUNCH DATE DEC 11 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 536.305 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.027 GAL 3.69 AZL 91.23 HCA 162.09 SMA 186.60 ECC .21979 INC 1.2297 V1 30.247
RP 227.53 LAP -.38 LOP 241.09 VP 21.338 GAP -.78 AZP 88.83 TAL 20.69 TAP 182.78 RCA 145.58 APO 227.61 V2 24.173
RC 241.142 GL -11.23 GP 18.13 ZAL 50.31 ZAP 123.46 ETS 166.06 ZAE 154.50 ETE 131.16 ZAC 106.81 ETC 255.34 CLP 125.46

PLANETOCENTRIC CONIC

C3 13.198 VHL 3.633 DLA 7.32 RAL 127.87 RAD 6567.5 VEL 11.601 PTH 2.03 VHP 3.565 DPA 14.99 RAP 194.24 ECC 1.2172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 37 20	2348.43	-22.58	50.14	344.59	107.56	14 16 28	1748.4	-19.96	42.45
90.00	3 29 15	4535.03	10.63	190.90	342.04	63.60	4 44 50	3935.0	7.00	184.10
100.00	15 2 11	2074.76	-23.54	29.67	344.24	108.98	15 36 45	1474.8	-20.73	22.00
100.00	4 47 5	4283.93	11.54	171.96	341.57	62.23	5 58 29	3683.9	7.73	165.24
110.00	16 18 26	1836.12	-26.11	10.47	343.16	112.89	16 49 2	1236.1	-22.78	2.89
110.00	5 47 19	4095.34	13.93	156.26	340.18	58.46	6 55 35	3495.3	9.65	149.77

DIFFERENTIAL CORRECTIONS
TDE .2361 TRA -.3745 TC3 1.5629 BAU .6080
RDE -.0150 RRA .5489 RC3 3.0712 FAU .39690
FDE-1.0453 FRA-5.1125 FC-26.0341 BSP 8864
BDE .2365 BRA .6645 BC3 3.4460 FSP 6071

MID-COURSE EXECUTION ACCURACY
SGT 1335.2 SGR 2396.2 SG3 1784.6
RRT .6269 RRF -.9954 RTF -.6256
SGB 2743.1 R23 -.1536 R13 -.9835
SG1 2565.2 SG2 971.8 THA 67.31

ORBIT DETERMINATION ACCURACY
ST 414.4 SR 271.3 SS 923.5
CRT -.4740 CRS .7841 CST .1589
LSA 950.0 MSA 441.0 SSA 32.5
EL1 441.7 EL2 224.1 ALF 156.32

LAUNCH DATE DEC 11 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 540.207 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.017	GAL	3.69	AZL	91.42	HCA	163.13	SMA	186.43	ECC	.21915	INC	1.4181	V1	30.247
RP	227.14	LAP	-.41	LOP	242.14	VP	21.370	GAP	-1.09	AZP	88.64	TAL	20.77	TAP	183.90	RCA	145.58	APO	227.29	V2	24.214
RC	242.914	GL	-12.91	GP	19.45	ZAL	50.46	ZAP	121.56	ETS	166.04	ZAE	152.30	ETE	132.63	ZAC	107.94	ETC	255.27	CLP	123.71

PLANETOCENTRIC CONIC

C3	13.309	VHL	3.648	DLA	5.72	RAL	127.30	RAD	6567.5	VEL	11.606	PTH	2.03	VHP	3.537	DPA	16.46	RAP	194.22	ECC	1.2190

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 47 18	2299.69	-21.54	46.95	343.68	108.84	14 25 37	1699.7	-18.77	39.37
90.00	3 14 44	4587.37	12.20	193.94	341.67	64.25	4 31 12	3987.4	8.64	187.08
100.00	15 11 21	2028.60	-22.48	26.65	343.32	110.23	15 45 9	1428.6	-19.53	19.10
100.00	4 33 22	4333.70	13.10	174.83	341.21	62.89	5 45 36	3733.7	9.36	168.04
110.00	16 25 47	1795.62	-25.01	7.84	342.20	114.10	16 55 43	1195.6	-21.54	.40
110.00	5 35 25	4139.44	15.48	158.73	339.85	59.14	6 44 25	3539.4	11.27	152.15

DIFFERENTIAL CORRECTIONS

TDE	.2448	TRA	-.4115	TC3	1.3434	BAU	.6358
RDE	.0411	RRA	.6205	RC3	3.3113	FAU	.40229
FDE	-1.3726	FRA	-5.3373	FC	-26.1695	BSP	9363
BDE	.2483	BRA	.7445	BC3	3.5734	FSP	6186

MID-COURSE EXECUTION ACCURACY

SGT	1237.1	SGR	2607.7	SG3	1812.7		
RRT	.5446	RRF	-.9965	RTF	-.5422		
SGB	2886.3	R23	-.1112	R13	-.9903		
SG1	2707.8	SG2	999.2	THA	73.15		

ORBIT DETERMINATION ACCURACY

ST	432.1	SR	309.4	SS	1030.2
CRT	-.2265	CRS	.8852	CST	.2426
LSA	1071.2	MSA	442.2	SSA	27.6
EL1	442.6	EL2	294.3	ALF	163.17

LAUNCH DATE DEC 11 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 544.120 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.009	GAL	3.69	AZL	91.63	HCA	164.19	SMA	186.28	ECC	.21856	INC	1.6308	V1	30.247
RP	226.75	LAP	-.44	LOP	243.19	VP	21.404	GAP	-1.40	AZP	88.43	TAL	20.83	TAP	185.02	RCA	145.57	APO	227.00	V2	24.256
RC	244.666	GL	-14.80	GP	20.91	ZAL	50.71	ZAP	119.61	ETS	166.03	ZAE	149.97	ETE	133.84	ZAC	109.20	ETC	255.19	CLP	121.93

PLANETOCENTRIC CONIC

C3	13.463	VHL	3.669	DLA	3.92	RAL	126.70	RAD	6567.5	VEL	11.612	PTH	2.03	VHP	3.518	DPA	18.08	RAP	194.24	ECC	1.2216

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 58 28	2245.84	-20.31	43.47	342.79	110.16	14 35 54	1645.8	-17.39	36.02
90.00	2 58 46	4646.23	13.91	197.42	341.39	65.09	4 16 13	4046.2	10.44	190.46
100.00	15 21 39	1977.55	-21.25	23.36	342.41	111.54	15 54 36	1377.5	-18.13	15.95
100.00	4 18 17	4389.75	14.81	178.11	340.94	63.74	5 31 26	3789.8	11.16	171.22
110.00	16 34 6	1750.77	-23.73	4.98	341.24	115.36	17 3 17	1150.8	-20.12	357.70
110.00	5 22 19	4189.30	17.20	161.57	339.61	59.99	6 32 8	3589.3	13.08	154.88

DIFFERENTIAL CORRECTIONS

TDE	.2487	TRA	-.4547	TC3	1.1081	BAU	.6716
RDE	.1105	RRA	.7026	RC3	3.5629	FAU	.40577
FDE	-1.7407	FRA	-5.5549	FC	-26.0931	BSP	9995
BDE	.2722	BRA	.8369	BC3	3.7312	FSP	6263

MID-COURSE EXECUTION ACCURACY

SGT	1148.3	SGR	2841.7	SG3	1832.1		
RRT	.4322	RRF	-.9973	RTF	-.4286		
SGB	3064.9	R23	-.0728	R13	-.9947		
SG1	2891.0	SG2	1017.9	THA	78.67		

ORBIT DETERMINATION ACCURACY

ST	443.9	SR	380.5	SS	1158.4
CRT	-.0090	CRS	.9480	CST	.3032
LSA	1220.8	MSA	439.1	SSA	23.3
EL1	444.0	EL2	380.4	ALF	178.34

LAUNCH DATE DEC 11 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 548.043 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.001	GAL	3.69	AZL	91.87	HCA	165.24	SMA	186.14	ECC	.21800	INC	1.8740	V1	30.247
RP	226.38	LAP	-.48	LOP	244.24	VP	21.439	GAP	-1.70	AZP	88.19	TAL	20.88	TAP	186.12	RCA	145.56	APO	226.72	V2	24.297
RC	246.398	GL	-16.93	GP	22.54	ZAL	51.08	ZAP	117.60	ETS	166.04	ZAE	147.51	ETE	134.82	ZAC	110.62	ETC	255.08	CLP	120.11

PLANETOCENTRIC CONIC

C3	13.677	VHL	3.698	DLA	1.89	RAL	126.06	RAD	6567.5	VEL	11.622	PTH	2.04	VHP	3.510	DPA	19.85	RAP	194.33	ECC	1.2251

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 11 4	2186.04	-18.87	39.68	341.91	111.52	14 47 30	1586.0	-15.78	32.37
90.00	2 41 3	4712.92	15.79	201.42	341.22	66.18	3 59 36	4112.9	12.44	194.34
100.00	15 33 17	1920.82	-19.79	19.78	341.51	112.88	16 5 18	1320.8	-16.52	12.51
100.00	4 1 31	4453.36	16.69	181.90	340.79	64.84	5 15 44	3853.4	13.16	174.89
110.00	16 43 33	1700.90	-22.24	1.87	340.29	116.65	17 11 54	1100.9	-18.48	354.75
110.00	5 7 44	4246.04	19.10	164.87	339.50	61.10	6 18 30	3646.0	15.10	158.04

DIFFERENTIAL CORRECTIONS

TDE	.2504	TRA	-.5025	TC3	.8676	BAU	.7171
RDE	.1984	RRA	.7979	RC3	3.8249	FAU	.40714
FDE	-2.1602	FRA	-5.7619	FC	-25.7713	BSP	10742
BDE	.3194	BRA	.9429	BC3	3.9220	FSP	6287

MID-COURSE EXECUTION ACCURACY

SGT	1081.2	SGR	3102.9	SG3	1841.6		
RRT	.2895	RRF	-.9980	RTF	-.2852		
SGB	3285.8	R23	-.0411	R13	-.9971		
SG1	3120.5	SG2	1029.0	THA	83.53		

ORBIT DETERMINATION ACCURACY

ST	453.2	SR	489.2	SS	1311.7
CRT	.1539	CRS	.9789	CST	.3484
LSA	1405.4	MSA	435.7	SSA	19.5
EL1	510.4	EL2	429.3	ALF	58.21

LAUNCH DATE DEC 11 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 551.977 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	32.993	GAL	3.69	AZL	92.15	HCA	166.30	SMA	186.02	ECC	.21747	INC	2.1545	V1	30.247
RP	225.97	LAP	-.51	LOP	245.30	VP	21.475	GAP	-1.99	AZP	87.91	TAL	20.92	TAP	187.21	RCA	145.56	APO	226.47	V2	24.339
RC	248.110	GL	-19.34	GP	24.35	ZAL	51.60	ZAP	115.54	ETS	166.08	ZAE	144.91	ETE	135.61	ZAC	112.21	ETC	254.96	CLP	118.25

PLANETOCENTRIC CONIC

C3	13.974	VHL	3.738	DLA	-.42	RAL	125.36	RAD	6567.6	VEL	11.634	PTH	2.04	VHP	3.515	DPA	21.80	RAP	194.49	ECC	1.2300

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 25 23	2119.20	-17.15	35.53	341.06	112.89	15 0 42	1519.2	-13.90	28.36
90.00	2 21 8	4789.17	17.83	206.09	341.22	67.63	3 40 58	4189.2	14.64	198.86
100.00	15 46 32	1857.44	-18.06	15.86	340.64	114.23	16 17 29	1257.4	-14.64	8.74
100.00	3 42 41	4526.16	18.74	186.33	340.81	66.28	4 58 7	3926.2	15.38	179.16
110.00	16 54 19	1645.22	-20.50	358.49	339.38	117.97	17 21 45	1045.2	-16.60	351.54
110.00	4 51 22	4311.15	21.20	168.76	339.56	62.53	6 3 13	3711.1	17.35	161.75

DIFFERENTIAL CORRECTIONS

TDE	.2518	TRA	-.5504	TC3	.6368	BAU	.7762
RDE	.3145	RRA	.9153	RC3	4.1056	FAU	.40726
FDE	-2.6572	FRA	-5.9890	FC	-25.2309	BSP	11473
BDE	.4029	BRA	1.0680	BC3	4.1547	FSP	6179

MID-COURSE EXECUTION ACCURACY

SGT	1042.7	SGR	3409.2	SG3	1846.4		
RRT	.1305	RRF	-.9985	RTF	-.1260		
SGB	3565.0	R23	-.0176	R13	-.9983		
SG1	3412.1	SG2	1032.9	THA	87.48		

ORBIT DETERMINATION ACCURACY

ST	461.7	SR	646.5	SS	1502.9
CRT	.2707	CRS	.9921	CST	.3864
LSA	1643.9	MSA	432.8	SSA	15.9
EL1	667.8	EL2	430.3	ALF	70.86

LAUNCH DATE DEC 11 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 555.919 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 32.986 GAL 3.69 AZL 92.48 HCA 167.36 SMA 185.90 ECC .21697 INC 2.4833 V1 30.247
RP 225.58 LAP -.54 LOP 246.37 VP 21.512 GAP -2.28 AZP 87.58 TAL 20.93 TAP 188.29 RCA 145.56 APO 226.23 V2 24.381
RC 249.803 GL -22.09 GP 26.38 ZAL 52.31 ZAP 113.43 ETS 166.15 ZAE 142.15 ETE 136.22 ZAC 114.00 ETC 254.79 CLP 116.35

PLANETOCENTRIC CONIC

C3 14.386 VHL 3.793 DLA -3.06 RAL 124.58 RAD 6567.6 VEL 11.652 PTH 2.05 VHP 3.536 DPA 23.95 RAP 194.76 ECC 1.2368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 41 51	2043.82	-15.09	30.95	340.30	114.25	15 15 55	1443.8	-11.69	23.92
90.00	1 58 28	4877.37	20.02	211.63	341.44	69.55	3 19 45	4277.4	17.06	204.20
100.00	16 1 46	1786.03	-16.01	11.55	339.85	115.58	16 31 32	1186.0	-12.44	4.58
100.00	3 21 14	4610.40	20.96	191.60	341.05	68.19	4 38 5	4010.4	17.82	184.22
110.00	17 6 45	1582.63	-18.46	354.78	338.52	119.29	17 33 7	982.6	-14.41	348.00
110.00	4 32 45	4386.56	23.49	173.41	339.86	64.42	5 45 52	3786.6	19.85	166.16

DIFFERENTIAL CORRECTIONS
TDE .2346 TRA -.6183 TC3 .3645 BAU .8369
RDE .4460 RRA 1.0372 RC3 4.3361 FAU .39958
FDE-3.1056 FRA-6.0945 FC-24.0460 BSP 12722
BDE .5039 BRA 1.2075 BC3 4.3514 FSP 6192

MID-COURSE EXECUTION ACCURACY
SGT 1037.7 SGR 3706.1 SG3 1811.8
RRT -.0830 RRF -.9988 RTF .0881
SGB 3848.6 R23 .0018 R13 -.9988
SG1 3707.2 SG2 1033.8 THA 91.44

ORBIT DETERMINATION ACCURACY
ST 452.1 SR 827.7 SS 1672.1
CRT .2872 CRS .9969 CST .3600
LSA 1871.8 MSA 426.4 SSA 13.3
EL1 841.5 EL2 425.9 ALF 77.96

LAUNCH DATE DEC 11 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 559.871 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 32.980 GAL 3.68 AZL 92.87 HCA 168.42 SMA 185.79 ECC .21651 INC 2.8718 V1 30.247
RP 225.19 LAP -.58 LOP 247.43 VP 21.549 GAP -2.56 AZP 87.19 TAL 20.93 TAP 189.36 RCA 145.57 APO 226.02 V2 24.423
RC 251.477 GL -25.23 GP 28.66 ZAL 53.24 ZAP 111.27 ETS 166.27 ZAE 139.23 ETE 136.69 ZAC 116.03 ETC 254.58 CLP 114.42

PLANETOCENTRIC CONIC

C3 14.966 VHL 3.869 DLA -6.07 RAL 123.70 RAD 6567.6 VEL 11.677 PTH 2.05 VHP 3.577 DPA 26.32 RAP 195.18 ECC 1.2463

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 1 6	1958.05	-12.63	25.85	339.67	115.55	15 33 44	1358.0	-9.09	18.97
90.00	1 32 11	4980.74	22.33	218.32	341.98	72.12	2 55 12	4380.7	19.68	210.65
100.00	16 19 33	1704.93	-13.57	6.77	339.19	116.89	16 47 58	1104.9	-9.85	359.95
100.00	2 56 25	4709.08	23.32	197.98	341.62	70.75	4 14 54	4109.1	20.48	190.34
110.00	17 21 12	1511.92	-16.05	350.71	337.78	120.59	17 46 24	911.9	-11.88	344.10
110.00	4 11 15	4474.86	25.97	179.08	340.50	66.95	5 25 50	3874.9	22.62	171.52

DIFFERENTIAL CORRECTIONS
TDE .2133 TRA -.6902 TC3 .1096 BAU .9135
RDE .6238 RRA 1.1908 RC3 4.5645 FAU .38974
FDE-3.6302 FRA-6.2046 FC-22.5449 BSP 13943
BDE .6593 BRA 1.3763 BC3 4.5658 FSP 6033

MID-COURSE EXECUTION ACCURACY
SGT 1078.7 SGR 4058.5 SG3 1767.7
RRT -.2813 RRF -.9991 RTF .2864
SGB 4199.4 R23 .0147 R13 -.9990
SG1 4070.6 SG2 1032.1 THA 94.57

ORBIT DETERMINATION ACCURACY
ST 441.5 SR 1071.4 SS 1876.8
CRT .2707 CRS .9989 CST .3152
LSA 2164.9 MSA 421.9 SSA 10.9
EL1 1079.2 EL2 421.9 ALF 82.48

LAUNCH DATE DEC 11 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 563.831 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 32.975 GAL 3.67 AZL 93.34 HCA 169.49 SMA 185.69 ECC .21607 INC 3.3398 V1 30.247
RP 224.80 LAP -.61 LOP 248.50 VP 21.588 GAP -2.84 AZP 86.72 TAL 20.92 TAP 190.41 RCA 145.57 APO 225.82 V2 24.465
RC 253.132 GL -28.84 GP 31.23 ZAL 54.47 ZAP 109.06 ETS 166.44 ZAE 136.13 ETE 137.03 ZAC 118.34 ETC 254.30 CLP 112.46

PLANETOCENTRIC CONIC

C3 15.793 VHL 3.974 DLA -9.54 RAL 122.68 RAD 6567.6 VEL 11.712 PTH 2.06 VHP 3.646 DPA 28.96 RAP 195.78 ECC 1.2599

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 24 7	1858.95	-9.66	20.10	339.27	116.75	15 55 6	1258.9	-5.99	13.34
90.00	1 1 1	5104.05	24.67	226.60	342.96	75.64	2 26 5	4504.0	22.45	218.63
100.00	16 40 46	1611.67	-10.63	1.40	338.75	118.10	17 7 38	1011.7	-6.80	354.71
100.00	2 27 3	4826.58	25.73	205.88	342.65	74.24	3 47 30	4226.6	23.32	197.91
110.00	17 38 21	1431.35	-13.21	346.20	337.23	121.82	18 2 12	831.4	-8.91	339.74
110.00	3 45 58	4579.64	28.57	186.11	341.63	70.38	5 2 17	3979.6	25.63	178.17

DIFFERENTIAL CORRECTIONS
TDE .1748 TRA -.7782 TC3 -.1516 BAU .9968
RDE .8435 RRA 1.3663 RC3 4.7187 FAU .37244
FDE-4.1232 FRA-6.2167 FC-20.4160 BSP 15539
BDE .8614 BRA 1.5724 BC3 4.7211 FSP 5869

MID-COURSE EXECUTION ACCURACY
SGT 1171.5 SGR 4419.9 SG3 1687.0
RRT -.4670 RRF -.9993 RTF .4720
SGB 4572.5 R23 .0241 R13 -.9991
SG1 4455.5 SG2 1027.6 THA 97.45

ORBIT DETERMINATION ACCURACY
ST 424.3 SR 1360.4 SS 2066.0
CRT .1759 CRS .9996 CST .2034
LSA 2474.8 MSA 417.1 SSA 8.9
EL1 1362.6 EL2 417.0 ALF 86.53

LAUNCH DATE DEC 11 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 567.803 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 32.969 GAL 3.66 AZL 93.91 HCA 170.56 SMA 185.61 ECC .21566 INC 3.9140 V1 30.247
RP 224.41 LAP -.64 LOP 249.58 VP 21.628 GAP -3.11 AZP 86.14 TAL 20.89 TAP 191.45 RCA 145.58 APO 225.64 V2 24.506
RC 254.766 GL -33.01 GP 34.15 ZAL 56.04 ZAP 106.80 ETS 166.70 ZAE 132.81 ETE 137.28 ZAC 120.97 ETC 253.94 CLP 110.44

PLANETOCENTRIC CONIC

C3 17.002 VHL 4.123 DLA -13.54 RAL 121.46 RAD 6567.7 VEL 11.764 PTH 2.08 VHP 3.752 DPA 31.90 RAP 196.61 ECC 1.2798

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 52 36	1741.97	-6.01	13.44	339.26	117.72	16 21 38	1142.0	-2.25	6.77
90.00	0 22 48	5254.71	26.80	237.12	344.53	80.49	1 50 23	4654.7	25.21	228.81
100.00	17 6 51	1502.43	-7.07	355.25	338.68	119.12	17 31 53	902.4	-3.13	348.67
100.00	1 51 15	4969.48	27.99	215.89	344.29	79.05	3 14 4	4369.5	26.19	207.55
110.00	17 59 8	1338.64	-9.83	341.15	337.00	122.90	18 21 27	738.6	-5.43	334.82
110.00	3 15 27	4706.04	31.13	195.06	343.46	75.10	4 33 53	4106.0	28.77	186.65

DIFFERENTIAL CORRECTIONS
TDE .1325 TRA -.8689 TC3 -.3632 BAU 1.1044
RDE 1.1541 RRA 1.6042 RC3 4.8455 FAU .35306
FDE-4.6894 FRA-6.2411 FC-17.9784 BSP 16812
BDE 1.1617 BRA 1.8244 BC3 4.8591 FSP 5410

MID-COURSE EXECUTION ACCURACY
SGT 1290.8 SGR 4878.1 SG3 1597.4
RRT -.5955 RRF -.9995 RTF .6000
SGB 5045.9 R23 .0280 R13 -.9991
SG1 4941.0 SG2 1023.8 THA 99.36

ORBIT DETERMINATION ACCURACY
ST 415.7 SR 1749.1 SS 2287.9
CRT .0521 CRS .9999 CST .0677
LSA 2879.9 MSA 415.4 SSA 7.1
EL1 1749.2 EL2 415.1 ALF 89.25

LAUNCH DATE DEC 11 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 571.781 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 32.965 GAL 3.65 AZL 94.64 HCA 171.63 SMA 185.53 ECC .21528 INC 4.6372 V1 30.247
RP 224.02 LAP -.67 LOP 250.66 VP 21.669 GAP -3.37 AZP 85.41 TAL 20.85 TAP 192.48 RCA 145.59 APO 225.47 V2 24.548
RC 256.380 GL -37.82 GP 37.46 ZAL 58.05 ZAP 104.51 ETS 167.05 ZAE 129.27 ETE 137.46 ZAC 123.97 ETC 253.45 CLP 108.39

PLANETOCENTRIC CONIC

C3 18.816 VHL 4.338 DLA -18.14 RAL 119.97 RAD 6567.8 VEL 11.841 PTH 2.10 VHP 3.909 DPA 35.15 RAP 197.78 ECC 1.3097

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 7	1597.51	-1.38	5.34	339.97	118.29	16 56 45	997.5	2.41	358.72
90.00	23 29 28	5446.40	28.20	250.95	346.78	87.28	25 0 14	4846.4	27.52	242.35
100.00	17 40 41	1369.80	-2.62	347.91	339.28	119.79	18 3 31	769.8	1.36	341.39
100.00	1 5 31	5149.35	29.62	229.00	346.68	85.75	2 31 20	4549.3	28.71	220.31
110.00	18 25 23	1229.74	-5.75	335.35	337.33	123.75	18 45 53	629.7	-1.28	329.12
110.00	2 37 18	4862.17	33.28	206.72	346.21	81.68	3 58 20	4262.2	31.77	197.82

DIFFERENTIAL CORRECTIONS
TDE .0677 TRA -.9818 TC3 -.5513 BAU 1.2185
RDE 1.5446 RRA 1.8829 RC3 4.8125 FAU .32349
FDE-5.1252 FRA-6.0974 FC-14.8836 BSP 18620
BDE 1.5461 BRA 2.1235 BC3 4.8440 FSP 4961

MID-COURSE EXECUTION ACCURACY
SGT 1448.8 SGR 5333.2 SG3 1457.0
RRT -.6971 RRF -.9996 RTF .7014
SGB 5526.5 R23 .0305 R13 -.9992
SG1 5431.5 SG2 1020.0 THA 101.12

ORBIT DETERMINATION ACCURACY
ST 419.3 SR 2189.6 SS 2446.1
CRT -.1535 CRS 1.0000 CST -.1454
LSA 3283.5 MSA 414.7 SSA 5.7
EL1 2190.6 EL2 414.1 ALF 91.75

LAUNCH DATE DEC 11 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 575.766 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 32.961 GAL 3.64 AZL 95.57 HCA 172.71 SMA 185.46 ECC .21493 INC 5.5743 V1 30.247
RP 223.63 LAP -.71 LOP 251.74 VP 21.710 GAP -3.63 AZP 84.47 TAL 20.79 TAP 193.50 RCA 145.60 APO 225.32 V2 24.590
RC 257.974 GL -43.36 GP 41.20 ZAL 60.56 ZAP 102.18 ETS 167.53 ZAE 125.48 ETE 137.63 ZAC 127.37 ETC 252.78 CLP 106.29

PLANETOCENTRIC CONIC

C3 21.654 VHL 4.653 DLA -23.41 RAL 118.08 RAD 6567.9 VEL 11.960 PTH 2.13 VHP 4.145 DPA 38.76 RAP 199.38 ECC 1.3564

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 26 33	1397.78	5.05	354.18	342.12	117.90	17 49 51	797.8	8.74	347.45
90.00	22 18 0	5713.12	27.52	270.38	349.41	96.96	23 53 13	5113.1	28.20	261.78
100.00	18 29 32	1194.48	3.32	338.29	341.16	119.72	18 49 27	594.5	7.25	331.71
100.00	0 1 38	5391.66	29.48	246.97	349.65	95.18	1 31 30	4791.7	29.89	238.19
110.00	19 0 50	1096.34	-.67	328.37	338.68	124.18	19 19 7	496.3	3.82	322.16
110.00	1 46 49	5062.56	34.17	222.27	349.94	90.82	3 11 12	4462.6	33.91	213.03

DIFFERENTIAL CORRECTIONS
TDE -.0217 TRA-1.1214 TC3 -.6920 BAU 1.3534
RDE 2.0752 RRA 2.2475 RC3 4.6236 FAU .28681
FDE-5.4439 FRA-5.8357 FC-11.4667 BSP 20400
BDE 2.0753 BRA 2.5118 BC3 4.6751 FSP 4330

MID-COURSE EXECUTION ACCURACY
SGT 1636.9 SGR 5842.8 SG3 1281.9
RRT -.7713 RRF -.9997 RTF .7755
SGB 6067.8 R23 .0309 R13 -.9992
SG1 5981.8 SG2 1017.6 THA 102.56

ORBIT DETERMINATION ACCURACY
ST 452.6 SR 2713.6 SS 2546.2
CRT -.3901 CRS 1.0000 CST -.3870
LSA 3725.3 MSA 416.6 SSA 4.6
EL1 2719.4 EL2 415.8 ALF 93.81

LAUNCH DATE DEC 11 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 579.757 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 32.957 GAL 3.62 AZL 96.84 HCA 173.78 SMA 185.40 ECC .21460 INC 6.8375 V1 30.247
RP 223.24 LAP -.74 LOP 252.82 VP 21.752 GAP -3.88 AZP 83.20 TAL 20.73 TAP 194.51 RCA 145.61 APO 225.19 V2 24.632
RC 259.547 GL -49.74 GP 45.40 ZAL 63.65 ZAP 99.86 ETS 168.19 ZAE 121.44 ETE 137.84 ZAC 131.18 ETC 251.88 CLP 104.12

PLANETOCENTRIC CONIC

C3 26.340 VHL 5.132 DLA -29.41 RAL 115.61 RAD 6568.1 VEL 12.154 PTH 2.18 VHP 4.502 DPA 42.70 RAP 201.55 ECC 1.4335

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.70	18 34 9	1179.85	18.60	344.95	348.92	113.20	18 53 49	579.9	21.59	337.46
98.30	20 50 39	738.89	18.62	312.58	348.93	113.19	21 2 58	138.9	21.60	305.09
100.00	20 18 41	841.29	14.75	318.30	347.06	116.30	20 32 42	241.3	18.16	311.18
100.00	21 48 48	5840.72	22.57	278.36	350.60	110.14	23 26 9	5240.7	25.11	270.48
110.00	19 56 45	910.37	6.41	318.63	342.18	123.65	20 11 56	310.4	10.79	312.27
110.00	0 31 9	5344.41	31.78	243.83	353.71	103.32	2 0 13	4744.4	33.28	234.93

DIFFERENTIAL CORRECTIONS
TDE -.1435 TRA-1.3023 TC3 -.7698 BAU 1.5160
RDE 2.8005 RRA 2.7395 RC3 4.2357 FAU .24252
FDE-5.5232 FRA-5.4064 FC3-7.9711 BSP 22044
BDE 2.8041 BRA 3.0333 BC3 4.3051 FSP 3528

MID-COURSE EXECUTION ACCURACY
SGT 1853.5 SGR 6403.3 SG3 1068.6
RRT -.8254 RRF -.9997 RTF .8295
SGB 6666.2 R23 .0300 R13 -.9993
SG1 6588.1 SG2 1017.1 THA 103.77

ORBIT DETERMINATION ACCURACY
ST 526.2 SR 3301.6 SS 2533.0
CRT -.5936 CRS 1.0000 CST -.5937
LSA 4173.2 MSA 422.3 SSA 3.7
EL1 3316.6 EL2 421.6 ALF 95.49

LAUNCH DATE DEC 11 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 583.750 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 32.954 GAL 3.60 AZL 98.63 HCA 174.86 SMA 185.35 ECC .21431 INC 8.6349 V1 30.247
RP 222.85 LAP -.77 LOP 253.91 VP 21.795 GAP -4.13 AZP 81.40 TAL 20.65 TAP 195.51 RCA 145.63 APO 225.07 V2 24.674
RC 261.100 GL -56.98 GP 50.03 ZAL 67.35 ZAP 97.58 ETS 169.09 ZAE 117.19 ETE 138.20 ZAC 135.38 ETC 250.64 CLP 101.85

PLANETOCENTRIC CONIC

C3 34.679 VHL 5.889 DLA -36.13 RAL 112.18 RAD 6568.4 VEL 12.492 PTH 2.26 VHP 5.063 DPA 46.92 RAP 204.47 ECC 1.5707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.56	16 39 24	1563.70	20.19	15.10	351.91	120.62	17 5 28	963.7	24.10	7.98
113.44	22 18 2	5780.93	20.20	272.60	351.92	120.61	23 54 23	5180.9	24.11	265.48
66.56	16 39 24	1563.70	20.19	15.10	351.91	120.62	17 5 28	963.7	24.10	7.98
113.44	22 18 2	5780.93	20.20	272.60	351.92	120.61	23 54 23	5180.9	24.11	265.48
66.56	16 39 24	1563.70	20.19	15.10	351.91	120.62	17 5 28	963.7	24.10	7.98
113.44	22 18 2	5780.93	20.20	272.60	351.92	120.61	23 54 23	5180.9	24.11	265.48

DIFFERENTIAL CORRECTIONS
TDE -.2893 TRA-1.5359 TC3 -.7561 BAU 1.6976
RDE 3.7539 RRA 3.3881 RC3 3.5828 FAU .18830
FDE-5.1363 FRA-4.6857 FC3-4.7008 BSP 24421
BDE 3.7651 BRA 3.7200 BC3 3.6617 FSP 2706

MID-COURSE EXECUTION ACCURACY
SGT 2072.5 SGR 6914.0 SG3 808.1
RRT -.8610 RRF -.9997 RTF .8656
SGB 7218.0 R23 .0280 R13 -.9994
SG1 7145.5 SG2 1020.1 THA 104.78

ORBIT DETERMINATION ACCURACY
ST 622.9 SR 3854.2 SS 2309.4
CRT -.7126 CRS 1.0000 CST -.7149
LSA 4515.3 MSA 434.5 SSA 3.0
EL1 3880.1 EL2 434.1 ALF 96.65

LAUNCH DATE DEC 11 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 628.792 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	32.947	GAL	3.17	AZL	81.16	HCA	187.24	SMA	185.22	ECC	.21182	INC	8.8427	V1	30.247
RP	218.70	LAP	-1.11	LOP	266.15	VP	22.297	GAP	-6.45	AZP	98.77	TAL	18.33	TAP	205.57	RCA	145.99	APO	224.46	V2	25.128
RC	276.940	GL	59.06	GP	-42.34	ZAL	69.94	ZAP	84.67	ETS	173.92	ZAE	109.01	ETE	195.98	ZAC	44.21	ETC	251.77	CLP	82.79

PLANETOCENTRIC CONIC

C3	34.764	VHL	5.896	DLA	71.78	RAL	173.62	RAD	6568.4	VEL	12.495	PTH	2.26	VHP	4.176	DPA	-32.46	RAP	151.52	ECC	1.5721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
12.19	9 39 8	4353.27	-49.42	242.66	125.77	16.61	10 51 41	3753.3	-57.02	238.88
12.19	2 21 7	4788.60	-20.60	249.52	24.64	11.46	3 40 55	4188.6	-28.43	248.14
20.80	6 17 34	4554.84	-33.76	237.51	70.93	22.09	7 33 29	3954.8	-41.11	233.94
159.20	16 54 2	2791.04	-33.75	85.31	70.91	22.08	17 40 33	2191.0	-41.10	81.74
20.80	6 17 34	4554.84	-33.76	237.51	70.93	22.09	7 33 29	3954.8	-41.11	233.94
159.20	16 54 2	2791.04	-33.75	85.31	70.91	22.08	17 40 33	2191.0	-41.10	81.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.9230	TRA	.1755	TC3	-2.3361	BAU	1.7852	SGT	5547.3	SGR	5971.2	SG3	1202.1	ST	4787.4	SR	4415.4	SS	3615.4
RDE	4.5049	RRA	.6072	RC3	-3.0491	FAU	.29721	RRT	.9624	RRF	.9995	RTF	.9578	CRT	.9955	CRS	-1.0000	CST	-.9954
FDE	10.2213	FRA	1.3922	FC3	-7.4015	BSP	27416	SGB	8150.3	R23	.1417	R13	.9895	LSA	7440.8	MSA	349.3	SSA	4.6
BDE	6.6731	BRA	.6321	BC3	3.8411	FSP	4278	SG1	8073.7	SG2	1114.9	THA	47.19	EL1	6505.5	EL2	307.2	ALF	42.67

LAUNCH DATE DEC 11 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 632.906 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	32.948	GAL	3.13	AZL	82.15	HCA	188.37	SMA	185.25	ECC	.21172	INC	7.8519	V1	30.247
RP	218.34	LAP	-1.14	LOP	267.28	VP	22.344	GAP	-6.63	AZP	97.77	TAL	18.07	TAP	206.43	RCA	146.03	APO	224.47	V2	25.168
RC	278.273	GL	55.59	GP	-38.58	ZAL	68.51	ZAP	82.94	ETS	173.21	ZAE	108.49	ETE	193.36	ZAC	47.67	ETC	252.93	CLP	80.95

PLANETOCENTRIC CONIC

C3	29.679	VHL	5.448	DLA	68.85	RAL	167.68	RAD	6568.2	VEL	12.290	PTH	2.21	VHP	3.913	DPA	-28.89	RAP	153.03	ECC	1.4884

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
24.20	6 1 7	4506.02	-35.50	232.57	61.67	26.31	7 16 13	3906.0	-42.58	228.19
155.80	16 23 2	2760.27	-35.49	83.94	61.65	26.31	17 9 3	2160.3	-42.57	79.55
24.20	6 1 7	4506.02	-35.50	232.57	61.67	26.31	7 16 13	3906.0	-42.58	228.19
155.80	16 23 2	2760.27	-35.49	83.94	61.65	26.31	17 9 3	2160.3	-42.57	79.55
24.20	6 1 7	4506.02	-35.50	232.57	61.67	26.31	7 16 13	3906.0	-42.58	228.19
155.80	16 23 2	2760.27	-35.49	83.94	61.65	26.31	17 9 3	2160.3	-42.57	79.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.6560	TRA	.0235	TC3	-2.8292	BAU	1.6987	SGT	5786.6	SGR	5506.4	SG3	1397.9	ST	4897.7	SR	4081.6	SS	3939.0
RDE	3.8633	RRA	.4279	RC3	-3.2132	FAU	.33678	RRT	.9658	RRF	.9994	RTF	.9617	CRT	.9961	CRS	-1.0000	CST	-.9961
FDE	11.0288	FRA	1.2207	FC3	-9.8236	BSP	26794	SGB	7987.9	R23	.1508	R13	.9881	LSA	7487.1	MSA	325.8	SSA	5.2
BDE	6.0501	BRA	.4285	BC3	4.2812	FSP	4962	SG1	7919.4	SG2	1043.5	THA	43.53	EL1	6369.5	EL2	275.4	ALF	39.79

LAUNCH DATE DEC 11 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 637.033 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	32.950	GAL	3.08	AZL	82.91	HCA	189.50	SMA	185.28	ECC	.21163	INC	7.0929	V1	30.247
RP	217.98	LAP	-1.17	LOP	268.42	VP	22.392	GAP	-6.81	AZP	97.00	TAL	17.79	TAP	207.28	RCA	146.07	APO	224.49	V2	25.208
RC	279.589	GL	52.59	GP	-35.26	ZAL	67.38	ZAP	81.16	ETS	172.63	ZAE	107.64	ETE	191.04	ZAC	50.72	ETC	253.81	CLP	79.15

PLANETOCENTRIC CONIC

C3	26.159	VHL	5.115	DLA	66.17	RAL	163.80	RAD	6568.1	VEL	12.146	PTH	2.18	VHP	3.733	DPA	-25.69	RAP	154.19	ECC	1.4305

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
27.32	5 52 34	4464.81	-36.58	227.89	54.67	30.21	7 6 59	3864.8	-43.37	222.78
152.68	16 0 40	2738.56	-36.57	82.65	54.66	30.21	16 46 18	2138.6	-43.36	77.54
27.32	5 52 34	4464.81	-36.58	227.89	54.67	30.21	7 6 59	3864.8	-43.37	222.78
152.68	16 0 40	2738.56	-36.57	82.65	54.66	30.21	16 46 18	2138.6	-43.36	77.54
27.32	5 52 34	4464.81	-36.58	227.89	54.67	30.21	7 6 59	3864.8	-43.37	222.78
152.68	16 0 40	2738.56	-36.57	82.65	54.66	30.21	16 46 18	2138.6	-43.36	77.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.4252	TRA	-.0960	TC3	-3.3334	BAU	1.6412	SGT	6022.6	SGR	5074.4	SG3	1558.0	ST	4959.0	SR	3702.9	SS	4105.1
RDE	3.2967	RRA	.3004	RC3	-3.3033	FAU	.36901	RRT	.9688	RRF	.9993	RTF	.9648	CRT	.9965	CRS	-1.0000	CST	-.9966
FDE	11.3330	FRA	1.0154	FC	-12.2125	BSP	26255	SGB	7875.4	R23	.1595	R13	.9866	LSA	7420.2	MSA	307.7	SSA	6.0
BDE	5.5182	BRA	.3154	BC3	4.6929	FSP	5472	SG1	7815.5	SG2	969.4	THA	39.96	EL1	6183.9	EL2	248.9	ALF	36.72

LAUNCH DATE DEC 11 1964 FLIGHT TIME 294.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 641.169 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	32.952	GAL	3.03	AZL	83.51	HCA	190.64	SMA	185.31	ECC	.21155	INC	6.4928	V1	30.247
RP	217.62	LAP	-1.20	LOP	269.57	VP	22.439	GAP	-6.99	AZP	96.38	TAL	17.49	TAP	208.12	RCA	146.11	APO	224.51	V2	25.248
RC	280.887	GL	50.00	GP	-32.34	ZAL	66.49	ZAP	79.37	ETS	172.18	ZAE	106.54	ETE	189.01	ZAC	53.42	ETC	254.49	CLP	77.39

PLANETOCENTRIC CONIC

C3	23.598	VHL	4.858	DLA	63.75	RAL	161.17	RAD	6568.0	VEL	12.041	PTH	2.15	VHP	3.608	DPA	-22.84	RAP	155.10	ECC	1.3884

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.16	5 48 37	4429.21	-37.20	223.56	49.20	33.73	7 2 26	3829.2	-43.70	217.84
149.84	15 43 35	2723.45	-37.19	81.52	49.18	33.73	16 28 59	2123.4	-43.69	75.80
30.16	5 48 37	4429.21	-37.20	223.56	49.20	33.73	7 2 26	3829.2	-43.70	217.84
149.84	15 43 35	2723.45	-37.19	81.52	49.18	33.73	16 28 59	2123.4	-43.69	75.80
30.16	5 48 37	4429.21	-37.20	223.56	49.20	33.73	7 2 26	3829.2	-43.70	217.84
149.84	15 43 35	2723.45	-37.19	81.52	49.18	33.73	16 28 59	2123.4	-43.69	75.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.2463	TRA	-.1856	TC3	-3.8348	BAU	1.5988	SGT	6261.8	SGR	4680.2	SG3	1685.3	ST	5011.8	SR	3351.3	SS	4188.6
RDE	2.8362	RRA	.2228	RC3	-3.3131	FAU	.39209	RRT	.9709	RRF	.9992	RTF	.9670	CRT	.9966	CRS	-1.0000	CST	-.9967
FDE	11.3722	FRA	.8599	FC	-14.3845	BSP	26204	SGB	7817.5	R23	.1677	R13	.9851	LSA	7335.1	MSA	300.3	SSA	6.8
BDE	5.1063	BRA	.2900	BC3	5.0678	FSP	5942	SG1	7765.1	SG2	904.3	THA	36.54	EL1	6024.6	EL2	231.4	ALF	33.74

LAUNCH DATE DEC 11 1964 FLIGHT TIME 296.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 645.316 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	32.954	GAL	2.97	AZL	83.99	HCA	191.78	SMA	185.35	ECC	.21149	INC	6.0061
RP	217.27	LAP	-1.22	LOP	270.71	VP	22.487	GAP	-7.16	AZP	95.88	TAL	17.17	TAP	208.95	RCA	146.15	APO	224.55
RC	282.167	GL	47.72	GP	-29.76	ZAL	65.81	ZAP	77.58	ETS	171.81	ZAE	105.25	ETE	187.26	ZAC	55.79	ETC	255.03

PLANETOCENTRIC CONIC

C3	21.660	VHL	4.654	DLA	61.57	RAL	159.33	RAD	6567.9	VEL	11.960	PTH	2.13	VHP	3.521	DPA	-20.30	RAP	155.81

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
32.74	5 47 29	4397.92	-37.49	219.58	44.80	36.88	7 0 47	3797.9	-43.71	213.36
147.26	15 30 5	2713.11	-37.48	80.55	44.78	36.87	16 15 18	2113.1	-43.70	74.34
32.74	5 47 29	4397.92	-37.49	219.58	44.80	36.88	7 0 47	3797.9	-43.71	213.36
147.26	15 30 5	2713.11	-37.48	80.55	44.78	36.87	16 15 18	2113.1	-43.70	74.34
32.74	5 47 29	4397.92	-37.49	219.58	44.80	36.88	7 0 47	3797.9	-43.71	213.36
147.26	15 30 5	2713.11	-37.48	80.55	44.78	36.87	16 15 18	2113.1	-43.70	74.34

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	4.0985	TRA	-.2628	TC3	-4.3454	BAU	1.5783	SGT	6502.3	SGR	4319.4	SG3	1783.2	ST	5051.2	SR	3021.0
RDE	2.4506	RRA	.1627	RC3	-3.2901	FAU	.41046	RRT	.9728	RRF	.9990	RTF	.9689	CRT	.9966	CRS	-1.0000
FDE	11.1845	FRA	.6903	FC	-16.4058	BSP	26106	SGB	7806.3	R23	.1744	R13	.9837	LSA	7221.6	MSA	291.3
BDE	4.7753	BRA	.3091	BC3	5.4504	FSP	6239	SG1	7761.2	SG2	837.8	THA	33.31	EL1	5881.8	EL2	213.5

SS	4194.6	CST	-.9968	ALF	30.84

LAUNCH DATE DEC 11 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 649.472 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	32.957	GAL	2.92	AZL	84.40	HCA	192.93	SMA	185.39	ECC	.21144	INC	5.6032
RP	216.91	LAP	-1.25	LOP	271.86	VP	22.535	GAP	-7.33	AZP	95.46	TAL	16.85	TAP	209.77	RCA	146.19	APO	224.59
RC	283.431	GL	45.73	GP	-27.49	ZAL	65.31	ZAP	75.82	ETS	171.53	ZAE	103.84	ETE	185.74	ZAC	57.89	ETC	255.46

PLANETOCENTRIC CONIC

C3	20.145	VHL	4.488	DLA	59.60	RAL	158.04	RAD	6567.8	VEL	11.896	PTH	2.11	VHP	3.462	DPA	-18.04	RAP	156.38

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.09	5 48 12	4369.94	-37.57	215.94	41.23	39.68	7 1 2	3769.9	-43.53	209.32
144.91	15 19 5	2706.31	-37.56	79.76	41.21	39.67	16 4 11	2106.3	-43.52	73.14
35.09	5 48 12	4369.94	-37.57	215.94	41.23	39.68	7 1 2	3769.9	-43.53	209.32
144.91	15 19 5	2706.31	-37.56	79.76	41.21	39.67	16 4 11	2106.3	-43.52	73.14
35.09	5 48 12	4369.94	-37.57	215.94	41.23	39.68	7 1 2	3769.9	-43.53	209.32
144.91	15 19 5	2706.31	-37.56	79.76	41.21	39.67	16 4 11	2106.3	-43.52	73.14

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	3.9838	TRA	-.3222	TC3	-4.8499	BAU	1.5689	SGT	6743.7	SGR	3991.3	SG3	1855.6	ST	5093.1	SR	2730.8
RDE	2.1368	RRA	.1251	RC3	-3.2268	FAU	.42274	RRT	.9744	RRF	.9987	RTF	.9703	CRT	.9966	CRS	-1.0000
FDE	10.8910	FRA	.5659	FC	-18.1670	BSP	26282	SGB	7836.3	R23	.1799	R13	.9825	LSA	7116.8	MSA	285.9
BDE	4.5207	BRA	.3456	BC3	5.8253	FSP	6479	SG1	7797.8	SG2	776.4	THA	30.30	EL1	5775.5	EL2	199.1

SS	4163.4	CST	-.9969	ALF	28.15

LAUNCH DATE DEC 11 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 653.638 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	32.960	GAL	2.86	AZL	84.74	HCA	194.08	SMA	185.44	ECC	.21140	INC	5.2639
RP	216.57	LAP	-1.28	LOP	273.02	VP	22.582	GAP	-7.49	AZP	95.11	TAL	16.50	TAP	210.58	RCA	146.24	APO	224.64
RC	284.679	GL	43.96	GP	-25.47	ZAL	64.97	ZAP	74.09	ETS	171.31	ZAE	102.34	ETE	184.44	ZAC	59.75	ETC	255.81

PLANETOCENTRIC CONIC

C3	18.929	VHL	4.351	DLA	57.82	RAL	157.15	RAD	6567.8	VEL	11.845	PTH	2.10	VHP	3.423	DPA	-16.02	RAP	156.84

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.23	5 50 12	4344.53	-37.50	212.61	38.29	42.17	7 2 36	3744.5	-43.21	205.66
142.77	15 9 57	2702.20	-37.48	79.13	38.27	42.16	15 55 0	2102.2	-43.19	72.19
37.23	5 50 12	4344.53	-37.50	212.61	38.29	42.17	7 2 36	3744.5	-43.21	205.66
142.77	15 9 57	2702.20	-37.48	79.13	38.27	42.16	15 55 0	2102.2	-43.19	72.19
37.23	5 50 12	4344.53	-37.50	212.61	38.29	42.17	7 2 36	3744.5	-43.21	205.66
142.77	15 9 57	2702.20	-37.48	79.13	38.27	42.16	15 55 0	2102.2	-43.19	72.19

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	3.8890	TRA	-.3725	TC3	-5.3575	BAU	1.5719	SGT	6986.5	SGR	3694.0	SG3	1907.2	ST	5130.9	SR	2473.4
RDE	1.8763	RRA	.0992	RC3	-3.1432	FAU	.43099	RRT	.9756	RRF	.9984	RTF	.9715	CRT	.9965	CRS	-1.0000
FDE	10.5156	FRA	.4639	FC	-19.7119	BSP	26516	SGB	7902.9	R23	.1838	R13	.9814	LSA	7012.6	MSA	281.9
BDE	4.3179	BRA	.3855	BC3	6.2115	FSP	6627	SG1	7870.1	SG2	719.6	THA	27.54	EL1	5692.9	EL2	186.7

SS	4100.2	CST	-.9969	ALF	25.69

LAUNCH DATE DEC 11 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 657.812 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	32.963	GAL	2.80	AZL	85.03	HCA	195.23	SMA	185.49	ECC	.21137	INC	4.9742
RP	216.22	LAP	-1.31	LOP	274.17	VP	22.630	GAP	-7.65	AZP	94.80	TAL	16.14	TAP	211.38	RCA	146.28	APO	224.70
RC	285.910	GL	42.39	GP	-23.67	ZAL	64.76	ZAP	72.40	ETS	171.14	ZAE	100.78	ETE	183.33	ZAC	61.40	ETC	256.11

PLANETOCENTRIC CONIC

C3	17.928	VHL	4.234	DLA	56.19	RAL	156.55	RAD	6567.7	VEL	11.803	PTH	2.09	VHP	3.400	DPA	-14.22	RAP	157.22

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.20	5 53 6	4321.18	-37.32	209.55	35.87	44.40	7 5 7	3721.2	-42.80	202.35
140.80	15 2 16	2700.11	-37.31	78.64	35.85	44.39	15 47 16	2100.1	-42.79	71.44
39.20	5 53 6	4321.18	-37.32	209.55	35.87	44.40	7 5 7	3721.2	-42.80	202.35
140.80	15 2 16	2700.11	-37.31	78.64	35.85	44.39	15 47 16	2100.1	-42.79	71.44
39.20	5 53 6	4321.18	-37.32	209.55	35.87	44.40	7 5 7	3721.2	-42.80	202.35
140.80	15 2 16	2700.11	-37.31	78.64	35.85	44.39	15 47 16	2100.1	-42.79	71.44

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	3.8130	TRA	-.4109	TC3	-5.8590	BAU	1.5822	SGT	7227.6	SGR	3423.3	SG3	1940.5	ST	5170.5	SR	2248.6
RDE	1.6601	RRA	.0833	RC3	-3.0409	FAU	.43518	RRT	.9767	RRF	.9979	RTF	.9725	CRT	.9964	CRS	-1.0000
FDE	10.1012	FRA	.3941	FC	-21.0142	BSP	26890	SGB	7997.3	R23	.1860	R13	.9805	LSA	6918.7	MSA	278.6
BDE	4.1587	BRA	.4192	BC3	6.6011	FSP	6721	SG1	7969.5	SG2	666.6	THA	25.01	EL1	5635.5	EL2	175.6

SS	4019.4	CST	-.9968	ALF	23.45

LAUNCH DATE DEC 11 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 661.995 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	32.966	GAL	2.73	AZL	85.28	HCA	196.39	SMA	185.54	ECC	.21136	INC	4.7238
RP	215.88	LAP	-1.33	LOP	275.34	VP	22.677	GAP	-7.80	AZP	94.53	TAL	15.77	TAP	212.17	RCA	146.33	APO	224.76
RC	287.127	GL	40.99	GP	-22.07	ZAL	64.66	ZAP	70.75	ETS	171.02	ZAE	99.19	ETE	182.36	ZAC	62.89	ETC	256.35

V1	30.247	V2	25.442	CLP	69.16														

PLANETOCENTRIC CONIC

C3	17.090	VHL	4.134	DLA	54.70	RAL	156.18	RAD	6567.7	VEL	11.767	PTH	2.08	VHP	3.389	DPA	-12.60	RAP	157.55

ECC	1.2813	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		41.02	5 56 43	4299.45	-37.07	206.73	33.86	46.40	7 8 23	3699.4	-42.34	199.31							
		138.98	14 55 43	2699.62	-37.06	78.28	33.84	46.39	15 40 43	2099.6	-42.33	70.86							
		41.02	5 56 43	4299.45	-37.07	206.73	33.86	46.40	7 8 23	3699.4	-42.34	199.31							
		138.98	14 55 43	2699.62	-37.06	78.28	33.84	46.39	15 40 43	2099.6	-42.33	70.86							
		41.02	5 56 43	4299.45	-37.07	206.73	33.86	46.40	7 8 23	3699.4	-42.34	199.31							
		138.98	14 55 43	2699.62	-37.06	78.28	33.84	46.39	15 40 43	2099.6	-42.33	70.86							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.7524	TRA	-.4386	TC3	-6.3528	BAU	1.5980	SGT	7466.1	SGR	3177.0	SG3	1958.6	ST	5212.7	SR	2053.2	SS	3928.9
RDE	1.4799	RRA	.0752	RC3	-2.9263	FAU	.43599	RRT	.9775	RRF	.9974	RTF	.9733	CRT	.9962	CRS	-1.0000	CST	-.9968
FDE	9.6715	FRA	.3577	FC	-22.0862	BSP	27419	SGB	8114.0	R23	.1868	R13	.9798	LSA	6837.2	MSA	276.6	SSA	11.4
BDE	4.0337	BRA	.4450	BC3	6.9943	FSP	6786	SG1	8090.4	SG2	618.7	THA	22.72	EL1	5600.0	EL2	166.2	ALF	21.44

LAUNCH DATE DEC 11 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 666.185 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	32.969	GAL	2.67	AZL	85.50	HCA	197.56	SMA	185.60	ECC	.21135	INC	4.5049
RP	215.54	LAP	-1.36	LOP	276.50	VP	22.724	GAP	-7.95	AZP	94.30	TAL	15.38	TAP	212.94	RCA	146.38	APO	224.83
RC	288.529	GL	39.74	GP	-20.63	ZAL	64.67	ZAP	69.14	ETS	170.93	ZAE	97.58	ETE	181.54	ZAC	64.22	ETC	256.56

V1	30.247	V2	25.480	CLP	67.63														

PLANETOCENTRIC CONIC

C3	16.374	VHL	4.046	DLA	53.33	RAL	156.00	RAD	6567.7	VEL	11.737	PTH	2.07	VHP	3.387	DPA	-11.15	RAP	157.83

ECC	1.2695	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		42.71	6 0 52	4279.06	-36.78	204.11	32.20	48.21	7 12 11	3679.1	-41.85	196.52							
		137.29	14 50 7	2700.37	-36.77	78.03	32.18	48.20	15 35 7	2100.4	-41.84	70.44							
		42.71	6 0 52	4279.06	-36.78	204.11	32.20	48.21	7 12 11	3679.1	-41.85	196.52							
		137.29	14 50 7	2700.37	-36.77	78.03	32.18	48.20	15 35 7	2100.4	-41.84	70.44							
		42.71	6 0 52	4279.06	-36.78	204.11	32.20	48.21	7 12 11	3679.1	-41.85	196.52							
		137.29	14 50 7	2700.37	-36.77	78.03	32.18	48.20	15 35 7	2100.4	-41.84	70.44							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.7081	TRA	-.4519	TC3	-6.8303	BAU	1.6155	SGT	7698.8	SGR	2950.1	SG3	1961.6	ST	5262.9	SR	1887.8	SS	3843.3
RDE	1.3318	RRA	.0766	RC3	-2.7943	FAU	.43256	RRT	.9778	RRF	.9967	RTF	.9738	CRT	.9959	CRS	-.9999	CST	-.9966
FDE	9.2642	FRA	.3835	FC	-22.8705	BSP	28170	SGB	8244.6	R23	.1866	R13	.9791	LSA	6779.0	MSA	279.2	SSA	12.2
BDE	3.9400	BRA	.4584	BC3	7.3798	FSP	6875	SG1	8224.3	SG2	579.2	THA	20.65	EL1	5588.9	EL2	159.9	ALF	19.68

LAUNCH DATE DEC 11 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 670.386 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	32.973	GAL	2.60	AZL	85.69	HCA	198.72	SMA	185.67	ECC	.21137	INC	4.3119
RP	215.21	LAP	-1.38	LOP	277.67	VP	22.771	GAP	-8.10	AZP	94.08	TAL	14.98	TAP	213.71	RCA	146.42	APO	224.91
RC	289.516	GL	38.60	GP	-19.33	ZAL	64.76	ZAP	67.57	ETS	170.87	ZAE	95.97	ETE	180.82	ZAC	65.42	ETC	256.74

V1	30.247	V2	25.517	CLP	66.15														

PLANETOCENTRIC CONIC

C3	15.754	VHL	3.969	DLA	52.06	RAL	155.96	RAD	6567.6	VEL	11.711	PTH	2.06	VHP	3.394	DPA	-9.84	RAP	158.08

ECC	1.2593	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		44.30	6 5 28	4259.71	-36.45	201.67	30.82	49.85	7 16 28	3659.7	-41.34	193.94							
		135.70	14 45 14	2702.18	-36.44	77.87	30.81	49.84	15 30 16	2102.2	-41.33	70.14							
		44.30	6 5 28	4259.71	-36.45	201.67	30.82	49.85	7 16 28	3659.7	-41.34	193.94							
		135.70	14 45 14	2702.18	-36.44	77.87	30.81	49.84	15 30 16	2102.2	-41.33	70.14							
		44.30	6 5 28	4259.71	-36.45	201.67	30.82	49.85	7 16 28	3659.7	-41.34	193.94							
		135.70	14 45 14	2702.18	-36.44	77.87	30.81	49.84	15 30 16	2102.2	-41.33	70.14							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.6581	TRA	-.4703	TC3	-7.3316	BAU	1.6443	SGT	7935.8	SGR	2748.7	SG3	1959.7	ST	5293.8	SR	1781.3	SS	3725.6
RDE	1.1981	RRA	.0721	RC3	-2.6828	FAU	.43049	RRT	.9783	RRF	.9959	RTF	.9744	CRT	.9958	CRS	-.9999	CST	-.9965
FDE	8.7922	FRA	.3585	FC	-23.6562	BSP	28629	SGB	8398.3	R23	.1843	R13	.9787	LSA	6695.3	MSA	275.3	SSA	13.3
BDE	3.8493	BRA	.4758	BC3	7.8070	FSP	6796	SG1	8381.0	SG2	538.7	THA	18.80	EL1	5567.7	EL2	151.3	ALF	18.05

LAUNCH DATE DEC 11 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 674.594 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	32.977	GAL	2.53	AZL	85.86	HCA	199.90	SMA	185.73	ECC	.21139	INC	4.1403
RP	214.88	LAP	-1.41	LOP	278.84	VP	22.818	GAP	-8.24	AZP	93.89	TAL	14.57	TAP	214.47	RCA	146.47	APO	225.00
RC	290.691	GL	37.58	GP	-18.15	ZAL	64.94	ZAP	66.04	ETS	170.83	ZAE	94.37	ETE	180.20	ZAC	66.51	ETC	256.89

V1	30.247	V2	25.554	CLP	64.70														

PLANETOCENTRIC CONIC

C3	15.211	VHL	3.900	DLA	50.88	RAL	156.05	RAD	6567.6	VEL	11.687	PTH	2.06	VHP	3.406	DPA	-8.66	RAP	158.32

ECC	1.2503	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		45.79	6 10 27	4241.21	-36.10	199.37	29.69	51.35	7 21 8	3641.2	-40.82	191.53							
		134.21	14 40 59	2704.83	-36.09	77.79	29.68	51.34	15 26 4	2104.8	-40.81	69.95							
		45.79	6 10 27	4241.21	-36.10	199.37	29.69	51.35	7 21 8	3641.2	-40.82	191.53							
		134.21	14 40 59	2704.83	-36.09	77.79	29.68	51.34	15 26 4	2104.8	-40.81	69.95							
		45.79	6 10 27	4241.21	-36.10	199.37	29.69	51.35	7 21 8	3641.2	-40.82	191.53							
		134.21	14 40 59	2704.83	-36.09	77.79	29.68	51.34	15 26 4	2104.8	-40.81	69.95							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.6175	TRA	-.4786	TC3	-7.8223	BAU	1.6739	SGT	8167.8	SGR	2563.3	SG3	1947.8	ST	5328.1	SR	1596.5	SS	3612.1
RDE	1.0854	RRA	.0726	RC3	-2.5638	FAU	.42573	RRT	.9786	RRF	.9948	RTF	.9749	CRT	.9955	CRS	-.9999	CST	-.9964
FDE	8.3437	FRA	.3696	FC	-24.2310	BSP	29212	SGB	8560.6	R23	.1807	R13	.9783	LSA	6626.4	MSA	273.7	SSA	14.4
BDE	3.7768	BRA	.4841	BC3	8.2317	FSP	6722	SG1	8545.7	SG2	504.5	THA	17.13	EL1	5560.2	EL2	144.5	ALF	16.62

LAUNCH DATE DEC 11 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 678.810 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 32.981 GAL 2.45 AZL 86.01 HCA 201.07 SMA 185.80 ECC .21143 INC 3.9865 V1 30.247
RP 214.56 LAP -1.43 LOP 280.02 VP 22.865 GAP -8.38 AZP 93.72 TAL 14.14 TAP 215.21 RCA 146.52 APO 225.09 V2 25.590
RC 291.851 GL 36.65 GP -17.09 ZAL 65.20 ZAP 64.56 ETS 170.81 ZAE 92.77 ETE 179.67 ZAC 67.50 ETC 257.02 CLP 63.29

PLANETOCENTRIC CONIC

C3 14.728 VHL 3.838 DLA 49.77 RAL 156.25 RAD 6567.6 VEL 11.667 PTH 2.05 VHP 3.424 DPA -7.59 RAP 158.54 ECC 1.2424

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.20	6 15 44	4223.43	-35.73	197.19	28.77	52.72	7 26 8	3623.4	-40.30	189.26
132.80	14 37 17	2708.19	-35.72	77.78	28.76	52.71	15 22 26	2108.2	-40.29	69.85
47.20	6 15 44	4223.43	-35.73	197.19	28.77	52.72	7 26 8	3623.4	-40.30	189.26
132.80	14 37 17	2708.19	-35.72	77.78	28.76	52.71	15 22 26	2108.2	-40.29	69.85
47.20	6 15 44	4223.43	-35.73	197.19	28.77	52.72	7 26 8	3623.4	-40.30	189.26
132.80	14 37 17	2708.19	-35.72	77.78	28.76	52.71	15 22 26	2108.2	-40.29	69.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.5789 TRA -.4821 TC3-8.3159 BAU 1.7068 SGT 8398.3 SGR 2394.4 SG3 1929.6 ST 5357.1 SR 1476.8 SS 3494.7
RDE .9878 RRA .0746 RC3-2.4472 FAU .41987 RRT .9785 RRF .9936 RTF .9753 CRT .9953 CRS -.9999 CST -.9963
FDE 7.9002 FRA .3923 FC-24.6806 BSP 29779 SGB 8733.0 R23 .1758 R13 .9780 LSA 6558.8 MSA 272.6 SSA 15.4
BDE 3.7127 BRA .4878 BC3 8.6685 FSP 6623 SG1 8720.0 SG2 475.1 THA 15.64 EL1 5555.2 EL2 138.6 ALF 15.35

LAUNCH DATE DEC 11 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 683.034 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 32.985 GAL 2.38 AZL 86.15 HCA 202.25 SMA 185.88 ECC .21149 INC 3.8479 V1 30.247
RP 214.24 LAP -1.46 LOP 281.20 VP 22.911 GAP -8.52 AZP 93.56 TAL 13.70 TAP 215.95 RCA 146.56 APO 225.19 V2 25.626
RC 292.998 GL 35.80 GP -16.12 ZAL 65.52 ZAP 63.12 ETS 170.80 ZAE 91.19 ETE 179.21 ZAC 68.41 ETC 257.13 CLP 61.92

PLANETOCENTRIC CONIC

C3 14.295 VHL 3.781 DLA 48.72 RAL 156.55 RAD 6567.6 VEL 11.648 PTH 2.04 VHP 3.447 DPA -6.63 RAP 158.76 ECC 1.2353

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.54	6 21 22	4206.11	-35.36	195.11	28.03	54.00	7 31 28	3606.1	-39.77	187.11
131.46	14 34 1	2712.26	-35.35	77.84	28.02	53.99	15 19 13	2112.3	-39.77	69.84
48.54	6 21 22	4206.11	-35.36	195.11	28.03	54.00	7 31 28	3606.1	-39.77	187.11
131.46	14 34 1	2712.26	-35.35	77.84	28.02	53.99	15 19 13	2112.3	-39.77	69.84
48.54	6 21 22	4206.11	-35.36	195.11	28.03	54.00	7 31 28	3606.1	-39.77	187.11
131.46	14 34 1	2712.26	-35.35	77.84	28.02	53.99	15 19 13	2112.3	-39.77	69.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.5462 TRA -.4766 TC3-8.7995 BAU 1.7396 SGT 8622.8 SGR 2239.2 SG3 1905.1 ST 5387.6 SR 1372.2 SS 3380.5
RDE .9041 RRA .0789 RC3-2.3298 FAU .41245 RRT .9782 RRF .9921 RTF .9755 CRT .9949 CRS -.9998 CST -.9961
FDE 7.4778 FRA .4370 FC-24.9791 BSP 30440 SGB 8908.8 R23 .1697 R13 .9778 LSA 6501.0 MSA 272.4 SSA 16.4
BDE 3.6596 BRA .4831 BC3 9.1028 FSP 6524 SG1 8897.4 SG2 450.5 THA 14.29 EL1 5558.0 EL2 133.6 ALF 14.23

LAUNCH DATE DEC 11 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 687.265 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 32.990 GAL 2.30 AZL 86.28 HCA 203.43 SMA 185.95 ECC .21156 INC 3.7223 V1 30.247
RP 213.93 LAP -1.48 LOP 282.38 VP 22.957 GAP -8.65 AZP 93.42 TAL 13.24 TAP 216.67 RCA 146.61 APO 225.29 V2 25.662
RC 294.131 GL 35.02 GP -15.23 ZAL 65.91 ZAP 61.72 ETS 170.81 ZAE 89.64 ETE 178.81 ZAC 69.25 ETC 257.22 CLP 60.59

PLANETOCENTRIC CONIC

C3 13.903 VHL 3.729 DLA 47.72 RAL 156.93 RAD 6567.5 VEL 11.631 PTH 2.04 VHP 3.474 DPA -5.76 RAP 158.98 ECC 1.2288

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.83	6 27 16	4189.20	-34.97	193.12	27.45	55.18	7 37 5	3589.2	-39.25	185.05
130.17	14 31 8	2716.94	-34.96	77.97	27.44	55.17	15 16 25	2116.9	-39.24	69.90
49.83	6 27 16	4189.20	-34.97	193.12	27.45	55.18	7 37 5	3589.2	-39.25	185.05
130.17	14 31 8	2716.94	-34.96	77.97	27.44	55.17	15 16 25	2116.9	-39.24	69.90
49.83	6 27 16	4189.20	-34.97	193.12	27.45	55.18	7 37 5	3589.2	-39.25	185.05
130.17	14 31 8	2716.94	-34.96	77.97	27.44	55.17	15 16 25	2116.9	-39.24	69.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.5163 TRA -.4645 TC3-9.2797 BAU 1.7733 SGT 8843.7 SGR 2096.9 SG3 1876.0 ST 5416.5 SR 1279.8 SS 3267.3
RDE .8314 RRA .0842 RC3-2.2148 FAU .40410 RRT .9776 RRF .9904 RTF .9758 CRT .9946 CRS -.9998 CST -.9959
FDE 7.0711 FRA .4927 FC-25.1626 BSP 31108 SGB 9088.9 R23 .1623 R13 .9776 LSA 6448.0 MSA 272.4 SSA 17.4
BDE 3.6133 BRA .4720 BC3 9.5404 FSP 6407 SG1 9078.7 SG2 430.0 THA 13.08 EL1 5564.2 EL2 129.2 ALF 13.23

LAUNCH DATE DEC 11 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 691.504 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 32.994 GAL 2.22 AZL 86.39 HCA 204.62 SMA 186.03 ECC .21164 INC 3.6077 V1 30.247
RP 213.62 LAP -1.50 LOP 283.57 VP 23.003 GAP -8.78 AZP 93.28 TAL 12.77 TAP 217.39 RCA 146.66 APO 225.40 V2 25.697
RC 295.251 GL 34.31 GP -14.42 ZAL 66.35 ZAP 60.37 ETS 170.83 ZAE 88.10 ETE 178.46 ZAC 70.02 ETC 257.30 CLP 59.30

PLANETOCENTRIC CONIC

C3 13.547 VHL 3.681 DLA 46.77 RAL 157.38 RAD 6567.5 VEL 11.616 PTH 2.04 VHP 3.504 DPA -4.98 RAP 159.20 ECC 1.2229

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.08	6 33 27	4172.58	-34.58	191.20	27.00	56.29	7 42 59	3572.6	-38.73	183.08
128.92	14 28 34	2722.19	-34.57	78.14	26.99	56.28	15 13 56	2122.2	-38.72	70.03
51.08	6 33 27	4172.58	-34.58	191.20	27.00	56.29	7 42 59	3572.6	-38.73	183.08
128.92	14 28 34	2722.19	-34.57	78.14	26.99	56.28	15 13 56	2122.2	-38.72	70.03
51.08	6 33 27	4172.58	-34.58	191.20	27.00	56.29	7 42 59	3572.6	-38.73	183.08
128.92	14 28 34	2722.19	-34.57	78.14	26.99	56.28	15 13 56	2122.2	-38.72	70.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.4853 TRA -.4480 TC3-9.7616 BAU 1.8085 SGT 9061.3 SGR 1966.3 SG3 1843.3 ST 5438.4 SR 1196.6 SS 3151.3
RDE .7671 RRA .0897 RC3-2.1040 FAU .39523 RRT .9766 RRF .9882 RTF .9760 CRT .9942 CRS -.9998 CST -.9956
FDE 6.6719 FRA .5537 FC-25.2583 BSP 31769 SGB 9272.2 R23 .1539 R13 .9775 LSA 6392.5 MSA 272.8 SSA 18.5
BDE 3.5687 BRA .4569 BC3 9.9858 FSP 6281 SG1 9263.0 SG2 413.6 THA 11.99 EL1 5567.1 EL2 125.2 ALF 12.35

LAUNCH DATE DEC 11 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 695.750 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	32.999	GAL	2.14	AZL	86.50	HCA	205.80	SMA	186.11	ECC	.21173	INC	3.5028	V1	30.247
RP	213.31	LAP	-1.52	LOP	284.76	VP	23.048	GAP	-8.91	AZP	93.15	TAL	12.29	TAP	218.10	RCA	146.71	APO	225.52	V2	25.731
RC	296.356	GL	33.65	GP	-13.68	ZAL	66.86	ZAP	59.05	ETS	170.85	ZAE	86.59	ETE	178.15	ZAC	70.74	ETC	257.37	CLP	58.04

PLANETOCENTRIC CONIC

C3	13.219	VHL	3.636	DLA	45.86	RAL	157.90	RAD	6567.5	VEL	11.602	PTH	2.03	VHP	3.538	DPA	-4.27	RAP	159.44	ECC	1.2176

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.29	6 39 54	4156.14	-34.18	189.33	26.69	57.34	7 49 10	3556.1	-38.21	181.17
127.71	14 26 16	2728.00	-34.17	78.38	26.68	57.33	15 11 44	2128.0	-38.20	70.22
52.29	6 39 54	4156.14	-34.18	189.33	26.69	57.34	7 49 10	3556.1	-38.21	181.17
127.71	14 26 16	2728.00	-34.17	78.38	26.68	57.33	15 11 44	2128.0	-38.20	70.22
52.29	6 39 54	4156.14	-34.18	189.33	26.69	57.34	7 49 10	3556.1	-38.21	181.17
127.71	14 26 16	2728.00	-34.17	78.38	26.68	57.33	15 11 44	2128.0	-38.20	70.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.4567	TRA	-.4238	TC-10.2376	BAU	1.8434	SGT	9274.2	SGR	1846.6	SG3	1808.0	ST	5459.4	SR	1122.9	SS	3038.0
RDE	.7108	RRA	.0961	RC3-1.9966	FAU	.38581	RRT	.9752	RRF	.9857	RTF	.9761	CRT	.9939	CRS	-.9997	CST	-.9953
FDE	6.2916	FRA	.6262	FC-25.2671	BSP	32448	SGB	9456.3	R23	.1448	R13	.9773	LSA	6341.9	MSA	273.6	SSA	19.4
BDE	3.5290	BRA	.4345	BC310.4304	FSP	6145	SG1	9447.8	SG2	400.9	THA	11.01	EL1	5572.4	EL2	121.7	ALF	11.56

LAUNCH DATE DEC 11 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 700.003 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.004	GAL	2.05	AZL	86.59	HCA	207.00	SMA	186.20	ECC	.21185	INC	3.4061	V1	30.247
RP	213.01	LAP	-1.55	LOP	285.95	VP	23.093	GAP	-9.03	AZP	93.04	TAL	11.79	TAP	218.79	RCA	146.75	APO	225.64	V2	25.765
RC	297.448	GL	33.04	GP	-12.99	ZAL	67.42	ZAP	57.78	ETS	170.89	ZAE	85.11	ETE	177.89	ZAC	71.40	ETC	257.42	CLP	56.82

PLANETOCENTRIC CONIC

C3	12.917	VHL	3.594	DLA	44.98	RAL	158.49	RAD	6567.5	VEL	11.589	PTH	2.03	VHP	3.574	DPA	-3.62	RAP	159.68	ECC	1.2126

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.47	6 46 38	4139.76	-33.78	187.50	26.48	58.33	7 55 38	3539.8	-37.68	179.31
126.53	14 24 11	2734.41	-33.77	78.67	26.47	58.32	15 9 46	2134.4	-37.67	70.48
53.47	6 46 38	4139.76	-33.78	187.50	26.48	58.33	7 55 38	3539.8	-37.68	179.31
126.53	14 24 11	2734.41	-33.77	78.67	26.47	58.32	15 9 46	2134.4	-37.67	70.48
53.47	6 46 38	4139.76	-33.78	187.50	26.48	58.33	7 55 38	3539.8	-37.68	179.31
126.53	14 24 11	2734.41	-33.77	78.67	26.47	58.32	15 9 46	2134.4	-37.67	70.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.4260	TRA	-.3960	TC-10.7157	BAU	1.8792	SGT	9484.5	SGR	1736.4	SG3	1770.3	ST	5473.1	SR	1056.5	SS	2923.4
RDE	.6608	RRA	.1021	RC3-1.8934	FAU	.37608	RRT	.9735	RRF	.9828	RTF	.9762	CRT	.9935	CRS	-.9997	CST	-.9950
FDE	5.9215	FRA	.6978	FC-25.2053	BSP	33096	SGB	9642.1	R23	.1348	R13	.9772	LSA	6288.2	MSA	274.2	SSA	20.4
BDE	3.4892	BRA	.4089	BC310.8817	FSP	5997	SG1	9634.2	SG2	391.2	THA	10.12	EL1	5572.9	EL2	118.4	ALF	10.86

LAUNCH DATE DEC 11 1964 FLIGHT TIME 324.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 704.263 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.009	GAL	1.97	AZL	86.68	HCA	208.19	SMA	186.29	ECC	.21197	INC	3.3169	V1	30.247
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.138	GAP	-9.15	AZP	92.92	TAL	11.28	TAP	219.48	RCA	146.80	APO	225.77	V2	25.798
RC	298.526	GL	32.47	GP	-12.36	ZAL	68.03	ZAP	56.54	ETS	170.92	ZAE	83.66	ETE	177.66	ZAC	72.02	ETC	257.46	CLP	55.63

PLANETOCENTRIC CONIC

C3	12.638	VHL	3.555	DLA	44.12	RAL	159.13	RAD	6567.5	VEL	11.577	PTH	2.02	VHP	3.613	DPA	-3.05	RAP	159.94	ECC	1.2080

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.63	6 53 40	4123.31	-33.37	185.70	26.37	59.27	8 2 24	3523.3	-37.16	177.49
125.37	14 22 16	2741.48	-33.35	79.01	26.36	59.25	15 7 58	2141.5	-37.15	70.80
54.63	6 53 40	4123.31	-33.37	185.70	26.37	59.27	8 2 24	3523.3	-37.16	177.49
125.37	14 22 16	2741.48	-33.35	79.01	26.36	59.25	15 7 58	2141.5	-37.15	70.80
54.63	6 53 40	4123.31	-33.37	185.70	26.37	59.27	8 2 24	3523.3	-37.16	177.49
125.37	14 22 16	2741.48	-33.35	79.01	26.36	59.25	15 7 58	2141.5	-37.15	70.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.3975	TRA	-.3607	TC-11.1860	BAU	1.9140	SGT	9689.8	SGR	1635.0	SG3	1730.9	ST	5486.3	SR	997.8	SS	2813.4
RDE	.6170	RRA	.1084	RC3-1.7929	FAU	.36590	RRT	.9712	RRF	.9793	RTF	.9763	CRT	.9931	CRS	-.9997	CST	-.9946
FDE	5.5732	FRA	.7762	FC-25.0657	BSP	33779	SGB	9826.8	R23	.1243	R13	.9771	LSA	6239.7	MSA	275.1	SSA	21.4
BDE	3.4530	BRA	.3766	BC311.3288	FSP	5851	SG1	9819.2	SG2	384.4	THA	9.32	EL1	5575.1	EL2	115.3	ALF	10.24

LAUNCH DATE DEC 11 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 708.530 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.014	GAL	1.88	AZL	86.77	HCA	209.39	SMA	186.38	ECC	.21212	INC	3.2342	V1	30.247
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.182	GAP	-9.27	AZP	92.82	TAL	10.76	TAP	220.15	RCA	146.84	APO	225.91	V2	25.831
RC	299.592	GL	31.95	GP	-11.77	ZAL	68.69	ZAP	55.34	ETS	170.96	ZAE	82.23	ETE	177.46	ZAC	72.61	ETC	257.50	CLP	54.48

PLANETOCENTRIC CONIC

C3	12.378	VHL	3.518	DLA	43.28	RAL	159.82	RAD	6567.5	VEL	11.566	PTH	2.02	VHP	3.653	DPA	-2.52	RAP	160.21	ECC	1.2037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.78	7 1 0	4106.75	-32.95	183.92	26.36	60.17	8 9 27	3506.8	-36.63	175.69
124.22	14 20 29	2749.17	-32.94	79.41	26.35	60.15	15 6 18	2149.2	-36.62	71.18
55.78	7 1 0	4106.75	-32.95	183.92	26.36	60.17	8 9 27	3506.8	-36.63	175.69
124.22	14 20 29	2749.17	-32.94	79.41	26.35	60.15	15 6 18	2149.2	-36.62	71.18
55.78	7 1 0	4106.75	-32.95	183.92	26.36	60.17	8 9 27	3506.8	-36.63	175.69
124.22	14 20 29	2749.17	-32.94	79.41	26.35	60.15	15 6 18	2149.2	-36.62	71.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.3670	TRA	-.3198	TC-11.6551	BAU	1.9490	SGT	9891.1	SGR	1541.4	SG3	1690.0	ST	5493.0	SR	944.7	SS	2702.6
RDE	.5777	RRA	.1149	RC3-1.6963	FAU	.35557	RRT	.9683	RRF	.9752	RTF	.9763	CRT	.9927	CRS	-.9996	CST	-.9942
FDE	5.2354	FRA	.8593	FC-24.8696	BSP	34446	SGB	10010.5	R23	.1139	R13	.9770	LSA	6188.1	MSA	276.6	SSA	22.3
BDE	3.4162	BRA	.3399	BC311.7779	FSP	5700	SG1	10003.3	SG2	380.5	THA	8.59	EL1	5572.5	EL2	112.4	ALF	9.69

LAUNCH DATE DEC 11 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 712.803 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.020	GAL	1.78	AZL	86.84	HCA	210.59	SMA	186.47	ECC	.21227	INC	3.1572
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.226	GAP	-9.39	AZP	92.72	TAL	10.22	TAP	220.82	RCA	146.89	APO	226.05
RC	300.645	GL	31.45	GP	-11.23	ZAL	69.40	ZAP	54.17	ETS	171.00	ZAE	80.83	ETE	177.28	ZAC	73.15	ETC	257.52

V1	30.247	V2	25.863	CLP	53.36														

PLANETOCENTRIC CONIC

C3	12.135	VHL	3.484	DLA	42.47	RAL	160.57	RAD	6567.5	VEL	11.555	PTH	2.02	VHP	3.696	DPA	-2.06	RAP	160.50
ECC	1.1997																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.92	7 8 39	4089.96	-32.52	182.15	26.43	61.03	8 16 49	3490.0	-36.10	173.90
123.08	14 18 48	2757.57	-32.51	79.87	26.42	61.01	15 4 45	2157.6	-36.09	71.62
56.92	7 8 39	4089.96	-32.52	182.15	26.43	61.03	8 16 49	3490.0	-36.10	173.90
123.08	14 18 48	2757.57	-32.51	79.87	26.42	61.01	15 4 45	2157.6	-36.09	71.62
56.92	7 8 39	4089.96	-32.52	182.15	26.43	61.03	8 16 49	3490.0	-36.10	173.90
123.08	14 18 48	2757.57	-32.51	79.87	26.42	61.01	15 4 45	2157.6	-36.09	71.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.3343	TRA	-.2742	TC	-12.1218	BAU	1.9837	SGT	10088.4	SGR	1455.1	SG3	1648.2	ST	5493.0	SR	896.8	SS	2592.7
RDE	.5426	RRA	.1212	RC3	-1.6032	FAU	.34511	RRT	.9648	RRF	.9705	RTF	.9763	CRT	.9923	CRS	-.9996	CST	-.9937
FDE	4.9109	FRA	.9424	FC	-24.6202	BSP	35086	SGB	10192.7	R23	.1035	R13	.9768	LSA	6133.6	MSA	278.2	SSA	23.2
BDE	3.3782	BRA	.2998	BC	312.2274	FSP	5544	SG	110185.7	SG2	379.0	THA	7.93	EL1	5564.6	EL2	109.7	ALF	9.21

LAUNCH DATE DEC 11 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 717.083 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.025	GAL	1.69	AZL	86.91	HCA	211.80	SMA	186.57	ECC	.21245	INC	3.0852
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.269	GAP	-9.50	AZP	92.62	TAL	9.67	TAP	221.47	RCA	146.93	APO	226.20
RC	301.687	GL	30.99	GP	-10.73	ZAL	70.15	ZAP	53.04	ETS	171.05	ZAE	79.46	ETE	177.13	ZAC	73.67	ETC	257.54

V1	30.247	V2	25.895	CLP	52.27														

PLANETOCENTRIC CONIC

C3	11.909	VHL	3.451	DLA	41.66	RAL	161.36	RAD	6567.5	VEL	11.545	PTH	2.02	VHP	3.741	DPA	-1.64	RAP	160.80
ECC	1.1960																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.07	7 16 37	4072.86	-32.08	180.37	26.58	61.86	8 24 30	3472.9	-35.56	172.11
121.93	14 17 10	2766.73	-32.07	80.39	26.57	61.85	15 3 16	2166.7	-35.56	72.14
58.07	7 16 37	4072.86	-32.08	180.37	26.58	61.86	8 24 30	3472.9	-35.56	172.11
121.93	14 17 10	2766.73	-32.07	80.39	26.57	61.85	15 3 16	2166.7	-35.56	72.14
58.07	7 16 37	4072.86	-32.08	180.37	26.58	61.86	8 24 30	3472.9	-35.56	172.11
121.93	14 17 10	2766.73	-32.07	80.39	26.57	61.85	15 3 16	2166.7	-35.56	72.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.3009	TRA	-.2219	TC	-12.5839	BAU	2.0179	SGT	10281.7	SGR	1375.5	SG3	1605.6	ST	5488.7	SR	853.7	SS	2484.5
RDE	-.5113	RRA	.1275	RC3	-1.5135	FAU	.33457	RRT	.9606	RRF	.9650	RTF	.9763	CRT	.9919	CRS	-.9995	CST	-.9931
FDE	4.6008	FRA	1.0270	FC	-24.3220	BSP	35758	SGB	10373.3	R23	.0931	R13	.9767	LSA	6078.5	MSA	279.9	SSA	24.2
BDE	3.3403	BRA	.2559	BC	312.6746	FSP	5394	SG	110366.3	SG2	379.2	THA	7.33	EL1	5553.7	EL2	107.0	ALF	8.77

LAUNCH DATE DEC 11 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 721.370 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.031	GAL	1.59	AZL	86.98	HCA	213.01	SMA	186.66	ECC	.21264	INC	3.0180
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.311	GAP	-9.61	AZP	92.53	TAL	9.11	TAP	222.12	RCA	146.97	APO	226.36
RC	302.717	GL	30.55	GP	-10.26	ZAL	70.96	ZAP	51.94	ETS	171.09	ZAE	78.12	ETE	176.99	ZAC	74.16	ETC	257.55

V1	30.247	V2	25.926	CLP	51.21														

PLANETOCENTRIC CONIC

C3	11.697	VHL	3.420	DLA	40.86	RAL	162.20	RAD	6567.4	VEL	11.536	PTH	2.01	VHP	3.788	DPA	-1.27	RAP	161.12
ECC	1.1925																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.21	7 24 58	4055.23	-31.64	178.57	26.80	62.66	8 32 33	3455.2	-35.02	170.30
120.79	14 15 30	2776.84	-31.63	80.99	26.79	62.65	15 1 47	2176.8	-35.01	72.73
59.21	7 24 58	4055.23	-31.64	178.57	26.80	62.66	8 32 33	3455.2	-35.02	170.30
120.79	14 15 30	2776.84	-31.63	80.99	26.79	62.65	15 1 47	2176.8	-35.01	72.73
59.21	7 24 58	4055.23	-31.64	178.57	26.80	62.66	8 32 33	3455.2	-35.02	170.30
120.79	14 15 30	2776.84	-31.63	80.99	26.79	62.65	15 1 47	2176.8	-35.01	72.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.2667	TRA	-.1631	TC	-13.0396	BAU	2.0513	SGT	10470.7	SGR	1302.3	SG3	1563.0	ST	5480.2	SR	815.0	SS	2378.6
RDE	.4833	RRA	.1336	RC3	-1.4271	FAU	.32405	RRT	.9556	RRF	.9586	RTF	.9762	CRT	.9916	CRS	-.9995	CST	-.9924
FDE	4.3058	FRA	1.1124	FC	-23.9839	BSP	36430	SGB	10551.3	R23	.0831	R13	.9766	LSA	6022.8	MSA	281.7	SSA	25.0
BDE	3.3023	BRA	.2108	BC	313.1175	FSP	5239	SG	110544.5	SG2	381.0	THA	6.79	EL1	5539.5	EL2	104.1	ALF	8.39

LAUNCH DATE DEC 11 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 725.662 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.037	GAL	1.49	AZL	87.05	HCA	214.22	SMA	186.76	ECC	.21285	INC	2.9546
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.353	GAP	-9.72	AZP	92.44	TAL	8.53	TAP	222.75	RCA	147.01	APO	226.52
RC	303.736	GL	30.13	GP	-9.82	ZAL	71.81	ZAP	50.87	ETS	171.14	ZAE	76.80	ETE	176.88	ZAC	74.62	ETC	257.55

V1	30.247	V2	25.956	CLP	50.18														

PLANETOCENTRIC CONIC

C3	11.499	VHL	3.391	DLA	40.07	RAL	163.08	RAD	6567.4	VEL	11.528	PTH	2.01	VHP	3.836	DPA	-.93	RAP	161.45
ECC	1.1892																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.38	7 33 42	4037.05	-31.18	176.75	27.09	63.44	8 40 59	3437.0	-34.47	168.48
119.62	14 13 48	2787.90	-31.17	81.66	27.08	63.43	15 0 16	2187.9	-34.46	73.40
60.38	7 33 42	4037.05	-31.18	176.75	27.09	63.44	8 40 59	3437.0	-34.47	168.48
119.62	14 13 48	2787.90	-31.17	81.66	27.08	63.43	15 0 16	2187.9	-34.46	73.40
60.38	7 33 42	4037.05	-31.18	176.75	27.09	63.44	8 40 59	3437.0	-34.47	168.48
119.62	14 13 48	2787.90	-31.17	81.66	27.08	63.43	15 0 16	2187.9	-34.46	73.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.2272	TRA	-.1013	TC	-13.4985	BAU	2.0854	SGT	10657.9	SGR	1234.4	SG3	1520.0	ST	5460.0	SR	779.4	SS	2271.2
RDE	.4578	RRA	.1394	RC3	-1.3441	FAU	.31363	RRT	.9496	RRF	.9514	RTF	.9762	CRT	.9913	CRS	-.9994	CST	-.9916
FDE	4.0184	FRA	1.1953	FC	-23.6117	BSP	37020	SGB	10729.2	R23	.0740	R13	.9765	LSA	5957.9	MSA	284.1	SSA	25.9
BDE	3.2595	BRA	.1723	BC	313.5652	FSP	5079	SG	110722.3	SG2	384.6	THA	6.28	EL1	5514.4	EL2	101.5	ALF	8.06

LAUNCH DATE DEC 11 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 729.958 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.042	GAL	1.39	AZL	87.11	HCA	215.44	SMA	186.87	ECC	.21308	INC	2.8950	V1	30.247
RP	211.08	LAP	-1.68	LOP	294.40	VP	23.394	GAP	-9.82	AZP	92.36	TAL	7.94	TAP	223.37	RCA	147.05	APO	226.68	V2	25.986
RC	304.746	GL	29.74	GP	-9.42	ZAL	72.71	ZAP	49.84	ETS	171.19	ZAE	75.51	ETE	176.78	ZAC	75.06	ETC	257.55	CLP	49.18

PLANETOCENTRIC CONIC

C3	11.314	VHL	3.364	DLA	39.28	RAL	164.01	RAD	6567.4	VEL	11.520	PTH	2.01	VHP	3.886	DPA	-.64	RAP	161.81	ECC	1.1862

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.56	7 42 53	4018.12	-30.71	174.88	27.45	64.20	8 49 51	3418.1	-33.91	166.62
118.44	14 12 0	2800.08	-30.70	82.42	27.44	64.19	14 58 40	2200.1	-33.90	74.15
61.56	7 42 53	4018.12	-30.71	174.88	27.45	64.20	8 49 51	3418.1	-33.91	166.62
118.44	14 12 0	2800.08	-30.70	82.42	27.44	64.19	14 58 40	2200.1	-33.90	74.15
61.56	7 42 53	4018.12	-30.71	174.88	27.45	64.20	8 49 51	3418.1	-33.91	166.62
118.44	14 12 0	2800.08	-30.70	82.42	27.44	64.19	14 58 40	2200.1	-33.90	74.15

DIFFERENTIAL CORRECTIONS

TDE	3.2050	TRA	-.0147	TC-13.8876	BAU	2.1091	
RDE	.4376	RRA	.1476	RC3-1.2542	FAU	.30126	
FDE	3.7856	FRA	1.3177	FC-23.0527	BSP	38094	
BDE	3.2347	BRA	.1483	BC313.9441	FSP	5011	

MID-COURSE EXECUTION ACCURACY

SGT10820.7	SGR	1171.7	SG3	1472.6			
RRT	.9418	RRF	.9430	RTF	.9760		
SGB10804.0	R23	.0673	R13	.9762			
SG110876.9	SG2	391.8	THA	5.83			

ORBIT DETERMINATION ACCURACY

ST	5466.6	SR	752.1	SS	2190.2		
CRT	.9912	CRS	-.9993	CST	-.9906		
LSA	5929.7	MSA	289.8	SSA	26.3		
EL1	5517.2	EL2	98.7	ALF	7.77		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 734.263 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.048	GAL	1.29	AZL	87.16	HCA	216.65	SMA	186.97	ECC	.21333	INC	2.8387	V1	30.247
RP	210.82	LAP	-1.69	LOP	295.62	VP	23.435	GAP	-9.93	AZP	92.28	TAL	7.33	TAP	223.99	RCA	147.08	APO	226.86	V2	26.015
RC	305.746	GL	29.36	GP	-9.04	ZAL	73.65	ZAP	48.84	ETS	171.23	ZAE	74.24	ETE	176.69	ZAC	75.49	ETC	257.54	CLP	48.20

PLANETOCENTRIC CONIC

C3	11.141	VHL	3.338	DLA	38.49	RAL	164.97	RAD	6567.4	VEL	11.512	PTH	2.01	VHP	3.937	DPA	-.39	RAP	162.18	ECC	1.1834

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.77	7 52 31	3998.31	-30.23	172.96	27.86	64.95	8 59 10	3398.3	-33.33	164.70
117.23	14 10 2	2813.54	-30.22	83.27	27.86	64.93	14 56 56	2213.5	-33.32	75.01
62.77	7 52 31	3998.31	-30.23	172.96	27.86	64.95	8 59 10	3398.3	-33.33	164.70
117.23	14 10 2	2813.54	-30.22	83.27	27.86	64.93	14 56 56	2213.5	-33.32	75.01
62.77	7 52 31	3998.31	-30.23	172.96	27.86	64.95	8 59 10	3398.3	-33.33	164.70
117.23	14 10 2	2813.54	-30.22	83.27	27.86	64.93	14 56 56	2213.5	-33.32	75.01

DIFFERENTIAL CORRECTIONS

TDE	3.1544	TRA	.0520	TC-14.3542	BAU	2.1452	
RDE	.4158	RRA	.1517	RC3-1.1809	FAU	.29183	
FDE	3.5074	FRA	1.3797	FC-22.6768	BSP	38550	
BDE	3.1817	BRA	.1604	BC314.4027	FSP	4830	

MID-COURSE EXECUTION ACCURACY

SGT11007.0	SGR	1114.3	SG3	1431.7			
RRT	.9341	RRF	.9336	RTF	.9760		
SGB11063.3	R23	.0582	R13	.9762			
SG111056.2	SG2	396.0	THA	5.41			

ORBIT DETERMINATION ACCURACY

ST	5422.5	SR	721.0	SS	2076.9		
CRT	.9910	CRS	-.9991	CST	-.9896		
LSA	5843.9	MSA	290.7	SSA	27.3		
EL1	5469.4	EL2	95.6	ALF	7.51		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 738.573 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.055	GAL	1.18	AZL	87.21	HCA	217.87	SMA	187.08	ECC	.21360	INC	2.7854	V1	30.247
RP	210.58	LAP	-1.71	LOP	296.84	VP	23.475	GAP	-10.03	AZP	92.20	TAL	6.71	TAP	224.59	RCA	147.12	APO	227.04	V2	26.043
RC	306.737	GL	28.99	GP	-8.68	ZAL	74.63	ZAP	47.86	ETS	171.28	ZAE	73.00	ETE	176.61	ZAC	75.89	ETC	257.52	CLP	47.26

PLANETOCENTRIC CONIC

C3	10.980	VHL	3.314	DLA	37.69	RAL	165.97	RAD	6567.4	VEL	11.505	PTH	2.00	VHP	3.990	DPA	-.17	RAP	162.57	ECC	1.1807

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.01	8 2 41	3977.40	-29.73	170.98	28.34	65.67	9 8 59	3377.4	-32.74	162.72
115.99	14 7 51	2828.46	-29.72	84.23	28.33	65.66	14 54 59	2228.5	-32.73	75.98
64.01	8 2 41	3977.40	-29.73	170.98	28.34	65.67	9 8 59	3377.4	-32.74	162.72
115.99	14 7 51	2828.46	-29.72	84.23	28.33	65.66	14 54 59	2228.5	-32.73	75.98
64.01	8 2 41	3977.40	-29.73	170.98	28.34	65.67	9 8 59	3377.4	-32.74	162.72
115.99	14 7 51	2828.46	-29.72	84.23	28.33	65.66	14 54 59	2228.5	-32.73	75.98

DIFFERENTIAL CORRECTIONS

TDE	3.1031	TRA	.1270	TC-14.8100	BAU	2.1802	
RDE	.3962	RRA	.1561	RC3-1.1100	FAU	.28249	
FDE	3.2439	FRA	1.4450	FC-22.2723	BSP	39028	
BDE	3.1283	BRA	.2012	BC314.8516	FSP	4650	

MID-COURSE EXECUTION ACCURACY

SGT11189.3	SGR	1061.5	SG3	1391.3			
RRT	.9253	RRF	.9230	RTF	.9759		
SGB11239.6	R23	.0495	R13	.9761			
SG111232.4	SG2	400.9	THA	5.02			

ORBIT DETERMINATION ACCURACY

ST	5374.2	SR	693.1	SS	1966.8		
CRT	.9910	CRS	-.9988	CST	-.9883		
LSA	5757.2	MSA	292.1	SSA	28.3		
EL1	5418.0	EL2	92.2	ALF	7.28		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 742.888 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.061	GAL	1.07	AZL	87.27	HCA	219.10	SMA	187.19	ECC	.21389	INC	2.7348	V1	30.247
RP	210.34	LAP	-1.72	LOP	298.06	VP	23.515	GAP	-10.13	AZP	92.12	TAL	6.08	TAP	225.18	RCA	147.15	APO	227.23	V2	26.071
RC	307.719	GL	28.64	GP	-8.35	ZAL	75.66	ZAP	46.91	ETS	171.32	ZAE	71.79	ETE	176.54	ZAC	76.28	ETC	257.50	CLP	46.34

PLANETOCENTRIC CONIC

C3	10.831	VHL	3.291	DLA	36.89	RAL	167.01	RAD	6567.4	VEL	11.499	PTH	2.00	VHP	4.044	DPA	.02	RAP	162.98	ECC	1.1783

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.29	8 13 27	3955.17	-29.21	168.91	28.87	66.39	9 19 23	3355.2	-32.14	160.66
114.71	14 5 21	2845.09	-29.20	85.32	28.87	66.37	14 52 46	2245.1	-32.13	77.08
65.29	8 13 27	3955.17	-29.21	168.91	28.87	66.39	9 19 23	3355.2	-32.14	160.66
114.71	14 5 21	2845.09	-29.20	85.32	28.87	66.37	14 52 46	2245.1	-32.13	77.08
65.29	8 13 27	3955.17	-29.21	168.91	28.87	66.39	9 19 23	3355.2	-32.14	160.66
114.71	14 5 21	2845.09	-29.20	85.32	28.87	66.37	14 52 46	2245.1	-32.13	77.08

DIFFERENTIAL CORRECTIONS

TDE	3.0514	TRA	.2096	TC-15.2464	BAU	2.2128	
RDE	.3791	RRA	.1605	RC3-1.0390	FAU	.27278	
FDE	3.0011	FRA	1.5136	FC-21.8033	BSP	39577	
BDE	3.0749	BRA	.2640	BC315.2818	FSP	4494	

MID-COURSE EXECUTION ACCURACY

SGT11363.9	SGR	1012.7	SG3	1349.9			
RRT	.9149	RRF	.9111	RTF	.9759		
SGB11408.9	R23	.0421	R13	.9761			
SG111401.7	SG2	407.3	THA	4.67			

ORBIT DETERMINATION ACCURACY

ST	5322.7	SR	668.6	SS	1863.8		
CRT	.9910	CRS	-.9983	CST	-.9868		
LSA	5671.4	MSA	294.3	SSA	29.2		
EL1	5363.8	EL2	88.7	ALF	7.10		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 747.209 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.067 GAL .96 AZL 87.31 HCA 220.32 SMA 187.30 ECC .21420 INC 2.6867 V1 30.247
RP 210.10 LAP -1.74 LOP 299.29 VP 23.553 GAP -10.23 AZP 92.05 TAL 5.44 TAP 225.76 RCA 147.18 APO 227.42 V2 26.098
RC 308.691 GL 28.29 GP -8.03 ZAL 76.74 ZAP 45.99 ETS 171.36 ZAE 70.59 ETE 176.49 ZAC 76.65 ETC 257.48 CLP 45.44

PLANETOCENTRIC CONIC

C3 10.693 VHL 3.270 DLA 36.09 RAL 168.08 RAD 6567.4 VEL 11.493 PTH 2.00 VHP 4.099 DPA .18 RAP 163.40 ECC 1.1760

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.63	8 24 53	3931.36	-28.68	166.73	29.46	67.09	9 30 24	3331.4	-31.52	158.50
113.37	14 2 28	2863.68	-28.67	86.56	29.45	67.08	14 50 11	2263.7	-31.51	78.33
66.63	8 24 53	3931.36	-28.68	166.73	29.46	67.09	9 30 24	3331.4	-31.52	158.50
113.37	14 2 28	2863.68	-28.67	86.56	29.45	67.08	14 50 11	2263.7	-31.51	78.33
66.63	8 24 53	3931.36	-28.68	166.73	29.46	67.09	9 30 24	3331.4	-31.52	158.50
113.37	14 2 28	2863.68	-28.67	86.56	29.45	67.08	14 50 11	2263.7	-31.51	78.33

DIFFERENTIAL CORRECTIONS
TDE 2.9973 TRA .3002 TC-15.6722 BAU 2.2447
RDE .3637 RRA .1653 RC3 -.9697 FAU .26309
FDE 2.7694 FRA 1.5882 FC-21.2998 BSP 40101
BDE 3.0193 BRA .3427 BC315.7022 FSP 4336

MID-COURSE EXECUTION ACCURACY
SGT11535.2 SGR 967.8 SG3 1308.8
RRT .9029 RRF .8977 RTF .9758
SGB11575.7 R23 .0360 R13 .9759
SG111568.3 SG2 414.8 THA 4.34

ORBIT DETERMINATION ACCURACY
ST 5264.3 SR 646.5 SS 1763.1
CRT .9912 CRS -.9976 CST -.9849
LSA 5581.2 MSA 297.9 SSA 30.0
EL1 5303.1 EL2 85.1 ALF 6.94

LAUNCH DATE DEC 11 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 751.534 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.074 GAL .84 AZL 87.36 HCA 221.55 SMA 187.41 ECC .21453 INC 2.6410 V1 30.247
RP 209.88 LAP -1.75 LOP 300.52 VP 23.591 GAP -10.32 AZP 91.98 TAL 4.78 TAP 226.33 RCA 147.21 APO 227.62 V2 26.124
RC 309.654 GL 27.95 GP -7.74 ZAL 77.85 ZAP 45.10 ETS 171.41 ZAE 69.42 ETE 176.43 ZAC 77.01 ETC 257.45 CLP 44.57

PLANETOCENTRIC CONIC

C3 10.567 VHL 3.251 DLA 35.27 RAL 169.18 RAD 6567.4 VEL 11.487 PTH 2.00 VHP 4.155 DPA .31 RAP 163.85 ECC 1.1739

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.04	8 37 7	3905.54	-28.12	164.41	30.10	67.79	9 42 12	3305.5	-30.88	156.19
111.96	13 59 2	2884.67	-28.12	87.97	30.09	67.77	14 47 7	2284.7	-30.87	79.75
68.04	8 37 7	3905.54	-28.12	164.41	30.10	67.79	9 42 12	3305.5	-30.88	156.19
111.96	13 59 2	2884.67	-28.12	87.97	30.09	67.77	14 47 7	2284.7	-30.87	79.75
68.04	8 37 7	3905.54	-28.12	164.41	30.10	67.79	9 42 12	3305.5	-30.88	156.19
111.96	13 59 2	2884.67	-28.12	87.97	30.09	67.77	14 47 7	2284.7	-30.87	79.75

DIFFERENTIAL CORRECTIONS
TDE 2.9392 TRA .3956 TC-16.0810 BAU 2.2753
RDE .3496 RRA .1693 RC3 -.9020 FAU .25346
FDE 2.5448 FRA 1.6512 FC-20.7663 BSP 40688
BDE 2.9600 BRA .4303 BC316.1063 FSP 4197

MID-COURSE EXECUTION ACCURACY
SGT11699.2 SGR 925.8 SG3 1267.2
RRT .8896 RRF .8826 RTF .9758
SGB11735.7 R23 .0294 R13 .9759
SG111728.1 SG2 421.8 THA 4.03

ORBIT DETERMINATION ACCURACY
ST 5196.5 SR 626.1 SS 1661.8
CRT .9915 CRS -.9966 CST -.9827
LSA 5483.2 MSA 300.3 SSA 30.8
EL1 5233.5 EL2 81.0 ALF 6.81

LAUNCH DATE DEC 11 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 755.863 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.080 GAL .73 AZL 87.40 HCA 222.79 SMA 187.53 ECC .21489 INC 2.5972 V1 30.247
RP 209.66 LAP -1.76 LOP 301.75 VP 23.629 GAP -10.42 AZP 91.91 TAL 4.10 TAP 226.89 RCA 147.23 APO 227.82 V2 26.149
RC 310.607 GL 27.62 GP -7.46 ZAL 79.01 ZAP 44.23 ETS 171.45 ZAE 68.28 ETE 176.39 ZAC 77.36 ETC 257.42 CLP 43.72

PLANETOCENTRIC CONIC

C3 10.451 VHL 3.233 DLA 34.44 RAL 170.32 RAD 6567.4 VEL 11.482 PTH 2.00 VHP 4.212 DPA .41 RAP 164.31 ECC 1.1720

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.53	8 50 16	3877.22	-27.55	161.92	30.79	68.47	9 54 54	3277.2	-30.22	153.72
110.47	13 54 56	2908.55	-27.54	89.59	30.79	68.46	14 43 24	2308.5	-30.21	81.39
69.53	8 50 16	3877.22	-27.55	161.92	30.79	68.47	9 54 54	3277.2	-30.22	153.72
110.47	13 54 56	2908.55	-27.54	89.59	30.79	68.46	14 43 24	2308.5	-30.21	81.39
69.53	8 50 16	3877.22	-27.55	161.92	30.79	68.47	9 54 54	3277.2	-30.22	153.72
110.47	13 54 56	2908.55	-27.54	89.59	30.79	68.46	14 43 24	2308.5	-30.21	81.39

DIFFERENTIAL CORRECTIONS
TDE 2.8792 TRA .4979 TC-16.4844 BAU 2.3063
RDE .3371 RRA .1734 RC3 -.8381 FAU .24440
FDE 2.3354 FRA 1.7176 FC-20.2449 BSP 41250
BDE 2.8989 BRA .5272 BC316.5057 FSP 4056

MID-COURSE EXECUTION ACCURACY
SGT11865.3 SGR 888.5 SG3 1228.3
RRT .8749 RRF .8663 RTF .9757
SGB11898.5 R23 .0238 R13 .9758
SG111890.8 SG2 429.4 THA 3.75

ORBIT DETERMINATION ACCURACY
ST 5122.9 SR 608.0 SS 1565.9
CRT .9919 CRS -.9950 CST -.9800
LSA 5382.6 MSA 304.1 SSA 31.6
EL1 5158.3 EL2 76.6 ALF 6.72

LAUNCH DATE DEC 11 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 760.197 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.087 GAL .61 AZL 87.44 HCA 224.02 SMA 187.64 ECC .21527 INC 2.5553 V1 30.247
RP 209.44 LAP -1.78 LOP 302.99 VP 23.665 GAP -10.51 AZP 91.84 TAL 3.42 TAP 227.44 RCA 147.25 APO 228.04 V2 26.174
RC 311.551 GL 27.29 GP -7.20 ZAL 80.21 ZAP 43.38 ETS 171.48 ZAE 67.15 ETE 176.35 ZAC 77.70 ETC 257.38 CLP 42.90

PLANETOCENTRIC CONIC

C3 10.348 VHL 3.217 DLA 33.60 RAL 171.48 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 4.271 DPA .49 RAP 164.78 ECC 1.1703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.12	9 4 33	3845.82	-26.96	159.21	31.53	69.15	10 8 39	3245.8	-29.55	151.03
108.88	13 49 57	2935.92	-26.95	91.46	31.53	69.13	14 38 53	2335.9	-29.54	83.29
71.12	9 4 33	3845.82	-26.96	159.21	31.53	69.15	10 8 39	3245.8	-29.55	151.03
108.88	13 49 57	2935.92	-26.95	91.46	31.53	69.13	14 38 53	2335.9	-29.54	83.29
110.00	14 44 45	2768.23	-30.61	79.82	32.92	73.98	15 30 53	2168.2	-32.50	71.11
110.00	13 8 55	3061.51	-23.42	99.55	29.85	64.36	13 59 56	2461.5	-26.67	91.90

DIFFERENTIAL CORRECTIONS
TDE 2.8144 TRA .6061 TC-16.8712 BAU 2.3364
RDE .3257 RRA .1774 RC3 -.7750 FAU .23526
FDE 2.1328 FRA 1.7820 FC-19.6827 BSP 41797
BDE 2.8332 BRA .6315 BC316.8898 FSP 3916

MID-COURSE EXECUTION ACCURACY
SGT12025.9 SGR 853.8 SG3 1188.8
RRT .8582 RRF .8481 RTF .9756
SGB12056.2 R23 .0190 R13 .9757
SG112048.3 SG2 437.5 THA 3.49

ORBIT DETERMINATION ACCURACY
ST 5038.5 SR 591.3 SS 1470.6
CRT .9925 CRS -.9927 CST -.9767
LSA 5272.8 MSA 308.5 SSA 32.3
EL1 5072.5 EL2 71.9 ALF 6.65

LAUNCH DATE DEC 11 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 764.535 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.094 GAL .48 AZL 87.48 HCA 225.26 SMA 187.76 ECC .21567 INC 2.5152 V1 30.247
RP 209.24 LAP -1.79 LOP 304.22 VP 23.701 GAP -10.61 AZP 91.77 TAL 2.72 TAP 227.98 RCA 147.27 APO 228.26 V2 26.198
RC 312.486 GL 26.97 GP -6.96 ZAL 81.46 ZAP 42.56 ETS 171.52 ZAE 66.05 ETE 176.32 ZAC 78.02 ETC 257.35 CLP 42.09

PLANETOCENTRIC CONIC

C3 10.256 VHL 3.202 DLA 32.74 RAL 172.67 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 4.331 DPA .54 RAP 165.27 ECC 1.1688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.84	9 20 11	3810.50	-26.34	156.23	32.32	69.82	10 23 41	3210.5	-28.85	148.07
107.16	13 43 50	2967.65	-26.33	93.65	32.31	69.81	14 33 17	2367.6	-28.84	85.50
72.84	9 20 11	3810.50	-26.34	156.23	32.32	69.82	10 23 41	3210.5	-28.85	148.07
107.16	13 43 50	2967.65	-26.33	93.65	32.31	69.81	14 33 17	2367.6	-28.84	85.50
110.00	15 16 34	2682.11	-32.06	73.53	34.24	77.44	16 1 16	2082.1	-33.45	64.57
110.00	12 46 37	3144.04	-20.89	104.62	29.68	62.31	13 39 1	2544.0	-24.43	97.26

DIFFERENTIAL CORRECTIONS
TDE 2.7461 TRA .7218 TC-17.2367 BAU 2.3653
RDE .3153 RRA .1813 RC3 -.7133 FAU .22620
FDE 1.9364 FRA 1.8462 FC-19.0947 BSP 42328
BDE 2.7642 BRA .7442 BC317.2514 FSP 3776

MID-COURSE EXECUTION ACCURACY
SGT12181.0 SGR 821.9 SG3 1149.5
RRT .8397 RRF .8281 RTF .9754
SGB12208.7 R23 .0147 R13 .9754
SG112200.6 SG2 445.6 THA 3.25

ORBIT DETERMINATION ACCURACY
ST 4945.8 SR 576.0 SS 1376.0
CRT .9932 CRS -.9893 CST -.9723
LSA 5156.2 MSA 314.1 SSA 33.1
EL1 4978.8 EL2 66.8 ALF 6.60

LAUNCH DATE DEC 11 1964 FLIGHT TIME 354.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 768.876 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.100 GAL .36 AZL 87.52 HCA 226.50 SMA 187.88 ECC .21610 INC 2.4768 V1 30.247
RP 209.04 LAP -1.80 LOP 305.47 VP 23.736 GAP -10.70 AZP 91.71 TAL 2.00 TAP 228.50 RCA 147.28 APO 228.48 V2 26.221
RC 313.411 GL 26.64 GP -6.72 ZAL 82.74 ZAP 41.76 ETS 171.55 ZAE 64.96 ETE 176.29 ZAC 78.34 ETC 257.30 CLP 41.31

PLANETOCENTRIC CONIC

C3 10.176 VHL 3.190 DLA 31.87 RAL 173.89 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 4.391 DPA .57 RAP 165.78 ECC 1.1675

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.73	9 37 37	3769.78	-25.71	152.87	33.16	70.49	10 40 27	3169.8	-28.13	144.73
105.27	13 36 7	3005.22	-25.70	96.27	33.15	70.47	14 26 12	2405.2	-28.12	88.13
74.73	9 37 37	3769.78	-25.71	152.87	33.16	70.49	10 40 27	3169.8	-28.13	144.73
105.27	13 36 7	3005.22	-25.70	96.27	33.15	70.47	14 26 12	2405.2	-28.12	88.13
110.00	15 41 12	2617.68	-32.91	68.69	35.31	80.18	16 24 50	2017.7	-33.91	59.60
110.00	12 31 42	3205.32	-18.91	108.27	29.85	60.98	13 25 8	2605.3	-22.63	101.11

DIFFERENTIAL CORRECTIONS
TDE 2.6739 TRA .8408 TC-17.5935 BAU 2.3951
RDE .3061 RRA .1845 RC3 -.6545 FAU .21760
FDE 1.7521 FRA 1.8995 FC-18.5131 BSP 42863
BDE 2.6914 BRA .8608 BC317.6057 FSP 3646

MID-COURSE EXECUTION ACCURACY
SGT12337.6 SGR 793.1 SG3 1111.7
RRT .8198 RRF .8065 RTF .9754
SGB12363.0 R23 .0102 R13 .9754
SG112354.7 SG2 453.5 THA 3.02

ORBIT DETERMINATION ACCURACY
ST 4843.9 SR 562.3 SS 1285.6
CRT .9940 CRS -.9845 CST -.9673
LSA 5032.9 MSA 318.7 SSA 33.8
EL1 4876.1 EL2 61.2 ALF 6.58

LAUNCH DATE DEC 11 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 773.220 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.107 GAL .23 AZL 87.56 HCA 227.74 SMA 188.00 ECC .21656 INC 2.4397 V1 30.247
RP 208.85 LAP -1.81 LOP 306.71 VP 23.770 GAP -10.79 AZP 91.64 TAL 1.28 TAP 229.02 RCA 147.29 APO 228.72 V2 26.243
RC 314.329 GL 26.31 GP -6.51 ZAL 84.06 ZAP 40.98 ETS 171.59 ZAE 63.90 ETE 176.26 ZAC 78.66 ETC 257.26 CLP 40.55

PLANETOCENTRIC CONIC

C3 10.108 VHL 3.179 DLA 30.98 RAL 175.14 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 4.453 DPA .58 RAP 166.31 ECC 1.1663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.88	9 57 34	3721.37	-25.05	148.95	34.04	71.15	10 59 35	3121.4	-27.39	140.84
103.12	13 26 6	3050.95	-25.04	99.47	34.03	71.13	14 16 57	2451.0	-27.38	91.36
76.88	9 57 34	3721.37	-25.05	148.95	34.04	71.15	10 59 35	3121.4	-27.39	140.84
103.12	13 26 6	3050.95	-25.04	99.47	34.03	71.13	14 16 57	2451.0	-27.38	91.36
110.00	16 2 38	2562.96	-33.47	64.52	36.29	82.59	16 45 21	1963.0	-34.13	55.34
110.00	12 20 12	3257.36	-17.16	111.30	30.20	59.98	13 14 29	2657.4	-21.03	104.30

DIFFERENTIAL CORRECTIONS
TDE 2.6109 TRA .9815 TC-17.8756 BAU 2.4169
RDE .2989 RRA .1888 RC3 -.5923 FAU .20797
FDE 1.5950 FRA 1.9739 FC-17.8124 BSP 43683
BDE 2.6279 BRA .9994 BC317.8854 FSP 3550

MID-COURSE EXECUTION ACCURACY
SGT12473.4 SGR 767.8 SG3 1071.4
RRT .7971 RRF .7836 RTF .9751
SGB12497.0 R23 .0087 R13 .9751
SG112488.5 SG2 463.0 THA 2.81

ORBIT DETERMINATION ACCURACY
ST 4758.0 SR 551.8 SS 1212.2
CRT .9949 CRS -.9781 CST -.9613
LSA 4930.0 MSA 326.1 SSA 34.2
EL1 4789.5 EL2 55.1 ALF 6.58

LAUNCH DATE DEC 11 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 777.570 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.114 GAL .10 AZL 87.60 HCA 228.98 SMA 188.13 ECC .21704 INC 2.4041 V1 30.247
RP 208.67 LAP -1.81 LOP 307.95 VP 23.803 GAP -10.88 AZP 91.58 TAL .54 TAP 229.52 RCA 147.30 APO 228.96 V2 26.264
RC 315.238 GL 25.98 GP -6.30 ZAL 85.43 ZAP 40.22 ETS 171.62 ZAE 62.85 ETE 176.24 ZAC 78.96 ETC 257.21 CLP 39.81

PLANETOCENTRIC CONIC

C3 10.053 VHL 3.171 DLA 30.07 RAL 176.40 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 4.515 DPA .57 RAP 166.85 ECC 1.1654

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.43	10 21 18	3660.98	-24.36	144.18	34.97	71.81	11 22 19	3061.0	-26.62	136.09
100.57	13 12 28	3109.15	-24.35	103.57	34.96	71.79	14 4 17	2509.2	-26.61	95.49
79.43	10 21 18	3660.98	-24.36	144.18	34.97	71.81	11 22 19	3061.0	-26.62	136.09
100.57	13 12 28	3109.15	-24.35	103.57	34.96	71.79	14 4 17	2509.2	-26.61	95.49
110.00	16 22 10	2514.06	-33.83	60.75	37.21	84.79	17 4 4	1914.1	-34.18	51.52
110.00	12 10 46	3304.08	-15.55	113.96	30.70	59.17	13 5 50	2704.1	-19.53	107.09

DIFFERENTIAL CORRECTIONS
TDE 2.5127 TRA 1.0992 TC-18.2546 BAU 2.4544
RDE .2894 RRA .1902 RC3 -.5451 FAU .20170
FDE 1.3816 FRA 1.9946 FC-17.3701 BSP 43911
BDE 2.5293 BRA 1.1156 BC318.2627 FSP 3390

MID-COURSE EXECUTION ACCURACY
SGT12644.4 SGR 742.2 SG3 1040.0
RRT .7766 RRF .7575 RTF .9750
SGB12666.2 R23 -.0011 R13 .9750
SG112657.5 SG2 467.1 THA 2.61

ORBIT DETERMINATION ACCURACY
ST 4605.8 SR 536.5 SS 1096.8
CRT .9957 CRS -.9667 CST -.9508
LSA 4753.2 MSA 332.3 SSA 35.2
EL1 4636.7 EL2 49.2 ALF 6.62

LAUNCH DATE DEC 11 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 781.920 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.121	GAL	-.04	AZL	87.63	HCA	230.23	SMA	188.25	ECC	.21756	INC	2.3697	V1	30.247
RP	208.49	LAP	-1.82	LOP	309.20	VP	23.835	GAP	-10.97	AZP	91.52	TAL	359.78	TAP	230.01	RCA	147.30	APO	229.21	V2	26.285
RC	316.140	GL	25.65	GP	-6.10	ZAL	86.83	ZAP	39.48	ETS	171.64	ZAE	61.83	ETE	176.22	ZAC	79.26	ETC	257.17	CLP	39.08

PLANETOCENTRIC CONIC

C3	10.010	VHL	3.164	DLA	29.15	RAL	177.69	RAD	6567.4	VEL	11.463	PTH	1.99	VHP	4.579	DPA	.54	RAP	167.40	ECC	1.1647

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.78	10 52 30	3576.70	-23.66	137.69	35.94	72.46	11 52 6	2976.7	-25.84	129.62
97.22	12 51 33	3191.76	-23.65	109.44	35.94	72.44	13 44 45	2591.8	-25.83	101.38
100.00	14 9 21	2942.21	-27.45	92.11	37.06	77.69	14 58 24	2342.2	-28.87	83.59
100.00	12 17 22	3301.48	-19.96	116.10	34.48	67.27	13 12 24	2701.5	-22.86	108.51
110.00	16 40 26	2469.05	-34.06	57.25	38.10	86.85	17 21 35	1869.0	-34.12	48.01
110.00	12 2 47	3347.41	-14.03	116.39	31.31	58.50	12 58 34	2747.4	-18.09	109.64

DIFFERENTIAL CORRECTIONS

TDE	2.4510	TRA	1.2540	TC-18.4707	BAU	2.4727	
RDE	.2867	RRA	.1955	RC3 -.4727	FAU	.18911	
FDE	1.2969	FRA	2.0943	FC-16.3550	BSP	44659	
BDE	2.4677	BRA	1.2691	BC318.4767	FSP	3366	

MID-COURSE EXECUTION ACCURACY

SGT12769.9	SGR	723.5	SG3	990.7			
RRT	.7420	RRF	.7323	RTF	.9744		
SGB12790.4	R23	.0124	R13	.9744			
SG112781.2	SG2	484.6	THA	2.41			

ORBIT DETERMINATION ACCURACY

ST	4520.2	SR	533.4	SS	1069.7		
CRT	.9966	CRS	-.9575	CST	-.9451		
LSA	4662.9	MSA	341.6	SSA	35.6		
EL1	4551.4	EL2	43.8	ALF	6.71		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 786.274 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.129	GAL	-.18	AZL	87.66	HCA	231.48	SMA	188.38	ECC	.21810	INC	2.3365	V1	30.247
RP	208.32	LAP	-1.83	LOP	310.45	VP	23.867	GAP	-11.06	AZP	91.46	TAL	359.02	TAP	230.49	RCA	147.29	APO	229.46	V2	26.304
RC	317.035	GL	25.31	GP	-5.92	ZAL	88.27	ZAP	38.76	ETS	171.67	ZAE	60.82	ETE	176.21	ZAC	79.55	ETC	257.12	CLP	38.38

PLANETOCENTRIC CONIC

C3	9.982	VHL	3.159	DLA	28.21	RAL	179.00	RAD	6567.4	VEL	11.462	PTH	1.99	VHP	4.644	DPA	.49	RAP	167.97	ECC	1.1643

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 19 17	3312.18	-24.35	118.49	37.40	75.08	13 14 29	2712.2	-26.16	110.30
90.00	11 35 12	3455.14	-21.51	128.01	36.46	71.13	12 32 47	2855.1	-23.89	120.15
100.00	14 42 44	2849.63	-28.62	85.48	38.41	80.99	15 30 14	2249.6	-29.57	76.80
100.00	11 54 26	3392.91	-17.45	121.73	34.75	65.34	12 50 59	2792.9	-20.63	114.38
110.00	16 57 48	2426.90	-34.16	53.97	38.99	88.79	17 38 14	1826.9	-33.95	44.73
110.00	11 55 52	3388.42	-12.56	118.66	32.01	57.94	12 52 20	2788.4	-16.70	112.00

DIFFERENTIAL CORRECTIONS

TDE	2.3519	TRA	1.3861	TC-18.7663	BAU	2.5050	
RDE	.2798	RRA	.1962	RC3 -.4306	FAU	.18368	
FDE	1.1159	FRA	2.1000	FC-15.9310	BSP	44988	
BDE	2.3685	BRA	1.3999	BC318.7713	FSP	3161	

MID-COURSE EXECUTION ACCURACY

SGT12920.6	SGR	703.2	SG3	962.5			
RRT	.7201	RRF	.7034	RTF	.9749		
SGB12939.7	R23	.0006	R13	.9749			
SG112930.5	SG2	487.6	THA	2.25			

ORBIT DETERMINATION ACCURACY

ST	4364.7	SR	521.8	SS	971.9		
CRT	.9972	CRS	-.9387	CST	-.9315		
LSA	4488.5	MSA	346.1	SSA	36.3		
EL1	4395.6	EL2	38.9	ALF	6.80		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 790.630 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.136	GAL	-.32	AZL	87.70	HCA	232.73	SMA	188.51	ECC	.21867	INC	2.3044	V1	30.247
RP	208.16	LAP	-1.83	LOP	311.70	VP	23.897	GAP	-11.14	AZP	91.40	TAL	358.24	TAP	230.96	RCA	147.28	APO	229.73	V2	26.323
RC	317.924	GL	24.96	GP	-5.74	ZAL	89.74	ZAP	38.06	ETS	171.69	ZAE	59.83	ETE	176.19	ZAC	79.84	ETC	257.06	CLP	37.69

PLANETOCENTRIC CONIC

C3	9.967	VHL	3.157	DLA	27.25	RAL	180.32	RAD	6567.4	VEL	11.461	PTH	1.99	VHP	4.709	DPA	.42	RAP	168.56	ECC	1.1640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 10 51	3160.43	-26.59	107.96	39.15	79.90	14 3 31	2560.4	-27.72	99.47
90.00	10 54 13	3606.30	-17.88	137.61	36.42	67.67	11 54 19	3006.3	-20.75	130.11
100.00	15 9 9	2779.05	-29.27	80.33	39.59	83.62	15 55 28	2179.1	-29.84	71.57
100.00	11 38 36	3462.91	-15.42	125.93	35.27	64.07	12 36 18	2862.9	-18.78	118.75
110.00	17 14 27	2386.94	-34.18	50.85	39.88	90.64	17 54 14	1786.9	-33.71	41.63
110.00	11 49 47	3427.79	-11.12	120.81	32.80	57.47	12 46 55	2827.8	-15.34	114.24

DIFFERENTIAL CORRECTIONS

TDE	2.2589	TRA	1.5356	TC-19.0054	BAU	2.5330	
RDE	.2750	RRA	.1978	RC3 -.3815	FAU	.17631	
FDE	.9669	FRA	2.1281	FC-15.3138	BSP	45525	
BDE	2.2755	BRA	1.5483	BC319.0092	FSP	3060	

MID-COURSE EXECUTION ACCURACY

SGT13062.9	SGR	685.7	SG3	928.3			
RRT	.6925	RRF	.6731	RTF	.9750		
SGB13080.9	R23	-.0041	R13	.9750			
SG113071.6	SG2	494.3	THA	2.08			

ORBIT DETERMINATION ACCURACY

ST	4221.3	SR	513.6	SS	897.2		
CRT	.9974	CRS	-.9146	CST	-.9158		
LSA	4331.5	MSA	353.8	SSA	36.9		
EL1	4252.3	EL2	36.9	ALF	6.92		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 794.988 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.143	GAL	-.46	AZL	87.73	HCA	233.98	SMA	188.63	ECC	.21928	INC	2.2733	V1	30.247
RP	208.01	LAP	-1.84	LOP	312.95	VP	23.927	GAP	-11.23	AZP	91.34	TAL	357.44	TAP	231.42	RCA	147.27	APO	230.00	V2	26.341
RC	318.808	GL	24.61	GP	-5.58	ZAL	91.25	ZAP	37.38	ETS	171.71	ZAE	58.85	ETE	176.18	ZAC	80.13	ETC	257.01	CLP	37.02

PLANETOCENTRIC CONIC

C3	9.967	VHL	3.157	DLA	26.27	RAL	181.67	RAD	6567.4	VEL	11.461	PTH	1.99	VHP	4.776	DPA	.34	RAP	169.15	ECC	1.1640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 42 17	3073.49	-27.48	101.75	40.46	82.89	14 33 30	2473.5	-28.18	93.15
90.00	10 33 29	3693.24	-15.55	142.93	36.91	66.03	11 35 2	3093.2	-18.66	135.63
100.00	15 32 17	2718.85	-29.64	75.89	40.70	85.93	16 17 36	2118.9	-29.89	67.10
100.00	11 26 10	3523.11	-13.59	129.47	35.94	63.12	12 24 53	2923.1	-17.09	122.43
110.00	17 30 34	2348.75	-34.11	47.86	40.78	92.40	18 9 43	1748.8	-33.40	38.69
110.00	11 44 22	3465.98	-9.72	122.87	33.67	57.07	12 42 8	2866.0	-13.99	116.38

DIFFERENTIAL CORRECTIONS

TDE	2.1632	TRA	1.6937	TC-19.2024	BAU	2.5592	
RDE	.2711	RRA	.1998	RC3 -.3323	FAU	.16867	
FDE	.8286	FRA	2.1643	FC-14.6505	BSP	45999	
BDE	2.1801	BRA	1.7055	BC319.2053	FSP	2941	

MID-COURSE EXECUTION ACCURACY

SGT13197.4	SGR	670.5	SG3	893.8			
RRT	.6624	RRF	.6419	RTF	.9747		
SGB13214.4	R23	-.0064	R13	.9747			
SG113204.9	SG2	502.0	THA	1.93			

ORBIT DETERMINATION ACCURACY

ST	4074.5	SR	506.7	SS	832.0		
CRT	.9969	CRS	-.8819	CST	-.8954		
LSA	4173.2	MSA	364.9	SSA	37.3		
EL1	4105.7	EL2	39.3	ALF	7.07		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 799.348 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.150	GAL	-.61	AZL	87.76	HCA	235.23	SMA	188.76	ECC	.21992	INC	2.2431	V1	30.247
RP	207.86	LAP	-1.84	LOP	314.21	VP	23.956	GAP	-11.32	AZP	91.28	TAL	356.63	TAP	231.87	RCA	147.25	APO	230.28	V2	26.357
RC	319.685	GL	24.25	GP	-5.42	ZAL	92.79	ZAP	36.72	ETS	171.73	ZAE	57.89	ETE	176.17	ZAC	80.41	ETC	256.96	CLP	36.37

PLANETOCENTRIC CONIC

C3	9.983	VHL	3.160	DLA	25.27	RAL	183.02	RAD	6567.4	VEL	11.462	PTH	1.99	VHP	4.844	DPA	.24	RAP	169.77	ECC	1.1643		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 8 16	3004.05	-27.97	96.73	41.66	85.36	14 58 20	2404.1	-28.31	88.08
90.00	10 18 20	3763.30	-13.57	147.12	37.59	64.91	11 21 3	3163.3	-16.84	139.97
100.00	15 53 25	2665.01	-29.83	71.90	41.79	88.02	16 37 50	2065.0	-29.79	63.10
100.00	11 15 51	3577.58	-11.89	132.62	36.74	62.37	12 15 29	2977.6	-15.50	125.69
110.00	17 46 15	2312.03	-33.97	45.01	41.70	94.09	18 24 47	1712.0	-33.03	35.89
110.00	11 39 31	3503.32	-8.33	124.87	34.61	56.73	12 37 55	2903.3	-12.65	118.44

DIFFERENTIAL CORRECTIONS

TDE	2.0639	TRA	1.8574	TC-19.3779	BAU	2.5865	
RDE	.2680	RRA	.2013	RC3 -.2854	FAU	.16136	
FDE	.6999	FRA	2.1935	FC-13.9937	BSP	46459	
BDE	2.0812	BRA	1.8683	BC319.3800	FSP	2821	

MID-COURSE EXECUTION ACCURACY

SGT	13335.0	SGR	657.1	SG3	860.3		
RRT	.6312	RRF	.6094	RTF	.9746		
SGB	13351.2	R23	-.0086	R13	.9746		
SG1	13341.5	SG2	509.4	THA	1.78		

ORBIT DETERMINATION ACCURACY

ST	3923.2	SR	501.0	SS	774.2		
CRT	.9955	CRS	-.8397	CST	-.8711		
LSA	4012.3	MSA	376.4	SSA	37.8		
EL1	3954.7	EL2	47.0	ALF	7.25		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 803.709 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.158	GAL	-.76	AZL	87.79	HCA	236.49	SMA	188.90	ECC	.22060	INC	2.2138	V1	30.247		
RP	207.73	LAP	-1.85	LOP	315.46	VP	23.983	GAP	-11.41	AZP	91.22	TAL	355.81	TAP	232.30	RCA	147.23	APO	230.57	V2	26.373		
RC	320.558	GL	23.87	GP	-5.27	ZAL	94.36	ZAP	36.07	ETS	171.75	ZAE	56.95	ETE	176.16	ZAC	80.68	ETC	256.90	CLP	35.73		

PLANETOCENTRIC CONIC

C3	10.014	VHL	3.165	DLA	24.26	RAL	184.39	RAD	6567.4	VEL	11.463	PTH	1.99	VHP	4.912	DPA	.12	RAP	170.39	ECC	1.1648		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 31 22	2943.83	-28.22	92.34	42.82	87.55	15 20 26	2343.8	-28.26	83.67
90.00	10 6 9	3824.78	-11.77	150.73	38.40	64.06	11 9 53	3224.8	-15.16	143.70
100.00	16 13 11	2615.54	-29.89	68.23	42.86	89.96	16 56 47	2015.5	-29.58	59.44
100.00	11 7 0	3628.30	-10.28	135.52	37.63	61.78	12 7 29	3028.3	-13.97	128.68
110.00	18 1 32	2276.57	-33.76	42.26	42.63	95.70	18 39 29	1676.6	-32.60	33.21
110.00	11 35 9	3540.04	-6.95	126.82	35.62	56.45	12 34 9	2940.0	-11.32	120.45

DIFFERENTIAL CORRECTIONS

TDE	1.9608	TRA	2.0286	TC-19.5148	BAU	2.6129	
RDE	.2658	RRA	.2028	RC3 -.2401	FAU	.15419	
FDE	.5785	FRA	2.2218	FC-13.3298	BSP	46935	
BDE	1.9787	BRA	2.0387	BC319.5163	FSP	2715	

MID-COURSE EXECUTION ACCURACY

SGT	13467.7	SGR	645.6	SG3	827.6		
RRT	.5989	RRF	.5762	RTF	.9744		
SGB	13483.2	R23	-.0103	R13	.9744		
SG1	13473.3	SG2	516.8	THA	1.65		

ORBIT DETERMINATION ACCURACY

ST	3768.4	SR	496.2	SS	724.4		
CRT	.9927	CRS	-.7853	CST	-.8414		
LSA	3849.4	MSA	390.1	SSA	38.1		
EL1	3800.5	EL2	59.5	ALF	7.45		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 808.070 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.165	GAL	-.91	AZL	87.81	HCA	237.74	SMA	189.03	ECC	.22131	INC	2.1853	V1	30.247		
RP	207.60	LAP	-1.85	LOP	316.72	VP	24.010	GAP	-11.50	AZP	91.17	TAL	354.98	TAP	232.72	RCA	147.19	APO	230.86	V2	26.388		
RC	321.425	GL	23.49	GP	-5.12	ZAL	95.95	ZAP	35.44	ETS	171.76	ZAE	56.02	ETE	176.15	ZAC	80.96	ETC	256.85	CLP	35.11		

PLANETOCENTRIC CONIC

C3	10.062	VHL	3.172	DLA	23.23	RAL	185.77	RAD	6567.4	VEL	11.465	PTH	1.99	VHP	4.982	DPA	-.01	RAP	171.03	ECC	1.1656		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 38	2889.53	-28.31	88.37	43.95	89.53	15 40 48	2289.5	-28.08	79.71
90.00	9 55 53	3880.99	-10.07	153.99	39.33	63.40	11 0 34	3281.0	-13.57	147.06
100.00	16 31 57	2569.35	-29.85	64.79	43.93	91.76	17 14 46	1969.4	-29.28	56.03
100.00	10 59 15	3676.41	-8.72	138.24	38.61	61.29	12 0 32	3076.4	-12.48	131.47
110.00	18 16 31	2242.21	-33.50	39.61	43.60	97.25	18 53 53	1642.2	-32.13	30.64
110.00	11 31 11	3576.32	-5.58	128.74	36.69	56.22	12 30 47	2976.3	-9.98	122.41

DIFFERENTIAL CORRECTIONS

TDE	1.8538	TRA	2.2063	TC-19.6152	BAU	2.6389	
RDE	.2641	RRA	.2038	RC3 -.1967	FAU	.14719	
FDE	.4607	FRA	2.2434	FC-12.6634	BSP	47439	
BDE	1.8725	BRA	2.2157	BC319.6162	FSP	2612	

MID-COURSE EXECUTION ACCURACY

SGT	13597.1	SGR	635.3	SG3	795.1		
RRT	.5658	RRF	.5415	RTF	.9741		
SGB	13612.0	R23	-.0127	R13	.9741		
SG1	13601.9	SG2	523.6	THA	1.52		

ORBIT DETERMINATION ACCURACY

ST	3611.6	SR	492.0	SS	680.6		
CRT	.9878	CRS	-.7158	CST	-.8050		
LSA	3685.5	MSA	405.9	SSA	38.3		
EL1	3644.2	EL2	76.0	ALF	7.67		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 812.432 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.173	GAL	-1.07	AZL	87.84	HCA	239.00	SMA	189.16	ECC	.22207	INC	2.1575	V1	30.247		
RP	207.48	LAP	-1.85	LOP	317.98	VP	24.036	GAP	-11.58	AZP	91.11	TAL	354.13	TAP	233.13	RCA	147.16	APO	231.17	V2	26.402		
RC	322.286	GL	23.10	GP	-4.99	ZAL	97.58	ZAP	34.82	ETS	171.78	ZAE	55.11	ETE	176.14	ZAC	81.23	ETC	256.79	CLP	34.51		

PLANETOCENTRIC CONIC

C3	10.128	VHL	3.182	DLA	22.19	RAL	187.16	RAD	6567.4	VEL	11.468	PTH	1.99	VHP	5.052	DPA	-.15	RAP	171.68	ECC	1.1667		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 12 37	2839.46	-28.29	84.71	45.09	91.37	15 59 56	2239.5	-27.80	76.08
90.00	9 46 59	3933.67	-8.45	157.01	40.34	62.87	10 52 32	3333.7	-12.02	150.16
100.00	16 49 54	2525.74	-29.71	61.56	45.02	93.46	17 32 0	1925.7	-28.91	52.85
100.00	10 52 22	3722.62	-7.19	140.83	39.66	60.91	11 54 25	3122.6	-11.02	134.13
110.00	18 31 12	2208.84	-33.18	37.06	44.59	98.73	19 8 1	1608.8	-31.62	28.18
110.00	11 27 34	3612.29	-4.22	130.63	37.82	56.05	12 27 46	3012.3	-8.65	124.34

DIFFERENTIAL CORRECTIONS

TDE	1.7439	TRA	2.3901	TC-19.6830	BAU	2.6653	
RDE	.2634	RRA	.2045	RC3 -.1556	FAU	.14048	
FDE	.3540	FRA	2.2614	FC-12.0081	BSP	47898	
BDE	1.7637	BRA	2.3988	BC319.6836	FSP	2508	

MID-COURSE EXECUTION ACCURACY

SGT	13726.2	SGR	626.7	SG3	763.8		
RRT	.5321	RRF	.5067	RTF	.9740		
SGB	13740.5	R23	-.0146	R13	.9739		
SG1	13730.2	SG2	530.5	THA	1.39		

ORBIT DETERMINATION ACCURACY

ST	3455.8	SR	489.0	SS	647.3		
CRT	.9801	CRS	-.6347	CST	-.7662		
LSA	3524.3	MSA	422.8	SSA	38.4		
EL1	3488.9	EL2	96.1	ALF	7.90		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 816.795 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.180	GAL	-1.23	AZL	87.87	HCA	240.26	SMA	189.30	ECC	.22286	INC	2.1304	V1	30.247
RP	207.36	LAP	-1.85	LOP	319.24	VP	24.061	GAP	-11.67	AZP	91.06	TAL	353.27	TAP	233.53	RCA	147.11	APO	231.48	V2	26.416
RC	323.141	GL	22.70	GP	-4.86	ZAL	99.22	ZAP	34.22	ETS	171.79	ZAE	54.21	ETE	176.13	ZAC	81.49	ETC	256.74	CLP	33.92

PLANETOCENTRIC CONIC

C3	10.213	VHL	3.196	DLA	21.13	RAL	188.55	RAD	6567.4	VEL	11.472	PTH	1.99	VHP	5.124	DPA	-.30	RAP	172.34	ECC	1.1681

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 36	2792.63	-28.16	81.29	46.23	93.08	16 18 8	2192.6	-27.44	72.70
90.00	9 39 7	3983.83	-6.88	159.87	41.43	62.46	10 45 31	3383.8	-10.52	153.07
100.00	17 7 14	2484.27	-29.50	58.49	46.12	95.06	17 48 38	1884.3	-28.49	49.84
100.00	10 46 10	3767.42	-5.70	143.32	40.78	60.61	11 48 58	3167.4	-9.58	136.67
110.00	18 45 38	2176.41	-32.82	34.59	45.61	100.15	19 21 54	1576.4	-31.07	25.81
110.00	11 24 15	3648.05	-2.86	132.50	39.02	55.92	12 25 4	3048.0	-7.31	126.25

DIFFERENTIAL CORRECTIONS

TDE	1.6311	TRA	2.5815	TC	-19.7105	BAU	2.6912
RDE	.2633	RRA	.2050	RC3	-.1161	FAU	.13385
FDE	.2520	FRA	2.2761	FC	-11.3464	BSP	48401
BDE	1.6522	BRA	2.5896	BC	319.7109	FSP	2414

MID-COURSE EXECUTION ACCURACY

SGT	13852.0	SGR	619.4	SG3	732.8		
RRT	.4977	RRF	.4712	RTF	.9736		
SGB	13865.8	R23	-.0163	R13	.9736		
SG1	13855.4	SG2	537.1	THA	1.28		

ORBIT DETERMINATION ACCURACY

ST	3303.1	SR	486.7	SS	622.0
CRT	.9688	CRS	-.5395	CST	-.7234
LSA	3367.1	MSA	442.4	SSA	38.4
EL1	3336.6	EL2	119.4	ALF	8.13

LAUNCH DATE DEC 11 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 821.156 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.188	GAL	-1.39	AZL	87.90	HCA	241.52	SMA	189.43	ECC	.22369	INC	2.1040	V1	30.247
RP	207.26	LAP	-1.85	LOP	320.50	VP	24.085	GAP	-11.76	AZP	91.00	TAL	352.39	TAP	233.92	RCA	147.06	APO	231.81	V2	26.428
RC	323.990	GL	22.29	GP	-4.73	ZAL	100.89	ZAP	33.64	ETS	171.80	ZAE	53.33	ETE	176.13	ZAC	81.76	ETC	256.68	CLP	33.34

PLANETOCENTRIC CONIC

C3	10.316	VHL	3.212	DLA	20.06	RAL	189.95	RAD	6567.4	VEL	11.476	PTH	1.99	VHP	5.196	DPA	-.47	RAP	173.01	ECC	1.1698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 49 48	2748.40	-27.96	78.07	47.39	94.68	16 35 36	2148.4	-27.02	69.53
90.00	9 32 5	4032.12	-5.36	162.59	42.59	62.15	10 39 17	3432.1	-9.04	155.85
100.00	17 24 1	2444.60	-29.23	55.58	47.25	96.57	18 4 45	1844.6	-28.01	46.98
100.00	10 40 33	3811.14	-4.24	145.73	41.98	60.38	11 44 4	3211.1	-8.15	139.13
110.00	18 59 49	2144.85	-32.42	32.22	46.66	101.50	19 35 34	1544.8	-30.49	23.53
110.00	11 21 14	3683.67	-1.50	134.36	40.27	65.85	12 22 37	3083.7	-5.97	128.13

DIFFERENTIAL CORRECTIONS

TDE	1.5164	TRA	2.7812	TC	-19.6935	BAU	2.7161
RDE	.2640	RRA	.2052	RC3	-.0786	FAU	.12736
FDE	.1576	FRA	2.2877	FC	-10.6880	BSP	48869
BDE	1.5393	BRA	2.7887	BC	319.6937	FSP	2314

MID-COURSE EXECUTION ACCURACY

SGT	13973.3	SGR	613.4	SG3	702.4		
RRT	.4633	RRF	.4355	RTF	.9733		
SGB	13986.8	R23	-.0181	R13	.9733		
SG1	13976.2	SG2	543.5	THA	1.17		

ORBIT DETERMINATION ACCURACY

ST	3157.9	SR	485.3	SS	605.7
CRT	.9526	CRS	-.4354	CST	-.6816
LSA	3218.3	MSA	464.1	SSA	38.3
EL1	3191.6	EL2	146.0	ALF	8.35

LAUNCH DATE DEC 11 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 825.517 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.195	GAL	-1.55	AZL	87.92	HCA	242.79	SMA	189.57	ECC	.22457	INC	2.0782	V1	30.247
RP	207.16	LAP	-1.85	LOP	321.77	VP	24.108	GAP	-11.85	AZP	90.95	TAL	351.51	TAP	234.29	RCA	147.00	APO	232.14	V2	26.439
RC	324.833	GL	21.86	GP	-4.62	ZAL	102.57	ZAP	33.06	ETS	171.80	ZAE	52.46	ETE	176.12	ZAC	82.02	ETC	256.63	CLP	32.78

PLANETOCENTRIC CONIC

C3	10.440	VHL	3.231	DLA	18.98	RAL	191.36	RAD	6567.4	VEL	11.482	PTH	2.00	VHP	5.270	DPA	-.65	RAP	173.69	ECC	1.1718

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 7 22	2706.35	-27.69	75.02	48.57	96.19	16 52 28	2106.4	-26.54	66.54
90.00	9 25 42	4078.98	-3.86	165.22	43.82	61.93	10 33 41	3479.0	-7.59	158.52
100.00	17 40 20	2406.54	-28.90	52.80	48.40	98.00	18 20 27	1806.5	-27.49	44.28
100.00	10 35 25	3854.03	-2.79	148.10	43.23	60.23	11 39 39	3254.0	-6.73	141.53
110.00	19 13 48	2114.12	-31.98	29.93	47.75	102.78	19 49 2	1514.1	-29.89	21.34
110.00	11 18 27	3719.21	-.14	136.22	41.57	55.82	12 20 26	3119.2	-4.62	130.00

DIFFERENTIAL CORRECTIONS

TDE	1.3977	TRA	2.9859	TC	-19.6433	BAU	2.7418
RDE	.2655	RRA	.2051	RC3	-.0431	FAU	.12104
FDE	.0706	FRA	2.2958	FC	-10.0367	BSP	49334
BDE	1.4227	BRA	2.9930	BC	319.6433	FSP	2222

MID-COURSE EXECUTION ACCURACY

SGT	14093.7	SGR	608.5	SG3	672.7		
RRT	.4283	RRF	.4000	RTF	.9728		
SGB	14106.8	R23	-.0192	R13	.9728		
SG1	14096.1	SG2	549.8	THA	1.06		

ORBIT DETERMINATION ACCURACY

ST	3018.1	SR	484.7	SS	597.4
CRT	.9303	CRS	-.3272	CST	-.6449
LSA	3076.0	MSA	487.4	SSA	38.1
EL1	3051.7	EL2	175.9	ALF	8.53

LAUNCH DATE DEC 11 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 829.876 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.203	GAL	-1.72	AZL	87.95	HCA	244.05	SMA	189.71	ECC	.22549	INC	2.0529	V1	30.247
RP	207.08	LAP	-1.85	LOP	323.03	VP	24.129	GAP	-11.94	AZP	90.90	TAL	350.60	TAP	234.65	RCA	146.93	APO	232.49	V2	26.449
RC	325.671	GL	21.43	GP	-4.51	ZAL	104.27	ZAP	32.51	ETS	171.81	ZAE	51.60	ETE	176.11	ZAC	82.28	ETC	256.57	CLP	32.23

PLANETOCENTRIC CONIC

C3	10.586	VHL	3.254	DLA	17.89	RAL	192.76	RAD	6567.4	VEL	11.488	PTH	2.00	VHP	5.345	DPA	-.85	RAP	174.39	ECC	1.1742

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 22	2666.20	-27.36	72.13	49.77	97.60	17 8 48	2066.2	-26.02	63.72
90.00	9 19 54	4124.74	-2.39	167.78	45.11	61.78	10 28 38	3524.7	-6.15	161.12
100.00	17 56 15	2369.92	-28.52	50.14	49.58	99.35	18 35 45	1769.9	-26.93	41.70
100.00	10 30 42	3896.25	-1.36	150.42	44.54	60.14	11 35 38	3296.3	-5.33	143.87
110.00	19 27 34	2084.23	-31.50	27.73	48.87	104.01	20 2 18	1484.2	-29.26	19.24
110.00	11 15 53	3754.71	1.22	138.07	42.93	55.84	12 18 28	3154.7	-3.27	131.86

DIFFERENTIAL CORRECTIONS

TDE	1.2759	TRA	3.1988	TC	-19.5521	BAU	2.7671
RDE	.2676	RRA	.2047	RC3	-.0099	FAU	.11493
FDE	-.0118	FRA	2.2994	FC	3-9.3990	BSP	49805
BDE	1.3037	BRA	3.2053	BC	319.5521	FSP	2133

MID-COURSE EXECUTION ACCURACY

SGT	14211.2	SGR	604.6	SG3	643.7		
RRT	.3937	RRF	.3644	RTF	.9723		
SGB	14224.1	R23	-.0207	R13	.9723		
SG1	14213.2	SG2	555.7	THA	.96		

ORBIT DETERMINATION ACCURACY

ST	2889.2	SR	484.7	SS	595.6
CRT	.9002	CRS	-.2164	CST	-.6145
LSA	2944.9	MSA	512.9	SSA	37.7
EL1	2922.1	EL2	208.7	ALF	8.63

LAUNCH DATE DEC 11 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 834.234 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.211	GAL	-1.90	AZL	87.97	HCA	245.31	SMA	189.85	ECC	.22645	INC	2.0282	V1	30.247
RP	207.00	LAP	-1.84	LOP	324.30	VP	24.150	GAP	-12.04	AZP	90.85	TAL	349.69	TAP	235.00	RCA	146.86	APO	232.84	V2	26.459
RC	326.503	GL	20.99	GP	-4.40	ZAL	105.98	ZAP	31.96	ETS	171.81	ZAE	50.75	ETE	176.10	ZAC	82.54	ETC	256.52	CLP	31.69

PLANETOCENTRIC CONIC

C3	10.754	VHL	3.279	DLA	16.79	RAL	194.16	RAD	6567.4	VEL	11.495	PTH	2.00	VHP	5.420	DPA	-1.05	RAP	175.10	ECC	1.1770		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 54	2627.73	-26.98	69.38	51.01	98.93	17 24 42	2027.7	-25.47	61.03
90.00	9 14 33	4169.61	-.94	170.29	46.47	61.70	10 24 3	3569.6	-4.72	163.64
100.00	18 11 47	2334.63	-28.10	47.60	50.79	100.63	18 50 42	1734.6	-26.35	39.23
100.00	10 26 21	3937.95	.05	152.70	45.91	60.11	11 31 59	3338.0	-3.93	146.17
110.00	19 41 7	2055.15	-31.01	25.61	50.02	105.17	20 15 22	1455.1	-28.61	17.23
110.00	11 13 31	3790.19	2.58	139.92	44.34	55.90	12 16 41	3190.2	-1.92	133.72

DIFFERENTIAL CORRECTIONS

TDE	1.1526	TRA	3.4189	TC-19.4188	BAU	2.7918	
RDE	.2704	RRA	.2039	RC3 .0214	FAU	.10889	
FDE	-.0878	FRA	2.2975	FC3-8.7659	BSP	50278	
BDE	1.1839	BRA	3.4250	BC319.4189	FSP	2043	

MID-COURSE EXECUTION ACCURACY

SGT14324.6	SGR	601.6	SG3	614.9			
RRT	.3591	RRF	.3287	RTF	.9718		
SGB14337.2	R23	-.0223	R13	.9718			
SG114326.2	SG2	561.4	THA	.87			

ORBIT DETERMINATION ACCURACY

ST	2775.8	SR	485.5	SS	598.9		
CRT	.8610	CRS	-.1094	CST	-.5948		
LSA	2829.7	MSA	539.1	SSA	37.2		
EL1	2807.4	EL2	244.1	ALF	8.63		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 838.589 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.219	GAL	-2.08	AZL	88.00	HCA	246.58	SMA	189.99	ECC	.22747	INC	2.0039	V1	30.247		
RP	206.93	LAP	-1.84	LOP	325.56	VP	24.170	GAP	-12.13	AZP	90.80	TAL	348.76	TAP	235.34	RCA	146.77	APO	233.21	V2	26.467		
RC	327.330	GL	20.54	GP	-4.30	ZAL	107.70	ZAP	31.43	ETS	171.81	ZAE	49.92	ETE	176.10	ZAC	82.80	ETC	256.47	CLP	31.17		

PLANETOCENTRIC CONIC

C3	10.946	VHL	3.308	DLA	15.69	RAL	195.56	RAD	6567.4	VEL	11.504	PTH	2.00	VHP	5.497	DPA	-1.27	RAP	175.81	ECC	1.1801		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 0	2590.80	-26.57	66.75	52.27	100.18	17 40 11	1990.8	-24.89	58.49
90.00	9 9 38	4213.77	.48	172.75	47.88	61.69	10 19 52	3613.8	-3.51	166.12
100.00	18 27 0	2300.58	-27.65	45.17	52.03	101.83	19 5 20	1700.6	-25.74	36.89
100.00	10 22 19	3979.22	1.45	154.97	47.34	60.14	11 28 39	3379.2	-2.53	148.45
110.00	19 54 28	2026.89	-30.48	23.57	51.22	106.27	20 28 15	1426.9	-27.95	15.29
110.00	11 11 20	3825.68	3.93	141.78	45.80	56.02	12 15 6	3225.7	-.56	135.57

DIFFERENTIAL CORRECTIONS

TDE	1.0267	TRA	3.6459	TC-19.2545	BAU	2.8176	
RDE	.2739	RRA	.2029	RC3 .0502	FAU	.10309	
FDE	-.1574	FRA	2.2932	FC3-8.1541	BSP	50733	
BDE	1.0626	BRA	3.6516	BC319.2546	FSP	1958	

MID-COURSE EXECUTION ACCURACY

SGT14439.2	SGR	599.5	SG3	587.3			
RRT	.3251	RRF	.2937	RTF	.9711		
SGB14451.7	R23	-.0237	R13	.9711			
SG114440.5	SG2	566.8	THA	.77			

ORBIT DETERMINATION ACCURACY

ST	2679.3	SR	486.9	SS	606.7		
CRT	.8114	CRS	-.0096	CST	-.5878		
LSA	2731.8	MSA	565.6	SSA	36.6		
EL1	2708.6	EL2	281.5	ALF	8.48		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 842.942 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.226	GAL	-2.26	AZL	88.02	HCA	247.85	SMA	190.13	ECC	.22853	INC	1.9801	V1	30.247		
RP	206.86	LAP	-1.83	LOP	326.83	VP	24.189	GAP	-12.22	AZP	90.75	TAL	347.82	TAP	235.67	RCA	146.68	APO	233.58	V2	26.474		
RC	328.152	GL	20.08	GP	-4.20	ZAL	109.43	ZAP	30.92	ETS	171.81	ZAE	49.10	ETE	176.09	ZAC	83.06	ETC	256.41	CLP	30.66		

PLANETOCENTRIC CONIC

C3	11.162	VHL	3.341	DLA	14.59	RAL	196.96	RAD	6567.4	VEL	11.513	PTH	2.01	VHP	5.575	DPA	-1.49	RAP	176.54	ECC	1.1837		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 43	2555.30	-26.11	64.25	53.56	101.36	17 55 18	1955.3	-24.28	56.06
90.00	9 5 4	4257.33	1.89	175.18	49.34	61.74	10 16 1	3657.3	-1.90	168.55
100.00	18 41 53	2267.74	-27.17	42.84	53.30	102.96	19 19 41	1667.7	-25.12	34.65
100.00	10 18 35	4020.12	2.84	157.21	48.82	60.23	11 25 35	3420.1	-1.15	150.69
110.00	20 7 38	1999.45	-29.94	21.62	52.45	107.31	20 40 57	1399.5	-27.28	13.44
110.00	11 9 19	3861.17	5.28	143.64	47.30	56.18	12 13 41	3261.2	.80	137.42

DIFFERENTIAL CORRECTIONS

TDE	.8990	TRA	3.8809	TC-19.0470	BAU	2.8424	
RDE	.2782	RRA	.2015	RC3 .0771	FAU	.09734	
FDE	-.2208	FRA	2.2851	FC3-7.5496	BSP	51187	
BDE	.9410	BRA	3.8861	BC319.0472	FSP	1874	

MID-COURSE EXECUTION ACCURACY

SGT14548.3	SGR	598.1	SG3	559.9			
RRT	.2913	RRF	.2593	RTF	.9703		
SGB14560.5	R23	-.0248	R13	.9703			
SG114549.3	SG2	572.1	THA	.69			

ORBIT DETERMINATION ACCURACY

ST	2603.6	SR	489.0	SS	617.2		
CRT	.7508	CRS	.0810	CST	-.5936		
LSA	2654.9	MSA	590.8	SSA	35.9		
EL1	2629.8	EL2	319.7	ALF	8.15		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 847.291 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.234	GAL	-2.44	AZL	88.04	HCA	249.11	SMA	190.27	ECC	.22965	INC	1.9566	V1	30.247		
RP	206.81	LAP	-1.83	LOP	328.10	VP	24.206	GAP	-12.32	AZP	90.70	TAL	346.87	TAP	235.98	RCA	146.58	APO	233.97	V2	26.480		
RC	328.970	GL	19.61	GP	-4.11	ZAL	111.15	ZAP	30.41	ETS	171.81	ZAE	48.29	ETE	176.08	ZAC	83.32	ETC	256.36	CLP	30.16		

PLANETOCENTRIC CONIC

C3	11.405	VHL	3.377	DLA	13.48	RAL	198.35	RAD	6567.4	VEL	11.524	PTH	2.01	VHP	5.654	DPA	-1.72	RAP	177.27	ECC	1.1877		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 5	2521.15	-25.63	61.87	54.88	102.46	18 10 6	1921.2	-23.66	53.75
90.00	9 0 48	4300.38	3.27	177.58	50.86	61.86	10 12 29	3700.4	-.51	170.95
100.00	18 56 29	2236.05	-26.67	40.62	54.61	104.03	19 33 45	1636.0	-24.48	32.51
100.00	10 15 5	4060.72	4.21	159.45	50.35	60.38	11 22 46	3460.7	.23	152.92
110.00	20 20 36	1972.86	-29.39	19.75	53.71	108.30	20 53 28	1372.9	-26.61	11.66
110.00	11 7 28	3896.68	6.62	145.51	48.86	56.39	12 12 24	3296.7	2.15	139.27

DIFFERENTIAL CORRECTIONS

TDE	.7692	TRA	4.1236	TC-18.8061	BAU	2.8675	
RDE	.2831	RRA	.1990	RC3 .1017	FAU	.09180	
FDE	-.2795	FRA	2.2732	FC3-6.9683	BSP	51653	
BDE	.8196	BRA	4.1285	BC318.8064	FSP	1794	

MID-COURSE EXECUTION ACCURACY

SGT14656.2	SGR	597.4	SG3	533.3			
RRT	.2583	RRF	.2254	RTF	.9693		
SGB14668.4	R23	-.0263	R13	.9693			
SG114657.1	SG2	577.1	THA	.60			

ORBIT DETERMINATION ACCURACY

ST	2550.8	SR	491.6	SS	629.5		
CRT	.6792	CRS	.1637	CST	-.6094		
LSA	2601.1	MSA	614.1	SSA	35.1		
EL1	2573.0	EL2	357.7	ALF	7.61		

LAUNCH DATE DEC 11 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 851.637 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.242 GAL -2.63 AZL 88.07 HCA 250.58 SMA 190.42 ECC .23082 INC 1.9336 V1 30.247
RP 206.77 LAP -1.82 LOP 329.37 VP 24.223 GAP -12.42 AZP 90.65 TAL 345.90 TAP 236.28 RCA 146.46 APO 234.37 V2 26.486
RC 329.784 GL 19.14 GP -4.02 ZAL 112.88 ZAP 29.92 ETS 171.81 ZAE 47.50 ETE 176.07 ZAC 83.57 ETC 256.31 CLP 29.67

PLANETOCENTRIC CONIC

C3 11.676 VHL 3.417 DLA 12.38 RAL 199.74 RAD 6567.4 VEL 11.535 PTH 2.01 VHP 5.734 DPA -1.97 RAP 178.02 ECC 1.1922

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 43 6	2488.30	-25.13	59.59	56.23	103.50	18 24 34	1888.3	-23.03	51.55
90.00	8 56 50	4343.00	4.64	179.97	52.43	62.03	10 9 13	3743.0	.86	173.33
100.00	19 10 47	2205.48	-26.15	38.50	55.94	105.03	19 47 33	1605.5	-23.83	30.47
100.00	10 11 49	4101.05	5.56	161.68	51.93	60.58	11 20 10	3501.0	1.60	155.13
110.00	20 33 22	1947.11	-28.83	17.95	55.01	109.22	21 5 49	1347.1	-25.93	9.97
110.00	11 5 45	3932.18	7.95	147.40	50.46	56.64	12 11 17	3332.2	3.51	141.13

DIFFERENTIAL CORRECTIONS
TDE .6374 TRA 4.3729 TC-18.5332 BAU 2.8929
RDE .2887 RRA .1977 RC3 .1239 FAU .08642
FDE -.3324 FRA 2.2562 FC3-6.4077 BSP 52099
BDE .6997 BRA 4.3774 BC318.5337 FSP 1713

MID-COURSE EXECUTION ACCURACY
SGT14761.8 SGR 597.2 SG3 507.4
RRT .2259 RRF .1921 RTF .9683
SGB14773.9 R23 -.0278 R13 .9683
SG114762.4 SG2 581.8 THA .52

ORBIT DETERMINATION ACCURACY
ST 2521.6 SR 494.7 SS 641.8
CRT .5978 CRS .2370 CST -.6341
LSA 2571.5 MSA 633.4 SSA 34.3
EL1 2539.3 EL2 393.8 ALF 6.85

LAUNCH DATE DEC 11 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 855.978 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.250 GAL -2.82 AZL 88.09 HCA 251.65 SMA 190.56 ECC .23205 INC 1.9109 V1 30.247
RP 206.73 LAP -1.81 LOP 330.64 VP 24.238 GAP -12.52 AZP 90.60 TAL 344.92 TAP 236.57 RCA 146.34 APO 234.78 V2 26.490
RC 330.595 GL 18.66 GP -3.93 ZAL 114.61 ZAP 29.44 ETS 171.80 ZAE 46.71 ETE 176.06 ZAC 83.83 ETC 256.27 CLP 29.20

PLANETOCENTRIC CONIC

C3 11.975 VHL 3.461 DLA 11.28 RAL 201.11 RAD 6567.5 VEL 11.548 PTH 2.02 VHP 5.815 DPA -2.22 RAP 178.78 ECC 1.1971

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 48	2456.70	-24.61	57.42	57.62	104.46	18 38 45	1856.7	-22.38	49.46
90.00	8 53 6	4385.23	5.98	182.35	54.05	62.27	10 6 12	3785.2	2.22	175.69
100.00	19 24 49	2176.04	-25.61	36.48	57.31	105.96	20 1 5	1576.0	-23.18	28.53
100.00	10 8 46	4141.13	6.89	163.90	53.56	60.84	11 17 47	3541.1	2.95	157.33
110.00	20 45 56	1922.24	-28.26	16.24	56.35	110.09	21 17 58	1322.2	-25.26	8.35
110.00	11 4 9	3967.69	9.28	149.29	52.11	56.95	12 10 17	3367.7	4.86	142.99

DIFFERENTIAL CORRECTIONS
TDE .5048 TRA 4.6305 TC-18.2297 BAU 2.9186
RDE .2950 RRA .1952 RC3 .1442 FAU .08114
FDE -.3800 FRA 2.2364 FC3-5.8658 BSP 52536
BDE .5847 BRA 4.6346 BC318.2303 FSP 1635

MID-COURSE EXECUTION ACCURACY
SGT14866.1 SGR 597.6 SG3 482.1
RRT .1943 RRF .1596 RTF .9670
SGB14878.1 R23 -.0291 R13 .9670
SG114866.5 SG2 586.2 THA .45

ORBIT DETERMINATION ACCURACY
ST 2518.4 SR 498.4 SS 653.9
CRT .5092 CRS .3017 CST -.6641
LSA 2568.5 MSA 648.1 SSA 33.4
EL1 2531.5 EL2 426.7 ALF 5.92

LAUNCH DATE DEC 11 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 860.313 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.258 GAL -3.02 AZL 88.11 HCA 252.92 SMA 190.71 ECC .23334 INC 1.8885 V1 30.247
RP 206.70 LAP -1.81 LOP 331.90 VP 24.253 GAP -12.62 AZP 90.55 TAL 343.92 TAP 236.84 RCA 146.21 APO 235.20 V2 26.493
RC 331.403 GL 18.18 GP -3.85 ZAL 116.32 ZAP 28.97 ETS 171.80 ZAE 45.94 ETE 176.05 ZAC 84.08 ETC 256.22 CLP 28.74

PLANETOCENTRIC CONIC

C3 12.305 VHL 3.508 DLA 10.19 RAL 202.48 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 5.898 DPA -2.48 RAP 179.54 ECC 1.2025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 12	2426.32	-24.08	55.36	59.03	105.37	18 52 39	1826.3	-21.74	47.47
90.00	8 49 37	4427.12	7.30	184.72	55.72	62.57	10 3 24	3827.1	3.57	178.03
100.00	19 38 36	2147.69	-25.07	34.55	58.72	106.84	20 14 23	1547.7	-22.52	26.68
100.00	10 5 54	4180.98	8.21	166.13	55.23	61.16	11 15 35	3581.0	4.30	159.53
110.00	20 58 18	1898.26	-27.69	14.61	57.72	110.90	21 29 56	1298.3	-24.59	6.81
110.00	11 2 41	4003.17	10.59	151.21	53.80	57.31	12 9 24	3403.2	6.20	144.86

DIFFERENTIAL CORRECTIONS
TDE .3704 TRA 4.8957 TC-17.8989 BAU 2.9447
RDE .3020 RRA .1924 RC3 .1622 FAU .07602
FDE -.4227 FRA 2.2119 FC3-5.3481 BSP 52959
BDE .4779 BRA 4.8995 BC317.8996 FSP 1559

MID-COURSE EXECUTION ACCURACY
SGT14968.8 SGR 598.5 SG3 457.4
RRT .1635 RRF .1278 RTF .9656
SGB14980.7 R23 -.0307 R13 .9656
SG114969.1 SG2 590.4 THA .38

ORBIT DETERMINATION ACCURACY
ST 2539.4 SR 502.4 SS 664.8
CRT .4159 CRS .3591 CST -.6969
LSA 2590.3 MSA 657.7 SSA 32.5
EL1 2548.3 EL2 455.3 ALF 4.86

LAUNCH DATE DEC 11 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 864.644 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.266 GAL -3.22 AZL 88.13 HCA 254.19 SMA 190.85 ECC .23468 INC 1.8664 V1 30.247
RP 206.68 LAP -1.80 LOP 333.17 VP 24.266 GAP -12.73 AZP 90.51 TAL 342.92 TAP 237.11 RCA 146.06 APO 235.64 V2 26.495
RC 332.208 GL 17.69 GP -3.77 ZAL 118.03 ZAP 28.51 ETS 171.79 ZAE 45.17 ETE 176.04 ZAC 84.34 ETC 256.18 CLP 28.28

PLANETOCENTRIC CONIC

C3 12.668 VHL 3.559 DLA 9.10 RAL 203.84 RAD 6567.5 VEL 11.578 PTH 2.02 VHP 5.982 DPA -2.75 RAP 180.32 ECC 1.2085

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 19	2397.14	-23.54	53.39	60.48	106.21	19 6 16	1797.1	-21.09	45.57
90.00	8 46 19	4468.67	8.60	187.08	57.44	62.92	10 0 48	3868.7	4.90	180.36
100.00	19 52 6	2120.44	-24.52	32.71	60.15	107.66	20 27 27	1520.4	-21.87	24.91
100.00	10 3 13	4220.60	9.50	168.36	56.95	61.53	11 13 34	3620.6	5.63	161.72
110.00	21 10 29	1875.18	-27.12	13.06	59.12	111.66	21 41 44	1275.2	-23.93	5.34
110.00	11 1 20	4038.62	11.88	153.13	55.53	57.71	12 8 39	3438.6	7.54	146.74

DIFFERENTIAL CORRECTIONS
TDE .2353 TRA 5.1688 TC-17.5398 BAU 2.9707
RDE .3096 RRA .1893 RC3 .1780 FAU .07104
FDE -.4601 FRA 2.1833 FC3-4.8550 BSP 53378
BDE .3888 BRA 5.1722 BC317.5407 FSP 1483

MID-COURSE EXECUTION ACCURACY
SGT15067.9 SGR 599.7 SG3 433.4
RRT .1335 RRF .0968 RTF .9640
SGB15079.9 R23 -.0324 R13 .9640
SG115068.2 SG2 594.3 THA .30

ORBIT DETERMINATION ACCURACY
ST 2583.5 SR 506.9 SS 673.8
CRT .3217 CRS .4096 CST -.7297
LSA 2635.6 MSA 662.0 SSA 31.6
EL1 2588.9 EL2 479.0 ALF 3.74

LAUNCH DATE DEC 11 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 868.968 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.274 GAL -3.43 AZL 88.16 HCA 255.46 SMA 191.00 ECC .23610 INC 1.8446 V1 30.247
RP 206.67 LAP -1.79 LOP 334.44 VP 24.279 GAP -12.83 AZP 90.46 TAL 341.90 TAP 237.36 RCA 145.90 APO 236.09 V2 26.497
RC 333.009 GL 17.21 GP -3.70 ZAL 119.73 ZAP 28.07 ETS 171.78 ZAE 44.42 ETE 176.02 ZAC 84.59 ETC 256.13 CLP 27.84

PLANETOCENTRIC CONIC

C3 13.065 VHL 3.614 DLA 8.03 RAL 205.18 RAD 6567.5 VEL 11.595 PTH 2.03 VHP 6.067 DPA -3.03 RAP 181.10 ECC 1.2150

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 9	2369.14	-22.99	51.52	61.96	107.00	19 19 38	1769.1	-20.45	43.77
90.00	8 43 13	4509.91	9.87	189.45	59.20	63.32	9 58 23	3909.9	6.21	182.68
100.00	20 5 22	2094.28	-23.97	30.96	61.62	108.42	20 40 16	1494.3	-21.23	23.24
100.00	10 0 41	4260.01	10.77	170.60	58.72	61.95	11 11 41	3660.0	6.94	163.91
110.00	21 22 27	1853.03	-26.55	11.58	60.56	112.37	21 53 20	1253.0	-23.28	3.95
110.00	11 0 5	4074.03	13.16	155.08	57.31	58.16	12 7 59	3474.0	8.86	148.62

DIFFERENTIAL CORRECTIONS

TDE .0990 TRA 5.4501 TC-17.1593 BAU 2.9972
RDE .3178 RRA .1857 RC3 .1919 FAU .06619
FDE -.4934 FRA 2.1513 FC3-4.3862 BSP 53789
BDE .3329 BRA 5.4533 BC317.1603 FSP 1410

MID-COURSE EXECUTION ACCURACY

SGT15166.4 SGR 601.2 SG3 410.1
RRT .1044 RRF .0666 RTF .9621
SGB15178.3 R23 -.0342 R13 .9621
SG115166.5 SG2 598.0 THA .24

ORBIT DETERMINATION ACCURACY

ST 2648.5 SR 511.7 SS 681.1
CRT .2295 CRS .4547 CST -.7605
LSA 2702.0 MSA 662.1 SSA 30.7
EL1 2651.1 EL2 497.5 ALF 2.63

LAUNCH DATE DEC 11 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 873.284 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.282 GAL -3.64 AZL 88.18 HCA 256.73 SMA 191.15 ECC .23757 INC 1.8231 V1 30.247
RP 206.67 LAP -1.77 LOP 335.71 VP 24.290 GAP -12.94 AZP 90.42 TAL 340.87 TAP 237.59 RCA 145.73 APO 236.56 V2 26.497
RC 333.807 GL 16.72 GP -3.62 ZAL 121.41 ZAP 27.63 ETS 171.77 ZAE 43.68 ETE 176.01 ZAC 84.84 ETC 256.09 CLP 27.41

PLANETOCENTRIC CONIC

C3 13.497 VHL 3.674 DLA 6.97 RAL 206.51 RAD 6567.5 VEL 11.614 PTH 2.03 VHP 6.153 DPA -3.31 RAP 181.89 ECC 1.2221

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 42	2342.32	-22.45	49.74	63.47	107.73	19 32 44	1742.3	-19.82	42.06
90.00	8 40 18	4550.86	11.11	191.82	61.00	63.79	9 56 9	3950.9	7.50	185.00
100.00	20 18 22	2069.22	-23.42	29.30	63.12	109.13	20 52 51	1469.2	-20.59	21.65
100.00	9 58 18	4299.19	12.02	172.84	60.53	62.42	11 9 58	3699.2	8.23	166.10
110.00	21 34 14	1831.81	-25.99	10.19	62.02	113.02	22 4 46	1231.8	-22.65	2.63
110.00	10 58 56	4109.36	14.42	157.04	59.14	58.67	12 7 25	3509.4	10.17	150.52

DIFFERENTIAL CORRECTIONS

TDE -.0373 TRA 5.7392 TC-16.7579 BAU 3.0241
RDE .3267 RRA .1818 RC3 .2039 FAU .06144
FDE -.5222 FRA 2.1144 FC3-3.9411 BSP 54204
BDE .3289 BRA 5.7421 BC316.7591 FSP 1338

MID-COURSE EXECUTION ACCURACY

SGT15262.0 SGR 603.1 SG3 387.2
RRT .0762 RRF .0370 RTF .9600
SGB15273.9 R23 -.0364 R13 .9600
SG115262.0 SG2 601.3 THA .17

ORBIT DETERMINATION ACCURACY

ST 2730.9 SR 516.7 SS 685.8
CRT .1421 CRS .4951 CST -.7879
LSA 2785.7 MSA 658.9 SSA 29.8
EL1 2731.9 EL2 511.3 ALF 1.60

LAUNCH DATE DEC 11 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 877.594 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.290 GAL -3.85 AZL 88.20 HCA 257.99 SMA 191.29 ECC .23912 INC 1.8018 V1 30.247
RP 206.68 LAP -1.76 LOP 336.98 VP 24.300 GAP -13.06 AZP 90.37 TAL 339.82 TAP 237.82 RCA 145.55 APO 237.03 V2 26.496
RC 334.601 GL 16.23 GP -3.55 ZAL 123.08 ZAP 27.21 ETS 171.76 ZAE 42.95 ETE 175.99 ZAC 85.09 ETC 256.06 CLP 26.99

PLANETOCENTRIC CONIC

C3 13.967 VHL 3.737 DLA 5.92 RAL 207.83 RAD 6567.5 VEL 11.634 PTH 2.04 VHP 6.241 DPA -3.61 RAP 182.69 ECC 1.2299

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 59	2316.66	-21.91	48.05	65.00	108.40	19 45 36	1716.7	-19.19	40.43
90.00	8 37 32	4591.50	12.32	194.19	62.85	64.30	9 54 3	3991.5	8.76	187.31
100.00	20 31 8	2045.24	-22.87	27.73	64.64	109.79	21 5 13	1445.2	-19.97	20.14
100.00	9 56 4	4338.15	13.24	175.09	62.38	62.95	11 8 22	3738.2	9.50	168.29
110.00	21 45 48	1811.55	-25.45	8.86	63.52	113.63	22 16 0	1211.5	-22.03	1.38
110.00	10 57 53	4144.61	15.66	159.02	61.00	59.22	12 6 57	3544.6	11.46	152.43

DIFFERENTIAL CORRECTIONS

TDE -.1751 TRA 6.0349 TC-16.3444 BAU 3.0523
RDE .3363 RRA .1774 RC3 .2140 FAU .05684
FDE -.5466 FRA 2.0734 FC3-3.5233 BSP 54562
BDE .3791 BRA 6.0375 BC316.3458 FSP 1267

MID-COURSE EXECUTION ACCURACY

SGT15357.2 SGR 605.1 SG3 365.0
RRT .0486 RRF .0082 RTF .9575
SGB15369.1 R23 -.0385 R13 .9575
SG115357.2 SG2 604.4 THA .11

ORBIT DETERMINATION ACCURACY

ST 2827.2 SR 522.0 SS 688.0
CRT .0602 CRS .5311 CST -.8121
LSA 2883.0 MSA 653.0 SSA 28.9
EL1 2827.4 EL2 521.1 ALF .66

LAUNCH DATE DEC 11 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 881.894 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.298 GAL -4.07 AZL 88.22 HCA 259.26 SMA 191.44 ECC .24073 INC 1.7806 V1 30.247
RP 206.69 LAP -1.75 LOP 338.25 VP 24.309 GAP -13.17 AZP 90.33 TAL 338.77 TAP 238.03 RCA 145.36 APO 237.53 V2 26.494
RC 335.390 GL 15.74 GP -3.49 ZAL 124.73 ZAP 26.79 ETS 171.75 ZAE 42.22 ETE 175.97 ZAC 85.35 ETC 256.02 CLP 26.58

PLANETOCENTRIC CONIC

C3 14.477 VHL 3.805 DLA 4.89 RAL 209.14 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 6.331 DPA -3.90 RAP 183.50 ECC 1.2383

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 1	2292.14	-21.37	46.45	66.57	109.03	19 58 13	1692.1	-18.58	38.89
90.00	8 34 54	4631.85	13.50	196.56	64.74	64.87	9 52 6	4031.9	10.00	189.63
100.00	20 43 39	2022.35	-22.34	26.24	66.20	110.40	21 17 22	1422.3	-19.36	18.71
100.00	9 53 57	4376.88	14.42	177.36	64.28	63.53	11 6 54	3776.9	10.75	170.49
110.00	21 57 11	1792.24	-24.91	7.62	65.04	114.20	22 27 3	1192.2	-21.43	.20
110.00	10 56 55	4179.75	16.87	161.02	62.90	59.82	12 6 34	3579.7	12.74	154.35

DIFFERENTIAL CORRECTIONS

TDE -.3125 TRA 6.3404 TC-15.9126 BAU 3.0802
RDE .3464 RRA .1727 RC3 .2223 FAU .05235
FDE -.5668 FRA 2.0286 FC3-3.1304 BSP 54940
BDE .4666 BRA 6.3428 BC315.9142 FSP 1197

MID-COURSE EXECUTION ACCURACY

SGT15449.3 SGR 607.4 SG3 343.5
RRT .0221 RRF -.0199 RTF .9546
SGB15461.2 R23 -.0410 R13 .9546
SG115449.3 SG2 607.2 THA .05

ORBIT DETERMINATION ACCURACY

ST 2935.6 SR 527.5 SS 687.4
CRT -.0144 CRS .5635 CST -.8326
LSA 2991.8 MSA 645.5 SSA 28.1
EL1 2935.6 EL2 527.5 ALF 179.85

LAUNCH DATE DEC 11 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 886.186 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.306 GAL -4.30 AZL 88.24 HCA 260.53 SMA 191.59 ECC .24242 INC 1.7597 V1 30.247
RP 206.72 LAP -1.74 LOP 339.52 VP 24.317 GAP -13.29 AZP 90.29 TAL 337.70 TAP 238.23 RCA 145.15 APO 238.04 V2 26.491
RC 336.176 GL 15.25 GP -3.43 ZAL 126.36 ZAP 26.39 ETS 171.73 ZAE 41.51 ETE 175.96 ZAC 85.60 ETC 255.99 CLP 26.18

PLANETOCENTRIC CONIC

C3 15.030 VHL 3.877 DLA 3.88 RAL 210.42 RAD 6567.6 VEL 11.680 PTH 2.05 VHP 6.421 DPA -4.21 RAP 184.31 ECC 1.2474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 47	2268.77	-20.85	44.94	68.16	109.61	20 10 35	1668.8	-17.98	37.44
90.00	8 32 25	4671.91	14.64	198.95	66.66	65.49	9 50 17	4071.9	11.22	191.95
100.00	20 55 56	2000.54	-21.81	24.83	67.78	110.96	21 29 17	1400.5	-18.77	17.36
100.00	9 51 57	4415.37	15.58	179.63	66.21	64.16	11 5 32	3815.4	11.98	172.69
110.00	22 8 21	1773.91	-24.40	6.44	66.59	114.72	22 37 55	1173.9	-20.86	359.09
110.00	10 56 2	4214.76	18.06	163.04	64.85	60.47	12 6 16	3614.8	13.99	156.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4497 TRA 6.6545 TC-15.4706 BAU 3.1089 SGT15540.2 SGR 609.8 SG3 322.5 ST 3052.3 SR 533.2 SS 683.9
RDE .3572 RRA .1676 RC3 .2291 FAU .04795 RRT -.0036 RRF -.0468 RTF .9512 CRT -.0815 CRS .5922 CST -.8499
FDE -.5825 FRA 1.9802 FC3-2.7619 BSP 55311 SGB15552.2 R23 .0434 R13 -.9512 LSA 3108.4 MSA 637.0 SSA 27.2
BDE .5743 BRA 6.6567 BC315.4723 FSP 1129 SG115540.2 SG2 609.8 THA 179.99 EL1 3052.6 EL2 531.3 ALF 179.16

LAUNCH DATE DEC 11 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 890.468 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.315 GAL -4.53 AZL 88.26 HCA 261.80 SMA 191.74 ECC .24418 INC 1.7389 V1 30.247
RP 206.75 LAP -1.72 LOP 340.79 VP 24.324 GAP -13.42 AZP 90.25 TAL 336.62 TAP 238.42 RCA 144.92 APO 238.56 V2 26.488
RC 336.957 GL 14.77 GP -3.36 ZAL 127.96 ZAP 26.00 ETS 171.72 ZAE 40.81 ETE 175.94 ZAC 85.85 ETC 255.96 CLP 25.79

PLANETOCENTRIC CONIC

C3 15.626 VHL 3.953 DLA 2.88 RAL 211.70 RAD 6567.6 VEL 11.705 PTH 2.06 VHP 6.513 DPA -4.52 RAP 185.14 ECC 1.2572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 18	2246.52	-20.33	43.51	69.78	110.15	20 22 44	1646.5	-17.40	36.06
90.00	8 30 4	4711.67	15.75	201.34	68.63	66.16	9 48 35	4111.7	12.40	194.27
100.00	21 7 59	1979.81	-21.30	23.51	69.38	111.48	21 40 59	1379.8	-18.20	16.09
100.00	9 50 4	4453.61	16.70	181.92	68.18	64.84	11 4 17	3853.6	13.17	174.90
110.00	22 19 19	1756.55	-23.90	5.34	68.17	115.20	22 48 35	1156.6	-20.30	358.04
110.00	10 55 13	4249.63	19.22	165.09	66.83	61.17	12 6 3	3649.6	15.22	158.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.5894 TRA 6.9756 TC-15.0238 BAU 3.1390 SGT15630.0 SGR 612.3 SG3 302.1 ST 3174.9 SR 538.9 SS 678.2
RDE .3686 RRA .1621 RC3 .2342 FAU .04368 RRT -.0287 RRF -.0736 RTF .9473 CRT -.1426 CRS .6194 CST -.8641
FDE -.5955 FRA 1.9272 FC3-2.4201 BSP 55625 SGB15642.0 R23 .0464 R13 -.9473 LSA 3230.3 MSA 628.1 SSA 26.5
BDE .6951 BRA 6.9774 BC315.0256 FSP 1062 SG115630.0 SG2 612.1 THA 179.94 EL1 3175.9 EL2 533.2 ALF 178.57

LAUNCH DATE DEC 11 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 894.738 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.323 GAL -4.76 AZL 88.28 HCA 263.07 SMA 191.89 ECC .24603 INC 1.7183 V1 30.247
RP 206.79 LAP -1.71 LOP 342.06 VP 24.330 GAP -13.54 AZP 90.21 TAL 335.52 TAP 238.59 RCA 144.68 APO 239.10 V2 26.483
RC 337.733 GL 14.29 GP -3.31 ZAL 129.55 ZAP 25.61 ETS 171.70 ZAE 40.12 ETE 175.92 ZAC 86.10 ETC 255.93 CLP 25.41

PLANETOCENTRIC CONIC

C3 16.270 VHL 4.034 DLA 1.91 RAL 212.96 RAD 6567.7 VEL 11.733 PTH 2.07 VHP 6.607 DPA -4.84 RAP 185.97 ECC 1.2678

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 57 34	2225.39	-19.83	42.17	71.42	110.64	20 34 39	1625.4	-16.84	34.76
90.00	8 27 49	4751.12	16.82	203.74	70.64	66.88	9 47 1	4151.1	13.55	196.59
100.00	21 19 48	1960.15	-20.81	22.26	71.01	111.96	21 52 28	1360.2	-17.64	14.89
100.00	9 48 17	4491.59	17.78	184.22	70.19	65.57	11 3 8	3891.6	14.34	177.12
110.00	22 30 5	1740.17	-23.42	4.31	69.77	115.64	22 59 5	1140.2	-19.77	357.07
110.00	10 54 29	4284.34	20.34	167.15	68.86	61.92	12 5 53	3684.3	16.43	160.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.7262 TRA 7.3057 TC-14.5678 BAU 3.1691 SGT15715.9 SGR 615.0 SG3 282.3 ST 3300.2 SR 544.6 SS 669.4
RDE .3805 RRA .1561 RC3 .2379 FAU .03951 RRT -.0528 RRF -.0994 RTF .9428 CRT -.1960 CRS .6437 CST -.8753
FDE -.6042 FRA 1.8701 FC3-2.1026 BSP 55956 SGB15727.9 R23 .0497 R13 -.9428 LSA 3354.4 MSA 619.5 SSA 25.7
BDE .8199 BRA 7.3074 BC314.5697 FSP 996 SG115715.9 SG2 614.1 THA 179.88 EL1 3302.0 EL2 533.7 ALF 178.10

LAUNCH DATE DEC 11 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 898.997 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.331 GAL -5.00 AZL 88.30 HCA 264.34 SMA 192.05 ECC .24795 INC 1.6977 V1 30.247
RP 206.84 LAP -1.69 LOP 343.33 VP 24.335 GAP -13.67 AZP 90.17 TAL 334.42 TAP 238.76 RCA 144.43 APO 239.66 V2 26.477
RC 338.506 GL 13.82 GP -3.25 ZAL 131.11 ZAP 25.24 ETS 171.68 ZAE 39.43 ETE 175.89 ZAC 86.35 ETC 255.90 CLP 25.04

PLANETOCENTRIC CONIC

C3 16.963 VHL 4.119 DLA .95 RAL 214.20 RAD 6567.7 VEL 11.762 PTH 2.08 VHP 6.703 DPA -5.16 RAP 186.81 ECC 1.2792

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 9 36	2205.36	-19.34	40.90	73.08	111.09	20 46 21	1605.4	-16.31	33.54
90.00	8 25 42	4790.27	17.85	206.15	72.68	67.65	9 45 32	4190.3	14.67	198.93
100.00	21 31 23	1941.55	-20.33	21.08	72.66	112.40	22 3 45	1341.6	-17.12	13.76
100.00	9 46 36	4529.31	18.83	186.53	72.24	66.35	11 2 5	3929.3	15.47	179.34
110.00	22 40 39	1724.76	-22.96	3.35	71.39	116.05	23 9 23	1124.8	-19.27	356.15
110.00	10 53 49	4318.87	21.44	169.23	70.92	62.71	12 5 48	3718.9	17.61	162.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.8645 TRA 7.6438 TC-14.1130 BAU 3.2009 SGT15801.7 SGR 617.7 SG3 263.1 ST 3427.4 SR 550.3 SS 658.2
RDE .3930 RRA .1497 RC3 .2404 FAU .03546 RRT -.0762 RRF -.1248 RTF .9374 CRT -.2440 CRS .6665 CST -.8843
FDE -.6098 FRA 1.8089 FC3-1.8097 BSP 56240 SGB15813.8 R23 .0533 R13 -.9375 LSA 3479.9 MSA 611.0 SSA 25.0
BDE .9496 BRA 7.6452 BC314.1150 FSP 931 SG115801.8 SG2 615.9 THA 179.83 EL1 3430.1 EL2 533.3 ALF 177.70

LAUNCH DATE DEC 11 1964 FLIGHT TIME 416.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 903.244 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.339 GAL -5.25 AZL 88.32 HCA 265.60 SMA 192.20 ECC .24996 INC 1.6773 V1 30.247
RP 206.90 LAP -1.67 LOP 344.60 VP 24.339 GAP -13.81 AZP 90.13 TAL 333.30 TAP 238.91 RCA 144.16 APO 240.24 V2 26.470
RC 339.274 GL 13.35 GP -3.20 ZAL 132.64 ZAP 24.88 ETS 171.67 ZAE 38.76 ETE 175.87 ZAC 86.61 ETC 255.88 CLP 24.68

PLANETOCENTRIC CONIC

C3 17.708 VHL 4.208 DLA .02 RAL 215.42 RAD 6567.7 VEL 11.794 PTH 2.09 VHP 6.800 DPA -5.49 RAP 187.66 ECC 1.2914

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 21 23	2186.42	-18.88	39.71	74.77	111.51	20 57 50	1586.4	-15.79	32.39
90.00	8 23 41	4829.10	18.84	208.58	74.76	68.46	9 44 10	4229.1	15.75	201.26
100.00	21 42 45	1924.00	-19.87	19.98	74.34	112.80	22 14 49	1324.0	-16.61	12.70
100.00	9 45 0	4566.75	19.84	188.85	74.33	67.17	11 1 7	3966.7	16.57	181.58
110.00	22 51 1	1710.31	-22.53	2.45	73.03	116.42	23 19 31	1110.3	-18.80	355.30
110.00	10 53 14	4353.20	22.49	171.34	73.02	63.55	12 5 47	3753.2	18.76	164.19

DIFFERENTIAL CORRECTIONS
TDE-1.0019 TRA 7.9914 TC-13.6564 BAU 3.2335
RDE .4061 RRA .1429 RC3 .2416 FAU .03149
FDE -.6118 FRA 1.7437 FC3-1.5395 BSP 56507
BDE 1.0810 BRA 7.9927 BC313.6585 FSP .867

MID-COURSE EXECUTION ACCURACY
SGT15885.6 SGR 620.4 SG3 244.5
RRT -.0988 RRF -.1493 RTF .9311
SGB15897.7 R23 .0574 R13 -.9311
SG115885.7 SG2 617.4 THA 179.78

ORBIT DETERMINATION ACCURACY
ST 3554.6 SR 556.0 SS 644.3
CRT -.2863 CRS .6875 CST -.8913
LSA 3604.9 MSA 602.9 SSA 24.3
EL1 3558.3 EL2 532.2 ALF 177.38

LAUNCH DATE DEC 11 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 907.476 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.348 GAL -5.50 AZL 88.34 HCA 266.87 SMA 192.35 ECC .25206 INC 1.6570 V1 30.247
RP 206.97 LAP -1.65 LOP 345.86 VP 24.342 GAP -13.95 AZP 90.09 TAL 332.17 TAP 239.04 RCA 143.87 APO 240.84 V2 26.462
RC 340.039 GL 12.89 GP -3.14 ZAL 134.15 ZAP 24.52 ETS 171.65 ZAE 38.09 ETE 175.84 ZAC 86.86 ETC 255.86 CLP 24.33

PLANETOCENTRIC CONIC

C3 18.508 VHL 4.302 DLA -.89 RAL 216.63 RAD 6567.7 VEL 11.828 PTH 2.09 VHP 6.899 DPA -5.82 RAP 188.52 ECC 1.3046

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 32 57	2168.54	-18.43	38.59	76.47	111.89	21 9 5	1568.5	-15.29	31.31
90.00	8 21 45	4867.61	19.79	211.01	76.87	69.32	9 42 53	4267.6	16.80	203.61
100.00	21 53 53	1907.49	-19.43	18.95	76.03	113.17	22 25 40	1307.5	-16.13	11.71
100.00	9 43 30	4603.90	20.80	191.19	76.44	68.03	11 0 14	4003.9	17.64	183.83
110.00	23 1 11	1696.83	-22.12	1.62	74.69	116.75	23 29 27	1096.8	-18.35	354.52
110.00	10 52 42	4387.32	23.51	173.46	75.15	64.44	12 5 49	3787.3	19.88	166.21

DIFFERENTIAL CORRECTIONS
TDE-1.1388 TRA 8.3474 TC-13.2006 BAU 3.2668
RDE .4197 RRA .1357 RC3 .2418 FAU .02759
FDE -.6108 FRA 1.6743 FC3-1.2905 BSP 56772
BDE 1.2136 BRA 8.3485 BC313.2028 FSP 805

MID-COURSE EXECUTION ACCURACY
SGT15966.4 SGR 623.2 SG3 226.4
RRT -.1208 RRF -.1731 RTF .9235
SGB15978.5 R23 .0618 R13 -.9235
SG115966.6 SG2 618.6 THA 179.73

ORBIT DETERMINATION ACCURACY
ST 3680.0 SR 561.6 SS 628.1
CRT -.3237 CRS .7073 CST -.8965
LSA 3727.9 MSA 595.3 SSA 23.7
EL1 3684.6 EL2 530.7 ALF 177.11

LAUNCH DATE DEC 11 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 911.694 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.356 GAL -5.75 AZL 88.36 HCA 268.13 SMA 192.51 ECC .25425 INC 1.6367 V1 30.247
RP 207.04 LAP -1.64 LOP 347.13 VP 24.344 GAP -14.09 AZP 90.05 TAL 331.03 TAP 239.17 RCA 143.56 APO 241.45 V2 26.453
RC 340.800 GL 12.44 GP -3.09 ZAL 135.62 ZAP 24.18 ETS 171.63 ZAE 37.44 ETE 175.81 ZAC 87.11 ETC 255.85 CLP 23.99

PLANETOCENTRIC CONIC

C3 19.366 VHL 4.401 DLA -1.78 RAL 217.82 RAD 6567.8 VEL 11.864 PTH 2.10 VHP 6.999 DPA -6.16 RAP 189.38 ECC 1.3187

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 44 17	2151.71	-17.99	37.54	78.19	112.24	21 20 8	1551.7	-14.82	30.30
90.00	8 19 55	4905.80	20.69	213.45	79.01	70.22	9 41 41	4305.8	17.80	205.96
100.00	22 4 48	1891.99	-19.01	17.99	77.74	113.51	22 36 20	1292.0	-15.67	10.79
100.00	9 42 5	4640.76	21.72	193.54	78.59	68.94	10 59 26	4040.8	18.66	186.08
110.00	23 11 9	1684.29	-21.73	.85	76.37	117.06	23 39 13	1084.3	-17.93	353.79
110.00	10 52 14	4421.22	24.49	175.61	77.33	65.37	12 5 55	3821.2	20.96	168.24

DIFFERENTIAL CORRECTIONS
TDE-1.2752 TRA 8.7123 TC-12.7520 BAU 3.3022
RDE .4338 RRA .1280 RC3 .2410 FAU .02381
FDE -.6067 FRA 1.6007 FC3-1.0644 BSP 56989
BDE 1.3469 BRA 8.7133 BC312.7543 FSP 743

MID-COURSE EXECUTION ACCURACY
SGT16047.3 SGR 625.9 SG3 209.0
RRT -.1420 RRF -.1963 RTF .9144
SGB16059.5 R23 .0670 R13 -.9144
SG116047.5 SG2 619.6 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 3802.8 SR 567.0 SS 609.5
CRT -.3569 CRS .7261 CST -.9002
LSA 3848.0 MSA 588.3 SSA 23.1
EL1 3808.2 EL2 528.9 ALF 176.89

LAUNCH DATE DEC 11 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 6 1966

HELIOCENTRIC CONIC DISTANCE 915.896 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.364 GAL -6.01 AZL 88.38 HCA 269.40 SMA 192.66 ECC .25654 INC 1.6165 V1 30.247
RP 207.13 LAP -1.62 LOP 348.39 VP 24.344 GAP -14.24 AZP 90.02 TAL 329.88 TAP 239.28 RCA 143.24 APO 242.08 V2 26.444
RC 341.558 GL 11.99 GP -3.05 ZAL 137.08 ZAP 23.84 ETS 171.61 ZAE 36.79 ETE 175.78 ZAC 87.36 ETC 255.84 CLP 23.66

PLANETOCENTRIC CONIC

C3 20.286 VHL 4.504 DLA -2.64 RAL 218.99 RAD 6567.8 VEL 11.902 PTH 2.11 VHP 7.102 DPA -6.51 RAP 190.25 ECC 1.3339

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 55 23	2135.91	-17.58	36.56	79.93	112.56	21 30 59	1535.9	-14.38	29.35
90.00	8 18 11	4943.65	21.54	215.90	81.18	71.16	9 40 35	4343.7	18.77	208.32
100.00	22 15 30	1877.49	-18.62	17.09	79.47	113.82	22 46 47	1277.5	-15.24	9.93
100.00	9 40 45	4677.31	22.60	195.90	80.77	69.89	10 58 43	4077.3	19.65	188.35
110.00	23 20 55	1672.69	-21.37	.15	78.07	117.34	23 48 48	1072.7	-17.54	353.12
110.00	10 51 49	4454.87	25.43	177.77	79.53	66.35	12 6 4	3854.9	22.01	170.29

DIFFERENTIAL CORRECTIONS
TDE-1.4111 TRA 9.0863 TC-12.3067 BAU 3.3383
RDE .4484 RRA .1199 RC3 .2394 FAU .02009
FDE -.6001 FRA 1.5228 FC3 -.8576 BSP 57188
BDE 1.4806 BRA 9.0871 BC312.3090 FSP 683

MID-COURSE EXECUTION ACCURACY
SGT16124.8 SGR 628.7 SG3 192.0
RRT -.1625 RRF -.2189 RTF .9033
SGB16137.0 R23 .0729 R13 -.9033
SG116125.1 SG2 620.3 THA 179.64

ORBIT DETERMINATION ACCURACY
ST 3922.1 SR 572.3 SS 589.1
CRT -.3863 CRS .7443 CST -.9023
LSA 3964.6 MSA 581.9 SSA 22.5
EL1 3928.4 EL2 527.0 ALF 176.71

LAUNCH DATE DEC 11 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 8 1966

HELIOCENTRIC CONIC DISTANCE 920.082 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.372 GAL -6.28 AZL 88.40 HCA 270.66 SMA 192.82 ECC .25892 INC 1.5963 V1 30.247
RP 207.22 LAP -1.60 LOP 349.66 VP 24.344 GAP -14.40 AZP 89.98 TAL 328.72 TAP 239.38 RCA 142.89 APO 242.74 V2 26.433
RC 342.314 GL 11.56 GP -3.00 ZAL 138.50 ZAP 23.52 ETS 171.59 ZAE 36.16 ETE 175.75 ZAC 87.61 ETC 255.83 CLP 23.33

PLANETOCENTRIC CONIC

C3 21.271 VHL 4.612 DLA -3.48 RAL 220.15 RAD 6567.9 VEL 11.944 PTH 2.13 VHP 7.206 DPA -6.85 RAP 191.13 ECC 1.3501

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 6 16	2121.11	-17.20	35.65	81.69	112.85	21 41 38	1521.1	-13.95	28.47
90.00	8 16 32	4981.17	22.34	218.35	83.38	72.14	9 39 33	4381.2	19.69	210.68
100.00	22 25 59	1863.96	-18.24	16.26	81.21	114.10	22 57 3	1264.0	-14.83	9.13
100.00	9 39 30	4713.55	23.42	198.28	82.98	70.88	10 58 3	4113.6	20.60	190.62
110.00	23 30 30	1662.00	-21.03	359.50	79.77	117.59	23 58 12	1062.0	-17.17	352.50
110.00	10 51 28	4488.28	26.32	179.96	81.76	67.36	12 6 17	3888.3	23.02	172.35

DIFFERENTIAL CORRECTIONS
TDE-1.5459 TRA 9.4695 TC-11.8682 BAU 3.3756
RDE .4635 RRA .1114 RC3 .2370 FAU .01644
FDE -.5906 FRA 1.4409 FC3 -.6693 BSP 57350
BDE 1.6139 BRA 9.4701 BC311.8706 FSP 623

MID-COURSE EXECUTION ACCURACY
SGT16199.9 SGR 631.4 SG3 175.7
RRT -.1824 RRF -.2406 RTF .8895
SGB16212.2 R23 .0794 R13 -.8895
SG116200.3 SG2 620.7 THA 179.59

ORBIT DETERMINATION ACCURACY
ST 4037.1 SR 577.4 SS 566.5
CRT -.4123 CRS .7618 CST -.9030
LSA 4076.8 MSA 575.9 SSA 22.0
EL1 4044.2 EL2 525.1 ALF 176.57

LAUNCH DATE DEC 11 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 10 1966

HELIOCENTRIC CONIC DISTANCE 924.249 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.381 GAL -6.56 AZL 88.42 HCA 271.92 SMA 192.97 ECC .26140 INC 1.5761 V1 30.247
RP 207.32 LAP -1.58 LOP 350.92 VP 24.343 GAP -14.55 AZP 89.95 TAL 327.54 TAP 239.47 RCA 142.53 APO 243.42 V2 26.421
RC 343.066 GL 11.13 GP -2.96 ZAL 139.90 ZAP 23.20 ETS 171.57 ZAE 35.53 ETE 175.72 ZAC 87.86 ETC 255.82 CLP 23.02

PLANETOCENTRIC CONIC

C3 22.324 VHL 4.725 DLA -4.30 RAL 221.29 RAD 6567.9 VEL 11.988 PTH 2.14 VHP 7.312 DPA -7.21 RAP 192.02 ECC 1.3674

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 16 57	2107.29	-16.83	34.80	83.46	113.11	21 52 4	1507.3	-13.56	27.65
90.00	8 14 57	5018.35	23.10	220.82	85.60	73.15	9 38 35	4418.3	20.57	213.05
100.00	22 36 16	1851.39	-17.89	15.49	82.97	114.35	23 7 8	1251.4	-14.45	8.39
100.00	9 38 19	4749.48	24.20	200.66	85.22	71.90	10 57 28	4149.5	21.50	192.91
110.00	23 39 54	1652.22	-20.72	358.91	81.50	117.81	24 7 26	1052.2	-16.84	351.94
110.00	10 51 11	4521.42	27.17	182.16	84.03	68.41	12 6 32	3921.4	23.99	174.43

DIFFERENTIAL CORRECTIONS
TDE-1.6795 TRA 9.8626 TC-11.4381 BAU 3.4144
RDE .4791 RRA .1024 RC3 .2339 FAU .01288
FDE -.5784 FRA 1.3547 FC3 -.4995 BSP 57518
BDE 1.7465 BRA 9.8631 BC311.4405 FSP 565

MID-COURSE EXECUTION ACCURACY
SGT16273.3 SGR 634.0 SG3 160.0
RRT -.2016 RRF -.2613 RTF .8724
SGB16285.7 R23 .0870 R13 -.8724
SG116273.8 SG2 621.0 THA 179.55

ORBIT DETERMINATION ACCURACY
ST 4147.2 SR 582.2 SS 542.2
CRT -.4353 CRS .7789 CST -.9023
LSA 4184.1 MSA 570.4 SSA 21.4
EL1 4155.1 EL2 523.2 ALF 176.45

LAUNCH DATE DEC 11 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 12 1966

HELIOCENTRIC CONIC DISTANCE 928.397 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.389 GAL -6.84 AZL 88.44 HCA 273.18 SMA 193.13 ECC .26399 INC 1.5559 V1 30.247
RP 207.43 LAP -1.55 LOP 352.18 VP 24.340 GAP -14.72 AZP 89.91 TAL 326.36 TAP 239.54 RCA 142.14 APO 244.11 V2 26.408
RC 343.815 GL 10.71 GP -2.91 ZAL 141.27 ZAP 22.89 ETS 171.55 ZAE 34.91 ETE 175.68 ZAC 88.11 ETC 255.82 CLP 22.72

PLANETOCENTRIC CONIC

C3 23.450 VHL 4.843 DLA -5.09 RAL 222.41 RAD 6568.0 VEL 12.034 PTH 2.15 VHP 7.421 DPA -7.56 RAP 192.92 ECC 1.3859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 27 25	2094.41	-16.48	34.01	85.24	113.36	22 2 19	1494.4	-13.18	26.89
90.00	8 13 27	5055.17	23.80	223.28	87.85	74.19	9 37 42	4455.2	21.41	215.43
100.00	22 46 21	1839.75	-17.56	14.79	84.74	114.58	23 17 1	1239.7	-14.10	7.71
100.00	9 37 12	4785.07	24.94	203.05	87.48	72.96	10 56 57	4185.1	22.37	195.20
110.00	23 49 6	1643.30	-20.44	358.37	83.23	118.01	24 16 29	1043.3	-16.53	351.43
110.00	10 50 56	4554.28	27.97	184.38	86.33	69.50	12 6 50	3954.3	24.93	176.53

DIFFERENTIAL CORRECTIONS
TDE-1.8128 TRA10.2656 TC-11.0188 BAU 3.4552
RDE .4952 RRA .0929 RC3 .2303 FAU .00937
FDE -.5641 FRA 1.2642 FC3 -.3458 BSP 57650
BDE 1.8793 BRA10.2660 BC311.0212 FSP 508

MID-COURSE EXECUTION ACCURACY
SGT16345.7 SGR 636.5 SG3 144.9
RRT -.2202 RRF -.2810 RTF .8506
SGB16358.1 R23 .0958 R13 -.8506
SG116346.4 SG2 620.9 THA 179.51

ORBIT DETERMINATION ACCURACY
ST 4252.7 SR 586.8 SS 516.3
CRT -.4558 CRS .7960 CST -.9002
LSA 4286.8 MSA 565.4 SSA 21.0
EL1 4261.3 EL2 521.3 ALF 176.35

LAUNCH DATE DEC 11 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 14 1966

HELIOCENTRIC CONIC DISTANCE 932.525 EARTH TO MARS

RL 147.30 LAL .00 LOL 79.00 VL 33.398 GAL -7.12 AZL 88.46 HCA 274.44 SMA 193.29 ECC .26669 INC 1.5356 V1 30.247
RP 207.54 LAP -1.53 LOP 353.44 VP 24.337 GAP -14.89 AZP 89.88 TAL 325.16 TAP 239.60 RCA 141.74 APO 244.84 V2 26.395
RC 344.561 GL 10.30 GP -2.87 ZAL 142.61 ZAP 22.59 ETS 171.53 ZAE 34.30 ETE 175.64 ZAC 88.36 ETC 255.83 CLP 22.42

PLANETOCENTRIC CONIC

C3 24.653 VHL 4.965 DLA -5.86 RAL 223.52 RAD 6568.0 VEL 12.084 PTH 2.16 VHP 7.531 DPA -7.92 RAP 193.82 ECC 1.4057

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 37 40	2082.45	-16.16	33.29	87.03	113.57	22 12 23	1482.5	-12.83	26.19
90.00	8 12 1	5091.65	24.46	225.76	90.11	75.26	9 36 53	4491.6	22.19	217.82
100.00	22 56 14	1829.00	-17.26	14.13	86.52	114.79	23 26 43	1229.0	-13.77	7.08
100.00	9 36 9	4820.33	25.62	205.45	89.76	74.04	10 56 29	4220.3	23.18	197.50
110.00	0 2 3	1635.24	-20.18	357.89	84.98	118.19	0 29 19	1035.2	-16.26	350.97
110.00	10 50 45	4586.86	28.73	186.61	88.65	70.63	12 7 11	3986.9	25.82	178.64

DIFFERENTIAL CORRECTIONS
TDE-1.9455 TRA10.6770 TC-10.6095 BAU 3.4975
RDE .5117 RRA .0830 RC3 .2262 FAU .00594
FDE -.5473 FRA 1.1694 FC3 -.2085 BSP 57714
BDE 2.0117 BRA10.6773 BC310.6119 FSP 452

MID-COURSE EXECUTION ACCURACY
SGT16414.6 SGR 639.0 SG3 130.5
RRT -.2382 RRF -.2991 RTF .8228
SGB16427.1 R23 .1059 R13 -.8228
SG116415.3 SG2 620.6 THA 179.47

ORBIT DETERMINATION ACCURACY
ST 4352.7 SR 591.2 SS 488.9
CRT -.4742 CRS .8131 CST -.8965
LSA 4384.0 MSA 560.7 SSA 20.5
EL1 4361.9 EL2 519.4 ALF 176.26

LAUNCH DATE DEC 11 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 16 1966

HELIOCENTRIC CONIC DISTANCE 936.630 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.406	GAL	-7.42	AZL	88.48	HCA	275.70	SMA	193.44	ECC	.26951	INC	1.5154	V1	30.247
RP	207.67	LAP	-1.51	LOP	354.70	VP	24.333	GAP	-15.07	AZP	89.85	TAL	323.95	TAP	239.65	RCA	141.31	APO	245.58	V2	26.380
RC	345.302	GL	9.90	GP	-2.83	ZAL	143.92	ZAP	22.31	ETS	171.51	ZAE	33.70	ETE	175.60	ZAC	88.62	ETC	255.83	CLP	22.13

PLANETOCENTRIC CONIC

C3	25.937	VHL	5.093	DLA	-6.61	RAL	224.61	RAD	6568.0	VEL	12.137	PTH	2.18	VHP	7.644	DPA	-8.28	RAP	194.73	ECC	1.4269

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ Z LAT	INJ Z LONG
90.00	21 47 44	2071.38	-15.86	32.61	88.84	113.77	22 22 15	1471.4	-12.51	25.54
90.00	8 10 40	5127.76	25.06	228.23	92.40	76.36	9 36 8	4527.8	22.94	220.20
100.00	23 5 55	1819.13	-16.97	13.54	88.31	114.98	23 36 15	1219.1	-13.47	6.50
100.00	9 35 10	4855.25	26.25	207.85	92.06	75.16	10 56 5	4255.3	23.95	199.81
110.00	0 10 54	1628.00	-19.95	357.46	86.73	118.35	0 38 2	1028.0	-16.00	350.56
110.00	10 50 36	4619.15	29.44	188.86	90.99	71.79	12 7 35	4019.1	26.67	180.77

DIFFERENTIAL CORRECTIONS

TDE-2.0757	TRA11.1002	TC-10.2093	BAU 3.5409		
RDE .5206	RRA .0727	RC3 .2217	FAU .00253		
FDE -.5284	FRA 1.0706	FC3 -.0845	BSP 57808		
BDE 2.1419	BRA11.1004	BC310.2117	FSP 398		

MID-COURSE EXECUTION ACCURACY

SGT16481.3	SGR 641.4	SG3 116.9			
RRT -.2556	RRF -.3146	RTF .7859			
SGB16493.7	R23 .1174	R13 -.7859			
SG116482.1	SG2 620.1	THA 179.43			

ORBIT DETERMINATION ACCURACY

ST 4446.8	SR 595.2	SS 460.3			
CRT -.4902	CRS .8305	CST -.8909			
LSA 4475.5	MSA 556.4	SSA 20.0			
EL1 4456.5	EL2 517.6	ALF 176.19			

LAUNCH DATE DEC 11 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 18 1966

HELIOCENTRIC CONIC DISTANCE 940.712 EARTH TO MARS

RL	147.30	LAL	.00	LOL	79.00	VL	33.414	GAL	-7.72	AZL	88.50	HCA	276.96	SMA	193.60	ECC	.27244	INC	1.4950	V1	30.247
RP	207.80	LAP	-1.48	LOP	355.95	VP	24.327	GAP	-15.25	AZP	89.82	TAL	322.74	TAP	239.69	RCA	140.86	APO	246.35	V2	26.364
RC	346.039	GL	9.52	GP	-2.79	ZAL	145.21	ZAP	22.03	ETS	171.50	ZAE	33.11	ETE	175.56	ZAC	88.87	ETC	255.84	CLP	21.86

PLANETOCENTRIC CONIC

C3	27.307	VHL	5.226	DLA	-7.33	RAL	225.69	RAD	6568.1	VEL	12.194	PTH	2.19	VHP	7.759	DPA	-8.65	RAP	195.65	ECC	1.4494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ Z LAT	INJ Z LONG
90.00	21 57 36	2061.17	-15.57	32.00	90.65	113.95	22 31 57	1461.2	-12.21	24.94
90.00	8 9 23	5163.52	25.61	230.70	94.70	77.49	9 35 26	4563.5	23.63	222.59
100.00	23 15 25	1810.09	-16.71	12.99	90.11	115.15	23 45 35	1210.1	-13.19	5.98
100.00	9 34 14	4889.82	26.83	210.26	94.38	76.30	10 55 44	4289.8	24.68	202.12
110.00	0 19 34	1621.55	-19.74	357.08	88.50	118.49	0 46 36	1021.6	-15.78	350.19
110.00	10 50 31	4651.13	30.10	191.11	93.36	72.97	12 8 2	4051.1	27.47	182.91

DIFFERENTIAL CORRECTIONS

TDE-2.2057	TRA11.5323	TC3-9.8236	BAU 3.5872		
RDE .5459	RRA .0619	RC3 .2169	FAU-.00081		
FDE -.5075	FRA .9673	FC3 .0256	BSP 57815		
BDE 2.2723	BRA11.5325	BC3 9.8260	FSP 344		

MID-COURSE EXECUTION ACCURACY

SGT16546.5	SGR 643.6	SG3 104.2			
RRT -.2725	RRF -.3270	RTF .7370			
SGB16559.0	R23 .1309	R13 -.7370			
SG116547.5	SG2 619.3	THA 179.39			

ORBIT DETERMINATION ACCURACY

ST 4535.6	SR 598.9	SS 430.6			
CRT -.5047	CRS .8486	CST -.8830			
LSA 4561.8	MSA 552.4	SSA 19.6			
EL1 4545.8	EL2 515.9	ALF 176.14			

LAUNCH DATE DEC 12 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 364.776 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 35.595 GAL -.03 AZL 88.79 HCA 112.10 SMA 247.97 ECC .40606 INC 1.2067 V1 30.251
RP 244.23 LAP 1.12 LOP 192.11 VP 23.486 GAP 23.94 AZP 90.45 TAL 359.90 TAP 112.00 RCA 147.28 APO 348.66 V2 22.463
RC 132.477 GL 7.99 GP 2.00 ZAL 88.18 ZAP 174.58 ETS 157.02 ZAE 152.33 ETE 1.75 ZAC 91.19 ETC 255.97 CLP 174.96

PLANETOCENTRIC CONIC

C3 29.080 VHL 5.393 DLA 12.02 RAL 172.31 RAD 6568.2 VEL 12.266 PTH 2.21 VHP 10.932 DPA .16 RAP 187.82 ECC 1.4706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 52 47	2688.62	-27.55	73.74	44.55	96.81	16 37 35	2088.6	-26.32	65.29
90.00	7 0 28	4567.45	11.61	192.78	38.00	63.99	8 16 36	3967.5	8.02	185.94
100.00	17 20 15	2406.52	-28.90	52.79	44.35	98.00	18 0 21	1806.5	-27.49	44.27
100.00	8 15 41	4324.79	12.82	174.32	37.37	62.76	9 27 46	3724.8	9.07	167.54
110.00	18 42 20	2149.66	-32.48	32.58	43.64	101.29	19 18 10	1549.7	-30.58	23.88
110.00	9 10 5	4154.41	16.00	159.58	35.56	59.38	10 19 20	3554.4	11.82	152.97

DIFFERENTIAL CORRECTIONS
TDE .4057 TRA-1.2701 TC3 .9919 BAU .3857
RDE -.5480 RRA -.2401 RC3 -.0163 FAU .05796
FDE -.0040 FRA .4924 FC3-1.7256 BSP 6760
BDE .6819 BRA 1.2926 BC3 .9921 FSP 540

MID-COURSE EXECUTION ACCURACY
SGT 1798.3 SGR 638.2 SG3 167.3
RRT .0784 RRF -.0843 RTF -.7842
SGB 1908.2 R23 -.0141 R13 -.7844
SG1 1799.1 SG2 636.0 THA 1.82

ORBIT DETERMINATION ACCURACY
ST 598.5 SR 587.5 SS 160.5
CRT -.6218 CRS .1007 CST .6886
LSA 757.3 MSA 392.5 SSA 39.3
EL1 755.3 EL2 364.6 ALF 135.85

LAUNCH DATE DEC 12 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 366.741 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 35.465 GAL .13 AZL 88.81 HCA 113.01 SMA 243.74 ECC .39576 INC 1.1892 V1 30.251
RP 243.99 LAP 1.09 LOP 193.02 VP 23.310 GAP 23.31 AZP 90.46 TAL .44 TAP 113.45 RCA 147.28 APO 340.20 V2 22.486
RC 134.631 GL 8.04 GP 2.06 ZAL 87.09 ZAP 174.03 ETS 158.48 ZAE 152.25 ETE 2.00 ZAC 91.33 ETC 255.96 CLP 174.40

PLANETOCENTRIC CONIC

C3 27.726 VHL 5.266 DLA 12.50 RAL 171.31 RAD 6568.1 VEL 12.211 PTH 2.19 VHP 10.663 DPA .06 RAP 188.16 ECC 1.4563

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 46	2692.74	-27.58	74.04	42.85	96.67	16 29 38	2092.7	-26.37	65.58
90.00	7 0 29	4539.52	10.77	191.16	36.28	63.65	8 16 8	3939.5	7.14	184.36
100.00	17 12 32	2409.69	-28.93	53.02	42.66	97.88	17 52 41	1809.7	-27.53	44.50
100.00	8 15 24	4297.80	11.97	172.76	35.63	62.41	9 27 2	3697.8	8.19	166.02
110.00	18 35 15	2150.82	-32.50	32.67	41.96	101.24	19 11 6	1550.8	-30.61	23.96
110.00	9 9 10	4129.44	15.13	158.17	33.81	58.98	10 17 59	3529.4	10.91	151.61

DIFFERENTIAL CORRECTIONS
TDE .4088 TRA-1.2267 TC3 1.1238 BAU .4166
RDE -.5337 RRA -.2321 RC3 -.0126 FAU .06098
FDE .0033 FRA .4664 FC3-1.9040 BSP 5786
BDE .6723 BRA 1.2484 BC3 1.1239 FSP 471

MID-COURSE EXECUTION ACCURACY
SGT 1862.2 SGR 635.8 SG3 179.0
RRT .0672 RRF -.0835 RTF -.7990
SGB 1967.7 R23 -.0228 R13 -.7992
SG1 1862.7 SG2 634.2 THA 1.49

ORBIT DETERMINATION ACCURACY
ST 606.1 SR 585.9 SS 154.0
CRT -.6379 CRS .1449 CST .6363
LSA 764.4 MSA 385.2 SSA 41.4
EL1 763.0 EL2 358.4 ALF 136.52

LAUNCH DATE DEC 12 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 368.851 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 35.340 GAL .28 AZL 88.83 HCA 113.92 SMA 239.85 ECC .38597 INC 1.1713 V1 30.251
RP 243.75 LAP 1.07 LOP 193.93 VP 23.143 GAP 22.69 AZP 90.48 TAL 1.00 TAP 114.91 RCA 147.27 APO 332.42 V2 22.510
RC 136.814 GL 8.07 GP 2.12 ZAL 85.98 ZAP 173.48 ETS 159.70 ZAE 152.21 ETE 2.26 ZAC 91.46 ETC 255.94 CLP 173.83

PLANETOCENTRIC CONIC

C3 26.479 VHL 5.146 DLA 12.97 RAL 170.28 RAD 6568.1 VEL 12.160 PTH 2.18 VHP 10.402 DPA -.03 RAP 188.50 ECC 1.4358

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 36 36	2697.41	-27.62	74.38	41.16	96.50	16 21 34	2097.4	-26.43	65.91
90.00	7 0 25	4511.99	9.93	189.57	34.54	63.35	8 15 37	3912.0	6.27	182.80
100.00	17 4 40	2413.39	-28.96	53.29	40.97	97.74	17 44 54	1813.4	-27.59	44.76
100.00	8 15 2	4271.24	11.13	171.24	33.91	62.08	9 26 14	3671.2	7.31	164.53
110.00	18 28 3	2152.48	-32.52	32.79	40.28	101.17	19 3 56	1552.5	-30.64	24.08
110.00	9 8 9	4104.92	14.27	156.79	32.08	58.60	10 16 33	3504.9	10.01	150.28

DIFFERENTIAL CORRECTIONS
TDE .3840 TRA-1.2009 TC3 1.2019 BAU .4255
RDE -.5202 RRA -.2246 RC3 -.0092 FAU .06291
FDE .0217 FRA .4540 FC3-2.0569 BSP 6090
BDE .6465 BRA 1.2217 BC3 1.2019 FSP 504

MID-COURSE EXECUTION ACCURACY
SGT 1896.2 SGR 633.6 SG3 188.3
RRT .0773 RRF -.0921 RTF -.8033
SGB 1999.2 R23 -.0223 R13 -.8035
SG1 1896.9 SG2 631.4 THA 1.66

ORBIT DETERMINATION ACCURACY
ST 594.7 SR 584.3 SS 152.6
CRT -.6215 CRS .2619 CST .5552
LSA 751.2 MSA 390.1 SSA 42.9
EL1 750.7 EL2 362.6 ALF 135.81

LAUNCH DATE DEC 12 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 371.093 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 35.221 GAL .43 AZL 88.85 HCA 114.83 SMA 236.26 ECC .37668 INC 1.1531 V1 30.251
RP 243.50 LAP 1.05 LOP 194.85 VP 22.985 GAP 22.06 AZP 90.48 TAL 1.56 TAP 116.39 RCA 147.26 APO 325.25 V2 22.535
RC 139.022 GL 8.10 GP 2.19 ZAL 84.86 ZAP 172.91 ETS 160.72 ZAE 152.22 ETE 2.53 ZAC 91.60 ETC 255.93 CLP 173.26

PLANETOCENTRIC CONIC

C3 25.334 VHL 5.033 DLA 13.44 RAL 169.22 RAD 6568.0 VEL 12.112 PTH 2.17 VHP 10.148 DPA -.11 RAP 188.84 ECC 1.4169

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 28 20	2702.61	-27.66	74.75	39.49	96.32	16 13 23	2102.6	-26.50	66.28
90.00	7 0 17	4484.91	9.10	188.01	32.84	63.07	8 15 2	3884.9	5.42	181.27
100.00	16 56 43	2417.60	-29.00	53.60	39.30	97.59	17 37 0	1817.6	-27.65	45.06
100.00	8 14 36	4245.15	10.30	169.75	32.20	61.78	9 25 21	3645.2	6.45	163.08
110.00	18 20 46	2154.61	-32.55	32.95	38.62	101.08	18 56 40	1554.6	-30.68	24.23
110.00	9 7 2	4080.91	13.41	155.46	30.37	58.26	10 15 3	3480.9	9.12	148.99

DIFFERENTIAL CORRECTIONS
TDE .3609 TRA-1.1687 TC3 1.2901 BAU .4370
RDE -.5073 RRA -.2173 RC3 -.0051 FAU .06506
FDE .0400 FRA .4376 FC3-2.2232 BSP 6266
BDE .6226 BRA 1.1887 BC3 1.2901 FSP 540

MID-COURSE EXECUTION ACCURACY
SGT 1930.4 SGR 631.0 SG3 198.4
RRT .0854 RRF -.1002 RTF -.8095
SGB 2030.9 R23 -.0230 R13 -.8098
SG1 1931.2 SG2 628.4 THA 1.79

ORBIT DETERMINATION ACCURACY
ST 582.0 SR 582.5 SS 152.3
CRT -.6075 CRS .3758 CST .4641
LSA 738.2 MSA 392.7 SSA 44.5
EL1 738.2 EL2 364.7 ALF 134.96

LAUNCH DATE DEC 12 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 373.452 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 35.107 GAL .57 AZL 88.87 HCA 115.75 SMA 232.94 ECC .36786 INC 1.1347 V1 30.251
RP 243.25 LAP 1.02 LOP 195.76 VP 22.835 GAP 21.44 AZP 90.49 TAL 2.13 TAP 117.87 RCA 147.25 APO 318.63 V2 22.560
RC 141.251 GL 8.11 GP 2.25 ZAL 83.71 ZAP 172.34 ETS 161.60 ZAE 152.27 ETE 2.81 ZAC 91.74 ETC 255.92 CLP 172.68

PLANETOCENTRIC CONIC

C3 24.281 VHL 4.928 DLA 13.90 RAL 168.15 RAD 6568.0 VEL 12.069 PTH 2.16 VHP 9.900 DPA -.19 RAP 189.17 ECC 1.3996

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 58	2708.27	-27.70	75.16	37.82	96.12	16 5 6	2108.3	-26.57	66.68
90.00	7 0 5	4458.36	8.28	186.50	31.16	62.82	8 14 23	3858.4	4.57	179.78
100.00	16 48 39	2422.25	-29.04	53.94	37.64	97.41	17 29 2	1822.2	-27.71	45.39
100.00	8 14 4	4219.61	9.47	168.31	30.52	61.52	9 24 24	3619.6	5.59	161.66
110.00	18 13 23	2157.16	-32.58	33.14	36.98	100.97	18 49 20	1557.2	-30.72	24.42
110.00	9 5 50	4057.47	12.57	154.17	28.68	57.95	10 13 28	3457.5	8.24	147.74

DIFFERENTIAL CORRECTIONS

TDE .3413 TRA-1.1365 TC3 1.3806 BAU .4482
RDE -.4950 RRA -.2102 RC3 -.0002 FAU .06735
FDE .0582 FRA .4189 FC3-2.4012 BSP 6374
BDE .6013 BRA 1.1558 BC3 1.3806 FSP 571

MID-COURSE EXECUTION ACCURACY

SGT 1965.2 SGR 628.2 SG3 209.1
RRT .0923 RRF -.1084 RTF -.8150
SGB 2063.2 R23 -.0248 R13 -.8153
SG1 1966.1 SG2 625.2 THA 1.88

ORBIT DETERMINATION ACCURACY

ST 570.9 SR 580.5 SS 153.7
CRT -.5962 CRS .4825 CST .3657
LSA 727.5 MSA 393.9 SSA 46.2
EL1 727.4 EL2 365.8 ALF 134.20

LAUNCH DATE DEC 12 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 375.920 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 34.998 GAL .71 AZL 88.88 HCA 116.66 SMA 229.87 ECC .35947 INC 1.1158 V1 30.251
RP 243.00 LAP 1.00 LOP 196.68 VP 22.693 GAP 20.82 AZP 90.50 TAL 2.70 TAP 119.36 RCA 147.24 APO 312.50 V2 22.585
RC 143.499 GL 8.11 GP 2.32 ZAL 82.56 ZAP 171.75 ETS 162.34 ZAE 152.37 ETE 3.09 ZAC 91.88 ETC 255.91 CLP 172.09

PLANETOCENTRIC CONIC

C3 23.313 VHL 4.828 DLA 14.36 RAL 167.05 RAD 6567.9 VEL 12.029 PTH 2.15 VHP 9.659 DPA -.26 RAP 189.49 ECC 1.3837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 31	2714.35	-27.75	75.60	36.17	95.90	15 56 46	2114.3	-26.64	67.11
90.00	6 59 47	4432.38	7.47	185.02	29.50	62.61	8 13 39	3832.4	3.74	178.32
100.00	16 40 32	2427.30	-29.09	54.31	36.00	97.22	17 20 59	1827.3	-27.78	45.75
100.00	8 13 28	4194.66	8.66	166.90	28.86	61.28	9 23 22	3594.7	4.76	160.28
110.00	18 5 56	2160.09	-32.62	33.36	35.34	100.85	18 41 56	1560.1	-30.78	24.63
110.00	9 4 33	4034.64	11.74	152.92	27.01	57.66	10 11 48	3434.6	7.39	146.52

DIFFERENTIAL CORRECTIONS

TDE .3208 TRA-1.1054 TC3 1.4756 BAU .4599
RDE -.4833 RRA -.2032 RC3 .0053 FAU .06977
FDE .0769 FRA .4000 FC3-2.5910 BSP 6545
BDE .5801 BRA 1.1239 BC3 1.4756 FSP 609

MID-COURSE EXECUTION ACCURACY

SGT 2002.2 SGR 625.3 SG3 220.4
RRT .1006 RRF -.1173 RTF -.8210
SGB 2097.6 R23 -.0260 R13 -.8214
SG1 2003.3 SG2 621.7 THA 1.99

ORBIT DETERMINATION ACCURACY

ST 558.4 SR 578.4 SS 157.4
CRT -.5822 CRS .5805 CST .2676
LSA 716.0 MSA 395.2 SSA 48.1
EL1 715.2 EL2 367.1 ALF 133.27

LAUNCH DATE DEC 12 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 378.485 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 34.894 GAL .85 AZL 88.90 HCA 117.58 SMA 227.01 ECC .35151 INC 1.0967 V1 30.251
RP 242.74 LAP .97 LOP 197.60 VP 22.559 GAP 20.21 AZP 90.51 TAL 3.28 TAP 120.86 RCA 147.22 APO 306.81 V2 22.611
RC 145.763 GL 8.11 GP 2.39 ZAL 81.39 ZAP 171.16 ETS 162.99 ZAE 152.50 ETE 3.39 ZAC 92.02 ETC 255.90 CLP 171.49

PLANETOCENTRIC CONIC

C3 22.425 VHL 4.736 DLA 14.81 RAL 165.94 RAD 6567.9 VEL 11.992 PTH 2.14 VHP 9.424 DPA -.33 RAP 189.81 ECC 1.3691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 3 2	2720.78	-27.79	76.06	34.53	95.67	15 48 23	2120.8	-26.71	67.56
90.00	6 59 24	4407.04	6.67	183.58	27.86	62.42	8 12 51	3807.0	2.93	176.90
100.00	16 32 22	2432.70	-29.13	54.70	34.36	97.02	17 12 54	1832.7	-27.85	46.13
100.00	8 12 45	4170.36	7.86	165.54	27.21	61.07	9 22 16	3570.4	3.94	158.94
110.00	17 58 27	2163.35	-32.66	33.61	33.72	100.71	18 34 30	1563.4	-30.84	24.86
110.00	9 3 10	4012.47	10.93	151.71	25.36	57.41	10 10 2	3412.5	6.55	145.35

DIFFERENTIAL CORRECTIONS

TDE .3005 TRA-1.0734 TC3 1.5707 BAU .4709
RDE -.4723 RRA -.1964 RC3 .0117 FAU .07229
FDE .0969 FRA .3785 FC3-2.7907 BSP 6694
BDE .5598 BRA 1.0912 BC3 1.5707 FSP 648

MID-COURSE EXECUTION ACCURACY

SGT 2037.1 SGR 622.1 SG3 232.2
RRT .1095 RRF -.1271 RTF -.8265
SGB 2129.9 R23 -.0276 R13 -.8269
SG1 2038.3 SG2 618.0 THA 2.11

ORBIT DETERMINATION ACCURACY

ST 544.6 SR 576.2 SS 163.3
CRT -.5674 CRS .6706 CST .1664
LSA 704.4 MSA 395.7 SSA 50.0
EL1 702.3 EL2 367.9 ALF 132.17

LAUNCH DATE DEC 12 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 381.140 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 34.795 GAL .99 AZL 88.92 HCA 118.50 SMA 224.36 ECC .34396 INC 1.0773 V1 30.251
RP 242.47 LAP .95 LOP 198.52 VP 22.432 GAP 19.60 AZP 90.51 TAL 3.87 TAP 122.37 RCA 147.19 APO 301.54 V2 22.638
RC 148.041 GL 8.09 GP 2.47 ZAL 80.22 ZAP 170.55 ETS 163.55 ZAE 152.68 ETE 3.71 ZAC 92.16 ETC 255.89 CLP 170.88

PLANETOCENTRIC CONIC

C3 21.610 VHL 4.649 DLA 15.25 RAL 164.81 RAD 6567.9 VEL 11.958 PTH 2.13 VHP 9.195 DPA -.39 RAP 190.13 ECC 1.3556

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 54 31	2727.51	-27.83	76.55	32.91	95.43	15 39 58	2127.5	-26.79	68.04
90.00	6 58 55	4382.40	5.89	182.19	26.24	62.25	8 11 58	3782.4	2.13	175.53
100.00	16 24 10	2438.38	-29.18	55.12	32.75	96.81	17 4 49	1838.4	-27.93	46.54
100.00	8 11 57	4146.76	7.08	164.22	25.60	60.88	9 21 4	3546.8	3.14	157.64
110.00	17 50 56	2166.89	-32.70	33.88	32.12	100.56	18 27 3	1566.9	-30.90	25.12
110.00	9 1 41	3991.01	10.14	150.55	23.74	57.18	10 8 12	3391.0	5.74	144.22

DIFFERENTIAL CORRECTIONS

TDE .2800 TRA-1.0417 TC3 1.6682 BAU .4820
RDE -.4618 RRA -.1896 RC3 .0188 FAU .07491
FDE .1180 FRA .3547 FC3-3.0010 BSP 6835
BDE .5401 BRA 1.0588 BC3 1.6683 FSP 687

MID-COURSE EXECUTION ACCURACY

SGT 2072.6 SGR 618.8 SG3 244.5
RRT .1193 RRF -.1377 RTF -.8319
SGB 2163.0 R23 -.0292 R13 -.8323
SG1 2074.0 SG2 614.0 THA 2.24

ORBIT DETERMINATION ACCURACY

ST 529.8 SR 573.8 SS 171.6
CRT -.5507 CRS .7482 CST .0695
LSA 692.9 MSA 395.6 SSA 52.0
EL1 688.6 EL2 368.5 ALF 130.87

LAUNCH DATE DEC 12 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 383.877 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	34.701	GAL	1.12	AZL	88.94	HCA	119.43	SMA	221.90	ECC	.33678	INC	1.0574	V1	30.251
RP	242.20	LAP	.92	LOP	199.44	VP	22.312	GAP	18.99	AZP	90.52	TAL	4.45	TAP	123.88	RCA	147.17	APO	296.63	V2	22.664
RC	150.330	GL	8.06	GP	2.55	ZAL	79.04	ZAP	169.93	ETS	164.04	ZAE	152.89	ETE	4.04	ZAC	92.30	ETC	255.88	CLP	170.26

PLANETOCENTRIC CONIC

C3	20.862	VHL	4.568	DLA	15.67	RAL	163.67	RAD	6567.8	VEL	11.927	PTH	2.12	VHP	8.972	DPA	-.44	RAP	190.44	ECC	1.3433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 46 0	2734.46	-27.88	77.06	31.31	95.18	15 31 34	2134.5	-26.87	68.53
90.00	6 58 21	4358.51	5.13	180.84	24.65	62.11	8 10 59	3758.5	1.36	174.19
100.00	16 15 59	2444.28	-29.22	55.55	31.15	96.58	16 56 43	1844.3	-28.00	46.96
100.00	8 11 3	4123.93	6.32	162.95	24.00	60.72	9 19 47	3523.9	2.37	156.39
110.00	17 43 26	2170.66	-32.75	34.16	30.54	100.39	18 19 37	1570.7	-30.97	25.39
110.00	9 0 5	3970.31	9.37	149.44	22.14	56.98	10 6 16	3370.3	4.96	143.13

DIFFERENTIAL CORRECTIONS

TDE	.2596	TRA	-1.0078	TC3	1.7666	BAU	.4928
RDE	-.4519	RRA	-.1830	RC3	.0268	FAU	.07772
FDE	.1406	FRA	.3272	FC3	-3.2253	BSP	6963
BDE	.5212	BRA	1.0243	BC3	1.7668	FSP	730

MID-COURSE EXECUTION ACCURACY

SGT	2105.9	SGR	615.4	SG3	257.7		
RRT	.1296	RRF	-.1492	RTF	-.8371		
SGB	2193.9	R23	-.0310	R13	-.8376		
SG1	2107.5	SG2	609.8	THA	2.37		

ORBIT DETERMINATION ACCURACY

ST	513.4	SR	571.3	SS	182.3
CRT	-.5332	CRS	.8129	CST	-.0231
LSA	682.0	MSA	394.0	SSA	54.3
EL1	674.2	EL2	368.1	ALF	129.32

LAUNCH DATE DEC 12 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 386.689 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	34.610	GAL	1.25	AZL	88.96	HCA	120.35	SMA	219.60	ECC	.32997	INC	1.0371	V1	30.251
RP	241.93	LAP	.89	LOP	200.37	VP	22.199	GAP	18.39	AZP	90.52	TAL	5.05	TAP	125.40	RCA	147.14	APO	292.06	V2	22.692
RC	152.629	GL	8.02	GP	2.63	ZAL	77.86	ZAP	169.30	ETS	164.46	ZAE	153.14	ETE	4.38	ZAC	92.45	ETC	255.87	CLP	169.63

PLANETOCENTRIC CONIC

C3	20.177	VHL	4.492	DLA	16.09	RAL	162.52	RAD	6567.8	VEL	11.898	PTH	2.11	VHP	8.755	DPA	-.49	RAP	190.74	ECC	1.3321

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 37 31	2741.57	-27.92	77.57	29.73	94.93	15 23 12	2141.6	-26.94	69.04
90.00	6 57 39	4335.44	4.40	179.55	23.09	62.00	8 9 55	3735.4	.62	172.91
100.00	16 7 49	2450.33	-29.27	56.00	29.58	96.35	16 48 40	1850.3	-28.08	47.39
100.00	8 10 2	4101.90	5.59	161.73	22.43	60.59	9 18 24	3501.9	1.63	155.18
110.00	17 35 57	2174.59	-32.80	34.46	28.98	100.22	18 12 12	1574.6	-31.04	25.68
110.00	8 58 24	3950.41	8.63	148.37	20.57	56.80	10 4 14	3350.4	4.20	142.08

DIFFERENTIAL CORRECTIONS

TDE	.2402	TRA	-.9754	TC3	1.8648	BAU	.5031
RDE	-.4425	RRA	-.1764	RC3	.0358	FAU	.08063
FDE	.1637	FRA	.2983	FC3	-3.4596	BSP	7098
BDE	.5035	BRA	.9913	BC3	1.8652	FSP	775

MID-COURSE EXECUTION ACCURACY

SGT	2139.5	SGR	611.9	SG3	271.3		
RRT	.1407	RRF	-.1616	RTF	-.8418		
SGB	2225.3	R23	-.0332	R13	-.8423		
SG1	2141.4	SG2	605.3	THA	2.50		

ORBIT DETERMINATION ACCURACY

ST	497.3	SR	568.7	SS	194.9
CRT	-.5147	CRS	.8616	CST	-.1026
LSA	672.5	MSA	391.5	SSA	56.6
EL1	660.2	EL2	367.3	ALF	127.67

LAUNCH DATE DEC 12 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 389.570 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	34.524	GAL	1.38	AZL	88.98	HCA	121.28	SMA	217.45	ECC	.32350	INC	1.0163	V1	30.251
RP	241.65	LAP	.87	LOP	201.29	VP	22.093	GAP	17.80	AZP	90.53	TAL	5.64	TAP	126.92	RCA	147.10	APO	287.79	V2	22.720
RC	154.936	GL	7.96	GP	2.72	ZAL	76.67	ZAP	168.66	ETS	164.84	ZAE	153.43	ETE	4.75	ZAC	92.60	ETC	255.87	CLP	168.99

PLANETOCENTRIC CONIC

C3	19.549	VHL	4.421	DLA	16.49	RAL	161.36	RAD	6567.8	VEL	11.871	PTH	2.11	VHP	8.543	DPA	-.52	RAP	191.04	ECC	1.3217

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 29 4	2748.78	-27.96	78.09	28.17	94.67	15 14 53	2148.8	-27.02	69.55
90.00	6 56 51	4313.19	3.69	178.30	21.55	61.90	8 8 44	3713.2	-.10	171.67
100.00	15 59 42	2456.49	-29.32	56.45	28.02	96.12	16 40 39	1856.5	-28.16	47.84
100.00	8 8 54	4080.71	4.88	160.55	20.89	60.47	9 16 55	3480.7	.91	154.01
110.00	17 28 30	2178.65	-32.85	34.76	27.44	100.05	18 4 49	1578.6	-31.11	25.97
110.00	8 56 35	3931.32	7.92	147.35	19.02	56.64	10 2 7	3331.3	3.48	141.08

DIFFERENTIAL CORRECTIONS

TDE	.2293	TRA	-.9340	TC3	1.9807	BAU	.5178
RDE	-.4337	RRA	-.1700	RC3	.0456	FAU	.08368
FDE	.1886	FRA	.2671	FC3	-3.7058	BSP	7050
BDE	.4906	BRA	.9494	BC3	1.9812	FSP	826

MID-COURSE EXECUTION ACCURACY

SGT	2179.3	SGR	608.5	SG3	285.6		
RRT	.1460	RRF	-.1752	RTF	-.8498		
SGB	2262.6	R23	-.0413	R13	-.8504		
SG1	2181.3	SG2	601.4	THA	2.53		

ORBIT DETERMINATION ACCURACY

ST	484.2	SR	566.2	SS	210.3
CRT	-.5137	CRS	.8988	CST	-.1920
LSA	669.9	MSA	383.4	SSA	58.8
EL1	651.7	EL2	360.9	ALF	126.50

LAUNCH DATE DEC 12 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 392.514 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	34.442	GAL	1.50	AZL	89.00	HCA	122.21	SMA	215.44	ECC	.31736	INC	.9951	V1	30.251
RP	241.36	LAP	.84	LOP	202.22	VP	21.993	GAP	17.21	AZP	90.53	TAL	6.23	TAP	128.44	RCA	147.07	APO	283.82	V2	22.748
RC	157.250	GL	7.89	GP	2.81	ZAL	75.50	ZAP	168.01	ETS	165.17	ZAE	153.75	ETE	5.14	ZAC	92.75	ETC	255.86	CLP	168.34

PLANETOCENTRIC CONIC

C3	18.975	VHL	4.356	DLA	16.87	RAL	160.20	RAD	6567.8	VEL	11.847	PTH	2.10	VHP	8.337	DPA	-.56	RAP	191.33	ECC	1.3123

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 20 44	2755.96	-28.00	78.62	26.63	94.41	15 6 39	2156.0	-27.09	70.07
90.00	6 55 56	4291.92	3.00	177.11	20.04	61.83	8 7 28	3691.9	-.79	170.48
100.00	15 51 41	2462.63	-29.36	56.90	26.49	95.89	16 32 44	1862.6	-28.23	48.28
100.00	8 7 39	4060.48	4.20	159.44	19.37	60.38	9 15 20	3460.5	.22	152.90
110.00	17 21 9	2182.73	-32.89	35.07	25.92	99.87	17 57 32	1582.7	-31.18	26.27
110.00	8 54 41	3913.15	7.24	146.39	17.50	56.50	9 59 54	3313.2	2.78	140.13

DIFFERENTIAL CORRECTIONS

TDE	.2064	TRA	-.9047	TC3	2.0703	BAU	.5254
RDE	-.4252	RRA	-.1635	RC3	.0567	FAU	.08696
FDE	.2125	FRA	.2307	FC3	-3.9677	BSP	7260
BDE	.4726	BRA	.9193	BC3	2.0711	FSP	872

MID-COURSE EXECUTION ACCURACY

SGT	2207.5	SGR	604.7	SG3	300.9		
RRT	.1624	RRF	-.1892	RTF	-.8524		
SGB	2288.8	R23	-.0403	R13	-.8530		
SG1	2209.9	SG2	596.0	THA	2.75		

ORBIT DETERMINATION ACCURACY

ST	464.5	SR	563.3	SS	225.4
CRT	-.4837	CRS	.9240	CST	-.2392
LSA	660.0	MSA	380.1	SSA	61.7
EL1	634.7	EL2	360.8	ALF	124.07

LAUNCH DATE DEC 12 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 395.517 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 34.363 GAL 1.62 AZL 89.03 HCA 123.14 SMA 213.57 ECC .31154 INC .9734 V1 30.251
RP 241.08 LAP .82 LOP 203.16 VP 21.900 GAP 16.62 AZP 90.53 TAL 6.82 TAP 129.96 RCA 147.03 APO 280.10 V2 22.777
RC 159.568 GL 7.81 GP 2.91 ZAL 74.33 ZAP 167.34 ETS 165.46 ZAE 154.11 ETE 5.56 ZAC 92.90 ETC 255.85 CLP 167.67

PLANETOCENTRIC CONIC

C3 18.450 VHL 4.295 DLA 17.23 RAL 159.04 RAD 6567.7 VEL 11.825 PTH 2.09 VHP 8.136 DPA -.58 RAP 191.61 ECC 1.3036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 12 30	2763.08	-28.04	79.13	25.11	94.15	14 58 33	2163.1	-27.17	70.58
90.00	6 54 52	4271.61	2.35	175.98	18.55	61.77	8 6 4	3671.6	-1.44	169.35
100.00	15 43 46	2468.72	-29.40	57.35	24.98	95.65	16 24 55	1868.7	-28.31	48.72
100.00	8 6 17	4041.19	3.55	158.37	17.89	60.30	9 13 38	3441.2	-.43	151.85
110.00	17 13 53	2186.80	-32.94	35.38	24.42	99.69	17 50 20	1586.8	-31.25	26.56
110.00	8 52 40	3895.88	6.59	145.47	16.00	56.38	9 57 36	3295.9	2.12	139.23

DIFFERENTIAL CORRECTIONS

TDE .1849 TRA -.8743 TC3 2.1645 BAU .5342
RDE -.4172 RRA -.1571 RC3 .0690 FAU .09044
FDE .2383 FRA .1928 FC3-4.2439 BSP 7449
BDE .4563 BRA .8884 BC3 2.1656 FSP 924

MID-COURSE EXECUTION ACCURACY

SGT 2238.2 SGR 601.1 SG3 317.0
RRT .1791 RRF -.2050 RTF -.8559
SGB 2317.5 R23 -.0408 R13 -.8565
SG1 2241.0 SG2 590.6 THA 2.96

ORBIT DETERMINATION ACCURACY

ST 445.1 SR 560.3 SS 243.1
CRT -.4530 CRS .9415 CST -.2774
LSA 652.9 MSA 375.1 SSA 64.6
EL1 618.9 EL2 359.3 ALF 121.43

LAUNCH DATE DEC 12 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 398.575 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 34.288 GAL 1.74 AZL 89.05 HCA 124.07 SMA 211.81 ECC .30602 INC .9513 V1 30.251
RP 240.79 LAP .79 LOP 204.09 VP 21.812 GAP 16.04 AZP 90.53 TAL 7.41 TAP 131.49 RCA 146.99 APO 276.62 V2 22.806
RC 161.890 GL 7.71 GP 3.01 ZAL 73.17 ZAP 166.66 ETS 165.72 ZAE 154.50 ETE 6.01 ZAC 93.06 ETC 255.84 CLP 167.00

PLANETOCENTRIC CONIC

C3 17.970 VHL 4.239 DLA 17.58 RAL 157.87 RAD 6567.7 VEL 11.805 PTH 2.09 VHP 7.940 DPA -.59 RAP 191.89 ECC 1.2957

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 24	2770.05	-28.07	79.64	23.62	93.90	14 50 34	2170.0	-27.23	71.07
90.00	6 53 41	4252.29	1.73	174.90	17.09	61.73	8 4 33	3652.3	-2.07	168.27
100.00	15 36 0	2474.69	-29.44	57.79	23.49	95.43	16 17 14	1874.7	-28.38	49.15
100.00	8 4 46	4022.90	2.93	157.37	16.43	60.24	9 11 49	3422.9	-1.05	150.84
110.00	17 6 44	2190.80	-32.99	35.68	22.95	99.52	17 43 15	1590.8	-31.32	26.86
110.00	8 50 32	3879.56	5.97	144.61	14.54	56.28	9 55 11	3279.6	1.50	138.38

DIFFERENTIAL CORRECTIONS

TDE .1666 TRA -.8419 TC3 2.2574 BAU .5427
RDE -.4096 RRA -.1508 RC3 .0823 FAU .09402
FDE .2646 FRA .1518 FC3-4.5297 BSP 7600
BDE .4422 BRA .8553 BC3 2.2589 FSP 980

MID-COURSE EXECUTION ACCURACY

SGT 2266.8 SGR 597.5 SG3 333.8
RRT .1949 RRF -.2218 RTF -.8595
SGB 2344.2 R23 -.0431 R13 -.8602
SG1 2270.0 SG2 585.2 THA 3.15

ORBIT DETERMINATION ACCURACY

ST 426.9 SR 557.3 SS 261.5
CRT -.4269 CRS .9525 CST -.3121
LSA 649.2 MSA 367.6 SSA 67.5
EL1 605.4 EL2 355.3 ALF 118.86

LAUNCH DATE DEC 12 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 401.684 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 34.216 GAL 1.85 AZL 89.07 HCA 125.01 SMA 210.16 ECC .30078 INC .9285 V1 30.251
RP 240.49 LAP .76 LOP 205.03 VP 21.730 GAP 15.47 AZP 90.53 TAL 8.00 TAP 133.01 RCA 146.95 APO 273.37 V2 22.836
RC 164.213 GL 7.61 GP 3.12 ZAL 72.02 ZAP 165.96 ETS 165.95 ZAE 154.93 ETE 6.49 ZAC 93.22 ETC 255.84 CLP 166.31

PLANETOCENTRIC CONIC

C3 17.531 VHL 4.187 DLA 17.90 RAL 156.71 RAD 6567.7 VEL 11.786 PTH 2.08 VHP 7.749 DPA -.60 RAP 192.16 ECC 1.2885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 56 29	2776.79	-28.10	80.13	22.15	93.65	14 42 46	2176.8	-27.30	71.56
90.00	6 52 20	4234.08	1.14	173.88	15.66	61.70	8 2 54	3634.1	-2.65	167.25
100.00	15 28 23	2480.46	-29.48	58.21	22.03	95.21	16 9 43	1880.5	-28.44	49.56
100.00	8 3 8	4005.64	2.35	156.42	14.99	60.19	9 9 53	3405.6	-1.64	149.90
110.00	16 59 43	2194.67	-33.03	35.98	21.50	99.35	17 36 18	1594.7	-31.39	27.14
110.00	8 48 17	3864.19	5.39	143.80	13.10	56.19	9 52 41	3264.2	.91	137.58

DIFFERENTIAL CORRECTIONS

TDE .1492 TRA -.8089 TC3 2.3515 BAU .5516
RDE -.4024 RRA -.1444 RC3 .0968 FAU .09780
FDE .2917 FRA .1069 FC3-4.8298 BSP 7724
BDE .4292 BRA .8217 BC3 2.3535 FSP 1039

MID-COURSE EXECUTION ACCURACY

SGT 2296.2 SGR 594.0 SG3 351.4
RRT .2117 RRF -.2399 RTF -.8632
SGB 2371.8 R23 -.0457 R13 -.8640
SG1 2299.8 SG2 579.6 THA 3.35

ORBIT DETERMINATION ACCURACY

ST 408.6 SR 554.2 SS 281.0
CRT -.3998 CRS .9586 CST -.3395
LSA 647.5 MSA 358.8 SSA 70.5
EL1 592.9 EL2 350.1 ALF 116.13

LAUNCH DATE DEC 12 1964 FLIGHT TIME 170.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 404.839 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 34.147 GAL 1.96 AZL 89.09 HCA 125.95 SMA 208.61 ECC .29581 INC .9051 V1 30.251
RP 240.19 LAP .73 LOP 205.96 VP 21.654 GAP 14.90 AZP 90.53 TAL 8.59 TAP 134.54 RCA 146.90 APO 270.32 V2 22.866
RC 166.536 GL 7.48 GP 3.23 ZAL 70.88 ZAP 165.25 ETS 166.15 ZAE 155.39 ETE 7.01 ZAC 93.38 ETC 255.83 CLP 165.60

PLANETOCENTRIC CONIC

C3 17.131 VHL 4.139 DLA 18.21 RAL 155.56 RAD 6567.7 VEL 11.769 PTH 2.08 VHP 7.563 DPA -.59 RAP 192.42 ECC 1.2819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 48 45	2783.23	-28.13	80.60	20.71	93.42	14 35 9	2183.2	-27.36	72.02
90.00	6 50 51	4216.96	.59	172.93	14.26	61.69	8 1 8	3617.0	-3.20	166.30
100.00	15 20 57	2485.96	-29.51	58.62	20.60	94.99	16 2 23	1886.0	-28.51	49.96
100.00	8 1 21	3989.46	1.80	155.53	13.59	60.16	9 7 50	3389.5	-2.19	149.01
110.00	16 52 52	2198.36	-33.07	36.26	20.08	99.19	17 29 30	1598.4	-31.45	27.41
110.00	8 45 55	3849.83	4.85	143.04	11.69	56.12	9 50 5	3249.8	.36	136.83

DIFFERENTIAL CORRECTIONS

TDE .1326 TRA -.7763 TC3 2.4432 BAU .5602
RDE -.3956 RRA -.1380 RC3 .1127 FAU .10180
FDE .3197 FRA .0589 FC3-5.1443 BSP 7853
BDE .4172 BRA .7885 BC3 2.4458 FSP 1101

MID-COURSE EXECUTION ACCURACY

SGT 2324.6 SGR 590.8 SG3 370.0
RRT .2298 RRF -.2597 RTF -.8668
SGB 2398.5 R23 -.0488 R13 -.8676
SG1 2328.9 SG2 573.9 THA 3.56

ORBIT DETERMINATION ACCURACY

ST 390.6 SR 550.9 SS 301.5
CRT -.3712 CRS .9610 CST -.3593
LSA 647.8 MSA 349.2 SSA 73.6
EL1 581.3 EL2 343.7 ALF 113.31

LAUNCH DATE DEC 12 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 408.039 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	34.082	GAL	2.06	AZL	89.12	HCA	126.89	SMA	207.16	ECC	.29110	INC	.8812
RP	239.88	LAP	.70	LOP	206.90	VP	21.583	GAP	14.34	AZP	90.53	TAL	9.17	TAP	136.06	RCA	146.85	APO	267.46
RC	168.857	GL	7.35	GP	3.35	ZAL	69.76	ZAP	164.53	ETS	166.33	ZAE	155.89	ETE	7.58	ZAC	93.54	ETC	255.83

V1	30.251	CLP	164.89																
V2	22.897																		

PLANETOCENTRIC CONIC

C3	16.767	VHL	4.095	DLA	18.49	RAL	154.41	RAD	6567.7	VEL	11.754	PTH	2.07	VHP	7.382	DPA	-.58	RAP	192.67
ECC	1.2759																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 41 16	2789.30	-28.15	81.04	19.30	93.20	14 27 45	2189.3	-27.41	72.46
90.00	6 49 12	4200.99	.07	172.04	12.89	61.68	7 59 13	3601.0	-3.72	165.40
100.00	15 13 43	2491.12	-29.54	59.00	19.19	94.80	15 55 15	1891.1	-28.56	50.33
100.00	7 59 25	3974.39	1.29	154.70	12.22	60.13	9 5 39	3374.4	-2.70	148.18
110.00	16 46 12	2201.81	-33.11	36.52	18.68	99.04	17 22 54	1601.8	-31.51	27.66
110.00	8 43 26	3836.47	4.34	142.34	10.31	56.06	9 47 22	3236.5	-.15	136.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1169	TRA	-.7433	TC3	2.5324	BAU	.5684	SGT	2351.7	SGR	587.8	SG3	389.5	ST	372.6	SR	547.6	SS	322.4
RDE	-.3891	RRA	-.1316	RC3	.1299	FAU	.10599	RRT	.2492	RRF	-.2808	RTF	-.8702	CRT	-.3416	CRS	.9607	CST	-.3735
FDE	.3482	FRA	.0068	FC3	-5.4728	BSP	7954	SGB	2424.0	R23	-.0522	R13	-.8712	LSA	649.6	MSA	338.8	SSA	76.8
BDE	.4063	BRA	.7548	BC3	2.5358	FSP	1165	SG1	2356.5	SG2	568.1	THA	3.78	EL1	570.8	EL2	336.0	ALF	110.44

LAUNCH DATE DEC 12 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 411.280 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	34.019	GAL	2.17	AZL	89.14	HCA	127.83	SMA	205.79	ECC	.28663	INC	.8565
RP	239.58	LAP	.68	LOP	207.85	VP	21.518	GAP	13.78	AZP	90.53	TAL	9.75	TAP	137.58	RCA	146.80	APO	264.77
RC	171.174	GL	7.20	GP	3.47	ZAL	68.65	ZAP	163.79	ETS	166.48	ZAE	156.41	ETE	8.19	ZAC	93.71	ETC	255.82

V1	30.251	CLP	164.15																
V2	22.928																		

PLANETOCENTRIC CONIC

C3	16.435	VHL	4.054	DLA	18.74	RAL	153.27	RAD	6567.7	VEL	11.740	PTH	2.07	VHP	7.205	DPA	-.55	RAP	192.91
ECC	1.2705																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 34 0	2794.94	-28.17	81.46	17.91	93.00	14 20 34	2194.9	-27.46	72.86
90.00	6 47 22	4186.17	-.41	171.21	11.55	61.69	7 57 9	3586.2	-4.19	164.57
100.00	15 6 43	2495.92	-29.57	59.35	17.81	94.61	15 48 19	1895.9	-28.61	50.68
100.00	7 57 20	3960.43	.81	153.94	10.87	60.12	9 3 20	3360.4	-3.17	147.41
110.00	16 39 43	2204.99	-33.14	36.76	17.31	98.90	17 16 28	1605.0	-31.56	27.89
110.00	8 40 50	3824.12	3.87	141.70	8.96	56.01	9 44 34	3224.1	-.62	135.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1135	TRA	-.7001	TC3	2.6439	BAU	.5818	SGT	2390.1	SGR	585.1	SG3	410.0	ST	358.0	SR	544.2	SS	342.3
RDE	-.3830	RRA	-.1251	RC3	.1484	FAU	.11040	RRT	.2618	RRF	-.3029	RTF	-.8768	CRT	-.3546	CRS	.9579	CST	-.4218
FDE	.3756	FRA	-.0494	FC3	-5.8156	BSP	7800	SGB	2460.7	R23	-.0620	R13	-.8779	LSA	656.3	MSA	323.0	SSA	80.4
BDE	.3995	BRA	.7112	BC3	2.6481	FSP	1233	SG1	2395.3	SG2	563.4	THA	3.88	EL1	566.5	EL2	321.5	ALF	109.72

LAUNCH DATE DEC 12 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 414.558 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.960	GAL	2.27	AZL	89.17	HCA	128.78	SMA	204.51	ECC	.28239	INC	.8312
RP	239.26	LAP	.65	LOP	208.79	VP	21.457	GAP	13.23	AZP	90.52	TAL	10.32	TAP	139.10	RCA	146.75	APO	262.26
RC	173.485	GL	7.04	GP	3.60	ZAL	67.57	ZAP	163.03	ETS	166.62	ZAE	156.97	ETE	8.86	ZAC	93.88	ETC	255.81

V1	30.251	CLP	163.41																
V2	22.959																		

PLANETOCENTRIC CONIC

C3	16.132	VHL	4.016	DLA	18.98	RAL	152.15	RAD	6567.6	VEL	11.727	PTH	2.07	VHP	7.032	DPA	-.52	RAP	193.15
ECC	1.2655																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 27 2	2799.99	-28.19	81.82	16.56	92.81	14 13 42	2200.0	-27.50	73.23
90.00	6 45 23	4172.65	-.84	170.46	10.24	61.69	7 54 55	3572.6	-4.62	163.81
100.00	15 0 1	2500.18	-29.59	59.67	16.46	94.45	15 41 41	1900.2	-28.66	50.99
100.00	7 55 5	3947.69	.38	153.24	9.56	60.11	9 0 53	3347.7	-3.60	146.71
110.00	16 33 29	2207.77	-33.17	36.97	15.97	98.78	17 10 16	1607.8	-31.60	28.10
110.00	8 38 7	3812.87	3.44	141.11	7.65	55.97	9 41 40	3212.9	-1.05	134.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0892	TRA	-.6779	TC3	2.7024	BAU	.5840	SGT	2403.0	SGR	582.8	SG3	431.5	ST	338.5	SR	540.6	SS	364.9
RDE	-.3771	RRA	-.1185	RC3	.1686	FAU	.11501	RRT	.2916	RRF	-.3278	RTF	-.8767	CRT	-.2828	CRS	.9544	CST	-.3894
FDE	.4064	FRA	-.1085	FC3	-6.1721	BSP	8138	SGB	2472.6	R23	-.0604	R13	-.8779	LSA	657.6	MSA	317.2	SSA	83.3
BDE	.3875	BRA	.6882	BC3	2.7076	FSP	1306	SG1	2409.3	SG2	556.0	THA	4.27	EL1	553.4	EL2	317.1	ALF	105.10

LAUNCH DATE DEC 12 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 417.873 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.903	GAL	2.36	AZL	89.19	HCA	129.73	SMA	203.30	ECC	.27838	INC	.8051
RP	238.95	LAP	.62	LOP	209.74	VP	21.401	GAP	12.69	AZP	90.51	TAL	10.88	TAP	140.61	RCA	146.70	APO	259.89
RC	175.790	GL	6.87	GP	3.74	ZAL	66.51	ZAP	162.26	ETS	166.73	ZAE	157.55	ETE	9.60	ZAC	94.05	ETC	255.81

V1	30.251	CLP	162.64																
V2	22.991																		

PLANETOCENTRIC CONIC

C3	15.857	VHL	3.982	DLA	19.18	RAL	151.04	RAD	6567.6	VEL	11.715	PTH	2.06	VHP	6.864	DPA	-.47	RAP	193.37
ECC	1.2610																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 20 22	2804.48	-28.20	82.15	15.24	92.65	14 7 7	2204.5	-27.54	73.55
90.00	6 43 12	4160.35	-1.24	169.77	8.96	61.71	7 52 33	3560.3	-5.01	163.12
100.00	14 53 34	2503.95	-29.61	59.95	15.14	94.30	15 35 18	1903.9	-28.70	51.26
100.00	7 52 41	3936.12	-.01	152.60	8.27	60.11	8 58 18	3336.1	-3.99	146.07
110.00	16 27 28	2210.18	-33.20	37.16	14.66	98.67	17 4 18	1610.2	-31.64	28.28
110.00	8 35 17	3802.65	3.05	140.57	6.36	55.94	9 38 40	3202.7	-1.44	134.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0757	TRA	-.6471	TC3	2.7778	BAU	.5903	SGT	2424.4	SGR	581.1	SG3	454.1	ST	322.1	SR	537.0	SS	385.8
RDE	-.3715	RRA	-.1117	RC3	.1904	FAU	.11986	RRT	.3159	RRF	-.3537	RTF	-.8791	CRT	-.2474	CRS	.9491	CST	-.3876
FDE	.4354	FRA	-.1730	FC3	-6.5439	BSP	8249	SGB	2493.1	R23	-.0642	R13	-.8804	LSA	662.5	MSA	307.3	SSA	86.5
BDE	.3791	BRA	.6567	BC3	2.7843	FSP	1381	SG1	2431.7	SG2	549.7	THA	4.56	EL1	545.7	EL2	307.1	ALF	102.43

LAUNCH DATE DEC 12 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 421.221 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.849 GAL 2.46 AZL 89.22 HCA 130.68 SMA 202.16 ECC .27458 INC .7783 V1 30.251
RP 238.63 LAP .59 LOP 210.69 VP 21.350 GAP 12.15 AZP 90.51 TAL 11.44 TAP 142.11 RCA 146.65 APO 257.67 V2 23.024
RC 178.086 GL 6.68 GP 3.88 ZAL 65.47 ZAP 161.46 ETS 166.83 ZAE 158.17 ETE 10.40 ZAC 94.23 ETC 255.80 CLP 161.86

PLANETOCENTRIC CONIC

C3 15.607 VHL 3.951 DLA 19.37 RAL 149.95 RAD 6567.6 VEL 11.704 PTH 2.06 VHP 6.700 DPA -.40 RAP 193.58 ECC 1.2569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 14 1	2808.32	-28.21	82.43	13.94	92.51	14 0 50	2208.3	-27.57	73.83
90.00	6 40 51	4149.32	-1.60	169.15	7.70	61.72	7 50 0	3549.3	-5.37	162.50
100.00	14 47 25	2507.13	-29.63	60.18	13.85	94.18	15 29 12	1907.1	-28.73	51.49
100.00	7 50 8	3925.74	-.36	152.03	7.02	60.11	8 55 33	3325.7	-4.34	145.50
110.00	16 21 42	2212.15	-33.22	37.31	13.38	98.58	16 58 35	1612.1	-31.67	28.42
110.00	8 32 20	3793.49	2.70	140.09	5.10	55.91	9 35 33	3193.5	-1.79	133.89

DIFFERENTIAL CORRECTIONS
TDE .0638 TRA -.6153 TC3 2.8514 BAU .5966
RDE -.3661 RRA -.1048 RC3 .2137 FAU .12495
FDE .4655 FRA -.2416 FC3-6.9309 BSP 8337
BDE .3717 BRA .6242 BC3 2.8594 FSP 1462

MID-COURSE EXECUTION ACCURACY
SGT 2445.3 SGR 580.1 SG3 477.8
RRT .3411 RRF -.3814 RTF -.8818
SGB 2513.1 R23 -.0691 R13 -.8832
SG1 2453.7 SG2 543.4 THA 4.86

ORBIT DETERMINATION ACCURACY
ST 306.0 SR 533.2 SS 407.4
CRT -.2147 CRS .9433 CST -.3851
LSA 669.0 MSA 297.2 SSA 89.6
EL1 539.0 EL2 295.7 ALF 100.09

LAUNCH DATE DEC 12 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 424.602 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.797 GAL 2.55 AZL 89.25 HCA 131.63 SMA 201.08 ECC .27098 INC .7505 V1 30.251
RP 238.31 LAP .56 LOP 211.64 VP 21.303 GAP 11.62 AZP 90.50 TAL 11.99 TAP 143.61 RCA 146.59 APO 255.57 V2 23.056
RC 180.373 GL 6.48 GP 4.04 ZAL 64.46 ZAP 160.65 ETS 166.92 ZAE 158.81 ETE 11.30 ZAC 94.41 ETC 255.80 CLP 161.06

PLANETOCENTRIC CONIC

C3 15.381 VHL 3.922 DLA 19.52 RAL 148.88 RAD 6567.6 VEL 11.695 PTH 2.06 VHP 6.540 DPA -.33 RAP 193.79 ECC 1.2531

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 8 0	2811.45	-28.22	82.66	12.67	92.39	13 54 52	2211.5	-27.59	74.05
90.00	6 38 17	4139.59	-1.91	168.61	6.48	61.74	7 47 17	3539.6	-5.67	161.95
100.00	14 41 35	2509.69	-29.64	60.37	12.58	94.08	15 23 25	1909.7	-28.76	51.68
100.00	7 47 24	3916.58	-.67	151.53	5.79	60.11	8 52 40	3316.6	-4.64	145.00
110.00	16 16 12	2213.65	-33.23	37.42	12.12	98.52	16 53 6	1613.7	-31.70	28.53
110.00	8 29 16	3785.39	2.39	139.67	3.87	55.89	9 32 21	3185.4	-2.10	133.47

DIFFERENTIAL CORRECTIONS
TDE .0581 TRA -.5796 TC3 2.9330 BAU .6051
RDE -.3610 RRA -.0978 RC3 .2389 FAU .13035
FDE .4939 FRA -.3157 FC3-7.3367 BSP 8302
BDE .3656 BRA .5878 BC3 2.9427 FSP 1544

MID-COURSE EXECUTION ACCURACY
SGT 2471.2 SGR 579.8 SG3 502.9
RRT .3647 RRF -.4103 RTF -.8856
SGB 2538.3 R23 -.0765 R13 -.8873
SG1 2480.7 SG2 537.8 THA 5.13

ORBIT DETERMINATION ACCURACY
ST 290.9 SR 529.3 SS 427.4
CRT -.2084 CRS .9362 CST -.4040
LSA 676.2 MSA 285.5 SSA 93.1
EL1 534.1 EL2 281.9 ALF 99.08

LAUNCH DATE DEC 12 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 428.011 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.748 GAL 2.63 AZL 89.28 HCA 132.59 SMA 200.07 ECC .26757 INC .7219 V1 30.251
RP 237.98 LAP .53 LOP 212.60 VP 21.261 GAP 11.09 AZP 90.49 TAL 12.52 TAP 145.11 RCA 146.54 APO 253.61 V2 23.089
RC 182.651 GL 6.26 GP 4.20 ZAL 63.47 ZAP 159.82 ETS 166.99 ZAE 159.47 ETE 12.29 ZAC 94.60 ETC 255.79 CLP 160.24

PLANETOCENTRIC CONIC

C3 15.175 VHL 3.896 DLA 19.65 RAL 147.82 RAD 6567.6 VEL 11.686 PTH 2.06 VHP 6.385 DPA -.24 RAP 193.98 ECC 1.2497

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 2 22	2813.78	-28.23	82.83	11.44	92.31	13 49 16	2213.8	-27.61	74.22
90.00	6 35 32	4131.21	-2.18	168.14	5.29	61.76	7 44 23	3531.2	-5.94	161.48
100.00	14 36 6	2511.54	-29.65	60.51	11.35	94.01	15 17 57	1911.5	-28.78	51.81
100.00	7 44 30	3908.68	-.94	151.10	4.60	60.12	8 49 38	3308.7	-4.91	144.56
110.00	16 11 0	2214.61	-33.24	37.50	10.89	98.48	16 47 55	1614.6	-31.71	28.60
110.00	8 26 4	3778.37	2.12	139.30	2.68	55.87	9 29 3	3178.4	-2.37	133.10

DIFFERENTIAL CORRECTIONS
TDE .0431 TRA -.5545 TC3 2.9822 BAU .6074
RDE -.3560 RRA -.0905 RC3 .2658 FAU .13589
FDE .5247 FRA -.3930 FC3-7.7524 BSP 8511
BDE .3586 BRA .5619 BC3 2.9940 FSP 1636

MID-COURSE EXECUTION ACCURACY
SGT 2480.4 SGR 580.6 SG3 528.8
RRT .3961 RRF -.4413 RTF -.8862
SGB 2547.4 R23 -.0800 R13 -.8881
SG1 2491.5 SG2 530.7 THA 5.55

ORBIT DETERMINATION ACCURACY
ST 276.4 SR 525.4 SS 448.9
CRT -.1495 CRS .9295 CST -.3739
LSA 683.2 MSA 279.6 SSA 95.2
EL1 527.6 EL2 272.1 ALF 96.13

LAUNCH DATE DEC 12 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 431.450 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.701 GAL 2.72 AZL 89.31 HCA 133.54 SMA 199.12 ECC .26435 INC .6922 V1 30.251
RP 237.65 LAP .50 LOP 213.56 VP 21.223 GAP 10.58 AZP 90.48 TAL 13.05 TAP 146.59 RCA 146.48 APO 251.76 V2 23.123
RC 184.919 GL 6.03 GP 4.37 ZAL 62.51 ZAP 158.96 ETS 167.05 ZAE 160.17 ETE 13.40 ZAC 94.79 ETC 255.79 CLP 159.40

PLANETOCENTRIC CONIC

C3 14.988 VHL 3.871 DLA 19.76 RAL 146.79 RAD 6567.6 VEL 11.678 PTH 2.05 VHP 6.233 DPA -.13 RAP 194.16 ECC 1.2467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 57 6	2815.30	-28.23	82.94	10.24	92.25	13 44 1	2215.3	-27.62	74.33
90.00	6 32 35	4124.14	-2.41	167.75	4.12	61.78	7 41 19	3524.1	-6.16	161.08
100.00	14 30 57	2512.67	-29.65	60.59	10.15	93.97	15 12 50	1912.7	-28.79	51.89
100.00	7 41 25	3902.01	-1.17	150.73	3.43	60.13	8 46 27	3302.0	-5.13	144.19
110.00	16 6 5	2215.03	-33.24	37.53	9.69	98.46	16 43 0	1615.0	-31.72	28.63
110.00	8 22 46	3772.42	1.90	138.99	1.52	55.86	9 25 39	3172.4	-2.60	132.79

DIFFERENTIAL CORRECTIONS
TDE .0350 TRA -.5249 TC3 3.0412 BAU .6123
RDE -.3512 RRA -.0830 RC3 .2949 FAU .14181
FDE .5528 FRA -.4767 FC3-8.1912 BSP 8570
BDE .3529 BRA .5314 BC3 3.0555 FSP 1728

MID-COURSE EXECUTION ACCURACY
SGT 2495.8 SGR 582.4 SG3 556.3
RRT .4254 RRF -.4734 RTF -.8883
SGB 2562.9 R23 -.0863 R13 -.8903
SG1 2508.7 SG2 524.4 THA 5.93

ORBIT DETERMINATION ACCURACY
ST 262.6 SR 521.2 SS 468.3
CRT -.1224 CRS .9216 CST -.3706
LSA 690.3 MSA 271.9 SSA 97.8
EL1 522.5 EL2 260.0 ALF 94.69

LAUNCH DATE DEC 12 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 434.915 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.656	GAL	2.80	AZL	89.34	HCA	134.50	SMA	198.22	ECC	.26129	INC	.6615	V1	30.251
RP	237.31	LAP	.47	LOP	214.52	VP	21.188	GAP	10.07	AZP	90.46	TAL	13.57	TAP	148.07	RCA	146.43	APO	250.01	V2	23.157
RC	187.176	GL	5.79	GP	4.55	ZAL	61.58	ZAP	158.09	ETS	167.10	ZAE	160.88	ETE	14.64	ZAC	94.99	ETC	255.78	CLP	158.54

PLANETOCENTRIC CONIC

C3	14.820	VHL	3.850	DLA	19.83	RAL	145.79	RAD	6567.6	VEL	11.671	PTH	2.05	VHP	6.085	DPA	-.01	RAP	194.32	ECC	1.2439

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 52 13	2815.96	-28.24	82.99	9.06	92.23	13 39 9	2216.0	-27.63	74.38
90.00	6 29 25	4118.43	-2.59	167.43	2.99	61.79	7 38 4	3518.4	-6.34	160.76
100.00	14 26 10	2513.03	-29.65	60.62	8.98	93.95	15 8 3	1913.0	-28.79	51.92
100.00	7 38 10	3896.58	-1.35	150.43	2.30	60.14	8 43 7	3296.6	-5.32	143.89
110.00	16 1 28	2214.86	-33.24	37.51	8.52	98.47	16 38 23	1614.9	-31.72	28.62
110.00	8 19 21	3767.52	1.71	138.74	.38	55.85	9 22 9	3167.5	-2.78	132.53

DIFFERENTIAL CORRECTIONS

TDE	.0280	TRA	-.4958	TC3	3.0939	BAU	.6164
RDE	-.3465	RRA	-.0752	RC3	.3259	FAU	.14797
FDE	.5816	FRA	-.5655	FC3	-8.6440	BSP	8626
BDE	.3476	BRA	.5015	BC3	3.1110	FSP	1827

MID-COURSE EXECUTION ACCURACY

SGT	2508.2	SGR	585.7	SG3	585.0		
RRT	.4557	RRF	-.5068	RTF	-.8900		
SGB	2575.7	R23	-.0934	R13	-.8924		
SG1	2523.0	SG2	518.3	THA	6.34		

ORBIT DETERMINATION ACCURACY

ST	249.5	SR	517.0	SS	487.9		
CRT	-.0973	CRS	.9136	CST	-.3670		
LSA	698.1	MSA	265.1	SSA	100.0		
EL1	517.7	EL2	247.9	ALF	93.49		

LAUNCH DATE DEC 12 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 438.406 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.613	GAL	2.88	AZL	89.37	HCA	135.47	SMA	197.37	ECC	.25840	INC	.6298	V1	30.251
RP	236.98	LAP	.44	LOP	215.48	VP	21.158	GAP	9.57	AZP	90.45	TAL	14.07	TAP	149.54	RCA	146.37	APO	248.37	V2	23.191
RC	189.421	GL	5.53	GP	4.74	ZAL	60.68	ZAP	157.19	ETS	167.14	ZAE	161.62	ETE	16.04	ZAC	95.19	ETC	255.78	CLP	157.66

PLANETOCENTRIC CONIC

C3	14.667	VHL	3.830	DLA	19.88	RAL	144.80	RAD	6567.6	VEL	11.664	PTH	2.05	VHP	5.942	DPA	.13	RAP	194.48	ECC	1.2414

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 47 44	2815.70	-28.24	82.97	7.92	92.24	13 34 40	2215.7	-27.63	74.36
90.00	6 26 3	4114.06	-2.73	167.19	1.88	61.80	7 34 37	3514.1	-6.48	160.51
100.00	14 21 44	2512.59	-29.65	60.58	7.83	93.97	15 3 37	1912.6	-28.79	51.89
100.00	7 34 44	3892.41	-1.49	150.20	1.19	60.14	8 39 37	3292.4	-5.46	143.66
110.00	15 57 9	2214.06	-33.23	37.45	7.38	98.50	16 34 3	1614.1	-31.70	28.56
110.00	8 15 49	3763.69	1.56	138.54	359.28	55.85	9 18 32	3163.7	-2.93	132.33

DIFFERENTIAL CORRECTIONS

TDE	.0235	TRA	-.4664	TC3	3.1448	BAU	.6206
RDE	-.3419	RRA	-.0670	RC3	.3594	FAU	.15447
FDE	.6086	FRA	-.6607	FC3	-9.1179	BSP	8636
BDE	.3427	BRA	.4712	BC3	3.1653	FSP	1928

MID-COURSE EXECUTION ACCURACY

SGT	2520.7	SGR	590.6	SG3	615.2		
RRT	.4864	RRF	-.5412	RTF	-.8920		
SGB	2588.9	R23	-.1014	R13	-.8947		
SG1	2537.7	SG2	512.5	THA	6.78		

ORBIT DETERMINATION ACCURACY

ST	236.6	SR	512.6	SS	506.2		
CRT	-.0844	CRS	.9049	CST	-.3729		
LSA	705.5	MSA	258.6	SSA	102.1		
EL1	513.1	EL2	235.6	ALF	92.83		

LAUNCH DATE DEC 12 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 441.922 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.572	GAL	2.95	AZL	89.40	HCA	136.44	SMA	196.57	ECC	.25566	INC	.5968	V1	30.251
RP	236.64	LAP	.41	LOP	216.45	VP	21.131	GAP	9.07	AZP	90.43	TAL	14.56	TAP	151.00	RCA	146.32	APO	246.83	V2	23.226
RC	191.655	GL	5.26	GP	4.94	ZAL	59.80	ZAP	156.27	ETS	167.16	ZAE	162.37	ETE	17.62	ZAC	95.40	ETC	255.77	CLP	156.76

PLANETOCENTRIC CONIC

C3	14.528	VHL	3.812	DLA	19.90	RAL	143.84	RAD	6567.6	VEL	11.658	PTH	2.05	VHP	5.801	DPA	.28	RAP	194.62	ECC	1.2391

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 43 40	2814.51	-28.23	82.88	6.81	92.28	13 30 35	2214.5	-27.62	74.27
90.00	6 22 28	4111.04	-2.83	167.02	.80	61.81	7 30 59	3511.0	-6.58	160.34
100.00	14 17 42	2511.31	-29.65	60.49	6.72	94.02	14 59 33	1911.3	-28.77	51.79
100.00	7 31 8	3889.47	-1.59	150.04	.11	60.15	8 35 57	3289.5	-5.55	143.50
110.00	15 53 10	2212.63	-33.22	37.34	6.26	98.56	16 30 2	1612.6	-31.68	28.46
110.00	8 12 9	3760.91	1.46	138.39	358.21	55.84	9 14 50	3160.9	-3.03	132.19

DIFFERENTIAL CORRECTIONS

TDE	.0247	TRA	-.4336	TC3	3.2002	BAU	.6263
RDE	-.3373	RRA	-.0583	RC3	.3953	FAU	.16134
FDE	.6317	FRA	-.7638	FC3	-9.6142	BSP	8525
BDE	.3382	BRA	.4375	BC3	3.2245	FSP	2028

MID-COURSE EXECUTION ACCURACY

SGT	2536.4	SGR	597.1	SG3	647.2		
RRT	.5157	RRF	-.5760	RTF	-.8947		
SGB	2605.7	R23	-.1113	R13	-.8978		
SG1	2555.8	SG2	507.7	THA	7.21		

ORBIT DETERMINATION ACCURACY

ST	223.5	SR	507.8	SS	521.9		
CRT	-.1087	CRS	.8948	CST	-.4096		
LSA	711.7	MSA	250.7	SSA	104.8		
EL1	508.6	EL2	221.9	ALF	93.38		

LAUNCH DATE DEC 12 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 445.459 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.533	GAL	3.02	AZL	89.44	HCA	137.40	SMA	195.82	ECC	.25308	INC	.5625	V1	30.251
RP	236.29	LAP	.38	LOP	217.42	VP	21.108	GAP	8.58	AZP	90.41	TAL	15.04	TAP	152.45	RCA	146.26	APO	245.37	V2	23.261
RC	193.877	GL	4.97	GP	5.15	ZAL	58.96	ZAP	155.33	ETS	167.18	ZAE	163.14	ETE	19.42	ZAC	95.62	ETC	255.77	CLP	155.84

PLANETOCENTRIC CONIC

C3	14.403	VHL	3.795	DLA	19.90	RAL	142.91	RAD	6567.6	VEL	11.653	PTH	2.05	VHP	5.665	DPA	.46	RAP	194.75	ECC	1.2370

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 40 2	2812.28	-28.23	82.72	5.73	92.36	13 26 54	2212.3	-27.60	74.11
90.00	6 18 41	4109.41	-2.88	166.93	359.75	61.82	7 27 10	3509.4	-6.63	160.25
100.00	14 14 3	2509.11	-29.64	60.33	5.64	94.10	14 55 52	1909.1	-28.75	51.64
100.00	7 27 21	3887.82	-1.65	149.95	359.07	60.15	8 32 9	3287.8	-5.61	143.40
110.00	15 49 30	2210.49	-33.20	37.18	5.17	98.66	16 26 21	1610.5	-31.65	28.30
110.00	8 8 23	3759.21	1.39	138.30	357.17	55.84	9 11 3	3159.2	-3.10	132.10

DIFFERENTIAL CORRECTIONS

TDE	.0129	TRA	-.4156	TC3	3.2115	BAU	.6240
RDE	-.3330	RRA	-.0495	RC3	.4333	FAU	.16823
FDE	.6615	FRA	-.8662	FC	-10.1121	BSP	8757
BDE	.3333	BRA	.4185	BC3	3.2406	FSP	2151

MID-COURSE EXECUTION ACCURACY

SGT	2527.4	SGR	606.0	SG3	679.4		
RRT	.5516	RRF	-.6118	RTF	-.8937		
SGB	2599.0	R23	-.1182	R13	-.8972		
SG1	2550.3	SG2	500.9	THA	7.84		

ORBIT DETERMINATION ACCURACY

ST	214.0	SR	503.4	SS	541.6		
CRT	-.0402	CRS	.8875	CST	-.3640		
LSA	720.2	MSA	251.2	SSA	104.1		
EL1	503.5	EL2	213.8	ALF	91.19		

LAUNCH DATE DEC 12 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 449.019 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.496 GAL 3.09 AZL 89.47 HCA 138.38 SMA 195.10 ECC .25063 INC .5269 V1 30.251
RP 235.94 LAP .35 LOP 218.39 VP 21.089 GAP 8.10 AZP 90.39 TAL 15.51 TAP 153.89 RCA 146.20 APO 244.00 V2 23.297
RC 196.086 GL 4.67 GP 5.38 ZAL 58.15 ZAP 154.36 ETS 167.19 ZAE 163.92 ETE 21.48 ZAC 95.85 ETC 255.76 CLP 154.89

PLANETOCENTRIC CONIC

C3 14.289 VHL 3.780 DLA 19.86 RAL 142.01 RAD 6567.6 VEL 11.648 PTH 2.04 VHP 5.533 DPA .65 RAP 194.86 ECC 1.2352

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 36 49	2809.07	-28.22	82.49	4.67	92.48	13 23 38	2209.1	-27.57	73.88
90.00	6 14 40	4109.13	-2.89	166.91	358.73	61.82	7 23 10	3509.1	-6.64	160.23
100.00	14 10 48	2506.04	-29.62	60.10	4.58	94.22	14 52 34	1906.0	-28.72	51.41
100.00	7 23 23	3887.39	-1.66	149.93	358.05	60.15	8 28 10	3287.4	-5.62	143.38
110.00	15 46 10	2207.66	-33.17	36.97	4.10	98.78	16 22 58	1607.7	-31.60	28.09
110.00	8 4 30	3758.54	1.37	138.27	356.15	55.84	9 7 9	3158.5	-3.12	132.06

DIFFERENTIAL CORRECTIONS
TDE .0105 TRA -.3908 TC3 3.2375 BAU .6251
RDE -.3286 RRA -.0401 RC3 .4742 FAU .17558
FDE .6855 FRA -.9789 FC-10.6381 BSP 8776
BDE .3288 BRA .3929 BC3 3.2720 FSP 2270

MID-COURSE EXECUTION ACCURACY
SGT 2527.4 SGR 617.1 SG3 713.8
RRT .5836 RRF -.6471 RTF -.8944
SGB 2601.6 R23 -.1283 R13 -.8985
SG1 2553.9 SG2 495.9 THA 8.43

ORBIT DETERMINATION ACCURACY
ST 203.3 SR 498.6 SS 557.8
CRT -.0543 CRS .8782 CST -.3718
LSA 727.0 MSA 248.3 SSA 104.7
EL1 498.7 EL2 203.2 ALF 90.96

LAUNCH DATE DEC 12 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 452.599 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.461 GAL 3.16 AZL 89.51 HCA 139.35 SMA 194.43 ECC .24831 INC .4895 V1 30.251
RP 235.59 LAP .32 LOP 219.36 VP 21.073 GAP 7.63 AZP 90.37 TAL 15.96 TAP 155.31 RCA 146.15 APO 242.71 V2 23.333
RC 198.280 GL 4.35 GP 5.61 ZAL 57.37 ZAP 153.36 ETS 167.19 ZAE 164.71 ETE 23.85 ZAC 96.08 ETC 255.75 CLP 153.92

PLANETOCENTRIC CONIC

C3 14.186 VHL 3.766 DLA 19.80 RAL 141.13 RAD 6567.6 VEL 11.644 PTH 2.04 VHP 5.404 DPA .87 RAP 194.96 ECC 1.2335

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 34 2	2804.82	-28.20	82.18	3.65	92.64	13 20 47	2204.8	-27.54	73.57
90.00	6 10 27	4110.19	-2.86	166.97	357.73	61.82	7 18 57	3510.2	-6.60	160.29
100.00	14 7 56	2502.03	-29.60	59.80	3.55	94.38	14 49 38	1902.0	-28.68	51.12
100.00	7 19 14	3888.22	-1.63	149.97	357.06	60.15	8 24 2	3288.2	-5.60	143.43
110.00	15 43 10	2204.10	-33.13	36.69	3.07	98.94	16 19 54	1604.1	-31.54	27.83
110.00	8 0 30	3758.91	1.38	138.29	355.17	55.84	9 3 9	3158.9	-3.11	132.08

DIFFERENTIAL CORRECTIONS
TDE .0095 TRA -.3667 TC3 3.2595 BAU .6260
RDE -.3243 RRA -.0301 RC3 .5185 FAU .18336
FDE .7075 FRA-1.0987 FC-11.1895 BSP 8785
BDE .3244 BRA .3679 BC3 3.3005 FSP 2395

MID-COURSE EXECUTION ACCURACY
SGT 2526.0 SGR 631.1 SG3 750.0
RRT .6152 RRF -.6821 RTF -.8951
SGB 2603.6 R23 -.1392 R13 -.8998
SG1 2556.8 SG2 491.5 THA 9.08

ORBIT DETERMINATION ACCURACY
ST 193.0 SR 493.6 SS 573.0
CRT -.0389 CRS .8684 CST -.3874
LSA 733.3 MSA 246.0 SSA 105.1
EL1 493.7 EL2 192.9 ALF 91.03

LAUNCH DATE DEC 12 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 456.200 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.428 GAL 3.22 AZL 89.55 HCA 140.33 SMA 193.79 ECC .24613 INC .4508 V1 30.251
RP 235.24 LAP .29 LOP 220.34 VP 21.059 GAP 7.16 AZP 90.35 TAL 16.40 TAP 156.73 RCA 146.10 APO 241.49 V2 23.369
RC 200.460 GL 4.01 GP 5.87 ZAL 56.62 ZAP 152.34 ETS 167.18 ZAE 165.49 ETE 26.59 ZAC 96.32 ETC 255.75 CLP 152.92

PLANETOCENTRIC CONIC

C3 14.094 VHL 3.754 DLA 19.71 RAL 140.28 RAD 6567.6 VEL 11.640 PTH 2.04 VHP 5.278 DPA 1.11 RAP 195.05 ECC 1.2319

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 31 41	2799.51	-28.19	81.79	2.65	92.83	13 18 20	2199.5	-27.50	73.19
90.00	6 6 1	4112.61	-2.78	167.10	356.77	61.81	7 14 33	3512.6	-6.53	160.43
100.00	14 5 28	2497.07	-29.57	59.44	2.54	94.57	14 47 5	1897.1	-28.63	50.76
100.00	7 14 54	3890.28	-1.56	150.09	356.09	60.14	8 19 45	3290.3	-5.53	143.54
110.00	15 40 29	2199.78	-33.09	36.37	2.05	99.13	16 17 9	1599.8	-31.47	27.51
110.00	7 56 22	3760.33	1.44	138.36	354.22	55.84	8 59 3	3160.3	-3.06	132.16

DIFFERENTIAL CORRECTIONS
TDE .0122 TRA -.3419 TC3 3.2790 BAU .6270
RDE -.3198 RRA -.0194 RC3 .5660 FAU .19147
FDE .7255 FRA-1.2264 FC-11.7615 BSP 8717
BDE .3200 BRA .3424 BC3 3.3275 FSP 2520

MID-COURSE EXECUTION ACCURACY
SGT 2523.7 SGR 647.9 SG3 787.9
RRT .6450 RRF -.7161 RTF -.8959
SGB 2605.5 R23 -.1514 R13 -.9014
SG1 2559.4 SG2 488.2 THA 9.76

ORBIT DETERMINATION ACCURACY
ST 182.9 SR 488.3 SS 586.2
CRT -.0734 CRS .8575 CST -.4261
LSA 738.3 MSA 243.4 SSA 105.6
EL1 488.5 EL2 182.3 ALF 91.83

LAUNCH DATE DEC 12 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 459.820 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.396 GAL 3.28 AZL 89.59 HCA 141.31 SMA 193.19 ECC .24406 INC .4102 V1 30.251
RP 234.89 LAP .26 LOP 221.32 VP 21.050 GAP 6.70 AZP 90.32 TAL 16.82 TAP 158.13 RCA 146.04 APO 240.34 V2 23.405
RC 202.623 GL 3.66 GP 6.14 ZAL 55.91 ZAP 151.28 ETS 167.17 ZAE 166.26 ETE 29.77 ZAC 96.58 ETC 255.74 CLP 151.89

PLANETOCENTRIC CONIC

C3 14.009 VHL 3.743 DLA 19.58 RAL 139.45 RAD 6567.6 VEL 11.636 PTH 2.04 VHP 5.157 DPA 1.38 RAP 195.12 ECC 1.2306

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 29 46	2793.09	-28.16	81.32	1.67	93.06	13 16 19	2193.1	-27.44	72.73
90.00	6 1 21	4116.39	-2.66	167.32	355.83	61.80	7 9 57	3516.4	-6.41	160.64
100.00	14 3 25	2491.11	-29.54	59.00	1.56	94.80	14 44 56	1891.1	-28.56	50.33
100.00	7 10 23	3893.60	-1.45	150.27	355.16	60.14	8 15 17	3293.6	-5.42	143.72
110.00	15 38 10	2194.67	-33.03	35.98	1.06	99.35	16 14 44	1594.7	-31.39	27.14
110.00	7 52 8	3762.80	1.53	138.49	353.29	55.85	8 54 50	3162.8	-2.96	132.29

DIFFERENTIAL CORRECTIONS
TDE .0111 TRA -.3236 TC3 3.2768 BAU .6245
RDE -.3154 RRA -.0081 RC3 .6165 FAU .19977
FDE .7437 FRA-1.3578 FC-12.3451 BSP 8788
BDE .3156 BRA .3237 BC3 3.3343 FSP 2664

MID-COURSE EXECUTION ACCURACY
SGT 2508.7 SGR 668.0 SG3 826.8
RRT .6748 RRF -.7486 RTF -.8952
SGB 2596.1 R23 -.1641 R13 -.9016
SG1 2550.4 SG2 484.9 THA 10.57

ORBIT DETERMINATION ACCURACY
ST 174.9 SR 483.0 SS 599.5
CRT -.0778 CRS .8475 CST -.4392
LSA 743.5 MSA 243.8 SSA 104.8
EL1 483.2 EL2 174.3 ALF 91.86

LAUNCH DATE DEC 12 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 463.458 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.365 GAL 3.33 AZL 89.63 HCA 142.29 SMA 192.63 ECC .24210 INC .3681 V1 30.251
RP 234.53 LAP .22 LOP 222.31 VP 21.043 GAP 6.25 AZP 90.29 TAL 17.23 TAP 159.52 RCA 145.99 APO 239.26 V2 23.442
RC 204.770 GL 3.29 GP 6.43 ZAL 55.22 ZAP 150.20 ETS 167.15 ZAE 167.00 ETE 33.47 ZAC 96.84 ETC 255.73 CLP 150.84

PLANETOCENTRIC CONIC

C3 13.933 VHL 3.733 DLA 19.43 RAL 138.66 RAD 6567.5 VEL 11.633 PTH 2.04 VHP 5.039 DPA 1.67 RAP 195.18 ECC 1.2293

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 28 17	2785.56	-28.14	80.77	.72	93.34	13 14 43	2185.6	-27.38	72.19
90.00	5 56 28	4121.52	-2.49	167.60	354.91	61.78	7 5 10	3521.5	-6.25	160.93
100.00	14 1 45	2484.15	-29.50	58.48	.61	95.06	14 43 10	1884.2	-28.49	49.83
100.00	7 5 41	3898.16	-1.30	150.52	354.25	60.13	8 10 39	3298.2	-5.26	143.98
110.00	15 36 10	2188.76	-32.96	35.53	.08	99.61	16 12 39	1588.8	-31.29	26.71
110.00	7 47 45	3766.32	1.66	138.67	352.39	55.85	8 50 32	3166.3	-2.83	132.47

DIFFERENTIAL CORRECTIONS

TDE .0148 TRA -.3034 TC3 3.2778 BAU .6232
RDE -.3107 RRA .0039 RC3 .6711 FAU .20853
FDE .7563 FRA-1.4986 FC-12.9569 BSP 8744
BDE .3111 BRA .3035 BC3 3.3458 FSP 2805

MID-COURSE EXECUTION ACCURACY

SGT 2496.4 SGR 691.8 SG3 867.7
RRT .7018 RRF -.7795 RTF -.8950
SGB 2590.5 R23 -.1781 R13 -.9025
SG1 2545.0 SG2 483.4 THA 11.42

ORBIT DETERMINATION ACCURACY

ST 166.9 SR 477.2 SS 610.6
CRT -.1259 CRS .8359 CST -.4849
LSA 747.2 MSA 243.2 SSA 104.5
EL1 477.7 EL2 165.4 ALF 92.87

LAUNCH DATE DEC 12 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 467.114 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.337 GAL 3.39 AZL 89.68 HCA 143.28 SMA 192.09 ECC .24026 INC .3232 V1 30.251
RP 234.17 LAP .19 LOP 223.29 VP 21.038 GAP 5.81 AZP 90.26 TAL 17.62 TAP 160.90 RCA 145.94 APO 238.24 V2 23.479
RC 206.900 GL 2.89 GP 6.73 ZAL 54.57 ZAP 149.09 ETS 167.13 ZAE 167.71 ETE 37.77 ZAC 97.12 ETC 255.73 CLP 149.76

PLANETOCENTRIC CONIC

C3 13.864 VHL 3.723 DLA 19.24 RAL 137.89 RAD 6567.5 VEL 11.630 PTH 2.04 VHP 4.924 DPA 1.98 RAP 195.22 ECC 1.2282

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 27 15	2776.90	-28.10	80.14	359.79	93.65	13 13 32	2176.9	-27.30	71.57
90.00	5 51 22	4128.00	-2.28	167.96	354.02	61.77	7 0 10	3528.0	-6.04	161.30
100.00	14 0 31	2476.15	-29.45	57.90	359.67	95.37	14 41 47	1876.2	-28.39	49.25
100.00	7 0 47	3903.97	-1.10	150.84	353.36	60.13	8 5 51	3304.0	-5.07	144.30
110.00	15 34 32	2182.00	-32.89	35.02	359.13	99.90	16 10 54	1582.0	-31.17	26.21
110.00	7 43 15	3770.90	1.84	138.91	351.52	55.86	8 46 6	3170.9	-2.65	132.71

DIFFERENTIAL CORRECTIONS

TDE .0188 TRA -.2852 TC3 3.2669 BAU .6204
RDE -.3060 RRA .0169 RC3 .7297 FAU .21759
FDE .7657 FRA-1.6478 FC-13.5875 BSP 8707
BDE .3066 BRA .2857 BC3 3.3474 FSP 2952

MID-COURSE EXECUTION ACCURACY

SGT 2477.0 SGR 719.6 SG3 910.2
RRT .7269 RRF -.8083 RTF -.8942
SGB 2579.4 R23 -.1930 R13 -.9030
SG1 2533.8 SG2 483.1 THA 12.38

ORBIT DETERMINATION ACCURACY

ST 160.1 SR 471.2 SS 620.8
CRT -.1806 CRS .8237 CST -.5325
LSA 750.4 MSA 243.6 SSA 103.7
EL1 472.2 EL2 157.1 ALF 93.95

LAUNCH DATE DEC 12 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 470.787 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.309 GAL 3.44 AZL 89.72 HCA 144.27 SMA 191.59 ECC .23851 INC .2764 V1 30.251
RP 233.80 LAP .16 LOP 224.28 VP 21.037 GAP 5.37 AZP 90.22 TAL 18.00 TAP 162.27 RCA 145.89 APO 237.28 V2 23.517
RC 209.011 GL 2.48 GP 7.06 ZAL 53.95 ZAP 147.94 ETS 167.09 ZAE 168.35 ETE 42.77 ZAC 97.41 ETC 255.72 CLP 148.65

PLANETOCENTRIC CONIC

C3 13.801 VHL 3.715 DLA 19.02 RAL 137.14 RAD 6567.5 VEL 11.627 PTH 2.04 VHP 4.813 DPA 2.33 RAP 195.24 ECC 1.2271

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 26 39	2767.07	-28.06	79.42	358.89	94.01	13 12 46	2167.1	-27.20	70.86
90.00	5 46 2	4135.84	-2.03	168.40	353.15	61.75	6 54 58	3535.8	-5.79	161.74
100.00	13 59 41	2467.09	-29.39	57.23	358.76	95.72	14 40 48	1867.1	-28.29	48.60
100.00	6 55 41	3911.05	-.86	151.23	352.50	60.12	8 0 52	3311.0	-4.83	144.69
110.00	15 33 14	2174.36	-32.79	34.44	358.20	100.23	16 9 29	1574.4	-31.04	25.66
110.00	7 38 37	3776.54	2.05	139.21	350.68	55.87	8 41 33	3176.5	-2.44	133.00

DIFFERENTIAL CORRECTIONS

TDE .0238 TRA -.2701 TC3 3.2469 BAU .6167
RDE -.3011 RRA .0307 RC3 .7925 FAU .22691
FDE .7716 FRA-1.8012 FC-14.2340 BSP 8677
BDE .3021 BRA .2718 BC3 3.3422 FSP 3109

MID-COURSE EXECUTION ACCURACY

SGT 2452.6 SGR 751.6 SG3 953.9
RRT .7494 RRF -.8348 RTF -.8928
SGB 2565.2 R23 -.2091 R13 -.9033
SG1 2519.0 SG2 484.6 THA 13.44

ORBIT DETERMINATION ACCURACY

ST 155.1 SR 465.0 SS 629.8
CRT -.2461 CRS .8115 CST -.5842
LSA 752.8 MSA 244.5 SSA 102.7
EL1 466.7 EL2 149.8 ALF 95.23

LAUNCH DATE DEC 12 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 474.476 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.283 GAL 3.49 AZL 89.77 HCA 145.26 SMA 191.11 ECC .23686 INC .2266 V1 30.251
RP 233.44 LAP .13 LOP 225.28 VP 21.038 GAP 4.94 AZP 90.19 TAL 18.36 TAP 163.62 RCA 145.84 APO 236.38 V2 23.555
RC 211.104 GL 2.04 GP 7.41 ZAL 53.36 ZAP 146.76 ETS 167.06 ZAE 168.90 ETE 48.53 ZAC 97.72 ETC 255.71 CLP 147.50

PLANETOCENTRIC CONIC

C3 13.744 VHL 3.707 DLA 18.77 RAL 136.42 RAD 6567.5 VEL 11.625 PTH 2.04 VHP 4.706 DPA 2.71 RAP 195.25 ECC 1.2262

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 26 29	2756.05	-28.00	78.62	358.00	94.41	13 12 25	2156.0	-27.10	70.07
90.00	5 40 28	4145.05	-1.74	168.92	352.31	61.73	6 49 33	3545.0	-5.50	162.26
100.00	13 59 15	2456.93	-29.32	56.48	357.86	96.10	14 40 12	1856.9	-28.16	47.87
100.00	6 50 23	3919.40	-.58	151.69	351.67	60.11	7 55 43	3319.4	-4.55	145.15
110.00	15 32 18	2165.82	-32.69	33.80	357.28	100.60	16 8 23	1565.8	-30.88	25.04
110.00	7 33 50	3783.27	2.31	139.56	349.86	55.89	8 36 53	3183.3	-2.18	133.35

DIFFERENTIAL CORRECTIONS

TDE .0304 TRA -.2560 TC3 3.2216 BAU .6127
RDE -.2959 RRA .0456 RC3 .8606 FAU .23671
FDE .7705 FRA-1.9644 FC-14.9101 BSP 8619
BDE .2975 BRA .2600 BC3 3.3346 FSP 3269

MID-COURSE EXECUTION ACCURACY

SGT 2425.4 SGR 788.5 SG3 999.8
RRT .7694 RRF -.8589 RTF -.8911
SGB 2550.4 R23 -.2256 R13 -.9037
SG1 2503.3 SG2 488.0 THA 14.61

ORBIT DETERMINATION ACCURACY

ST 151.9 SR 458.2 SS 636.9
CRT -.3297 CRS .7975 CST -.6426
LSA 753.6 MSA 245.9 SSA 101.6
EL1 461.3 EL2 142.4 ALF 96.90

LAUNCH DATE DEC 12 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 478.182 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.259 GAL 3.53 AZL 89.82 HCA 146.26 SMA 190.66 ECC .23531 INC .1757 V1 30.251
RP 233.07 LAP .10 LOP 226.27 VP 21.042 GAP 4.52 AZP 90.15 TAL 18.70 TAP 164.96 RCA 145.80 APO 235.52 V2 23.593
RC 213.179 GL 1.58 GP 7.78 ZAL 52.80 ZAP 145.55 ETS 167.02 ZAE 169.34 ETE 55.07 ZAC 98.04 ETC 255.70 CLP 146.33

PLANETOCENTRIC CONIC

C3 13.692 VHL 3.700 DLA 18.48 RAL 135.73 RAD 6567.5 VEL 11.622 PTH 2.04 VHP 4.602 DPA 3.12 RAP 195.24 ECC 1.2253

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 26 46	2743.80	-27.93	77.73	357.13	94.85	13 12 30	2143.8	-26.97	69.20
90.00	5 34 40	4155.65	-1.39	169.51	351.49	61.71	6 43 55	3555.6	-5.16	162.86
100.00	13 59 14	2445.63	-29.23	55.65	356.98	96.53	14 40 0	1845.6	-28.02	47.06
100.00	6 44 53	3929.05	-.25	152.21	350.86	60.11	7 50 22	3329.0	-4.23	145.68
110.00	15 31 42	2156.33	-32.57	33.08	356.38	101.01	16 7 38	1556.3	-30.71	24.36
110.00	7 28 54	3791.11	2.61	139.97	349.07	55.90	8 32 5	3191.1	-1.88	133.76

DIFFERENTIAL CORRECTIONS
TDE .0379 TRA -.2438 TC3 3.1852 BAU .6076
RDE -.2905 RRA .0616 RC3 .9332 FAU .24667
FDE .7659 FRA-2.1348 FC-15.5962 BSP 8544
BDE .2929 BRA .2514 BC3 3.3191 FSP 3436

MID-COURSE EXECUTION ACCURACY
SGT 2391.3 SGR 830.3 SG3 1046.7
RRT .7865 RRF -.8804 RTF -.8889
SGB 2531.4 R23 -.2427 R13 -.9041
SG1 2482.7 SG2 493.9 THA 15.92

ORBIT DETERMINATION ACCURACY
ST 150.7 SR 451.3 SS 643.6
CRT -.4195 CRS .7833 CST -.6968
LSA 754.4 MSA 247.7 SSA 100.1
EL1 456.1 EL2 135.3 ALF 98.75

LAUNCH DATE DEC 12 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 481.902 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.236 GAL 3.57 AZL 89.88 HCA 147.26 SMA 190.24 ECC .23383 INC .1191 V1 30.251
RP 232.70 LAP .07 LOP 227.27 VP 21.049 GAP 4.10 AZP 90.10 TAL 19.03 TAP 166.29 RCA 145.75 APO 234.72 V2 23.631
RC 215.236 GL 1.08 GP 8.17 ZAL 52.28 ZAP 144.30 ETS 166.97 ZAE 169.62 ETE 62.33 ZAC 98.38 ETC 255.69 CLP 145.12

PLANETOCENTRIC CONIC

C3 13.646 VHL 3.694 DLA 18.16 RAL 135.07 RAD 6567.5 VEL 11.620 PTH 2.04 VHP 4.502 DPA 3.56 RAP 195.22 ECC 1.2246

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 27 30	2730.29	-27.85	76.75	356.27	95.33	13 13 0	2130.3	-26.82	68.24
90.00	5 28 37	4167.66	-1.01	170.18	350.70	61.70	6 38 4	3567.7	-4.78	163.53
100.00	13 59 38	2433.16	-29.13	54.74	356.11	97.00	14 40 11	1833.2	-27.86	46.17
100.00	6 39 10	3940.02	.12	152.82	350.07	60.11	7 44 50	3340.0	-3.86	146.29
110.00	15 31 28	2145.84	-32.43	32.29	355.49	101.45	16 7 14	1545.8	-30.51	23.60
110.00	7 23 49	3800.10	2.95	140.44	348.30	55.93	8 27 9	3200.1	-1.54	134.23

DIFFERENTIAL CORRECTIONS
TDE .0470 TRA -.2339 TC3 3.1424 BAU .6023
RDE - 2844 RRA .0791 RC3 1.0123 FAU .25711
FDE .7511 FRA-2.3141 FC-16.3125 BSP 8465
BDE .2883 BRA .2469 BC3 3.3014 FSP 3607

MID-COURSE EXECUTION ACCURACY
SGT 2353.9 SGR 877.8 SG3 1095.8
RRT .8008 RRF -.8994 RTF -.8860
SGB 2512.2 R23 -.2600 R13 -.9044
SG1 2461.4 SG2 502.8 THA 17.38

ORBIT DETERMINATION ACCURACY
ST 152.6 SR 443.5 SS 647.7
CRT -.5177 CRS .7665 CST -.7460
LSA 753.0 MSA 250.5 SSA 98.5
EL1 451.1 EL2 128.3 ALF 101.00

LAUNCH DATE DEC 12 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 485.638 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.214 GAL 3.61 AZL 89.94 HCA 148.26 SMA 189.84 ECC .23245 INC .0622 V1 30.251
RP 232.32 LAP .03 LOP 228.27 VP 21.057 GAP 3.70 AZP 90.05 TAL 19.34 TAP 167.60 RCA 145.71 APO 233.97 V2 23.670
RC 217.275 GL .56 GP 8.60 ZAL 51.79 ZAP 143.01 ETS 166.92 ZAE 169.72 ETE 70.14 ZAC 98.74 ETC 255.68 CLP 143.88

PLANETOCENTRIC CONIC

C3 13.603 VHL 3.688 DLA 17.79 RAL 134.42 RAD 6567.5 VEL 11.618 PTH 2.04 VHP 4.406 DPA 4.05 RAP 195.18 ECC 1.2239

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 28 40	2715.47	-27.75	75.68	355.43	95.86	13 13 55	2115.5	-26.65	67.19
90.00	5 22 19	4181.13	-.57	170.93	349.92	61.69	6 32 0	3581.1	-4.35	164.29
100.00	14 0 27	2419.46	-29.02	53.74	355.26	97.52	14 40 47	1819.5	-27.67	45.19
100.00	6 33 12	3952.36	.54	153.49	349.30	60.11	7 39 5	3352.4	-3.44	146.97
110.00	15 31 35	2134.32	-32.27	31.43	354.61	101.94	16 7 10	1534.3	-30.29	22.78
110.00	7 18 33	3810.28	3.34	140.97	347.55	55.96	8 22 4	3210.3	-1.15	134.76

DIFFERENTIAL CORRECTIONS
TDE .0568 TRA -.2261 TC3 3.0886 BAU .5961
RDE -.2781 RRA .0978 RC3 1.0968 FAU .26769
FDE .7310 FRA-2.4994 FC-17.0365 BSP 8377
BDE .2838 BRA .2464 BC3 3.2776 FSP 3786

MID-COURSE EXECUTION ACCURACY
SGT 2309.7 SGR 930.9 SG3 1145.7
RRT .8122 RRF -.9161 RTF -.8824
SGB 2490.2 R23 -.2768 R13 -.9049
SG1 2436.4 SG2 514.9 THA 19.01

ORBIT DETERMINATION ACCURACY
ST 157.2 SR 435.3 SS 651.4
CRT -.6105 CRS .7495 CST -.7802
LSA 751.5 MSA 253.9 SSA 96.6
EL1 446.6 EL2 121.4 ALF 103.45

LAUNCH DATE DEC 12 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 489.388 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.193 GAL 3.65 AZL 90.00 HCA 149.27 SMA 189.46 ECC .23114 INC .0000 V1 30.251
RP 231.95 LAP .00 LOP 229.28 VP 21.068 GAP 3.29 AZP 90.00 TAL 19.63 TAP 168.90 RCA 145.67 APO 233.26 V2 23.709
RC 219.295 GL .01 GP 9.05 ZAL 51.33 ZAP 141.69 ETS 166.87 ZAE 169.61 ETE 78.21 ZAC 99.13 ETC 255.66 CLP 142.61

PLANETOCENTRIC CONIC

C3 13.565 VHL 3.683 DLA 17.39 RAL 133.80 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 4.313 DPA 4.57 RAP 195.13 ECC 1.2232

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 30 17	2699.28	-27.64	74.51	354.60	96.44	13 15 16	2099.3	-26.46	66.04
90.00	5 15 44	4196.09	-.09	171.76	349.17	61.68	6 25 40	3596.1	-3.87	165.13
100.00	14 1 42	2404.49	-28.88	52.65	354.42	98.08	14 41 46	1804.5	-27.46	44.13
100.00	6 27 0	3966.12	1.01	154.25	348.56	60.12	7 33 6	3366.1	-2.98	147.73
110.00	15 32 5	2121.69	-32.09	30.49	353.74	102.47	16 7 27	1521.7	-30.04	21.88
110.00	7 13 6	3821.68	3.78	141.57	346.83	56.00	8 16 48	3221.7	-.71	135.36

DIFFERENTIAL CORRECTIONS
TDE .0686 TRA -.2207 TC3 3.0264 BAU .5897
RDE -.2709 RRA .1182 RC3 1.1884 FAU .27860
FDE .6993 FRA-2.6936 FC-17.7801 BSP 8284
BDE .2794 BRA .2504 BC3 3.2514 FSP 3969

MID-COURSE EXECUTION ACCURACY
SGT 2260.7 SGR 990.4 SG3 1197.2
RRT .8205 RRF -.9304 RTF -.8779
SGB 2468.1 R23 -.2929 R13 -.9056
SG1 2410.3 SG2 531.0 THA 20.83

ORBIT DETERMINATION ACCURACY
ST 165.8 SR 426.2 SS 653.3
CRT -.6994 CRS .7294 CST -.7979
LSA 748.4 MSA 258.9 SSA 94.2
EL1 442.8 EL2 114.1 ALF 106.34

LAUNCH DATE DEC 12 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 493.151 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.173 GAL 3.68 AZL 90.06 HCA 150.28 SMA 189.11 ECC .22990 INC .0610 V1 30.251
RP 231.57 LAP -.03 LOP 230.29 VP 21.081 GAP 2.90 AZP 89.94 TAL 19.91 TAP 170.18 RCA 145.63 APO 232.59 V2 23.748
RC 221.297 GL -.58 GP 9.54 ZAL 50.90 ZAP 140.32 ETS 166.82 ZAE 169.28 ETE 86.21 ZAC 99.54 ETC 255.65 CLP 141.30

PLANETOCENTRIC CONIC

C3 13.531 VHL 3.679 DLA 16.94 RAL 133.20 RAD 6567.5 VEL 11.615 PTH 2.04 VHP 4.225 DPA 5.14 RAP 195.06 ECC 1.2227

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 32 21	2681.68	-27.49	73.24	353.78	97.06	13 17 3	2081.7	-26.23	64.80
90.00	5 8 52	4212.60	.45	172.68	348.44	61.69	6 19 5	3612.6	-3.34	166.05
100.00	14 3 22	2388.17	-28.72	51.46	353.58	98.68	14 43 11	1788.2	-27.22	42.98
100.00	6 20 32	3981.35	1.52	155.08	347.84	60.14	7 26 54	3381.4	-2.46	148.56
110.00	15 32 57	2107.89	-31.88	29.47	352.88	103.04	16 8 5	1507.9	-29.76	20.90
110.00	7 7 27	3834.39	4.26	142.23	346.14	56.05	8 11 21	3234.4	-.23	136.02

DIFFERENTIAL CORRECTIONS

TDE .0806 TRA -.2174 TC3 2.9542 BAU .5830
RDE -.2629 RRA .1405 RC3 1.2874 FAU .28978
FDE .6572 FRA-2.8979 FC-18.5400 BSP 8174
BDE .2750 BRA .2589 BC3 3.2225 FSP 4152

MID-COURSE EXECUTION ACCURACY

SGT 2205.6 SGR 1057.0 SG3 1250.1
RRT .8262 RRF -.9428 RTF -.8725
SGB 2445.8 R23 -.3071 R13 -.9067
SG1 2382.9 SG2 551.2 THA 22.89

ORBIT DETERMINATION ACCURACY

ST 176.9 SR 416.2 SS 654.9
CRT -.7723 CRS .7071 CST -.7946
LSA 744.7 MSA 265.4 SSA 91.3
EL1 439.5 EL2 106.4 ALF 109.36

LAUNCH DATE DEC 12 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 496.929 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.154 GAL 3.71 AZL 90.13 HCA 151.29 SMA 188.78 ECC .22873 INC .1320 V1 30.251
RP 231.20 LAP -.06 LOP 231.30 VP 21.096 GAP 2.52 AZP 89.88 TAL 20.16 TAP 171.45 RCA 145.60 APO 231.96 V2 23.788
RC 223.281 GL -1.21 GP 10.06 ZAL 50.51 ZAP 138.92 ETS 166.77 ZAE 168.71 ETE 93.79 ZAC 99.98 ETC 255.64 CLP 139.96

PLANETOCENTRIC CONIC

C3 13.502 VHL 3.674 DLA 16.44 RAL 132.62 RAD 6567.5 VEL 11.614 PTH 2.04 VHP 4.140 DPA 5.75 RAP 194.98 ECC 1.2222

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 34 54	2662.57	-27.33	71.87	352.96	97.73	13 19 16	2062.6	-25.97	63.46
90.00	5 1 42	4230.75	1.03	173.70	347.73	61.70	6 12 13	3630.8	-2.76	167.07
100.00	14 5 29	2370.42	-28.53	50.17	352.76	99.33	14 45 0	1770.4	-26.94	41.73
100.00	6 13 48	3998.14	2.09	156.01	347.14	60.17	7 20 26	3398.1	-1.89	149.48
110.00	15 34 12	2092.85	-31.64	28.36	352.02	103.66	16 9 5	1492.8	-29.44	19.85
110.00	7 1 34	3848.48	4.79	142.97	345.46	56.11	8 5 43	3248.5	.31	136.76

DIFFERENTIAL CORRECTIONS

TDE .0933 TRA -.2177 TC3 2.8690 BAU .5757
RDE -.2541 RRA .1646 RC3 1.3936 FAU .30098
FDE .6050 FRA-3.1062 FC-19.2988 BSP 8085
BDE .2707 BRA .2729 BC3 3.1896 FSP 4345

MID-COURSE EXECUTION ACCURACY

SGT 2142.9 SGR 1130.3 SG3 1303.3
RRT .8286 RRF -.9532 RTF -.8656
SGB 2422.7 R23 -.3195 R13 -.9082
SG1 2353.2 SG2 576.2 THA 25.23

ORBIT DETERMINATION ACCURACY

ST 190.9 SR 405.4 SS 656.2
CRT -.8298 CRS .6836 CST -.7743
LSA 740.9 MSA 273.4 SSA 87.9
EL1 437.1 EL2 98.8 ALF 112.56

LAUNCH DATE DEC 12 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 500.720 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.137 GAL 3.74 AZL 90.21 HCA 152.30 SMA 188.47 ECC .22763 INC .2088 V1 30.251
RP 230.82 LAP -.10 LOP 232.32 VP 21.114 GAP 2.14 AZP 89.81 TAL 20.41 TAP 172.71 RCA 145.57 APO 231.36 V2 23.827
RC 225.247 GL -1.89 GP 10.63 ZAL 50.15 ZAP 137.47 ETS 166.71 ZAE 167.92 ETE 100.73 ZAC 100.45 ETC 255.62 CLP 138.57

PLANETOCENTRIC CONIC

C3 13.476 VHL 3.671 DLA 15.88 RAL 132.06 RAD 6567.5 VEL 11.613 PTH 2.03 VHP 4.059 DPA 6.41 RAP 194.89 ECC 1.2218

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 37 55	2641.88	-27.13	70.39	352.15	98.44	13 21 57	2041.9	-25.68	62.02
90.00	4 54 13	4250.62	1.67	174.80	347.04	61.73	6 5 3	3650.6	-2.12	168.18
100.00	14 8 4	2351.17	-28.31	48.79	351.93	100.03	14 47 15	1751.2	-26.63	40.38
100.00	6 6 45	4016.58	2.72	157.02	346.47	60.22	7 13 42	3416.6	-1.27	150.50
110.00	15 35 51	2076.48	-31.38	27.16	351.17	104.32	16 10 28	1476.5	-29.09	18.70
110.00	6 55 27	3864.03	5.38	143.79	344.81	56.19	7 59 51	3264.0	.91	137.57

DIFFERENTIAL CORRECTIONS

TDE .1071 TRA -.2201 TC3 2.7743 BAU .5689
RDE -.2440 RRA .1911 RC3 1.5085 FAU .31233
FDE .5390 FRA-3.3232 FC-20.0645 BSP 7990
BDE .2665 BRA .2915 BC3 3.1579 FSP 4540

MID-COURSE EXECUTION ACCURACY

SGT 2074.7 SGR 1211.5 SG3 1357.3
RRT .8281 RRF -.9619 RTF -.8572
SGB 2402.6 R23 -.3283 R13 -.9106
SG1 2324.8 SG2 606.1 THA 27.87

ORBIT DETERMINATION ACCURACY

ST 207.8 SR 393.5 SS 658.0
CRT -.8760 CRS .6577 CST -.7362
LSA 737.1 MSA 283.8 SSA 83.9
EL1 435.7 EL2 90.5 ALF 116.03

LAUNCH DATE DEC 12 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 504.523 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.120 GAL 3.77 AZL 90.29 HCA 153.32 SMA 188.17 ECC .22659 INC .2903 V1 30.251
RP 230.43 LAP -.13 LOP 233.34 VP 21.133 GAP 1.77 AZP 89.74 TAL 20.63 TAP 173.95 RCA 145.53 APO 230.81 V2 23.867
RC 227.193 GL -2.62 GP 11.23 ZAL 49.83 ZAP 135.98 ETS 166.66 ZAE 166.93 ETE 106.89 ZAC 100.95 ETC 255.60 CLP 137.15

PLANETOCENTRIC CONIC

C3 13.456 VHL 3.668 DLA 15.28 RAL 131.51 RAD 6567.5 VEL 11.612 PTH 2.03 VHP 3.982 DPA 7.13 RAP 194.78 ECC 1.2215

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 41 25	2619.50	-26.89	68.79	351.34	99.21	13 25 5	2019.5	-25.35	60.46
90.00	4 46 21	4272.35	2.37	176.02	346.38	61.77	5 57 34	3672.4	-1.42	169.39
100.00	14 11 6	2330.30	-28.05	47.29	351.11	100.78	14 49 56	1730.3	-26.28	38.94
100.00	5 59 22	4036.78	3.40	158.13	345.81	60.28	7 6 39	3436.8	-.58	151.60
110.00	15 37 55	2058.67	-31.07	25.87	350.31	105.03	16 12 13	1458.7	-28.69	17.47
110.00	6 49 3	3881.17	6.03	144.69	344.18	56.29	7 53 44	3281.2	1.56	138.46

DIFFERENTIAL CORRECTIONS

TDE .1214 TRA -.2264 TC3 2.6687 BAU .5627
RDE -.2327 RRA .2197 RC3 1.6322 FAU .32367
FDE .4593 FRA-3.5420 FC-20.8247 BSP 7896
BDE .2624 BRA .3155 BC3 3.1282 FSP 4736

MID-COURSE EXECUTION ACCURACY

SGT 2000.9 SGR 1301.0 SG3 1411.3
RRT .8241 RRF -.9692 RTF -.8467
SGB 2386.6 R23 -.3334 R13 -.9139
SG1 2298.8 SG2 641.4 THA 30.85

ORBIT DETERMINATION ACCURACY

ST 226.9 SR 380.4 SS 660.4
CRT -.9096 CRS .6309 CST -.6849
LSA 733.7 MSA 296.3 SSA 79.4
EL1 435.2 EL2 82.4 ALF 119.65

LAUNCH DATE DEC 12 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 508.340 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.105	GAL	3.79	AZL	90.38	HCA	154.34	SMA	187.90	ECC	.22561	INC	.3764	V1	30.251
RP	230.05	LAP	-.16	LOP	234.36	VP	21.154	GAP	1.40	AZP	89.66	TAL	20.84	TAP	175.18	RCA	145.51	APO	230.29	V2	23.907
RC	229.120	GL	-3.40	GP	11.89	ZAL	49.55	ZAP	134.45	ETS	166.61	ZAE	165.76	ETE	112.25	ZAC	101.49	ETC	255.59	CLP	135.70

PLANETOCENTRIC CONIC

C3	13.441	VHL	3.666	DLA	14.60	RAL	130.98	RAD	6567.5	VEL	11.611	PTH	2.03	VHP	3.909	DPA	7.90	RAP	194.67	ECC	1.2212

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 45 27	2595.30	-26.62	67.07	350.53	100.05	13 28 42	1995.3	-24.96	58.79
90.00	4 38 6	4296.06	3.14	177.34	345.74	61.84	5 49 43	3696.1	-.65	170.71
100.00	14 14 38	2307.69	-27.75	45.67	350.28	101.58	14 53 5	1707.7	-25.87	37.38
100.00	5 51 37	4058.90	4.14	159.35	345.18	60.37	6 59 16	3458.9	.17	152.82
110.00	15 40 24	2039.32	-30.72	24.47	349.46	105.79	16 14 23	1439.3	-28.25	16.14
110.00	6 42 20	3900.03	6.74	145.69	343.57	56.41	7 47 20	3300.0	2.28	139.45

DIFFERENTIAL CORRECTIONS

TDE	.1367	TRA	-.2351	TC3	2.5528	BAU	.5579
RDE	-.2191	RRA	.2515	RC3	1.7670	FAU	.33519
FDE	.3574	FRA	-3.7734	FC	-21.5903	BSP	7822
BDE	.2582	BRA	.3443	BC3	3.1047	FSP	4928

MID-COURSE EXECUTION ACCURACY

SGT	1921.9	SGR	1400.3	SG3	1466.4		
RRT	.8167	RRF	-.9752	RTF	-.8339		
SGB	2377.9	R23	-.3331	R13	-.9188		
SG1	2278.0	SG2	681.8	THA	34.24		

ORBIT DETERMINATION ACCURACY

ST	248.5	SR	365.5	SS	665.3
CRT	-.9340	CRS	.6008	CST	-.6147
LSA	731.1	MSA	313.1	SSA	74.1
EL1	435.7	EL2	74.5	ALF	123.53

LAUNCH DATE DEC 12 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 512.168 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.090	GAL	3.81	AZL	90.47	HCA	155.37	SMA	187.64	ECC	.22468	INC	.4708	V1	30.251
RP	229.67	LAP	-.20	LOP	235.38	VP	21.176	GAP	1.04	AZP	89.57	TAL	21.03	TAP	176.40	RCA	145.48	APO	229.80	V2	23.948
RC	231.027	GL	-4.25	GP	12.60	ZAL	49.31	ZAP	132.87	ETS	166.56	ZAE	164.42	ETE	116.84	ZAC	102.08	ETC	255.56	CLP	134.20

PLANETOCENTRIC CONIC

C3	13.432	VHL	3.665	DLA	13.86	RAL	130.47	RAD	6567.5	VEL	11.611	PTH	2.03	VHP	3.841	DPA	8.73	RAP	194.55	ECC	1.2211

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 50 0	2569.14	-26.30	65.22	349.71	100.90	13 32 49	1969.1	-24.53	57.00
90.00	4 29 25	4321.93	3.97	178.79	345.11	61.94	5 41 27	3721.9	.18	172.15
100.00	14 18 40	2283.20	-27.40	43.94	349.45	102.43	14 56 43	1683.2	-25.42	35.70
100.00	5 43 27	4083.10	4.96	160.68	344.57	60.48	6 51 30	3483.1	.99	154.15
110.00	15 43 20	2018.29	-30.32	22.96	348.59	106.60	16 16 58	1418.3	-27.75	14.71
110.00	6 35 16	3920.78	7.52	146.79	342.99	56.56	7 40 37	3320.8	3.07	140.53

DIFFERENTIAL CORRECTIONS

TDE	.1514	TRA	-.2472	TC3	2.4237	BAU	.5543
RDE	-.2038	RRA	.2862	RC3	1.9113	FAU	.34637
FDE	.2423	FRA	-4.0062	FC	-22.3251	BSP	7779
BDE	.2539	BRA	.3782	BC3	3.0866	FSP	5124

MID-COURSE EXECUTION ACCURACY

SGT	1835.9	SGR	1508.8	SG3	1520.1		
RRT	.8050	RRF	-.9802	RTF	-.8177		
SGB	2376.4	R23	-.3265	R13	-.9255		
SG1	2262.7	SG2	726.3	THA	38.11		

ORBIT DETERMINATION ACCURACY

ST	270.4	SR	349.8	SS	674.5
CRT	-.9480	CRS	.5752	CST	-.5361
LSA	732.1	MSA	331.3	SSA	68.4
EL1	436.7	EL2	68.9	ALF	127.33

LAUNCH DATE DEC 12 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 516.009 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.076	GAL	3.83	AZL	90.57	HCA	156.40	SMA	187.40	ECC	.22381	INC	.5718	V1	30.251
RP	229.28	LAP	-.23	LOP	236.41	VP	21.201	GAP	.69	AZP	89.48	TAL	21.20	TAP	177.60	RCA	145.46	APO	229.34	V2	23.988
RC	232.913	GL	-5.16	GP	13.36	ZAL	49.11	ZAP	131.25	ETS	166.52	ZAE	162.93	ETE	120.75	ZAC	102.71	ETC	255.54	CLP	132.67

PLANETOCENTRIC CONIC

C3	13.430	VHL	3.665	DLA	13.04	RAL	129.96	RAD	6567.5	VEL	11.611	PTH	2.03	VHP	3.778	DPA	9.64	RAP	194.42	ECC	1.2210

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 55 7	2540.84	-25.92	63.24	348.89	101.83	13 37 28	1940.8	-24.03	55.08
90.00	4 20 15	4350.18	4.87	180.38	344.52	62.07	5 32 45	3750.2	1.09	173.73
100.00	14 23 14	2256.66	-27.00	42.07	348.62	103.34	15 0 51	1656.7	-24.90	33.90
100.00	5 34 49	4109.59	5.84	162.15	343.98	60.63	6 43 19	3509.6	1.89	155.60
110.00	15 46 44	1995.41	-29.86	21.33	347.73	107.47	16 19 59	1395.4	-27.18	13.17
110.00	6 27 49	3943.60	8.38	148.01	342.43	56.74	7 33 33	3343.6	3.94	141.73

DIFFERENTIAL CORRECTIONS

TDE	.1661	TRA	-.2633	TC3	2.2823	BAU	.5530
RDE	-.1853	RRA	.3247	RC3	2.0683	FAU	.35754
FDE	.1003	FRA	-4.2464	FC	-23.0475	BSP	7777
BDE	.2489	BRA	.4181	BC3	3.0801	FSP	5311

MID-COURSE EXECUTION ACCURACY

SGT	1744.8	SGR	1629.0	SG3	1573.9		
RRT	.7882	RRF	-.9842	RTF	-.7972		
SGB	2387.0	R23	-.3125	R13	-.9339		
SG1	2257.8	SG2	774.7	THA	42.51		

ORBIT DETERMINATION ACCURACY

ST	293.4	SR	332.3	SS	689.4
CRT	-.9518	CRS	.5530	CST	-.4430
LSA	737.2	MSA	352.7	SSA	62.5
EL1	438.0	EL2	68.3	ALF	131.26

LAUNCH DATE DEC 12 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 519.864 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.063	GAL	3.85	AZL	90.68	HCA	157.43	SMA	187.17	ECC	.22299	INC	.6831	V1	30.251
RP	228.89	LAP	-.26	LOP	237.44	VP	21.227	GAP	.35	AZP	89.37	TAL	21.36	TAP	178.79	RCA	145.43	APO	228.91	V2	24.029
RC	234.778	GL	-6.16	GP	14.19	ZAL	48.95	ZAP	129.58	ETS	166.48	ZAE	161.31	ETE	124.06	ZAC	103.40	ETC	255.51	CLP	131.09

PLANETOCENTRIC CONIC

C3	13.438	VHL	3.666	DLA	12.14	RAL	129.46	RAD	6567.5	VEL	11.611	PTH	2.03	VHP	3.719	DPA	10.61	RAP	194.29	ECC	1.2212

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 0 50	2510.23	-25.47	61.11	348.06	102.81	13 42 40	1910.2	-23.45	53.02
90.00	4 10 32	4381.05	5.85	182.11	343.95	62.24	5 23 33	3781.0	2.09	175.45
100.00	14 28 22	2227.90	-26.53	40.06	347.78	104.30	15 5 30	1627.9	-24.31	31.96
100.00	5 25 40	4138.62	6.81	163.76	343.42	60.82	6 34 39	3538.6	2.87	157.19
110.00	15 50 37	1970.54	-29.34	19.58	346.85	108.38	16 23 28	1370.5	-26.55	11.51
110.00	6 19 55	3968.74	9.31	149.35	341.90	56.96	7 26 3	3368.7	4.90	143.04

DIFFERENTIAL CORRECTIONS

TDE	.1937	TRA	-.2698	TC3	2.1664	BAU	.5608
RDE	-.1599	RRA	.3710	RC3	2.2473	FAU	.36993
FDE	-.1038	FRA	-4.5287	FC	-23.8317	BSP	7553
BDE	.2512	BRA	.4587	BC3	3.1215	FSP	5409

MID-COURSE EXECUTION ACCURACY

SGT	1673.5	SGR	1768.9	SG3	1634.2		
RRT	.7721	RRF	-.9876	RTF	-.7797		
SGB	2435.0	R23	-.2865	R13	-.9455		
SG1	2292.6	SG2	820.5	THA	47.05		

ORBIT DETERMINATION ACCURACY

ST	332.7	SR	310.7	SS	719.9
CRT	-.9319	CRS	.5341	CST	-.2777
LSA	753.3	MSA	393.8	SSA	53.6
EL1	447.4	EL2	83.8	ALF	137.09

LAUNCH DATE DEC 12 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 523.730 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.051	GAL	3.86	AZL	90.80	HCA	158.47	SMA	186.96	ECC	.22221	INC	.8048
RP	228.51	LAP	-.30	LOP	238.48	VP	21.254	GAP	.01	AZP	89.25	TAL	21.49	TAP	179.96	RCA	145.42	APO	228.51
RC	236.623	GL	-7.25	GP	15.10	ZAL	48.85	ZAP	127.87	ETS	166.44	ZAE	159.56	ETE	126.85	ZAC	104.16	ETC	255.48

V1	30.251	V2	24.070	CLP	129.48														

PLANETOCENTRIC CONIC

C3	13.457	VHL	3.668	DLA	11.14	RAL	128.96	RAD	6567.5	VEL	11.612	PTH	2.03	VHP	3.666	DPA	11.67	RAP	194.17
ECC	1.2215																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 7 12	2476.99	-24.95	58.81	347.23	103.84	13 48 29	1877.0	-22.80	50.80
90.00	4 0 11	4414.89	6.92	184.03	343.41	62.47	5 13 46	3814.9	3.18	177.34
100.00	14 34 9	2196.60	-25.99	37.89	346.93	105.31	15 10 45	1596.6	-23.64	29.88
100.00	5 15 56	4170.52	7.87	165.55	342.90	61.07	6 25 26	3570.5	3.95	158.95
110.00	15 55 4	1943.37	-28.74	17.69	345.96	109.35	16 27 27	1343.4	-25.83	9.72
110.00	6 11 30	3996.51	10.34	150.85	341.40	57.24	7 18 6	3396.5	5.95	144.51

DIFFERENTIAL CORRECTIONS

TDE	.2031	TRA	-.2981	TC3	1.9847	BAU	.5636
RDE	-.1356	RRA	.4165	RC3	2.4241	FAU	.37920
FDE	-.2774	FRA	-4.7550	FC	-24.3954	BSP	7771
BDE	.2442	BRA	.5122	BC3	3.1329	FSP	5618

MID-COURSE EXECUTION ACCURACY

SGT	1564.0	SGR	1909.8	SG3	1679.4		
RRT	.7392	RRF	-.9902	RTF	-.7437		
SGB	2468.5	R23	-.2575	R13	-.9563		
SG1	2309.7	SG2	871.0	THA	52.61		

ORBIT DETERMINATION ACCURACY

ST	350.4	SR	295.4	SS	751.8
CRT	-.8999	CRS	.5544	CST	-.1953
LSA	778.4	MSA	408.5	SSA	48.6
EL1	447.0	EL2	100.9	ALF	140.40

LAUNCH DATE DEC 12 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 527.602 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.040	GAL	3.87	AZL	90.94	HCA	159.51	SMA	186.77	ECC	.22148	INC	.9382
RP	228.12	LAP	-.33	LOP	239.52	VP	21.283	GAP	-.32	AZP	89.12	TAL	21.61	TAP	181.12	RCA	145.40	APO	228.13
RC	238.446	GL	-8.45	GP	16.08	ZAL	48.80	ZAP	126.11	ETS	166.42	ZAE	157.69	ETE	129.21	ZAC	104.98	ETC	255.44

V1	30.251	V2	24.111	CLP	127.83														

PLANETOCENTRIC CONIC

C3	13.490	VHL	3.673	DLA	10.03	RAL	128.46	RAD	6567.5	VEL	11.614	PTH	2.03	VHP	3.619	DPA	12.81	RAP	194.05
ECC	1.2220																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 14 17	2440.86	-24.34	56.34	346.38	104.94	13 54 58	1840.9	-22.05	48.42
90.00	3 49 8	4452.08	8.08	186.14	342.90	62.77	5 3 20	3852.1	4.37	179.43
100.00	14 40 35	2162.53	-25.36	35.56	346.07	106.39	15 16 38	1562.5	-22.87	27.64
100.00	5 5 31	4205.65	9.02	167.52	342.40	61.38	6 15 36	3605.7	5.13	160.89
110.00	16 0 6	1913.71	-28.06	15.66	345.06	110.38	16 32 0	1313.7	-25.02	7.80
110.00	6 2 29	4027.23	11.47	152.51	340.93	57.58	7 9 37	3427.2	7.11	146.13

DIFFERENTIAL CORRECTIONS

TDE	.2126	TRA	-.3290	TC3	1.7954	BAU	.5722
RDE	-.1057	RRA	.4679	RC3	2.6161	FAU	.38810
FDE	-.4854	FRA	-4.9876	FC	-24.9069	BSP	8034
BDE	.2375	BRA	.5720	BC3	3.1729	FSP	5804

MID-COURSE EXECUTION ACCURACY

SGT	1456.4	SGR	2066.3	SG3	1723.1		
RRT	.6956	RRF	-.9923	RTF	-.6976		
SGB	2528.0	R23	-.2198	R13	-.9677		
SG1	2355.5	SG2	917.8	THA	58.58		

ORBIT DETERMINATION ACCURACY

ST	368.8	SR	282.8	SS	796.7
CRT	-.8359	CRS	.6022	CST	-.1040
LSA	819.0	MSA	422.0	SSA	43.4
EL1	446.7	EL2	128.1	ALF	143.92

LAUNCH DATE DEC 12 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 531.488 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.029	GAL	3.88	AZL	91.09	HCA	160.55	SMA	186.58	ECC	.22079	INC	1.0855
RP	227.73	LAP	-.36	LOP	240.56	VP	21.314	GAP	-.64	AZP	88.98	TAL	21.72	TAP	182.27	RCA	145.39	APO	227.78
RC	240.248	GL	-9.77	GP	17.16	ZAL	48.81	ZAP	124.30	ETS	166.41	ZAE	155.71	ETE	131.19	ZAC	105.89	ETC	255.40

V1	30.251	V2	24.152	CLP	126.14														

PLANETOCENTRIC CONIC

C3	13.541	VHL	3.680	DLA	8.80	RAL	127.96	RAD	6567.5	VEL	11.616	PTH	2.04	VHP	3.578	DPA	14.04	RAP	193.95
ECC	1.2229																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 22 9	2401.51	-23.62	53.68	345.53	106.09	14 2 10	1801.5	-21.19	45.85
90.00	3 37 15	4493.09	9.35	188.48	342.44	63.15	4 52 8	3893.1	5.68	181.73
100.00	14 47 46	2125.35	-24.62	33.04	345.20	107.51	15 23 12	1525.4	-21.99	25.23
100.00	4 54 18	4244.48	10.28	169.71	341.95	61.77	6 5 3	3644.5	6.42	163.04
110.00	16 5 46	1881.26	-27.27	13.47	344.16	111.46	16 37 8	1281.3	-24.11	5.73
110.00	5 52 48	4061.34	12.71	154.38	340.51	58.00	7 0 29	3461.3	8.39	147.94

DIFFERENTIAL CORRECTIONS

TDE	.2230	TRA	-.3628	TC3	1.5971	BAU	.5871
RDE	-.0687	RRA	.5258	RC3	2.8224	FAU	.39614
FDE	-.7336	FRA	-5.2221	FC	-25.3262	BSP	8349
BDE	.2333	BRA	.6388	BC3	3.2429	FSP	5960

MID-COURSE EXECUTION ACCURACY

SGT	1352.4	SGR	2238.8	SG3	1763.1		
RRT	.6377	RRF	-.9940	RTF	-.6378		
SGB	2615.6	R23	-.1765	R13	-.9782		
SG1	2433.7	SG2	958.2	THA	64.75		

ORBIT DETERMINATION ACCURACY

ST	388.9	SR	277.6	SS	858.3
CRT	-.7183	CRS	.6825	CST	-.0065
LSA	880.4	MSA	433.9	SSA	38.0
EL1	447.3	EL2	167.9	ALF	147.78

LAUNCH DATE DEC 12 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 535.385 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.020	GAL	3.88	AZL	91.25	HCA	161.59	SMA	186.41	ECC	.22014	INC	1.2502
RP	227.34	LAP	-.39	LOP	241.61	VP	21.345	GAP	-.96	AZP	88.81	TAL	21.81	TAP	183.40	RCA	145.38	APO	227.45
RC	242.030	GL	-11.23	GP	18.33	ZAL	48.90	ZAP	122.44	ETS	166.41	ZAE	153.62	ETE	132.85	ZAC	106.89	ETC	255.35

V1	30.251	V2	24.193	CLP	124.41														

PLANETOCENTRIC CONIC

C3	13.617	VHL	3.690	DLA	7.42	RAL	127.44	RAD	6567.5	VEL	11.619	PTH	2.04	VHP	3.543	DPA	15.39	RAP	193.87
ECC	1.2241																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 30 53	2358.50	-22.78	50.81	344.66	107.29	14 10 11	1758.5	-20.20	43.09
90.00	3 24 24	4538.52	10.74	191.10	342.03	63.64	4 40 3	3938.5	7.11	184.30
100.00	14 55 47	2084.67	-23.76	30.33	344.32	108.70	15 30 31	1484.7	-20.98	22.63
100.00	4 42 11	4287.59	11.65	172.17	341.55	62.28	5 53 39	3687.6	7.85	165.45
110.00	16 12 9	1845.65	-26.36	11.10	343.24	112.60	16 42 55	1245.6	-23.06	3.49
110.00	5 42 18	4099.37	14.07	156.48	340.15	58.52	6 50 37	3499.4	9.80	149.98

DIFFERENTIAL CORRECTIONS

TDE	.2307	TRA	-.4007	TC3	1.3862	BAU	.6082
RDE	-.0248	RRA	.5904	RC3	3.0397	FAU	.40264
FDE	-1.0066	FRA	-5.4490	FC	-25.5996	BSP	8794
BDE	.2320	BRA	.7135	BC3	3.3408	FSP	6115

MID-COURSE EXECUTION ACCURACY

SGT	1252.4	SGR	2426.6	SG3	1796.2		
RRT	.5598	RRF	-.9953	RTF	-.5583		
SGB	2730.7	R23	-.1315	R13	-.9866		
SG1	2545.2	SG2	989.4	THA	70.89		

ORBIT DETERMINATION ACCURACY

ST	405.8	SR	288.0	SS	934.4
CRT	-.5472	CRS	.7825	CST	.0770
LSA	962.2	MSA	440.1	SSA	33.0
EL1	446.8	EL2	218.9	ALF	151.29

LAUNCH DATE DEC 12 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 539.293 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.011 GAL 3.89 AZL 91.43 HCA 162.64 SMA 186.26 ECC .21953 INC 1.4338 V1 30.251
RP 226.95 LAP -.43 LOP 242.66 VP 21.378 GAP -1.27 AZP 88.63 TAL 21.88 TAP 184.52 RCA 145.37 APO 227.15 V2 24.235
RC 243.792 GL -12.86 GP 19.63 ZAL 49.06 ZAP 120.54 ETS 166.43 ZAE 151.41 ETE 134.24 ZAC 108.00 ETC 255.29 CLP 122.65

PLANETOCENTRIC CONIC

C3 13.723 VHL 3.705 DLA 5.88 RAL 126.91 RAD 6567.5 VEL 11.624 PTH 2.04 VHP 3.517 DPA 16.85 RAP 193.83 ECC 1.2259

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 40 35	2311.33	-21.79	47.70	343.80	108.54	14 19 7	1711.3	-19.06	40.10
90.00	3 10 25	4589.10	12.25	194.05	341.68	64.27	4 26 55	3989.1	8.69	187.18
100.00	15 4 43	2039.99	-22.75	27.39	343.44	109.93	15 38 43	1440.0	-19.83	19.81
100.00	4 28 59	4335.68	13.16	174.95	341.22	62.92	5 41 15	3735.7	9.42	168.15
110.00	16 19 20	1806.46	-25.31	8.54	342.31	113.78	16 49 27	1206.5	-21.87	1.07
110.00	5 30 51	4141.97	15.57	158.87	339.84	59.18	6 39 53	3542.0	11.37	152.29

DIFFERENTIAL CORRECTIONS
TDE .2373 TRA -.4428 TC3 1.1674 BAU .6376
RDE .0308 RRA .6643 RC3 3.2730 FAU .40808
FDE-1.3319 FRA-5.6755 FC-25.7437 BSP 9299
BDE .2392 BRA .7983 BC3 3.4750 FSP 6210

MID-COURSE EXECUTION ACCURACY
SGT 1164.8 SGR 2636.2 SG3 1824.5
RRT .4572 RRF -.9964 RTF -.4545
SGB 2882.1 R23 -.0894 R13 -.9923
SG1 2698.6 SG2 1012.0 THA 76.67

ORBIT DETERMINATION ACCURACY
ST 421.9 SR 321.8 SS 1033.9
CRT -.3288 CRS .8766 CST .1560
LSA 1073.9 MSA 443.3 SSA 28.2
EL1 446.0 EL2 287.5 ALF 154.90

LAUNCH DATE DEC 12 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 543.212 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.002 GAL 3.89 AZL 91.64 HCA 163.70 SMA 186.11 ECC .21895 INC 1.6414 V1 30.251
RP 226.56 LAP -.46 LOP 243.71 VP 21.413 GAP -1.57 AZP 88.42 TAL 21.93 TAP 185.63 RCA 145.36 APO 226.86 V2 24.277
RC 245.534 GL -14.67 GP 21.06 ZAL 49.33 ZAP 118.59 ETS 166.47 ZAE 149.08 ETE 135.39 ZAC 109.23 ETC 255.21 CLP 120.85

PLANETOCENTRIC CONIC

C3 13.872 VHL 3.725 DLA 4.15 RAL 126.34 RAD 6567.5 VEL 11.630 PTH 2.04 VHP 3.499 DPA 18.44 RAP 193.82 ECC 1.2283

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 51 26	2259.36	-20.63	44.34	342.93	109.84	14 29 6	1659.4	-17.74	36.85
90.00	2 55 6	4645.79	13.90	197.39	341.42	65.08	4 12 31	4045.8	10.43	190.43
100.00	15 14 43	1990.72	-21.57	24.20	342.55	111.21	15 47 54	1390.7	-18.50	16.76
100.00	4 14 29	4389.66	14.81	178.11	340.97	63.73	5 27 39	3789.7	11.16	171.22
110.00	16 27 26	1763.18	-24.09	5.76	341.39	115.02	16 56 49	1163.2	-20.52	358.44
110.00	5 18 17	4189.97	17.22	161.61	339.63	60.01	6 28 7	3590.0	13.11	154.92

DIFFERENTIAL CORRECTIONS
TDE .2406 TRA -.4897 TC3 .9391 BAU .6753
RDE .0990 RRA .7485 RC3 3.5181 FAU .41168
FDE-1.6954 FRA-5.8923 FC-25.6929 BSP 9925
BDE .2602 BRA .8945 BC3 3.6412 FSP 6272

MID-COURSE EXECUTION ACCURACY
SGT 1094.0 SGR 2867.7 SG3 1844.4
RRT .3243 RRF -.9972 RTF -.3207
SGB 3069.3 R23 -.0530 R13 -.9958
SG1 2892.8 SG2 1025.9 THA 81.92

ORBIT DETERMINATION ACCURACY
ST 434.4 SR 386.5 SS 1153.8
CRT -.1218 CRS .9403 CST .2168
LSA 1213.3 MSA 443.3 SSA 23.9
EL1 444.3 EL2 375.1 ALF 156.96

LAUNCH DATE DEC 12 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 547.141 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 32.995 GAL 3.89 AZL 91.88 HCA 164.75 SMA 185.98 ECC .21841 INC 1.8776 V1 30.251
RP 226.17 LAP -.49 LOP 244.77 VP 21.448 GAP -1.87 AZP 88.19 TAL 21.97 TAP 186.72 RCA 145.36 APO 226.60 V2 24.318
RC 247.256 GL -16.71 GP 22.64 ZAL 49.72 ZAP 116.59 ETS 166.53 ZAE 146.64 ETE 136.34 ZAC 110.60 ETC 255.11 CLP 119.01

PLANETOCENTRIC CONIC

C3 14.077 VHL 3.752 DLA 2.19 RAL 125.74 RAD 6567.6 VEL 11.639 PTH 2.04 VHP 3.492 DPA 20.17 RAP 193.88 ECC 1.2317

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 3 37	2201.80	-19.26	40.67	342.08	111.17	14 40 19	1601.8	-16.21	33.32
90.00	2 38 7	4709.79	15.70	201.23	341.27	66.13	3 56 37	4109.8	12.34	194.16
100.00	15 25 59	1936.13	-20.19	20.74	341.68	112.53	15 58 15	1336.1	-16.96	13.43
100.00	3 58 26	4450.70	16.61	181.74	340.84	64.79	5 12 37	3850.7	13.08	174.73
110.00	16 36 34	1715.19	-22.67	2.75	340.47	116.29	17 5 9	1115.2	-18.96	355.59
110.00	5 4 21	4244.40	19.05	164.78	339.53	61.06	6 15 5	3644.4	15.04	157.95

DIFFERENTIAL CORRECTIONS
TDE .2387 TRA -.5429 TC3 .6993 BAU .7213
RDE .1832 RRA .8448 RC3 3.7687 FAU .41269
FDE-2.0964 FRA-6.0909 FC-25.3807 BSP 10692
BDE .3009 BRA 1.0042 BC3 3.8330 FSP 6297

MID-COURSE EXECUTION ACCURACY
SGT 1047.2 SGR 3121.2 SG3 1852.3
RRT .1575 RRF -.9979 RTF -.1531
SGB 3292.2 R23 -.0236 R13 -.9976
SG1 3126.1 SG2 1032.5 THA 86.60

ORBIT DETERMINATION ACCURACY
ST 441.7 SR 485.3 SS 1293.2
CRT .0324 CRS .9739 CST .2541
LSA 1381.4 MSA 440.7 SSA 20.2
EL1 486.5 EL2 440.4 ALF 80.50

LAUNCH DATE DEC 12 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 551.081 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 32.987 GAL 3.88 AZL 92.15 HCA 165.81 SMA 185.86 ECC .21790 INC 2.1494 V1 30.251
RP 225.78 LAP -.53 LOP 245.83 VP 21.484 GAP -2.16 AZP 87.92 TAL 21.99 TAP 187.80 RCA 145.36 APO 226.36 V2 24.360
RC 248.959 GL -19.01 GP 24.39 ZAL 50.24 ZAP 114.55 ETS 166.63 ZAE 144.07 ETE 137.11 ZAC 112.13 ETC 254.99 CLP 117.14

PLANETOCENTRIC CONIC

C3 14.359 VHL 3.789 DLA -.02 RAL 125.09 RAD 6567.6 VEL 11.651 PTH 2.05 VHP 3.497 DPA 22.08 RAP 194.01 ECC 1.2363

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 17 24	2137.69	-17.63	36.67	341.26	112.52	14 53 1	1537.7	-14.43	29.46
90.00	2 19 8	4782.67	17.66	205.68	341.27	67.50	3 38 50	4182.7	14.45	198.47
100.00	15 38 44	1875.33	-18.56	16.96	340.85	113.86	16 9 59	1275.3	-15.17	9.80
100.00	3 40 29	4520.26	18.58	185.97	340.85	66.16	4 55 49	3920.3	15.20	178.81
110.00	16 46 57	1661.76	-21.03	359.48	339.58	117.59	17 14 39	1061.8	-17.17	352.49
110.00	4 48 44	4306.59	21.05	168.49	339.59	62.43	6 0 31	3706.6	17.19	161.48

DIFFERENTIAL CORRECTIONS
TDE .2353 TRA -.5988 TC3 .4641 BAU .7785
RDE .2915 RRA .9585 RC3 4.0288 FAU .41161
FDE-2.5564 FRA-6.2829 FC-24.8168 BSP 11523
BDE .3746 BRA 1.1302 BC3 4.0555 FSP 6235

MID-COURSE EXECUTION ACCURACY
SGT 1034.5 SGR 3408.4 SG3 1850.9
RRT -.0231 RRF -.9984 RTF .0276
SGB 3562.0 R23 -.0022 R13 -.9984
SG1 3408.5 SG2 1034.2 THA 90.44

ORBIT DETERMINATION ACCURACY
ST 447.8 SR 625.9 SS 1461.0
CRT .1417 CRS .9895 CST .2804
LSA 1591.8 MSA 438.9 SSA 16.7
EL1 632.1 EL2 438.9 ALF 78.72

LAUNCH DATE DEC 12 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 555.030 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	32.981	GAL	3.88	AZL	92.47	HCA	166.87	SMA	185.75	ECC	.21742	INC	2.4650	V1	30.251
RP	225.38	LAP	-.56	LOP	246.90	VP	21.522	GAP	-2.45	AZP	87.60	TAL	22.00	TAP	188.87	RCA	145.36	APO	226.13	V2	24.402
RC	250.643	GL	-21.63	GP	26.35	ZAL	50.95	ZAP	112.46	ETS	166.76	ZAE	141.36	ETE	137.73	ZAC	113.85	ETC	254.84	CLP	115.23

PLANETOCENTRIC CONIC

C3	14.749	VHL	3.840	DLA	-2.53	RAL	124.37	RAD	6567.6	VEL	11.668	PTH	2.05	VHP	3.517	DPA	24.17	RAP	194.24	ECC	1.2427

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 9	2065.72	-15.70	32.27	340.51	113.87	15 7 34	1465.7	-12.34	25.20
90.00	1 57 36	4866.52	19.76	210.94	341.48	69.30	3 18 43	4266.5	16.77	203.54
100.00	15 53 19	1807.13	-16.63	12.81	340.07	115.20	16 23 26	1207.1	-13.10	5.80
100.00	3 20 7	4600.35	20.71	190.97	341.08	67.95	4 36 48	4000.3	17.54	183.61
110.00	16 58 51	1601.95	-19.10	355.92	338.75	118.90	17 25 33	1002.0	-15.10	349.08
110.00	4 31 4	4378.29	23.25	172.90	339.87	64.20	5 44 3	3778.3	19.58	165.67

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2214	TRA	-.6652	TC3	.2177	BAU	.8446	SGT	1060.1	SGR	3721.0	SG3	1830.5	ST	444.9	SR	806.5	SS	1641.4
RDE	.4253	RRA	1.0892	RC3	4.2782	FAU	.40655	RRT	-.2172	RRF	-.9988	RTF	.2218	CRT	.1803	CRS	.9958	CST	.2671
FDE	-3.0394	FRA	-6.4331	FC	-23.8644	BSP	12531	SGB	3869.1	R23	.0136	R13	-.9987	LSA	1831.2	MSA	434.7	SSA	13.9
BDE	.4795	BRA	1.2762	BC3	4.2837	FSP	6133	SG1	3728.7	SG2	1032.7	THA	93.84	EL1	812.1	EL2	434.6	ALF	82.02

LAUNCH DATE DEC 12 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 558.986 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	32.975	GAL	3.87	AZL	92.84	HCA	167.94	SMA	185.65	ECC	.21697	INC	2.8367	V1	30.251
RP	224.99	LAP	-.59	LOP	247.97	VP	21.560	GAP	-2.72	AZP	87.23	TAL	21.99	TAP	189.93	RCA	145.37	APO	225.93	V2	24.444
RC	252.307	GL	-24.61	GP	28.54	ZAL	51.87	ZAP	110.33	ETS	166.94	ZAE	138.50	ETE	138.21	ZAC	115.80	ETC	254.65	CLP	113.30

PLANETOCENTRIC CONIC

C3	15.291	VHL	3.910	DLA	-5.40	RAL	123.55	RAD	6567.6	VEL	11.691	PTH	2.06	VHP	3.557	DPA	26.46	RAP	194.61	ECC	1.2516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 51 26	1984.15	-13.39	27.39	339.88	115.18	15 24 30	1384.1	-9.89	20.47
90.00	1 32 48	4964.25	21.98	217.24	341.97	71.69	2 55 33	4364.2	19.28	209.61
100.00	16 10 13	1729.97	-14.34	8.23	339.41	116.51	16 39 3	1130.0	-10.66	1.37
100.00	2 56 42	4693.66	22.97	196.97	341.60	70.33	4 14 55	4093.7	20.08	189.37
110.00	17 12 38	1534.59	-16.84	352.00	338.00	120.20	17 38 12	934.6	-12.70	345.34
110.00	4 10 47	4461.81	25.62	178.22	340.46	66.55	5 25 9	3861.8	22.22	170.71

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1904	TRA	-.7483	TC3	-.0475	BAU	.9158	SGT	1136.6	SGR	4037.0	SG3	1777.0	ST	432.4	SR	1019.5	SS	1810.5
RDE	.5840	RRA	1.2324	RC3	4.4799	FAU	.39482	RRT	-.4116	RRF	-.9990	RTF	.4164	CRT	.1334	CRS	.9983	CST	.1891
FDE	-3.4949	FRA	-6.4862	FC	-22.3540	BSP	13926	SGB	4194.0	R23	.0257	R13	-.9987	LSA	2078.6	MSA	428.3	SSA	11.6
BDE	.6142	BRA	1.4418	BC3	4.4802	FSP	6076	SG1	4065.9	SG2	1028.5	THA	97.07	EL1	1021.5	EL2	427.7	ALF	86.07

LAUNCH DATE DEC 12 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 562.952 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	32.970	GAL	3.86	AZL	93.28	HCA	169.01	SMA	185.56	ECC	.21654	INC	3.2808	V1	30.251
RP	224.60	LAP	-.63	LOP	249.04	VP	21.600	GAP	-3.00	AZP	86.78	TAL	21.96	TAP	190.97	RCA	145.38	APO	225.74	V2	24.486
RC	253.951	GL	-28.02	GP	31.01	ZAL	53.07	ZAP	108.17	ETS	167.19	ZAE	135.49	ETE	138.58	ZAC	118.00	ETC	254.39	CLP	111.33

PLANETOCENTRIC CONIC

C3	16.056	VHL	4.007	DLA	-8.69	RAL	122.60	RAD	6567.6	VEL	11.723	PTH	2.07	VHP	3.622	DPA	29.00	RAP	195.15	ECC	1.2642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 13 4	1890.56	-10.62	21.92	339.44	116.40	15 44 34	1290.6	-6.99	15.12
90.00	1 3 38	5079.94	24.25	224.96	342.86	74.92	2 28 18	4479.9	21.95	217.05
100.00	16 30 11	1641.77	-11.59	3.12	338.93	117.75	16 57 33	1041.8	-7.79	356.39
100.00	2 29 12	4803.97	25.31	204.33	342.53	73.54	3 49 16	4204.0	22.81	196.43
110.00	17 28 48	1458.21	-14.17	347.69	337.43	121.44	17 53 6	858.2	-9.91	341.18
110.00	3 47 4	4560.29	28.12	184.79	341.49	69.71	5 3 4	3960.3	25.09	176.92

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1489	TRA	-.8406	TC3	-.2995	BAU	.9985	SGT	1257.6	SGR	4387.1	SG3	1701.9	ST	422.4	SR	1288.5	SS	1991.5
RDE	.7899	RRA	1.4053	RC3	4.6420	FAU	.37845	RRT	-.5662	RRF	-.9993	RTF	.5707	CRT	.0317	CRS	.9994	CST	.0665
FDE	-3.9757	FRA	-6.4948	FC	-20.4053	BSP	15432	SGB	4563.8	R23	.0334	R13	-.9987	LSA	2371.8	MSA	423.4	SSA	9.5
BDE	.8039	BRA	1.6375	BC3	4.6516	FSP	5903	SG1	4447.8	SG2	1022.4	THA	99.74	EL1	1288.5	EL2	422.2	ALF	89.33

LAUNCH DATE DEC 12 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 566.930 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	32.965	GAL	3.85	AZL	93.82	HCA	170.08	SMA	185.48	ECC	.21615	INC	3.8218	V1	30.251
RP	224.21	LAP	-.66	LOP	250.12	VP	21.640	GAP	-3.26	AZP	86.24	TAL	21.92	TAP	192.01	RCA	145.39	APO	225.57	V2	24.527
RC	255.576	GL	-31.95	GP	33.78	ZAL	54.59	ZAP	105.97	ETS	167.51	ZAE	132.29	ETE	138.86	ZAC	120.49	ETC	254.06	CLP	109.33

PLANETOCENTRIC CONIC

C3	17.161	VHL	4.143	DLA	-12.46	RAL	121.48	RAD	6567.7	VEL	11.770	PTH	2.08	VHP	3.720	DPA	31.81	RAP	195.91	ECC	1.2824

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 39 26	1781.17	-7.24	15.66	339.33	117.45	16 9 8	1181.2	-3.51	8.97
90.00	0 28 18	5219.82	26.38	234.65	344.28	79.32	1 55 18	4619.8	24.64	226.41
100.00	16 54 23	1539.38	-8.29	357.31	338.76	118.82	17 20 2	939.4	-4.38	350.71
100.00	1 56 3	4936.85	27.54	213.57	344.01	77.90	3 18 20	4336.9	25.60	205.31
110.00	17 48 12	1370.85	-11.02	342.89	337.12	122.57	18 11 3	770.8	-6.64	336.52
110.00	3 18 43	4678.15	30.62	193.05	343.13	74.01	4 36 42	4078.1	28.13	184.74

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1046	TRA	-.9342	TC3	-.4988	BAU	1.1010	SGT	1393.8	SGR	4814.2	SG3	1614.3	ST	422.7	SR	1642.3	SS	2197.0
RDE	1.0731	RRA	1.6308	RC3	4.7730	FAU	.35934	RRT	-.6671	RRF	-.9994	RTF	.6711	CRT	-.0889	CRS	.9998	CST	-.0686
FDE	-4.5098	FRA	-6.4936	FC	-18.1275	BSP	16763	SGB	5011.9	R23	.0361	R13	-.9988	LSA	2743.1	MSA	422.3	SSA	7.7
BDE	1.0782	BRA	1.8794	BC3	4.7990	FSP	5494	SG1	4907.3	SG2	1018.7	THA	101.43	EL1	1642.8	EL2	420.9	ALF	91.40

LAUNCH DATE DEC 12 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 570.914 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	32.961	GAL	3.83	AZL	94.49	HCA	171.16	SMA	185.40	ECC	.21578	INC	4.4944	V1	30.251
RP	223.82	LAP	-.69	LOP	251.20	VP	21.681	GAP	-3.52	AZP	85.56	TAL	21.87	TAP	193.03	RCA	145.40	APO	225.41	V2	24.569
RC	257.180	GL	-36.48	GP	36.91	ZAL	56.52	ZAP	103.75	ETS	167.92	ZAE	128.89	ETE	139.07	ZAC	123.32	ETC	253.62	CLP	107.29

PLANETOCENTRIC CONIC

C3	18.794	VHL	4.335	DLA	-16.79	RAL	120.12	RAD	6567.8	VEL	11.840	PTH	2.10	VHP	3.865	DPA	34.91	RAP	196.97	ECC	1.3093

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 13 18	1648.60	-3.02	8.20	339.80	118.17	16 40 47	1048.6	.77	1.57
90.00	23 39 39	5394.76	27.97	247.19	346.34	85.40	25 9 34	4794.8	27.04	238.65
100.00	17 25 6	1416.94	-4.21	350.51	339.15	119.62	17 48 43	816.9	-.24	343.98
100.00	1 14 28	5101.66	29.32	225.49	346.20	83.92	2 39 30	4501.7	28.17	216.87
110.00	18 12 16	1269.19	-7.24	337.44	337.28	123.50	18 33 25	669.2	-2.79	331.18
110.00	2 43 48	4822.18	32.84	203.68	345.61	79.93	4 4 10	4222.2	31.10	194.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0345	TRA	-1.0525	TC3	-.6838	BAU	1.2140	SGT	1570.0	SGR	5261.3	SG3	1487.0	ST	438.6
RDE	1.4348	RRA	1.9011	RC3	4.7829	FAU	.33213	RRT	-.7489	RRF	-.9996	RTF	.7526	CRT	-.2871
FDE	-4.9623	FRA	-6.3653	FC	-15.2992	BSP	18357	SGB	5490.5	R23	.0375	R13	-.9989	LSA	3136.2
BDE	1.4352	BRA	2.1730	BC3	4.8315	FSP	5030	SG1	5396.0	SG2	1014.5	THA	103.07	EL1	2061.0

SR	2057.0	SS	2364.2	TC	-.6838
CRS	.9999	CST	-.2761	BAU	1.2140
MSA	421.0	SSA	6.2	FAU	.33213
EL2	419.4	ALF	93.65	FSP	5030

LAUNCH DATE DEC 12 1964 FLIGHT TIME 262.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 574.906 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	32.957	GAL	3.82	AZL	95.36	HCA	172.23	SMA	185.34	ECC	.21544	INC	5.3545	V1	30.251
RP	223.44	LAP	-.72	LOP	252.28	VP	21.723	GAP	-3.78	AZP	84.69	TAL	21.81	TAP	194.04	RCA	145.41	APO	225.27	V2	24.611
RC	258.763	GL	-41.69	GP	40.44	ZAL	58.92	ZAP	101.52	ETS	168.46	ZAE	125.29	ETE	139.26	ZAC	126.53	ETC	253.03	CLP	105.22

PLANETOCENTRIC CONIC

C3	21.297	VHL	4.615	DLA	-21.76	RAL	118.42	RAD	6567.9	VEL	11.945	PTH	2.13	VHP	4.078	DPA	38.33	RAP	198.42	ECC	1.3505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 17	1474.60	2.59	358.49	341.39	118.21	17 25 51	874.6	6.34	351.82
90.00	22 38 5	5628.27	28.07	264.24	348.93	93.93	24 11 53	5028.3	28.31	255.58
100.00	18 7 23	1261.25	1.06	341.96	340.54	119.88	18 28 24	661.3	5.02	335.42
100.00	0 18 35	5316.85	29.81	241.44	349.04	92.28	1 47 12	4716.9	29.81	232.63
110.00	18 43 48	1147.10	-2.61	331.02	338.25	124.10	19 2 55	547.1	1.88	324.81
110.00	1 58 40	5003.77	34.14	217.68	349.05	88.10	3 22 4	4403.8	33.50	208.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0605	TRA	-1.1958	TC3	-.8220	BAU	1.3466	SGT	1771.0	SGR	5762.2	SG3	1326.9	ST	485.9
RDE	1.9193	RRA	2.2498	RC3	4.6575	FAU	.29825	RRT	-.8082	RRF	-.9997	RTF	.8117	CRT	-.4957
FDE	-5.3158	FRA	-6.1269	FC	-12.1241	BSP	19895	SGB	6028.2	R23	.0372	R13	-.9990	LSA	3569.0
BDE	1.9203	BRA	2.5479	BC3	4.7295	FSP	4405	SG1	5942.8	SG2	1011.2	THA	104.38	EL1	2562.9

SR	2551.3	SS	2484.0	TC	-.8220
CRS	1.0000	CST	-.4909	BAU	1.3466
MSA	421.8	SSA	5.0	FAU	.29825
EL2	420.1	ALF	95.54	FSP	4405

LAUNCH DATE DEC 12 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 578.904 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	32.954	GAL	3.80	AZL	96.50	HCA	173.31	SMA	185.28	ECC	.21512	INC	6.4948	V1	30.251
RP	223.05	LAP	-.75	LOP	253.37	VP	21.765	GAP	-4.03	AZP	83.55	TAL	21.73	TAP	195.04	RCA	145.43	APO	225.14	V2	24.653
RC	260.326	GL	-47.67	GP	44.40	ZAL	61.88	ZAP	99.32	ETS	169.15	ZAE	121.47	ETE	139.48	ZAC	130.13	ETC	252.22	CLP	103.10

PLANETOCENTRIC CONIC

C3	25.318	VHL	5.032	DLA	-27.41	RAL	116.21	RAD	6568.0	VEL	12.112	PTH	2.17	VHP	4.394	DPA	42.06	RAP	200.41	ECC	1.4167

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 56	1154.71	12.54	340.26	346.06	115.60	18 57 11	554.7	15.88	333.18
90.00	20 43 46	744.47	22.91	314.67	350.31	107.11	20 56 11	144.5	25.04	306.65
100.00	19 20 11	1018.18	9.18	328.49	344.31	118.57	19 37 9	418.2	12.93	321.70
100.00	22 44 12	5644.28	26.55	265.13	351.43	104.27	24 18 17	5044.3	28.25	256.75
110.00	19 29 58	987.45	3.49	322.68	340.83	124.03	19 46 26	387.4	7.93	316.41
110.00	0 54 51	5247.77	33.06	236.59	352.99	99.21	2 22 18	4647.8	33.98	227.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1817	TRA	-1.3715	TC3	-.8897	BAU	1.4918	SGT	1984.7	SGR	6259.6	SG3	1120.1	ST	567.5
RDE	2.5504	RRA	2.6871	RC3	4.3165	FAU	.25480	RRT	-.8495	RRF	-.9997	RTF	.8529	CRT	-.6568
FDE	-5.4207	FRA	-5.6812	FC3	-8.7126	BSP	21846	SGB	6566.7	R23	.0360	R13	-.9991	LSA	3981.4
BDE	2.5569	BRA	3.0168	BC3	4.4072	FSP	3725	SG1	6488.6	SG2	1010.3	THA	105.46	EL1	3108.3

SR	3085.5	SS	2488.2	TC	-.8897
CRS	1.0000	CST	-.6555	BAU	1.4918
MSA	426.3	SSA	4.0	FAU	.25480
EL2	424.8	ALF	97.02	FSP	3725

LAUNCH DATE DEC 12 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 582.904 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	32.951	GAL	3.78	AZL	98.08	HCA	174.39	SMA	185.24	ECC	.21483	INC	8.0764	V1	30.251
RP	222.66	LAP	-.79	LOP	254.46	VP	21.809	GAP	-4.28	AZP	81.96	TAL	21.64	TAP	196.03	RCA	145.44	APO	225.03	V2	24.695
RC	261.869	GL	-54.48	GP	48.77	ZAL	65.43	ZAP	97.17	ETS	170.04	ZAE	117.46	ETE	139.79	ZAC	134.10	ETC	251.13	CLP	100.92

PLANETOCENTRIC CONIC

C3	32.218	VHL	5.676	DLA	-33.76	RAL	113.20	RAD	6568.3	VEL	12.393	PTH	2.24	VHP	4.879	DPA	46.06	RAP	203.07	ECC	1.5302

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.80	17 4 1	1471.29	19.58	7.45	351.03	118.07	17 28 33	871.3	23.18	.19
109.20	21 53 44	5836.23	19.60	276.60	351.04	118.06	23 31 0	5236.2	23.19	269.34
70.80	17 4 1	1471.29	19.58	7.45	351.03	118.07	17 28 33	871.3	23.18	.19
109.20	21 53 44	5836.23	19.60	276.60	351.04	118.06	23 31 0	5236.2	23.19	269.34
110.00	21 17 54	657.69	15.64	304.87	348.70	120.79	21 28 52	57.7	19.60	298.00
110.00	22 39 1	5697.82	23.64	268.02	353.23	115.44	24 13 59	5097.8	26.87	260.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3381	TRA	-1.6032	TC3	-.8832	BAU	1.6702	SGT	2216.1	SGR	6792.0	SG3	880.8	ST	677.1
RDE	3.4073	RRA	3.2872	RC3	3.7756	FAU	.20478	RRT	-.8797	RRF	-.9997	RTF	.8834	CRT	-.7607
FDE	-5.1963	FRA	-5.0367	FC3	-5.5027	BSP	23609	SGB	7144.4	R23	.0357	R13	-.9992	LSA	4363.6
BDE	3.4241	BRA	3.6573	BC3	3.8775	FSP	2888	SG1	7072.3	SG2	1012.1	THA	106.36	EL1	3680.9

SR	3644.2	SS	2343.8	TC	-.8832
CRS	1.0000	CST	-.7617	BAU	1.6702
MSA	436.1	SSA	3.2	FAU	.20478
EL2	435.1	ALF	98.16	FSP	2888

LAUNCH DATE DEC 12 1964 FLIGHT TIME 288.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 628.014 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 32.947 GAL 3.33 AZL 80.46 HCA 186.80 SMA 185.16 ECC .21235 INC 9.5437 V1 30.251
RP 218.52 LAP -1.12 LOP 266.72 VP 22.314 GAP -6.56 AZP 99.48 TAL 19.20 TAP 206.00 RCA 145.84 APO 224.48 V2 25.148
RC 277.609 GL 60.92 GP -44.53 ZAL 70.31 ZAP 84.24 ETS 173.06 ZAE 107.66 ETE 195.89 ZAC 42.05 ETC 251.06 CLP 81.90

PLANETOCENTRIC CONIC

C3 38.942 VHL 6.240 DLA 73.33 RAL 177.50 RAD 6568.5 VEL 12.661 PTH 2.30 VHP 4.404 DPA -34.26 RAP 150.01 ECC 1.6409

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
12.40	9 31 24	4412.96	-45.46	243.78	126.19	15.64	10 44 57	3813.0	-53.11	240.62
12.40	2 52 41	4785.68	-20.76	249.32	33.33	11.67	4 12 27	4185.7	-28.59	247.90
19.01	6 25 22	4587.61	-32.25	240.12	76.62	19.82	7 41 50	3987.6	-39.73	237.02
160.99	17 9 15	2815.61	-32.25	86.09	76.60	19.82	17 56 11	2215.6	-39.72	82.99
19.01	6 25 22	4587.61	-32.25	240.12	76.62	19.82	7 41 50	3987.6	-39.73	237.02
160.99	17 9 15	2815.61	-32.25	86.09	76.60	19.82	17 56 11	2215.6	-39.72	82.99

DIFFERENTIAL CORRECTIONS
TDE 5.3549 TRA .2545 TC3-2.2016 BAU 1.8900
RDE 4.8575 RRA .6854 RC3-2.8866 FAU .26843
FDE 9.3394 FRA 1.3445 FC3-5.9677 BSP 27945
BDE 7.2298 BRA .7311 BC3 3.6304 FSP 3720

MID-COURSE EXECUTION ACCURACY
SGT 5691.0 SGR 6138.7 SG3 1049.4
RRT .9622 RRF .9994 RTF .9567
SGB 8370.8 R23 .1448 R13 .9891
SG1 8291.8 SG2 1147.6 THA 47.25

ORBIT DETERMINATION ACCURACY
ST 4923.4 SR 4509.5 SS 3300.7
CRT .9953 CRS-1.0000 CST -.9950
LSA 7439.0 MSA 362.6 SSA 4.2
EL1 6668.7 EL2 322.8 ALF 42.48

LAUNCH DATE DEC 12 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 632.131 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 32.948 GAL 3.28 AZL 81.61 HCA 187.92 SMA 185.19 ECC .21226 INC 8.3947 V1 30.251
RP 218.16 LAP -1.15 LOP 267.85 VP 22.362 GAP -6.75 AZP 98.32 TAL 18.93 TAP 206.86 RCA 145.88 APO 224.50 V2 25.188
RC 278.933 GL 57.22 GP -40.59 ZAL 68.69 ZAP 82.47 ETS 172.35 ZAE 107.22 ETE 193.26 ZAC 45.67 ETC 252.40 CLP 80.06

PLANETOCENTRIC CONIC

C3 32.624 VHL 5.712 DLA 70.30 RAL 170.14 RAD 6568.3 VEL 12.409 PTH 2.24 VHP 4.082 DPA -30.55 RAP 151.70 ECC 1.5369

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
22.52	6 3 23	4534.45	-34.42	235.18	65.95	24.12	7 18 57	3934.5	-41.64	231.24
157.48	16 32 34	2779.37	-34.41	84.77	65.93	24.12	17 18 53	2179.4	-41.64	80.82
22.52	6 3 23	4534.45	-34.42	235.18	65.95	24.12	7 18 57	3934.5	-41.64	231.24
157.48	16 32 34	2779.37	-34.41	84.77	65.93	24.12	17 18 53	2179.4	-41.64	80.82
22.52	6 3 23	4534.45	-34.42	235.18	65.95	24.12	7 18 57	3934.5	-41.64	231.24
157.48	16 32 34	2779.37	-34.41	84.77	65.93	24.12	17 18 53	2179.4	-41.64	80.82

DIFFERENTIAL CORRECTIONS
TDE 5.0723 TRA .0844 TC3-2.6827 BAU 1.7794
RDE 4.2059 RRA .4853 RC3-3.0737 FAU .30923
FDE10.4567 FRA 1.2192 FC3-8.2061 BSP 27737
BDE 6.5892 BRA .4925 BC3 4.0798 FSP 4497

MID-COURSE EXECUTION ACCURACY
SGT 5945.1 SGR 5675.7 SG3 1255.2
RRT .9659 RRF .9994 RTF .9611
SGB 8219.3 R23 .1527 R13 .9878
SG1 8149.0 SG2 1072.9 THA 43.63

ORBIT DETERMINATION ACCURACY
ST 5089.5 SR 4242.5 SS 3721.0
CRT .9962 CRS-1.0000 CST -.9960
LSA 7591.9 MSA 333.5 SSA 4.9
EL1 6619.7 EL2 285.8 ALF 39.79

LAUNCH DATE DEC 12 1964 FLIGHT TIME 292.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 636.261 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 32.950 GAL 3.23 AZL 82.47 HCA 189.06 SMA 185.22 ECC .21217 INC 7.5278 V1 30.251
RP 217.80 LAP -1.18 LOP 268.99 VP 22.410 GAP -6.92 AZP 97.43 TAL 18.64 TAP 207.70 RCA 145.93 APO 224.52 V2 25.228
RC 280.240 GL 54.03 GP -37.07 ZAL 67.39 ZAP 80.65 ETS 171.79 ZAE 106.45 ETE 190.92 ZAC 48.91 ETC 253.41 CLP 78.25

PLANETOCENTRIC CONIC

C3 28.356 VHL 5.325 DLA 67.49 RAL 165.48 RAD 6568.1 VEL 12.236 PTH 2.20 VHP 3.865 DPA -27.19 RAP 153.02 ECC 1.4667

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
25.78	5 51 52	4489.86	-35.80	230.40	58.10	28.17	7 6 42	3889.9	-42.75	225.69
154.22	16 6 52	2753.61	-35.80	83.47	58.08	28.16	16 52 46	2153.6	-42.74	78.75
25.78	5 51 52	4489.86	-35.80	230.40	58.10	28.17	7 6 42	3889.9	-42.75	225.69
154.22	16 6 52	2753.61	-35.80	83.47	58.08	28.16	16 52 46	2153.6	-42.74	78.75
25.78	5 51 52	4489.86	-35.80	230.40	58.10	28.17	7 6 42	3889.9	-42.75	225.69
154.22	16 6 52	2753.61	-35.80	83.47	58.08	28.16	16 52 46	2153.6	-42.74	78.75

DIFFERENTIAL CORRECTIONS
TDE 4.7927 TRA -.0588 TC3-3.1908 BAU 1.7126
RDE 3.5861 RRA .3344 RC3-3.1979 FAU .34419
FDE10.9457 FRA 1.0174 FC-10.5085 BSP 27112
BDE 5.9858 BRA .3396 BC3 4.5175 FSP 5047

MID-COURSE EXECUTION ACCURACY
SGT 6178.0 SGR 5231.8 SG3 1425.3
RRT .9689 RRF .9993 RTF .9645
SGB 8095.6 R23 .1606 R13 .9865
SG1 8034.1 SG2 995.8 THA 40.11

ORBIT DETERMINATION ACCURACY
ST 5158.0 SR 3870.2 SS 3944.8
CRT .9966 CRS-1.0000 CST -.9966
LSA 7552.9 MSA 312.0 SSA 5.7
EL1 6443.4 EL2 256.3 ALF 36.86

LAUNCH DATE DEC 12 1964 FLIGHT TIME 294.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 640.401 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 32.952 GAL 3.18 AZL 83.15 HCA 190.20 SMA 185.26 ECC .21209 INC 6.8502 V1 30.251
RP 217.44 LAP -1.21 LOP 270.14 VP 22.457 GAP -7.10 AZP 96.74 TAL 18.34 TAP 208.54 RCA 145.97 APO 224.55 V2 25.268
RC 281.529 GL 51.27 GP -33.97 ZAL 66.37 ZAP 78.83 ETS 171.35 ZAE 105.41 ETE 188.88 ZAC 51.77 ETC 254.19 CLP 76.50

PLANETOCENTRIC CONIC

C3 25.311 VHL 5.031 DLA 64.94 RAL 162.36 RAD 6568.0 VEL 12.111 PTH 2.17 VHP 3.715 DPA -24.19 RAP 154.06 ECC 1.4166

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
28.76	5 46 10	4451.68	-36.64	225.92	52.03	31.86	7 0 22	3851.7	-43.30	220.54
151.24	15 47 44	2735.41	-36.64	82.28	52.01	31.85	16 33 19	2135.4	-43.30	76.90
28.76	5 46 10	4451.68	-36.64	225.92	52.03	31.86	7 0 22	3851.7	-43.30	220.54
151.24	15 47 44	2735.41	-36.64	82.28	52.01	31.85	16 33 19	2135.4	-43.30	76.90
28.76	5 46 10	4451.68	-36.64	225.92	52.03	31.86	7 0 22	3851.7	-43.30	220.54
151.24	15 47 44	2735.41	-36.64	82.28	52.01	31.85	16 33 19	2135.4	-43.30	76.90

DIFFERENTIAL CORRECTIONS
TDE 4.5604 TRA -.1744 TC3-3.7091 BAU 1.6688
RDE 3.0670 RRA .2332 RC3-3.2500 FAU .37143
FDE11.0747 FRA .8219 FC-12.7042 BSP 26727
BDE 5.4958 BRA .2912 BC3 4.9315 FSP 5491

MID-COURSE EXECUTION ACCURACY
SGT 6412.6 SGR 4825.7 SG3 1563.2
RRT .9711 RRF .9992 RTF .9668
SGB 8025.5 R23 .1682 R13 .9850
SG1 7971.9 SG2 926.5 THA 36.74

ORBIT DETERMINATION ACCURACY
ST 5196.7 SR 3499.3 SS 4055.5
CRT .9967 CRS-1.0000 CST -.9968
LSA 7457.1 MSA 300.2 SSA 6.5
EL1 6260.6 EL2 235.4 ALF 33.92

LAUNCH DATE DEC 12 1964 FLIGHT TIME 296.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 644.553 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	32.955	GAL	3.12	AZL	83.69	HCA	191.34	SMA	185.30	ECC	.21202	INC	6.3064
RP	217.09	LAP	-1.24	LOP	271.29	VP	22.505	GAP	-7.27	AZP	96.18	TAL	18.02	TAP	209.36	RCA	146.02	APO	224.59
RC	282.801	GL	48.85	GP	-31.22	ZAL	65.57	ZAP	77.03	ETS	171.01	ZAE	104.18	ETE	187.10	ZAC	54.31	ETC	254.80

V1 30.251 V2 25.307 CLP 74.78

PLANETOCENTRIC CONIC

C3	23.043	VHL	4.800	DLA	62.65	RAL	160.22	RAD	6567.9	VEL	12.018	PTH	2.14	VHP	3.611	DPA	-21.51	RAP	154.89

ECC 1.3792

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
31.46	5 43 59	4418.29	-37.10	221.78	47.20	35.17	6 57 37	3818.3	-43.48	215.85
148.54	15 32 48	2722.76	-37.09	81.24	47.18	35.17	16 18 10	2122.8	-43.47	75.32
31.46	5 43 59	4418.29	-37.10	221.78	47.20	35.17	6 57 37	3818.3	-43.48	215.85
148.54	15 32 48	2722.76	-37.09	81.24	47.18	35.17	16 18 10	2122.8	-43.47	75.32
31.46	5 43 59	4418.29	-37.10	221.78	47.20	35.17	6 57 37	3818.3	-43.48	215.85
148.54	15 32 48	2722.76	-37.09	81.24	47.18	35.17	16 18 10	2122.8	-43.47	75.32

DIFFERENTIAL CORRECTIONS

TDE	4.3812	TRA	-.2606	TC3	-4.2167	BAU	1.6387
RDE	2.6422	RRA	.1670	RC3	-3.2428	FAU	.39136
FDE	10.9780	FRA	.6560	FC	-14.7034	BSP	26712
BDE	5.1163	BRA	.3095	BC3	5.3195	FSP	5848

MID-COURSE EXECUTION ACCURACY

SGT	6647.8	SGR	4452.7	SG3	1670.6		
RRT	.9730	RRF	.9990	RTF	.9687		
SGB	8001.3	R23	.1750	R13	.9837		
SG1	7955.0	SG2	858.8	THA	33.54		

ORBIT DETERMINATION ACCURACY

ST	5234.7	SR	3157.7	SS	4092.9
CRT	.9968	CRS	-1.0000	CST	-.9969
LSA	7351.3	MSA	290.7	SSA	7.3
EL1	6109.5	EL2	217.0	ALF	31.06

LAUNCH DATE DEC 12 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 648.713 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	32.958	GAL	3.07	AZL	84.14	HCA	192.49	SMA	185.35	ECC	.21197	INC	5.8598
RP	216.74	LAP	-1.27	LOP	272.44	VP	22.553	GAP	-7.43	AZP	95.72	TAL	17.68	TAP	210.17	RCA	146.06	APO	224.64
RC	284.057	GL	46.73	GP	-28.80	ZAL	64.98	ZAP	75.25	ETS	170.76	ZAE	102.81	ETE	185.57	ZAC	56.55	ETC	255.28

V1 30.251 V2 25.346 CLP 73.11

PLANETOCENTRIC CONIC

C3	21.293	VHL	4.614	DLA	60.58	RAL	158.72	RAD	6567.9	VEL	11.945	PTH	2.13	VHP	3.539	DPA	-19.13	RAP	155.55

ECC 1.3504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
33.92	5 44 1	4388.60	-37.30	217.98	43.29	38.14	6 57 10	3788.6	-43.40	211.61
146.08	15 20 47	2714.18	-37.29	80.38	43.27	38.13	16 6 1	2114.2	-43.39	74.00
33.92	5 44 1	4388.60	-37.30	217.98	43.29	38.14	6 57 10	3788.6	-43.40	211.61
146.08	15 20 47	2714.18	-37.29	80.38	43.27	38.13	16 6 1	2114.2	-43.39	74.00
33.92	5 44 1	4388.60	-37.30	217.98	43.29	38.14	6 57 10	3788.6	-43.40	211.61
146.08	15 20 47	2714.18	-37.29	80.38	43.27	38.13	16 6 1	2114.2	-43.39	74.00

DIFFERENTIAL CORRECTIONS

TDE	4.2381	TRA	-.3302	TC3	-4.7238	BAU	1.6231
RDE	2.2960	RRA	.1245	RC3	-3.1930	FAU	.40514
FDE	10.7449	FRA	.5264	FC	-16.4722	BSP	26877
BDE	4.8200	BRA	.3529	BC3	5.7017	FSP	6131

MID-COURSE EXECUTION ACCURACY

SGT	6884.2	SGR	4112.2	SG3	1751.3		
RRT	.9744	RRF	.9988	RTF	.9701		
SGB	8018.9	R23	.1806	R13	.9824		
SG1	7979.2	SG2	796.9	THA	30.54		

ORBIT DETERMINATION ACCURACY

ST	5269.8	SR	2853.8	SS	4083.7
CRT	.9967	CRS	-1.0000	CST	-.9970
LSA	7246.4	MSA	285.7	SSA	8.2
EL1	5989.5	EL2	202.8	ALF	28.39

LAUNCH DATE DEC 12 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 652.883 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	32.961	GAL	3.01	AZL	84.51	HCA	193.64	SMA	185.40	ECC	.21192	INC	5.4861
RP	216.39	LAP	-1.29	LOP	273.60	VP	22.600	GAP	-7.59	AZP	95.33	TAL	17.33	TAP	210.97	RCA	146.11	APO	224.69
RC	285.296	GL	44.86	GP	-26.65	ZAL	64.55	ZAP	73.51	ETS	170.57	ZAE	101.35	ETE	184.26	ZAC	58.54	ETC	255.67

V1 30.251 V2 25.385 CLP 71.48

PLANETOCENTRIC CONIC

C3	19.903	VHL	4.461	DLA	58.70	RAL	157.67	RAD	6567.8	VEL	11.886	PTH	2.11	VHP	3.491	DPA	-17.00	RAP	156.10

ECC 1.3275

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.17	5 45 34	4361.80	-37.31	214.51	40.08	40.78	6 58 16	3761.8	-43.16	207.77
143.83	15 10 54	2708.67	-37.30	79.67	40.07	40.77	15 56 3	2108.7	-43.15	72.94
36.17	5 45 34	4361.80	-37.31	214.51	40.08	40.78	6 58 16	3761.8	-43.16	207.77
143.83	15 10 54	2708.67	-37.30	79.67	40.07	40.77	15 56 3	2108.7	-43.15	72.94
36.17	5 45 34	4361.80	-37.31	214.51	40.08	40.78	6 58 16	3761.8	-43.16	207.77
143.83	15 10 54	2708.67	-37.30	79.67	40.07	40.77	15 56 3	2108.7	-43.15	72.94

DIFFERENTIAL CORRECTIONS

TDE	4.1201	TRA	-.3888	TC3	-5.2325	BAU	1.6211
RDE	2.0090	RRA	.0943	RC3	-3.1212	FAU	.41484
FDE	10.4092	FRA	.4122	FC	-18.0452	BSP	27079
BDE	4.5838	BRA	.4000	BC3	6.0927	FSP	6307

MID-COURSE EXECUTION ACCURACY

SGT	7121.7	SGR	3803.6	SG3	1810.3		
RRT	.9757	RRF	.9985	RTF	.9713		
SGB	8073.8	R23	.1846	R13	.9813		
SG1	8040.0	SG2	738.0	THA	27.78		

ORBIT DETERMINATION ACCURACY

ST	5301.1	SR	2582.4	SS	4036.0
CRT	.9967	CRS	-1.0000	CST	-.9970
LSA	7140.1	MSA	280.7	SSA	9.1
EL1	5893.6	EL2	189.6	ALF	25.93

LAUNCH DATE DEC 12 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 657.062 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	32.964	GAL	2.94	AZL	84.83	HCA	194.80	SMA	185.45	ECC	.21189	INC	5.1688
RP	216.05	LAP	-1.32	LOP	274.75	VP	22.648	GAP	-7.75	AZP	95.00	TAL	16.96	TAP	211.76	RCA	146.16	APO	224.75
RC	286.520	GL	43.20	GP	-24.74	ZAL	64.26	ZAP	71.81	ETS	170.43	ZAE	99.82	ETE	183.13	ZAC	60.31	ETC	256.00

V1 30.251 V2 25.423 CLP 69.89

PLANETOCENTRIC CONIC

C3	18.770	VHL	4.332	DLA	56.99	RAL	156.96	RAD	6567.8	VEL	11.839	PTH	2.10	VHP	3.461	DPA	-15.10	RAP	156.56

ECC 1.3089

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.23	5 48 10	4337.30	-37.19	211.31	37.44	43.14	7 0 27	3737.3	-42.81	204.28
141.77	15 2 38	2705.47	-37.18	79.12	37.43	43.14	15 47 44	2105.5	-42.80	72.09
38.23	5 48 10	4337.30	-37.19	211.31	37.44	43.14	7 0 27	3737.3	-42.81	204.28
141.77	15 2 38	2705.47	-37.18	79.12	37.43	43.14	15 47 44	2105.5	-42.80	72.09
38.23	5 48 10	4337.30	-37.19	211.31	37.44	43.14	7 0 27	3737.3	-42.81	204.28
141.77	15 2 38	2705.47	-37.18	79.12	37.43	43.14	15 47 44	2105.5	-42.80	72.09

DIFFERENTIAL CORRECTIONS

TDE	4.0253	TRA	-.4338	TC3	-5.7337	BAU	1.6271
RDE	1.7715	RRA	.0764	RC3	-3.0275	FAU	.42020
FDE	10.0216	FRA	.3349	FC	-19.3809	BSP	27440
BDE	4.3978	BRA	.4404	BC3	6.4839	FSP	6428

MID-COURSE EXECUTION ACCURACY

SGT	7357.3	SGR	3522.0	SG3	1849.7		
RRT	.9767	RRF	.9980	RTF	.9722		
SGB	8156.8	R23	.1873	R13	.9804		
SG1	8128.1	SG2	684.0	THA	25.25		

ORBIT DETERMINATION ACCURACY

ST	5334.7	SR	2344.8	SS	3966.6
CRT	.9965	CRS	-1.0000	CST	-.9969
LSA	7043.8	MSA	277.4	SSA	10.1
EL1	5824.6	EL2	178.4	ALF	23.68

LAUNCH DATE DEC 12 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 661.250 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	32.967	GAL	2.88	AZL	85.10	HCA	195.96	SMA	185.51	ECC	.21187	INC	4.8957	V1	30.251
RP	215.71	LAP	-1.34	LOP	275.92	VP	22.696	GAP	-7.90	AZP	94.71	TAL	16.58	TAP	212.54	RCA	146.21	APO	224.82	V2	25.461
RC	287.729	GL	41.72	GP	-23.04	ZAL	64.10	ZAP	70.15	ETS	170.33	ZAE	98.26	ETE	182.16	ZAC	61.89	ETC	256.26	CLP	68.35

PLANETOCENTRIC CONIC

C3	16.343	VHL	4.043	DLA	52.67	RAL	156.17	RAD	6567.7	VEL	11.736	PTH	2.07	VHP	3.442	DPA	-10.51	RAP	157.60	ECC	1.2690

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.54	6 0 4	4273.22	-36.43	203.09	31.94	48.91	7 11 17	3673.2	-41.43	195.47
136.46	14 44 26	2705.34	-36.42	78.18	31.92	48.90	15 29 31	2105.3	-41.42	70.56
43.54	6 0 4	4273.22	-36.43	203.09	31.94	48.91	7 11 17	3673.2	-41.43	195.47
136.46	14 44 26	2705.34	-36.42	78.18	31.92	48.90	15 29 31	2105.3	-41.42	70.56
43.54	6 0 4	4273.22	-36.43	203.09	31.94	48.91	7 11 17	3673.2	-41.43	195.47
136.46	14 44 26	2705.34	-36.42	78.18	31.92	48.90	15 29 31	2105.3	-41.42	70.56

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	3.8270	TRA	-.5106	TC3	-7.2090	BAU	1.6809	SGT	8050.9	SGR	2821.0	SG3	1883.1	ST	5438.6	SR	1795.8	SS	3689.1
RDE	1.2659	RRA	.0614	RC3	-2.6866	FAU	.41838	RRT	.9784	RRF	.9961	RTF	.9740	CRT	.9960	CRS	-.9999	CST	-.9967
FDE	8.7427	FRA	.2669	FC	-22.1627	BSP	29058	SGB	8530.8	R23	.1870	R13	.9784	LSA	6807.2	MSA	272.9	SSA	13.0
BDE	4.0309	BRA	.5143	BC3	7.6933	FSP	6540	SG1	8513.0	SG2	551.4	THA	19.01	EL1	5725.3	EL2	153.2	ALF	18.22

LAUNCH DATE DEC 12 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 673.863 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	32.979	GAL	2.67	AZL	85.74	HCA	199.47	SMA	185.71	ECC	.21190	INC	4.2644	V1	30.251
RP	214.72	LAP	-1.42	LOP	279.43	VP	22.837	GAP	-8.33	AZP	94.02	TAL	15.36	TAP	214.82	RCA	146.36	APO	225.06	V2	25.572
RC	291.272	GL	38.12	GP	-18.89	ZAL	64.24	ZAP	65.45	ETS	170.22	ZAE	93.51	ETE	179.99	ZAC	65.76	ETC	256.84	CLP	63.96

PLANETOCENTRIC CONIC

C3	15.743	VHL	3.968	DLA	51.44	RAL	156.22	RAD	6567.6	VEL	11.710	PTH	2.06	VHP	3.453	DPA	-9.28	RAP	157.88	ECC	1.2591

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.08	6 4 58	4254.07	-36.10	200.70	30.70	50.49	7 15 52	3654.1	-40.92	192.95
134.92	14 39 55	2707.51	-36.08	78.06	30.68	50.48	15 25 2	2107.5	-40.91	70.31
45.08	6 4 58	4254.07	-36.10	200.70	30.70	50.49	7 15 52	3654.1	-40.92	192.95
134.92	14 39 55	2707.51	-36.08	78.06	30.68	50.48	15 25 2	2107.5	-40.91	70.31
45.08	6 4 58	4254.07	-36.10	200.70	30.70	50.49	7 15 52	3654.1	-40.92	192.95
134.92	14 39 55	2707.51	-36.08	78.06	30.68	50.48	15 25 2	2107.5	-40.91	70.31

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	3.7750	TRA	-.5235	TC3	-7.7024	BAU	1.7091	SGT	8279.2	SGR	2629.4	SG3	1875.4	ST	5466.3	SR	1653.0	SS	3578.6
RDE	1.1436	RRA	.0617	RC3	-2.5722	FAU	.41451	RRT	.9786	RRF	.9952	RTF	.9744	CRT	.9957	CRS	-.9999	CST	-.9965
FDE	8.2980	FRA	.2713	FC	-22.7942	BSP	29603	SGB	8686.7	R23	.1840	R13	.9780	LSA	6734.0	MSA	271.2	SSA	14.0
BDE	3.9444	BRA	.5272	BC3	8.1205	FSP	6480	SG1	8671.4	SG2	516.0	THA	17.33	EL1	5708.9	EL2	146.4	ALF	16.77

LAUNCH DATE DEC 12 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 678.084 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 32.983 GAL 2.59 AZL 85.90 HCA 200.64 SMA 185.78 ECC .21193 INC 4.0992 V1 30.251
RP 214.40 LAP -1.44 LOP 280.61 VP 22.884 GAP -8.47 AZP 93.84 TAL 14.92 TAP 215.56 RCA 146.41 APO 225.16 V2 25.608
RC 292.426 GL 37.15 GP -17.77 ZAL 64.46 ZAP 63.98 ETS 170.22 ZAE 91.94 ETE 179.46 ZAC 66.82 ETC 256.97 CLP 62.57

PLANETOCENTRIC CONIC

C3 15.213 VHL 3.900 DLA 50.28 RAL 156.39 RAD 6567.6 VEL 11.688 PTH 2.06 VHP 3.469 DPA -8.16 RAP 158.15 ECC 1.2504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.54	6 10 13	4235.66	-35.74	198.45	29.68	51.94	7 20 49	3635.7	-40.40	190.59
133.46	14 35 59	2710.46	-35.73	78.02	29.67	51.93	15 21 10	2110.5	-40.39	70.17
46.54	6 10 13	4235.66	-35.74	198.45	29.68	51.94	7 20 49	3635.7	-40.40	190.59
133.46	14 35 59	2710.46	-35.73	78.02	29.67	51.93	15 21 10	2110.5	-40.39	70.17
46.54	6 10 13	4235.66	-35.74	198.45	29.68	51.94	7 20 49	3635.7	-40.40	190.59
133.46	14 35 59	2710.46	-35.73	78.02	29.67	51.93	15 21 10	2110.5	-40.39	70.17

DIFFERENTIAL CORRECTIONS
TDE 3.7301 TRA -.5285 TC3-8.1888 BAU 1.7388
RDE 1.0389 RRA .0644 RC3-2.4556 FAU .40883
FDE 7.8654 FRA .2946 FC-23.2654 BSP 30201
BDE 3.8720 BRA .5324 BC3 8.5490 FSP 6401

MID-COURSE EXECUTION ACCURACY
SGT 8503.2 SGR 2453.6 SG3 1859.8
RRT .9787 RRF .9940 RTF .9748
SGB 8850.2 R23 .1796 R13 .9777
SG1 8836.8 SG2 485.1 THA 15.82

ORBIT DETERMINATION ACCURACY
ST 5494.8 SR 1527.8 SS 3467.3
CRT .9954 CRS -.9999 CST -.9964
LSA 6669.1 MSA 270.0 SSA 15.1
EL1 5701.5 EL2 140.4 ALF 15.48

LAUNCH DATE DEC 12 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 682.312 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 32.987 GAL 2.52 AZL 86.05 HCA 201.82 SMA 185.86 ECC .21198 INC 3.9505 V1 30.251
RP 214.08 LAP -1.47 LOP 281.79 VP 22.930 GAP -8.61 AZP 93.67 TAL 14.47 TAP 216.29 RCA 146.46 APO 225.26 V2 25.644
RC 293.566 GL 36.26 GP -16.74 ZAL 64.75 ZAP 62.55 ETS 170.24 ZAE 90.39 ETE 179.00 ZAC 67.78 ETC 257.09 CLP 61.22

PLANETOCENTRIC CONIC

C3 14.740 VHL 3.839 DLA 49.19 RAL 156.65 RAD 6567.6 VEL 11.667 PTH 2.05 VHP 3.490 DPA -7.16 RAP 158.41 ECC 1.2426

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.93	6 15 48	4217.82	-35.38	196.30	28.85	53.28	7 26 6	3617.8	-39.88	188.36
132.07	14 32 32	2714.16	-35.37	78.05	28.84	53.26	15 17 46	2114.2	-39.87	70.11
47.93	6 15 48	4217.82	-35.38	196.30	28.85	53.28	7 26 6	3617.8	-39.88	188.36
132.07	14 32 32	2714.16	-35.37	78.05	28.84	53.26	15 17 46	2114.2	-39.87	70.11
47.93	6 15 48	4217.82	-35.38	196.30	28.85	53.28	7 26 6	3617.8	-39.88	188.36
132.07	14 32 32	2714.16	-35.37	78.05	28.84	53.26	15 17 46	2114.2	-39.87	70.11

DIFFERENTIAL CORRECTIONS
TDE 3.6874 TRA -.5278 TC3-8.6762 BAU 1.7709
RDE .9477 RRA .0686 RC3-2.3421 FAU .40227
FDE 7.4377 FRA .3310 FC-23.6271 BSP 30802
BDE 3.8072 BRA .5322 BC3 8.9868 FSP 6302

MID-COURSE EXECUTION ACCURACY
SGT 8724.5 SGR 2293.3 SG3 1838.7
RRT .9784 RRF .9926 RTF .9750
SGB 9020.9 R23 .1741 R13 .9774
SG1 9009.2 SG2 459.2 THA 14.46

ORBIT DETERMINATION ACCURACY
ST 5518.4 SR 1416.2 SS 3352.0
CRT .9951 CRS -.9999 CST -.9962
LSA 6604.7 MSA 269.4 SSA 16.1
EL1 5695.6 EL2 135.3 ALF 14.33

LAUNCH DATE DEC 12 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 686.548 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 32.992 GAL 2.44 AZL 86.18 HCA 203.01 SMA 185.94 ECC .21204 INC 3.8161 V1 30.251
RP 213.77 LAP -1.49 LOP 282.97 VP 22.976 GAP -8.74 AZP 93.51 TAL 14.01 TAP 217.01 RCA 146.51 APO 225.36 V2 25.679
RC 294.693 GL 35.44 GP -15.81 ZAL 65.11 ZAP 61.16 ETS 170.27 ZAE 88.85 ETE 178.60 ZAC 68.67 ETC 257.18 CLP 59.92

PLANETOCENTRIC CONIC

C3 14.313 VHL 3.783 DLA 48.16 RAL 157.01 RAD 6567.6 VEL 11.649 PTH 2.04 VHP 3.516 DPA -6.26 RAP 158.67 ECC 1.2356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.26	6 21 41	4200.46	-35.00	194.24	28.20	54.52	7 31 41	3600.5	-39.36	186.23
130.74	14 29 29	2718.47	-34.99	78.14	28.19	54.51	15 14 47	2118.5	-39.35	70.13
49.26	6 21 41	4200.46	-35.00	194.24	28.20	54.52	7 31 41	3600.5	-39.36	186.23
130.74	14 29 29	2718.47	-34.99	78.14	28.19	54.51	15 14 47	2118.5	-39.35	70.13
49.26	6 21 41	4200.46	-35.00	194.24	28.20	54.52	7 31 41	3600.5	-39.36	186.23
130.74	14 29 29	2718.47	-34.99	78.14	28.19	54.51	15 14 47	2118.5	-39.35	70.13

DIFFERENTIAL CORRECTIONS
TDE 3.6498 TRA -.5197 TC3-9.1580 BAU 1.8036
RDE .8694 RRA .0738 RC3-2.2294 FAU .39453
FDE 7.0316 FRA .3792 FC-23.8636 BSP 31428
BDE 3.7519 BRA .5250 BC3 9.4255 FSP 6187

MID-COURSE EXECUTION ACCURACY
SGT 8942.2 SGR 2146.4 SG3 1812.7
RRT .9779 RRF .9909 RTF .9752
SGB 9196.2 R23 .1672 R13 .9772
SG1 9185.8 SG2 437.1 THA 13.24

ORBIT DETERMINATION ACCURACY
ST 5542.7 SR 1318.5 SS 3240.1
CRT .9948 CRS -.9998 CST -.9960
LSA 6548.7 MSA 269.0 SSA 17.1
EL1 5695.9 EL2 130.7 ALF 13.32

LAUNCH DATE DEC 12 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 690.792 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 32.997 GAL 2.36 AZL 86.31 HCA 204.20 SMA 186.02 ECC .21211 INC 3.6938 V1 30.251
RP 213.46 LAP -1.51 LOP 284.16 VP 23.022 GAP -8.86 AZP 93.37 TAL 13.53 TAP 217.72 RCA 146.56 APO 225.48 V2 25.714
RC 295.805 GL 34.69 GP -14.96 ZAL 65.53 ZAP 59.82 ETS 170.30 ZAE 87.34 ETE 178.25 ZAC 69.49 ETC 257.27 CLP 58.64

PLANETOCENTRIC CONIC

C3 13.925 VHL 3.732 DLA 47.18 RAL 157.44 RAD 6567.5 VEL 11.632 PTH 2.04 VHP 3.545 DPA -5.44 RAP 158.94 ECC 1.2292

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.54	6 27 51	4183.40	-34.61	192.26	27.69	55.68	7 37 34	3583.4	-38.84	184.19
129.46	14 26 46	2723.43	-34.60	78.29	27.68	55.67	15 12 10	2123.4	-38.83	70.23
50.54	6 27 51	4183.40	-34.61	192.26	27.69	55.68	7 37 34	3583.4	-38.84	184.19
129.46	14 26 46	2723.43	-34.60	78.29	27.68	55.67	15 12 10	2123.4	-38.83	70.23
50.54	6 27 51	4183.40	-34.61	192.26	27.69	55.68	7 37 34	3583.4	-38.84	184.19
129.46	14 26 46	2723.43	-34.60	78.29	27.68	55.67	15 12 10	2123.4	-38.83	70.23

DIFFERENTIAL CORRECTIONS
TDE 3.6129 TRA -.5051 TC3-9.6375 BAU 1.8370
RDE .8005 RRA .0802 RC3-2.1191 FAU .38596
FDE 6.6354 FRA .4413 FC-23.9953 BSP 32069
BDE 3.7005 BRA .5114 BC3 9.8677 FSP 6070

MID-COURSE EXECUTION ACCURACY
SGT 9154.7 SGR 2011.1 SG3 1782.2
RRT .9769 RRF .9889 RTF .9754
SGB 9373.0 R23 .1594 R13 .9769
SG1 9363.6 SG2 419.8 THA 12.14

ORBIT DETERMINATION ACCURACY
ST 5561.9 SR 1231.2 SS 3126.5
CRT .9944 CRS -.9998 CST -.9958
LSA 6492.5 MSA 269.6 SSA 18.2
EL1 5695.2 EL2 126.9 ALF 12.42

LAUNCH DATE DEC 12 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 695.043 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.002 GAL 2.27 AZL 86.42 HCA 205.39 SMA 186.11 ECC .21220 INC 3.5819 V1 30.251
RP 213.16 LAP -1.53 LOP 285.35 VP 23.067 GAP -8.99 AZP 93.24 TAL 13.04 TAP 218.42 RCA 146.61 APO 225.60 V2 25.748
RC 296.904 GL 34.01 GP -14.18 ZAL 66.02 ZAP 58.52 ETS 170.35 ZAE 85.85 ETE 177.95 ZAC 70.24 ETC 257.33 CLP 57.41

PLANETOCENTRIC CONIC

C3 13.570 VHL 3.684 DLA 46.24 RAL 157.94 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 3.578 DPA -4.71 RAP 159.21 ECC 1.2233

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.78	6 34 17	4166.55	-34.22	190.34	27.32	56.77	7 43 44	3566.6	-38.31	182.23
128.22	14 24 21	2728.98	-34.21	78.50	27.31	56.76	15 9 50	2129.0	-38.30	70.39
51.78	6 34 17	4166.55	-34.22	190.34	27.32	56.77	7 43 44	3566.6	-38.31	182.23
128.22	14 24 21	2728.98	-34.21	78.50	27.31	56.76	15 9 50	2129.0	-38.30	70.39
51.78	6 34 17	4166.55	-34.22	190.34	27.32	56.77	7 43 44	3566.6	-38.31	182.23
128.22	14 24 21	2728.98	-34.21	78.50	27.31	56.76	15 9 50	2129.0	-38.30	70.39

DIFFERENTIAL CORRECTIONS
TDE 3.5783 TRA -.4847 TC-10.1160 BAU 1.8712
RDE .7405 RRA .0867 RC3-2.0134 FAU .37707
FDE 6.2585 FRA .5084 FC-24.0558 BSP 32711
BDE 3.6541 BRA .4924 BC310.3144 FSP 5940

MID-COURSE EXECUTION ACCURACY
SGT 9365.4 SGR 1888.1 SG3 1749.8
RRT .9757 RRF .9865 RTF .9755
SGB 9553.8 R23 .1505 R13 .9768
SG1 9545.2 SG2 405.9 THA 11.15

ORBIT DETERMINATION ACCURACY
ST 5579.6 SR 1154.0 SS 3015.6
CRT .9940 CRS -.9998 CST -.9955
LSA 6440.8 MSA 270.1 SSA 19.2
EL1 5696.4 EL2 123.4 ALF 11.62

LAUNCH DATE DEC 12 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 699.300 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.007 GAL 2.19 AZL 86.52 HCA 206.58 SMA 186.19 ECC .21230 INC 3.4793 V1 30.251
RP 212.87 LAP -1.56 LOP 286.55 VP 23.112 GAP -9.11 AZP 93.11 TAL 12.53 TAP 219.11 RCA 146.66 APO 225.72 V2 25.782
RC 297.989 GL 33.37 GP -13.46 ZAL 66.55 ZAP 57.25 ETS 170.39 ZAE 84.39 ETE 177.69 ZAC 70.95 ETC 257.39 CLP 56.21

PLANETOCENTRIC CONIC

C3 13.243 VHL 3.639 DLA 45.33 RAL 158.51 RAD 6567.5 VEL 11.603 PTH 2.03 VHP 3.614 DPA -4.04 RAP 159.48 ECC 1.2180

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.99	6 41 0	4149.83	-33.82	188.47	27.06	57.80	7 50 10	3549.8	-37.79	180.31
127.01	14 22 10	2735.11	-33.81	78.76	27.05	57.79	15 7 45	2135.1	-37.78	70.61
52.99	6 41 0	4149.83	-33.82	188.47	27.06	57.80	7 50 10	3549.8	-37.79	180.31
127.01	14 22 10	2735.11	-33.81	78.76	27.05	57.79	15 7 45	2135.1	-37.78	70.61
52.99	6 41 0	4149.83	-33.82	188.47	27.06	57.80	7 50 10	3549.8	-37.79	180.31
127.01	14 22 10	2735.11	-33.81	78.76	27.05	57.79	15 7 45	2135.1	-37.78	70.61

DIFFERENTIAL CORRECTIONS
TDE 3.5455 TRA -.4559 TC-10.5853 BAU 1.9044
RDE .6874 RRA .0938 RC3-1.9090 FAU .36735
FDE 5.8945 FRA .5853 FC-24.0143 BSP 33416
BDE 3.6116 BRA .4655 BC310.7560 FSP 5815

MID-COURSE EXECUTION ACCURACY
SGT 9568.7 SGR 1773.7 SG3 1713.5
RRT .9740 RRF .9837 RTF .9755
SGB 9731.7 R23 .1410 R13 .9766
SG1 9723.6 SG2 395.1 THA 10.25

ORBIT DETERMINATION ACCURACY
ST 5595.4 SR 1084.9 SS 2904.7
CRT .9936 CRS -.9997 CST -.9952
LSA 6391.3 MSA 270.9 SSA 20.1
EL1 5698.3 EL2 120.1 ALF 10.91

LAUNCH DATE DEC 12 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 703.565 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.012 GAL 2.10 AZL 86.62 HCA 207.78 SMA 186.28 ECC .21242 INC 3.3845 V1 30.251
RP 212.57 LAP -1.58 LOP 287.75 VP 23.156 GAP -9.23 AZP 93.00 TAL 12.01 TAP 219.79 RCA 146.71 APO 225.86 V2 25.815
RC 299.061 GL 32.78 GP -12.79 ZAL 67.15 ZAP 56.03 ETS 170.45 ZAE 82.95 ETE 177.46 ZAC 71.60 ETC 257.43 CLP 55.04

PLANETOCENTRIC CONIC

C3 12.941 VHL 3.597 DLA 44.45 RAL 159.14 RAD 6567.5 VEL 11.590 PTH 2.03 VHP 3.652 DPA -3.45 RAP 159.77 ECC 1.2130

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.18	6 48 1	4133.09	-33.41	186.62	26.91	58.78	7 56 55	3533.1	-37.27	178.44
125.82	14 20 11	2741.88	-33.40	79.08	26.90	58.76	15 5 52	2141.9	-37.26	70.90
54.18	6 48 1	4133.09	-33.41	186.62	26.91	58.78	7 56 55	3533.1	-37.27	178.44
125.82	14 20 11	2741.88	-33.40	79.08	26.90	58.76	15 5 52	2141.9	-37.26	70.90
54.18	6 48 1	4133.09	-33.41	186.62	26.91	58.78	7 56 55	3533.1	-37.27	178.44
125.82	14 20 11	2741.88	-33.40	79.08	26.90	58.76	15 5 52	2141.9	-37.26	70.90

DIFFERENTIAL CORRECTIONS
TDE 3.5099 TRA -.4243 TC-11.0619 BAU 1.9393
RDE .6402 RRA .1006 RC3-1.8104 FAU .35772
FDE 5.5424 FRA .6617 FC-23.9308 BSP 34037
BDE 3.5678 BRA .4360 BC311.2090 FSP 5667

MID-COURSE EXECUTION ACCURACY
SGT 9771.8 SGR 1669.3 SG3 1676.6
RRT .9719 RRF .9804 RTF .9755
SGB 9913.4 R23 .1309 R13 .9764
SG1 9905.8 SG2 387.6 THA 9.44

ORBIT DETERMINATION ACCURACY
ST 5602.6 SR 1022.7 SS 2793.4
CRT .9932 CRS -.9997 CST -.9948
LSA 6337.4 MSA 272.0 SSA 21.1
EL1 5693.9 EL2 117.2 ALF 10.28

LAUNCH DATE DEC 12 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 707.837 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.018 GAL 2.01 AZL 86.70 HCA 208.98 SMA 186.38 ECC .21256 INC 3.2968 V1 30.251
RP 212.29 LAP -1.60 LOP 288.95 VP 23.200 GAP -9.34 AZP 92.88 TAL 11.48 TAP 220.46 RCA 146.76 APO 225.99 V2 25.847
RC 300.120 GL 32.23 GP -12.18 ZAL 67.79 ZAP 54.84 ETS 170.50 ZAE 81.54 ETE 177.26 ZAC 72.21 ETC 257.47 CLP 53.90

PLANETOCENTRIC CONIC

C3 12.661 VHL 3.558 DLA 43.60 RAL 159.83 RAD 6567.5 VEL 11.578 PTH 2.02 VHP 3.692 DPA -2.91 RAP 160.07 ECC 1.2084

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.35	6 55 20	4116.24	-33.00	184.81	26.85	59.71	8 3 57	3516.2	-36.74	176.60
124.65	14 18 19	2749.31	-32.99	79.46	26.84	59.70	15 4 9	2149.3	-36.73	71.26
55.35	6 55 20	4116.24	-33.00	184.81	26.85	59.71	8 3 57	3516.2	-36.74	176.60
124.65	14 18 19	2749.31	-32.99	79.46	26.84	59.70	15 4 9	2149.3	-36.73	71.26
55.35	6 55 20	4116.24	-33.00	184.81	26.85	59.71	8 3 57	3516.2	-36.74	176.60
124.65	14 18 19	2749.31	-32.99	79.46	26.84	59.70	15 4 9	2149.3	-36.73	71.26

DIFFERENTIAL CORRECTIONS
TDE 3.4763 TRA -.3851 TC-11.5310 BAU 1.9732
RDE .5988 RRA .1077 RC3-1.7143 FAU .34770
FDE 5.2108 FRA .7442 FC-23.7761 BSP 34702
BDE 3.5275 BRA .3998 BC311.6577 FSP 5527

MID-COURSE EXECUTION ACCURACY
SGT 9970.2 SGR 1573.3 SG3 1638.0
RRT .9692 RRF .9765 RTF .9755
SGB10093.5 R23 .1204 R13 .9762
SG110086.3 SG2 382.9 THA 8.71

ORBIT DETERMINATION ACCURACY
ST 5609.1 SR 967.6 SS 2686.3
CRT .9928 CRS -.9996 CST -.9944
LSA 6288.0 MSA 273.4 SSA 22.0
EL1 5690.8 EL2 114.4 ALF 9.72

LAUNCH DATE DEC 12 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 712.115 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.023 GAL 1.91 AZL 86.78 HCA 210.18 SMA 186.47 ECC .21271 INC 3.2152 V1 30.251
RP 212.01 LAP -1.62 LOP 290.15 VP 23.244 GAP -9.46 AZP 92.78 TAL 10.94 TAP 221.12 RCA 146.81 APO 226.14 V2 25.879
RC 301.167 GL 31.72 GP -11.61 ZAL 68.49 ZAP 53.69 ETS 170.56 ZAE 80.16 ETE 177.09 ZAC 72.79 ETC 257.49 CLP 52.80

PLANETOCENTRIC CONIC

C3 12.399 VHL 3.521 DLA 42.76 RAL 160.56 RAD 6567.5 VEL 11.567 PTH 2.02 VHP 3.735 DPA -2.43 RAP 160.39 ECC 1.2041

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.51	7 2 59	4099.15	-32.57	182.99	26.88	60.60	8 11 18	3499.2	-36.21	174.77
123.49	14 16 34	2757.50	-32.56	79.90	26.87	60.59	15 2 31	2157.5	-36.20	71.68
56.51	7 2 59	4099.15	-32.57	182.99	26.88	60.60	8 11 18	3499.2	-36.21	174.77
123.49	14 16 34	2757.50	-32.56	79.90	26.87	60.59	15 2 31	2157.5	-36.20	71.68
56.51	7 2 59	4099.15	-32.57	182.99	26.88	60.60	8 11 18	3499.2	-36.21	174.77
123.49	14 16 34	2757.50	-32.56	79.90	26.87	60.59	15 2 31	2157.5	-36.20	71.68

DIFFERENTIAL CORRECTIONS
TDE 3.4403 TRA -.3413 TC-11.9981 BAU 2.0069
RDE .5614 RRA .1143 RC3-1.6215 FAU .33752
FDE 4.8869 FRA .8256 FC-23.5662 BSP 35337
BDE 3.4858 BRA .3599 BC312.1072 FSP 5377

MID-COURSE EXECUTION ACCURACY
SGT10163.9 SGR 1484.1 SG3 1597.9
RRT .9659 RRF .9720 RTF .9755
SGB10271.7 R23 .1099 R13 .9761
SG110264.6 SG2 380.3 THA 8.04

ORBIT DETERMINATION ACCURACY
ST 5608.2 SR 917.3 SS 2577.0
CRT .9924 CRS -.9996 CST -.9939
LSA 6233.7 MSA 274.7 SSA 23.0
EL1 5681.7 EL2 111.7 ALF 9.22

LAUNCH DATE DEC 12 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 716.400 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.029 GAL 1.82 AZL 86.86 HCA 211.39 SMA 186.57 ECC .21287 INC 3.1392 V1 30.251
RP 211.73 LAP -1.63 LOP 291.36 VP 23.287 GAP -9.57 AZP 92.68 TAL 10.38 TAP 221.77 RCA 146.86 APO 226.29 V2 25.911
RC 302.203 GL 31.23 GP -11.09 ZAL 69.23 ZAP 52.57 ETS 170.62 ZAE 78.80 ETE 176.94 ZAC 73.33 ETC 257.51 CLP 51.73

PLANETOCENTRIC CONIC

C3 12.155 VHL 3.486 DLA 41.94 RAL 161.35 RAD 6567.5 VEL 11.556 PTH 2.02 VHP 3.779 DPA -2.00 RAP 160.72 ECC 1.2000

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.67	7 10 57	4081.82	-32.14	181.18	27.00	61.46	8 18 58	3481.8	-35.67	172.95
122.33	14 14 53	2766.40	-32.13	80.40	26.99	61.45	15 0 59	2166.4	-35.66	72.16
57.67	7 10 57	4081.82	-32.14	181.18	27.00	61.46	8 18 58	3481.8	-35.67	172.95
122.33	14 14 53	2766.40	-32.13	80.40	26.99	61.45	15 0 59	2166.4	-35.66	72.16
57.67	7 10 57	4081.82	-32.14	181.18	27.00	61.46	8 18 58	3481.8	-35.67	172.95
122.33	14 14 53	2766.40	-32.13	80.40	26.99	61.45	15 0 59	2166.4	-35.66	72.16

DIFFERENTIAL CORRECTIONS
TDE 3.4041 TRA -.2899 TC-12.4599 BAU 2.0400
RDE .5282 RRA .1211 RC3-1.5320 FAU .32725
FDE 4.5801 FRA .9107 FC-23.3082 BSP 36002
BDE 3.4448 BRA .3141 BC312.5538 FSP 5233

MID-COURSE EXECUTION ACCURACY
SGT10353.2 SGR 1402.2 SG3 1557.2
RRT .9620 RRF .9668 RTF .9755
SGB10447.7 R23 .0994 R13 .9759
SG110440.8 SG2 379.7 THA 7.43

ORBIT DETERMINATION ACCURACY
ST 5603.6 SR 872.4 SS 2470.9
CRT .9920 CRS -.9995 CST -.9933
LSA 6179.8 MSA 276.2 SSA 23.9
EL1 5670.1 EL2 109.0 ALF 8.78

LAUNCH DATE DEC 12 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 720.691 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.035 GAL 1.72 AZL 86.93 HCA 212.60 SMA 186.67 ECC .21306 INC 3.0680 V1 30.251
RP 211.47 LAP -1.65 LOP 292.57 VP 23.329 GAP -9.68 AZP 92.59 TAL 9.81 TAP 222.41 RCA 146.90 APO 226.45 V2 25.941
RC 303.228 GL 30.78 GP -10.60 ZAL 70.03 ZAP 51.48 ETS 170.67 ZAE 77.48 ETE 176.81 ZAC 73.84 ETC 257.52 CLP 50.69

PLANETOCENTRIC CONIC

C3 11.927 VHL 3.453 DLA 41.13 RAL 162.18 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 3.826 DPA -1.61 RAP 161.06 ECC 1.1963

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.83	7 19 17	4063.98	-31.70	179.36	27.19	62.29	8 27 1	3464.0	-35.13	171.11
121.17	14 13 11	2776.24	-31.69	80.97	27.18	62.28	14 59 27	2176.2	-35.12	72.73
58.83	7 19 17	4063.98	-31.70	179.36	27.19	62.29	8 27 1	3464.0	-35.13	171.11
121.17	14 13 11	2776.24	-31.69	80.97	27.18	62.28	14 59 27	2176.2	-35.12	72.73
58.83	7 19 17	4063.98	-31.70	179.36	27.19	62.29	8 27 1	3464.0	-35.13	171.11
121.17	14 13 11	2776.24	-31.69	80.97	27.18	62.28	14 59 27	2176.2	-35.12	72.73

DIFFERENTIAL CORRECTIONS
TDE 3.3654 TRA -.2346 TC-12.9245 BAU 2.0737
RDE .4985 RRA .1276 RC3-1.4467 FAU .31715
FDE 4.2865 FRA .9948 FC-23.0215 BSP 36629
BDE 3.4022 BRA .2670 BC313.0052 FSP 5086

MID-COURSE EXECUTION ACCURACY
SGT10541.9 SGR 1327.2 SG3 1516.8
RRT .9572 RRF .9608 RTF .9754
SGB10625.1 R23 .0894 R13 .9758
SG110618.3 SG2 381.2 THA 6.88

ORBIT DETERMINATION ACCURACY
ST 5592.1 SR 831.8 SS 2365.9
CRT .9916 CRS -.9995 CST -.9927
LSA 6122.3 MSA 278.2 SSA 24.8
EL1 5652.6 EL2 106.5 ALF 8.39

LAUNCH DATE DEC 12 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 724.988 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.041 GAL 1.62 AZL 87.00 HCA 213.81 SMA 186.78 ECC .21326 INC 3.0013 V1 30.251
RP 211.20 LAP -1.67 LOP 293.79 VP 23.371 GAP -9.78 AZP 92.49 TAL 9.22 TAP 223.03 RCA 146.94 APO 226.61 V2 25.971
RC 304.242 GL 30.35 GP -10.15 ZAL 70.87 ZAP 50.43 ETS 170.73 ZAE 76.17 ETE 176.70 ZAC 74.33 ETC 257.52 CLP 49.68

PLANETOCENTRIC CONIC

C3 11.713 VHL 3.422 DLA 40.32 RAL 163.06 RAD 6567.4 VEL 11.537 PTH 2.01 VHP 3.874 DPA -1.27 RAP 161.42 ECC 1.1928

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.01	7 28 0	4045.62	-31.24	177.51	27.45	63.10	8 35 26	3445.6	-34.57	169.26
119.99	14 11 28	2787.02	-31.23	81.62	27.44	63.08	14 57 55	2187.0	-34.56	73.37
60.01	7 28 0	4045.62	-31.24	177.51	27.45	63.10	8 35 26	3445.6	-34.57	169.26
119.99	14 11 28	2787.02	-31.23	81.62	27.44	63.08	14 57 55	2187.0	-34.56	73.37
60.01	7 28 0	4045.62	-31.24	177.51	27.45	63.10	8 35 26	3445.6	-34.57	169.26
119.99	14 11 28	2787.02	-31.23	81.62	27.44	63.08	14 57 55	2187.0	-34.56	73.37

DIFFERENTIAL CORRECTIONS
TDE 3.3245 TRA -.1724 TC-13.3824 BAU 2.1064
RDE .4715 RRA .1339 RC3-1.3645 FAU .30708
FDE 4.0016 FRA 1.0794 FC-22.6971 BSP 37266
BDE 3.3578 BRA .2183 BC313.4518 FSP 4939

MID-COURSE EXECUTION ACCURACY
SGT10725.0 SGR 1257.7 SG3 1476.0
RRT .9517 RRF .9538 RTF .9753
SGB10798.5 R23 .0798 R13 .9756
SG110791.7 SG2 383.9 THA 6.38

ORBIT DETERMINATION ACCURACY
ST 5573.5 SR 794.7 SS 2260.1
CRT .9913 CRS -.9994 CST -.9919
LSA 6060.1 MSA 280.3 SSA 25.7
EL1 5629.0 EL2 103.8 ALF 8.05

LAUNCH DATE DEC 12 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 729.288 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.047 GAL 1.51 AZL 87.06 HCA 215.03 SMA 186.88 ECC .21348 INC 2.9385 V1 30.251
RP 210.95 LAP -1.69 LOP 295.01 VP 23.412 GAP -9.89 AZP 92.41 TAL 8.62 TAP 223.65 RCA 146.99 APO 226.78 V2 26.001
RC 305.247 GL 29.94 GP -9.72 ZAL 71.76 ZAP 49.41 ETS 170.79 ZAE 74.90 ETE 176.60 ZAC 74.79 ETC 257.51 CLP 48.69

PLANETOCENTRIC CONIC

C3 11.513 VHL 3.393 DLA 39.52 RAL 163.98 RAD 6567.4 VEL 11.528 PTH 2.01 VHP 3.923 DPA -.97 RAP 161.80 ECC 1.1895

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.20	7 37 10	4026.54	-30.78	175.63	27.78	63.88	8 44 16	3426.5	-34.01	167.37
118.80	14 9 40	2798.90	-30.77	82.35	27.77	63.87	14 56 19	2198.9	-34.00	74.10
61.20	7 37 10	4026.54	-30.78	175.63	27.78	63.88	8 44 16	3426.5	-34.01	167.37
118.80	14 9 40	2798.90	-30.77	82.35	27.77	63.87	14 56 19	2198.9	-34.00	74.10
61.20	7 37 10	4026.54	-30.78	175.63	27.78	63.88	8 44 16	3426.5	-34.01	167.37
118.80	14 9 40	2798.90	-30.77	82.35	27.77	63.87	14 56 19	2198.9	-34.00	74.10

DIFFERENTIAL CORRECTIONS
TDE 3.3003 TRA -.0860 TC-13.7729 BAU 2.1289
RDE .4500 RRA .1428 RC3-1.2736 FAU .29480
FDE 3.7694 FRA 1.2040 FC-22.1681 BSP 38322
BDE 3.3308 BRA .1667 BC313.8317 FSP 4873

MID-COURSE EXECUTION ACCURACY
SGT10883.4 SGR 1192.5 SG3 1429.6
RRT .9441 RRF .9458 RTF .9750
SGB10948.6 R23 .0730 R13 .9753
SG110941.6 SG2 390.9 THA 5.91

ORBIT DETERMINATION ACCURACY
ST 5580.2 SR 766.1 SS 2179.5
CRT .9911 CRS -.9993 CST -.9909
LSA 6032.7 MSA 286.3 SSA 26.1
EL1 5631.6 EL2 101.3 ALF 7.75

LAUNCH DATE DEC 12 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 733.598 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.053 GAL 1.41 AZL 87.12 HCA 216.25 SMA 186.99 ECC .21372 INC 2.8792 V1 30.251
RP 210.70 LAP -1.70 LOP 296.23 VP 23.452 GAP -9.99 AZP 92.32 TAL 8.01 TAP 224.26 RCA 147.03 APO 226.95 V2 26.029
RC 306.243 GL 29.55 GP -9.33 ZAL 72.69 ZAP 48.42 ETS 170.84 ZAE 73.65 ETE 176.51 ZAC 75.23 ETC 257.50 CLP 47.73

PLANETOCENTRIC CONIC

C3 11.326 VHL 3.365 DLA 38.72 RAL 164.94 RAD 6567.4 VEL 11.520 PTH 2.01 VHP 3.974 DPA -.71 RAP 162.20 ECC 1.1864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.41	7 46 47	4006.62	-30.30	173.69	28.17	64.64	8 53 33	3406.6	-33.44	165.44
117.59	14 7 42	2812.04	-30.28	83.18	28.16	64.63	14 54 34	2212.0	-33.43	74.93
62.41	7 46 47	4006.62	-30.30	173.69	28.17	64.64	8 53 33	3406.6	-33.44	165.44
117.59	14 7 42	2812.04	-30.28	83.18	28.16	64.63	14 54 34	2212.0	-33.43	74.93
62.41	7 46 47	4006.62	-30.30	173.69	28.17	64.64	8 53 33	3406.6	-33.44	165.44
117.59	14 7 42	2812.04	-30.28	83.18	28.16	64.63	14 54 34	2212.0	-33.43	74.93

DIFFERENTIAL CORRECTIONS
TDE 3.2468 TRA -.0212 TC-14.2477 BAU 2.1651
RDE .4270 RRA .1472 RC3-1.2017 FAU .28583
FDE 3.4943 FRA 1.2653 FC-21.8479 BSP 38735
BDE 3.2748 BRA .1488 BC314.2983 FSP 4688

MID-COURSE EXECUTION ACCURACY
SGT11069.1 SGR 1134.0 SG3 1391.2
RRT .9369 RRF .9369 RTF .9750
SGB11127.0 R23 .0634 R13 .9753
SG111120.0 SG2 394.5 THA 5.49

ORBIT DETERMINATION ACCURACY
ST 5535.2 SR 733.7 SS 2067.9
CRT .9908 CRS -.9992 CST -.9899
LSA 5947.2 MSA 286.8 SSA 27.1
EL1 5582.7 EL2 98.3 ALF 7.48

LAUNCH DATE DEC 12 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 737.913 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.059 GAL 1.30 AZL 87.18 HCA 217.47 SMA 187.10 ECC .21398 INC 2.8232 V1 30.251
RP 210.46 LAP -1.72 LOP 297.45 VP 23.492 GAP -10.09 AZP 92.24 TAL 7.38 TAP 224.85 RCA 147.06 APO 227.13 V2 26.057
RC 307.229 GL 29.17 GP -8.96 ZAL 73.67 ZAP 47.46 ETS 170.90 ZAE 72.42 ETE 176.44 ZAC 75.65 ETC 257.49 CLP 46.80

PLANETOCENTRIC CONIC

C3 11.152 VHL 3.339 DLA 37.91 RAL 165.94 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 4.026 DPA -.48 RAP 162.61 ECC 1.1835

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.66	7 56 55	3985.63	-29.80	171.69	28.62	65.39	9 3 20	3385.6	-32.85	163.45
116.34	14 5 32	2826.62	-29.79	84.12	28.62	65.38	14 52 38	2226.6	-32.84	75.88
63.66	7 56 55	3985.63	-29.80	171.69	28.62	65.39	9 3 20	3385.6	-32.85	163.45
116.34	14 5 32	2826.62	-29.79	84.12	28.62	65.38	14 52 38	2226.6	-32.84	75.88
63.66	7 56 55	3985.63	-29.80	171.69	28.62	65.39	9 3 20	3385.6	-32.85	163.45
116.34	14 5 32	2826.62	-29.79	84.12	28.62	65.38	14 52 38	2226.6	-32.84	75.88

DIFFERENTIAL CORRECTIONS
TDE 3.1951 TRA .0544 TC-14.6992 BAU 2.1980
RDE .4066 RRA .1522 RC3-1.1291 FAU .27632
FDE 3.2372 FRA 1.3365 FC-21.4509 BSP 39260
BDE 3.2209 BRA .1616 BC314.7425 FSP 4529

MID-COURSE EXECUTION ACCURACY
SGT11244.9 SGR 1079.4 SG3 1351.1
RRT .9283 RRF .9266 RTF .9749
SGB11296.6 R23 .0550 R13 .9751
SG111289.5 SG2 399.7 THA 5.10

ORBIT DETERMINATION ACCURACY
ST 5489.9 SR 705.1 SS 1961.6
CRT .9907 CRS -.9989 CST -.9887
LSA 5865.1 MSA 288.7 SSA 28.0
EL1 5534.2 EL2 95.2 ALF 7.25

LAUNCH DATE DEC 12 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 742.233 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.065 GAL 1.19 AZL 87.23 HCA 218.70 SMA 187.21 ECC .21426 INC 2.7700 V1 30.251
RP 210.22 LAP -1.73 LOP 298.68 VP 23.531 GAP -10.19 AZP 92.16 TAL 6.74 TAP 225.44 RCA 147.10 APO 227.32 V2 26.085
RC 308.206 GL 28.81 GP -8.61 ZAL 74.69 ZAP 46.52 ETS 170.95 ZAE 71.22 ETE 176.37 ZAC 76.05 ETC 257.47 CLP 45.90

PLANETOCENTRIC CONIC

C3 10.990 VHL 3.315 DLA 37.10 RAL 166.98 RAD 6567.4 VEL 11.506 PTH 2.00 VHP 4.080 DPA -.29 RAP 163.03 ECC 1.1809

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.96	8 7 37	3963.39	-29.28	169.61	29.13	66.12	9 13 41	3363.4	-32.24	161.37
115.04	14 3 5	2842.83	-29.27	85.18	29.13	66.11	14 50 28	2242.8	-32.24	76.94
64.96	8 7 37	3963.39	-29.28	169.61	29.13	66.12	9 13 41	3363.4	-32.24	161.37
115.04	14 3 5	2842.83	-29.27	85.18	29.13	66.11	14 50 28	2242.8	-32.24	76.94
64.96	8 7 37	3963.39	-29.28	169.61	29.13	66.12	9 13 41	3363.4	-32.24	161.37
115.04	14 3 5	2842.83	-29.27	85.18	29.13	66.11	14 50 28	2242.8	-32.24	76.94

DIFFERENTIAL CORRECTIONS
TDE 3.1387 TRA .1341 TC-15.1490 BAU 2.2312
RDE .3881 RRA .1568 RC3-1.0592 FAU .26703
FDE 2.9897 FRA 1.4028 FC-21.0356 BSP 39712
BDE 3.1626 BRA .2064 BC315.1860 FSP 4361

MID-COURSE EXECUTION ACCURACY
SGT11419.1 SGR 1028.9 SG3 1311.6
RRT .9185 RRF .9151 RTF .9749
SGB11465.4 R23 .0469 R13 .9750
SG111458.2 SG2 405.5 THA 4.74

ORBIT DETERMINATION ACCURACY
ST 5433.8 SR 678.8 SS 1855.6
CRT .9907 CRS -.9985 CST -.9872
LSA 5774.5 MSA 290.4 SSA 29.0
EL1 5475.3 EL2 91.9 ALF 7.06

LAUNCH DATE DEC 12 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 746.557 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.072 GAL 1.08 AZL 87.28 HCA 219.92 SMA 187.32 ECC .21456 INC 2.7195 V1 30.251
RP 209.99 LAP -1.75 LOP 299.90 VP 23.570 GAP -10.28 AZP 92.09 TAL 6.09 TAP 226.02 RCA 147.13 APO 227.51 V2 26.111
RC 309.174 GL 28.46 GP -8.28 ZAL 75.76 ZAP 45.61 ETS 171.00 ZAE 70.04 ETE 176.32 ZAC 76.44 ETC 257.44 CLP 45.02

PLANETOCENTRIC CONIC

C3 10.840 VHL 3.292 DLA 36.29 RAL 168.05 RAD 6567.4 VEL 11.499 PTH 2.00 VHP 4.135 DPA -.13 RAP 163.48 ECC 1.1784

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.30	8 19 2	3939.51	-28.75	167.42	29.70	66.85	9 24 41	3339.5	-31.62	159.19
113.70	14 0 13	2861.08	-28.74	86.39	29.70	66.83	14 47 54	2261.1	-31.61	78.16
66.30	8 19 2	3939.51	-28.75	167.42	29.70	66.85	9 24 41	3339.5	-31.62	159.19
113.70	14 0 13	2861.08	-28.74	86.39	29.70	66.83	14 47 54	2261.1	-31.61	78.16
66.30	8 19 2	3939.51	-28.75	167.42	29.70	66.85	9 24 41	3339.5	-31.62	159.19
113.70	14 0 13	2861.08	-28.74	86.39	29.70	66.83	14 47 54	2261.1	-31.61	78.16

DIFFERENTIAL CORRECTIONS
TDE 3.0831 TRA .2232 TC-15.5832 BAU 2.2628
RDE .3718 RRA .1617 RC3 -.9906 FAU .25771
FDE 2.7605 FRA 1.4747 FC-20.5824 BSP 40271
BDE 3.1054 BRA .2756 BC315.6147 FSP 4217

MID-COURSE EXECUTION ACCURACY
SGT11589.2 SGR 982.9 SG3 1272.4
RRT .9072 RRF .9023 RTF .9748
SGB11630.8 R23 .0400 R13 .9749
SG111623.5 SG2 412.3 THA 4.40

ORBIT DETERMINATION ACCURACY
ST 5376.2 SR 655.8 SS 1755.9
CRT .9907 CRS -.9980 CST -.9854
LSA 5685.9 MSA 293.3 SSA 29.8
EL1 5415.3 EL2 88.4 ALF 6.89

LAUNCH DATE DEC 12 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 750.887 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.079 GAL .96 AZL 87.33 HCA 221.15 SMA 187.44 ECC .21488 INC 2.6715 V1 30.251
RP 209.77 LAP -1.76 LOP 301.14 VP 23.608 GAP -10.38 AZP 92.01 TAL 5.43 TAP 226.58 RCA 147.16 APO 227.72 V2 26.137
RC 310.132 GL 28.12 GP -7.98 ZAL 76.88 ZAP 44.73 ETS 171.05 ZAE 68.89 ETE 176.27 ZAC 76.82 ETC 257.42 CLP 44.16

PLANETOCENTRIC CONIC

C3 10.701 VHL 3.271 DLA 35.46 RAL 169.15 RAD 6567.4 VEL 11.493 PTH 2.00 VHP 4.191 DPA .00 RAP 163.94 ECC 1.1761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.71	8 31 11	3913.78	-28.20	165.10	30.32	67.56	9 36 24	3313.8	-30.99	156.89
112.29	13 56 53	2881.56	-28.19	87.76	30.32	67.54	14 44 55	2281.6	-30.98	79.55
67.71	8 31 11	3913.78	-28.20	165.10	30.32	67.56	9 36 24	3313.8	-30.99	156.89
112.29	13 56 53	2881.56	-28.19	87.76	30.32	67.54	14 44 55	2281.6	-30.98	79.55
67.71	8 31 11	3913.78	-28.20	165.10	30.32	67.56	9 36 24	3313.8	-30.99	156.89
112.29	13 56 53	2881.56	-28.19	87.76	30.32	67.54	14 44 55	2281.6	-30.98	79.55

DIFFERENTIAL CORRECTIONS
TDE 3.0253 TRA .3190 TC-16.0011 BAU 2.2930
RDE .3572 RRA .1663 RC3 -.9236 FAU .24843
FDE 2.5432 FRA 1.5445 FC-20.0982 BSP 40817
BDE 3.0463 BRA .3598 BC316.0277 FSP 4072

MID-COURSE EXECUTION ACCURACY
SGT11753.4 SGR 940.5 SG3 1233.4
RRT .8944 RRF .8879 RTF .9747
SGB11791.0 R23 .0336 R13 .9748
SG111783.5 SG2 419.6 THA 4.10

ORBIT DETERMINATION ACCURACY
ST 5312.1 SR 635.0 SS 1659.0
CRT .9910 CRS -.9971 CST -.9833
LSA 5593.3 MSA 296.3 SSA 30.6
EL1 5349.2 EL2 84.5 ALF 6.76

LAUNCH DATE DEC 12 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 755.220 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.085 GAL .84 AZL 87.37 HCA 222.39 SMA 187.56 ECC .21522 INC 2.6256 V1 30.251
RP 209.55 LAP -1.77 LOP 302.37 VP 23.645 GAP -10.47 AZP 91.94 TAL 4.75 TAP 227.13 RCA 147.19 APO 227.92 V2 26.162
RC 311.080 GL 27.78 GP -7.69 ZAL 78.03 ZAP 43.87 ETS 171.10 ZAE 67.75 ETE 176.22 ZAC 77.18 ETC 257.38 CLP 43.33

PLANETOCENTRIC CONIC

C3 10.575 VHL 3.252 DLA 34.62 RAL 170.29 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 4.248 DPA .11 RAP 164.42 ECC 1.1740

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.19	8 44 15	3885.60	-27.63	162.61	31.00	68.26	9 49 1	3285.6	-30.33	154.42
110.81	13 52 52	2904.90	-27.62	89.34	30.99	68.24	14 41 17	2304.9	-30.32	81.14
69.19	8 44 15	3885.60	-27.63	162.61	31.00	68.26	9 49 1	3285.6	-30.33	154.42
110.81	13 52 52	2904.90	-27.62	89.34	30.99	68.24	14 41 17	2304.9	-30.32	81.14
69.19	8 44 15	3885.60	-27.63	162.61	31.00	68.26	9 49 1	3285.6	-30.33	154.42
110.81	13 52 52	2904.90	-27.62	89.34	30.99	68.24	14 41 17	2304.9	-30.32	81.14

DIFFERENTIAL CORRECTIONS
TDE 2.9626 TRA .4198 TC-16.4133 BAU 2.3236
RDE .3438 RRA .1707 RC3 -.8592 FAU .23947
FDE 2.3332 FRA 1.6114 FC-19.6050 BSP 41385
BDE 2.9825 BRA .4532 BC316.4358 FSP 3943

MID-COURSE EXECUTION ACCURACY
SGT11916.6 SGR 901.6 SG3 1195.3
RRT .8801 RRF .8720 RTF .9746
SGB11950.7 R23 .0278 R13 .9747
SG111943.1 SG2 427.1 THA 3.81

ORBIT DETERMINATION ACCURACY
ST 5236.7 SR 615.8 SS 1562.3
CRT .9913 CRS -.9958 CST -.9807
LSA 5491.1 MSA 299.9 SSA 31.4
EL1 5272.2 EL2 80.4 ALF 6.65

LAUNCH DATE DEC 12 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 759.558 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.092 GAL .72 AZL 87.42 HCA 223.62 SMA 187.67 ECC .21559 INC 2.5818 V1 30.251
RP 209.34 LAP -1.78 LOP 303.61 VP 23.681 GAP -10.56 AZP 91.87 TAL 4.05 TAP 227.68 RCA 147.21 APO 228.14 V2 26.186
RC 312.019 GL 27.44 GP -7.42 ZAL 79.23 ZAP 43.03 ETS 171.14 ZAE 66.64 ETE 176.19 ZAC 77.53 ETC 257.35 CLP 42.51

PLANETOCENTRIC CONIC

C3 10.460 VHL 3.234 DLA 33.77 RAL 171.46 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 4.307 DPA .19 RAP 164.91 ECC 1.1721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.78	8 58 25	3854.47	-27.04	159.92	31.72	68.95	10 2 39	3254.5	-29.65	151.74
109.22	13 48 2	2931.62	-27.03	91.17	31.72	68.94	14 36 54	2331.6	-29.64	82.99
70.78	8 58 25	3854.47	-27.04	159.92	31.72	68.95	10 2 39	3254.5	-29.65	151.74
109.22	13 48 2	2931.62	-27.03	91.17	31.72	68.94	14 36 54	2331.6	-29.64	82.99
110.00	14 32 53	2794.60	-30.10	81.70	32.92	72.97	15 19 27	2194.6	-32.13	73.08
110.00	13 12 45	3039.48	-24.06	98.16	30.31	64.95	14 3 24	2439.5	-27.23	90.43

DIFFERENTIAL CORRECTIONS
TDE 2.8978 TRA .5288 TC-16.8025 BAU 2.3522
RDE .3318 RRA .1751 RC3 -.7950 FAU .23029
FDE 2.1343 FRA 1.6791 FC-19.0610 BSP 41896
BDE 2.9167 BRA .5570 BC316.8213 FSP 3797

MID-COURSE EXECUTION ACCURACY
SGT12072.5 SGR 865.6 SG3 1156.3
RRT .8638 RRF .8544 RTF .9745
SGB12103.5 R23 .0229 R13 .9745
SG112095.7 SG2 435.3 THA 3.55

ORBIT DETERMINATION ACCURACY
ST 5155.1 SR 598.7 SS 1469.0
CRT .9918 CRS -.9938 CST -.9775
LSA 5385.0 MSA 304.2 SSA 32.2
EL1 5189.2 EL2 75.9 ALF 6.57

LAUNCH DATE DEC 12 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 763.901 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.099 GAL .59 AZL 87.46 HCA 224.86 SMA 187.80 ECC .21599 INC 2.5399 V1 30.251
RP 209.14 LAP -1.79 LOP 304.84 VP 23.716 GAP -10.65 AZP 91.80 TAL 3.35 TAP 228.21 RCA 147.23 APO 228.36 V2 26.209
RC 312.950 GL 27.11 GP -7.17 ZAL 80.48 ZAP 42.22 ETS 171.18 ZAE 65.54 ETE 176.16 ZAC 77.87 ETC 257.31 CLP 41.72

PLANETOCENTRIC CONIC

C3 10.357 VHL 3.218 DLA 32.91 RAL 172.65 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 4.366 DPA .25 RAP 165.42 ECC 1.1704

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.49	9 13 55	3819.44	-26.43	156.95	32.50	69.64	10 17 35	3219.4	-28.96	148.79
107.51	13 42 5	2962.65	-26.42	93.30	32.49	69.62	14 31 27	2362.6	-28.95	85.15
72.49	9 13 55	3819.44	-26.43	156.95	32.50	69.64	10 17 35	3219.4	-28.96	148.79
107.51	13 42 5	2962.65	-26.42	93.30	32.49	69.62	14 31 27	2362.6	-28.95	85.15
110.00	15 8 2	2698.31	-31.81	74.72	34.35	76.77	15 53 0	2098.3	-33.30	65.81
110.00	12 47 8	3131.78	-21.28	103.88	30.00	62.59	13 39 20	2531.8	-24.78	96.48

DIFFERENTIAL CORRECTIONS
TDE 2.8277 TRA .6403 TC-17.1894 BAU 2.3822
RDE .3209 RRA .1786 RC3 -.7349 FAU .22182
FDE 1.9424 FRA 1.7328 FC-18.5423 BSP 42462
BDE 2.8458 BRA .6647 BC317.2051 FSP 3678

MID-COURSE EXECUTION ACCURACY
SGT12230.9 SGR 832.9 SG3 1119.5
RRT .8466 RRF .8351 RTF .9745
SGB12259.2 R23 .0171 R13 .9745
SG112251.3 SG2 442.6 THA 3.30

ORBIT DETERMINATION ACCURACY
ST 5061.7 SR 582.8 SS 1375.8
CRT .9925 CRS -.9910 CST -.9738
LSA 5268.5 MSA 307.2 SSA 33.0
EL1 5094.6 EL2 70.8 ALF 6.52

LAUNCH DATE DEC 12 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 768.246 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.106 GAL .47 AZL 87.50 HCA 226.10 SMA 187.92 ECC .21641 INC 2.4996 V1 30.251
RP 208.94 LAP -1.80 LOP 306.09 VP 23.751 GAP -10.74 AZP 91.73 TAL 2.63 TAP 228.73 RCA 147.25 APO 228.58 V2 26.232
RC 313.871 GL 26.78 GP -6.93 ZAL 81.76 ZAP 41.43 ETS 171.22 ZAE 64.47 ETE 176.13 ZAC 78.20 ETC 257.27 CLP 40.95

PLANETOCENTRIC CONIC

C3 10.266 VHL 3.204 DLA 32.03 RAL 173.88 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 4.426 DPA .28 RAP 165.94 ECC 1.1690

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.37	9 31 7	3779.39	-25.79	153.63	33.32	70.32	10 34 7	3179.4	-28.23	145.49
105.63	13 34 38	2999.16	-25.78	95.84	33.31	70.30	14 24 38	2399.2	-28.23	87.71
74.37	9 31 7	3779.39	-25.79	153.63	33.32	70.32	10 34 7	3179.4	-28.23	145.49
105.63	13 34 38	2999.16	-25.78	95.84	33.31	70.30	14 24 38	2399.2	-28.23	87.71
110.00	15 33 51	2630.25	-32.76	69.64	35.46	79.64	16 17 41	2030.2	-33.84	60.57
110.00	12 31 5	3196.30	-19.21	107.74	30.11	61.16	13 24 22	2596.3	-22.90	100.55

DIFFERENTIAL CORRECTIONS
TDE 2.7558 TRA .7610 TC-17.5429 BAU 2.4095
RDE .3113 RRA .1825 RC3 -.6736 FAU .21288
FDE 1.7619 FRA 1.7934 FC-17.9516 BSP 42999
BDE 2.7733 BRA .7826 BC317.5558 FSP 3547

MID-COURSE EXECUTION ACCURACY
SGT12379.0 SGR 802.7 SG3 1081.1
RRT .8266 RRF .8139 RTF .9743
SGB12405.0 R23 .0133 R13 .9744
SG112396.8 SG2 451.1 THA 3.07

ORBIT DETERMINATION ACCURACY
ST 4962.9 SR 568.7 SS 1287.5
CRT .9933 CRS -.9869 CST -.9690
LSA 5149.0 MSA 312.3 SSA 33.6
EL1 4994.9 EL2 65.5 ALF 6.49

LAUNCH DATE DEC 12 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 772.594 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.113 GAL .34 AZL 87.54 HCA 227.34 SMA 188.04 ECC .21685 INC 2.4610 V1 30.251
RP 208.76 LAP -1.81 LOP 307.33 VP 23.785 GAP -10.83 AZP 91.67 TAL 1.89 TAP 229.24 RCA 147.26 APO 228.82 V2 26.254
RC 314.784 GL 26.45 GP -6.70 ZAL 83.09 ZAP 40.66 ETS 171.26 ZAE 63.42 ETE 176.11 ZAC 78.52 ETC 257.22 CLP 40.20

PLANETOCENTRIC CONIC

C3 10.188 VHL 3.192 DLA 31.13 RAL 175.13 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 4.488 DPA .29 RAP 166.48 ECC 1.1677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.48	9 50 45	3731.95	-25.13	149.78	34.19	70.99	10 52 57	3131.9	-27.49	141.67
103.52	13 25 0	3043.54	-25.12	98.94	34.19	70.98	14 15 43	2443.5	-27.48	90.83
76.48	9 50 45	3731.95	-25.13	149.78	34.19	70.99	10 52 57	3131.9	-27.49	141.67
103.52	13 25 0	3043.54	-25.12	98.94	34.19	70.98	14 15 43	2443.5	-27.48	90.83
110.00	15 55 58	2573.41	-33.37	65.32	36.44	82.12	16 38 51	1973.4	-34.10	56.16
110.00	12 18 57	3250.07	-17.41	110.88	30.43	60.11	13 13 7	2650.1	-21.25	103.86

DIFFERENTIAL CORRECTIONS
TDE 2.6873 TRA .8959 TC-17.8521 BAU 2.4329
RDE .3031 RRA .1864 RC3 -.6131 FAU .20389
FDE 1.5977 FRA 1.8577 FC-17.3262 BSP 43723
BDE 2.7044 BRA .9151 BC317.8626 FSP 3442

MID-COURSE EXECUTION ACCURACY
SGT12517.0 SGR 775.9 SG3 1043.0
RRT .8051 RRF .7913 RTF .9742
SGB12541.0 R23 .0100 R13 .9742
SG112532.6 SG2 459.6 THA 2.86

ORBIT DETERMINATION ACCURACY
ST 4868.8 SR 556.8 SS 1207.6
CRT .9942 CRS -.9812 CST -.9632
LSA 5037.0 MSA 318.2 SSA 34.2
EL1 4900.1 EL2 59.5 ALF 6.49

LAUNCH DATE DEC 12 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 776.948 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.120 GAL .20 AZL 87.58 HCA 228.59 SMA 188.17 ECC .21733 INC 2.4237 V1 30.251
RP 208.58 LAP -1.82 LOP 308.58 VP 23.818 GAP -10.92 AZP 91.60 TAL 1.15 TAP 229.74 RCA 147.27 APO 229.06 V2 26.274
RC 315.690 GL 26.12 GP -6.49 ZAL 84.45 ZAP 39.92 ETS 171.29 ZAE 62.38 ETE 176.09 ZAC 78.84 ETC 257.17 CLP 39.47

PLANETOCENTRIC CONIC

C3 10.123 VHL 3.182 DLA 30.22 RAL 176.40 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 4.550 DPA .28 RAP 167.03 ECC 1.1666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.97	10 13 55	3673.35	-24.45	145.13	35.11	71.66	11 15 8	3073.3	-26.73	137.05
101.03	13 11 59	3099.56	-24.44	102.89	35.10	71.65	14 3 38	2499.6	-26.72	94.80
78.97	10 13 55	3673.35	-24.45	145.13	35.11	71.66	11 15 8	3073.3	-26.73	137.05
101.03	13 11 59	3099.56	-24.44	102.89	35.10	71.65	14 3 38	2499.6	-26.72	94.80
110.00	16 15 57	2523.02	-33.77	61.44	37.37	84.39	16 58 0	1923.0	-34.18	52.22
110.00	12 9 7	3297.89	-15.77	113.61	30.89	59.27	13 4 5	2697.9	-19.73	106.73

DIFFERENTIAL CORRECTIONS
TDE 2.5964 TRA 1.0168 TC-18.2239 BAU 2.4674
RDE .2946 RRA .1886 RC3 -.5619 FAU .19687
FDE 1.4170 FRA 1.8902 FC-16.8373 BSP 43916
BDE 2.6131 BRA 1.0341 BC318.2326 FSP 3265

MID-COURSE EXECUTION ACCURACY
SGT12681.8 SGR 750.9 SG3 1010.6
RRT .7834 RRF .7666 RTF .9743
SGB12704.0 R23 .0037 R13 .9743
SG112695.4 SG2 466.2 THA 2.66

ORBIT DETERMINATION ACCURACY
ST 4731.6 SR 543.6 SS 1112.7
CRT .9951 CRS -.9727 CST -.9554
LSA 4880.2 MSA 322.4 SSA 35.1
EL1 4762.4 EL2 53.6 ALF 6.52

LAUNCH DATE DEC 12 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 781.304 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.127 GAL .07 AZL 87.61 HCA 229.84 SMA 188.29 ECC .21783 INC 2.3879 V1 30.251
RP 208.40 LAP -1.82 LOP 309.82 VP 23.850 GAP -11.01 AZP 91.54 TAL .39 TAP 230.22 RCA 147.28 APO 229.31 V2 26.294
RC 316.588 GL 25.78 GP -6.28 ZAL 85.86 ZAP 39.19 ETS 171.33 ZAE 61.37 ETE 176.07 ZAC 79.15 ETC 257.13 CLP 38.76

PLANETOCENTRIC CONIC

C3 10.071 VHL 3.173 DLA 29.29 RAL 177.70 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 4.613 DPA .25 RAP 167.60 ECC 1.1657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.18	10 43 46	3593.39	-23.75	138.95	36.07	72.33	11 43 40	2993.4	-25.94	130.89
97.82	12 52 28	3177.46	-23.73	108.42	36.07	72.31	13 45 26	2577.5	-25.93	100.36
100.00	13 59 47	2961.78	-27.16	93.49	37.11	77.02	14 49 8	2361.8	-28.68	85.01
100.00	12 19 9	3284.31	-20.41	115.02	34.76	67.67	13 13 53	2684.3	-23.26	107.38
110.00	16 34 35	2476.86	-34.02	57.86	38.26	86.49	17 15 52	1876.9	-34.14	48.62
110.00	12 0 50	3341.98	-14.22	116.09	31.48	58.58	12 56 32	2742.0	-18.27	109.32

DIFFERENTIAL CORRECTIONS
TDE 2.5102 TRA 1.1409 TC-18.5368 BAU 2.4966
RDE .2875 RRA .1884 RC3 -.5093 FAU .18935
FDE 1.2531 FRA 1.8758 FC-16.2780 BSP 44392
BDE 2.5266 BRA 1.1563 BC318.5437 FSP 3121

MID-COURSE EXECUTION ACCURACY
SGT12827.1 SGR 725.3 SG3 973.4
RRT .7607 RRF .7377 RTF .9755
SGB12847.6 R23 -.0081 R13 .9755
SG112839.0 SG2 470.4 THA 2.47

ORBIT DETERMINATION ACCURACY
ST 4600.8 SR 532.2 SS 1021.8
CRT .9961 CRS -.9629 CST -.9486
LSA 4732.1 MSA 317.1 SSA 35.8
EL1 4631.2 EL2 46.8 ALF 6.57

LAUNCH DATE DEC 12 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 785.661 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.134 GAL -.07 AZL 87.65 HCA 231.08 SMA 188.42 ECC .21836 INC 2.3532 V1 30.251
RP 208.24 LAP -1.83 LOP 311.07 VP 23.881 GAP -11.09 AZP 91.48 TAL 359.61 TAP 230.70 RCA 147.28 APO 229.57 V2 26.314
RC 317.480 GL 25.44 GP -6.09 ZAL 87.30 ZAP 38.48 ETS 171.36 ZAE 60.37 ETE 176.05 ZAC 79.45 ETC 257.08 CLP 38.07

PLANETOCENTRIC CONIC

C3 10.032 VHL 3.167 DLA 28.34 RAL 179.02 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 4.678 DPA .20 RAP 168.19 ECC 1.1651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
88.74	11 42 54	3418.60	-23.02	125.86	37.08	72.99	12 39 53	2818.6	-25.13	117.83
91.26	12 3 51	3350.73	-23.00	120.89	37.08	72.97	12 59 41	2750.7	-25.12	112.86
100.00	14 35 24	2862.06	-28.49	86.38	38.51	80.53	15 23 6	2262.1	-29.50	77.72
100.00	11 54 2	3382.50	-17.75	121.10	34.96	65.55	12 50 25	2782.5	-20.90	113.72
110.00	16 52 14	2433.76	-34.15	54.50	39.15	88.48	17 32 48	1833.8	-33.99	45.26
110.00	11 53 42	3383.57	-12.73	118.39	32.17	58.01	12 50 5	2783.6	-16.87	111.72

DIFFERENTIAL CORRECTIONS
TDE 2.4241 TRA 1.3068 TC-18.7532 BAU 2.5159
RDE .2822 RRA .1955 RC3 -.4481 FAU .17956
FDE 1.1157 FRA 2.0095 FC-15.4948 BSP 45197
BDE 2.4405 BRA 1.3213 BC318.7586 FSP 3125

MID-COURSE EXECUTION ACCURACY
SGT12944.9 SGR 709.0 SG3 936.5
RRT .7289 RRF .7126 RTF .9732
SGB12964.3 R23 .0032 R13 .9732
SG112955.2 SG2 485.0 THA 2.29

ORBIT DETERMINATION ACCURACY
ST 4472.7 SR 524.7 SS 964.5
CRT .9967 CRS -.9442 CST -.9325
LSA 4592.7 MSA 341.8 SSA 36.3
EL1 4503.2 EL2 42.1 ALF 6.67

LAUNCH DATE DEC 12 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 790.021 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.142 GAL -.21 AZL 87.68 HCA 232.34 SMA 188.55 ECC .21892 INC 2.3197 V1 30.251
RP 208.08 LAP -1.84 LOP 312.33 VP 23.911 GAP -11.18 AZP 91.42 TAL 358.83 TAP 231.16 RCA 147.27 APO 229.83 V2 26.332
RC 318.367 GL 25.09 GP -5.91 ZAL 88.78 ZAP 37.79 ETS 171.39 ZAE 59.39 ETE 176.04 ZAC 79.74 ETC 257.02 CLP 37.39

PLANETOCENTRIC CONIC

C3 10.008 VHL 3.164 DLA 27.38 RAL 180.35 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 4.743 DPA .13 RAP 168.78 ECC 1.1647

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 2 46	3175.31	-26.41	109.01	39.23	79.40	13 55 41	2575.3	-27.61	100.54
90.00	10 54 39	3593.06	-18.22	136.79	36.64	67.94	11 54 32	2993.1	-21.06	129.26
100.00	15 2 44	2788.57	-29.19	81.03	39.71	83.26	15 49 13	2188.6	-29.82	72.28
100.00	11 37 22	3455.03	-15.65	125.46	35.44	64.20	12 34 57	2855.0	-18.99	118.27
110.00	17 9 9	2392.98	-34.18	51.32	40.03	90.36	17 49 2	1793.0	-33.75	42.10
110.00	11 47 26	3423.39	-11.29	120.57	32.94	57.52	12 44 30	2823.4	-15.49	113.99

DIFFERENTIAL CORRECTIONS
TDE 2.3356 TRA 1.4560 TC-19.0300 BAU 2.5468
RDE .2776 RRA .1972 RC3 -.4010 FAU .17292
FDE .9823 FRA 2.0371 FC-14.9584 BSP 45625
BDE 2.3520 BRA 1.4693 BC319.0343 FSP 2978

MID-COURSE EXECUTION ACCURACY
SGT13102.9 SGR 692.1 SG3 906.2
RRT .7031 RRF .6843 RTF .9738
SGB13121.2 R23 -.0019 R13 .9738
SG113112.0 SG2 491.8 THA 2.13

ORBIT DETERMINATION ACCURACY
ST 4337.9 SR 517.2 SS 897.8
CRT .9973 CRS -.9243 CST -.9195
LSA 4446.3 MSA 346.6 SSA 36.8
EL1 4368.4 EL2 38.0 ALF 6.78

LAUNCH DATE DEC 12 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 794.383 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.149 GAL -.36 AZL 87.71 HCA 233.59 SMA 188.68 ECC .21952 INC 2.2872 V1 30.251
RP 207.93 LAP -1.84 LOP 313.58 VP 23.940 GAP -11.27 AZP 91.36 TAL 358.02 TAP 231.61 RCA 147.26 APO 230.10 V2 26.349
RC 319.247 GL 24.73 GP -5.74 ZAL 90.30 ZAP 37.11 ETS 171.41 ZAE 58.42 ETE 176.03 ZAC 80.04 ETC 256.97 CLP 36.73

PLANETOCENTRIC CONIC

C3 9.999 VHL 3.162 DLA 26.39 RAL 181.70 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 4.809 DPA .05 RAP 169.39 ECC 1.1646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 35 39	3083.70	-27.39	102.48	40.56	82.53	14 27 3	2483.7	-28.14	93.90
90.00	10 32 33	3684.30	-15.80	142.39	37.08	66.19	11 33 57	3084.3	-18.88	135.07
100.00	15 26 26	2726.57	-29.60	76.46	40.82	85.63	16 11 52	2126.6	-29.89	67.67
100.00	11 24 28	3516.66	-13.79	129.10	36.10	63.21	12 23 4	2916.7	-17.28	122.04
110.00	17 25 29	2354.06	-34.12	48.28	40.93	92.16	18 4 43	1754.1	-33.45	39.10
110.00	11 41 54	3461.94	-9.87	122.65	33.80	57.10	12 39 36	2861.9	-14.13	116.15

DIFFERENTIAL CORRECTIONS
TDE 2.2352 TRA 1.6129 TC-19.2418 BAU 2.5726
RDE .2731 RRA .1994 RC3 -.3501 FAU .16516
FDE .8398 FRA 2.0766 FC-14.2995 BSP 46110
BDE 2.2518 BRA 1.6252 BC319.2450 FSP 2871

MID-COURSE EXECUTION ACCURACY
SGT13233.7 SGR 675.7 SG3 871.5
RRT .6726 RRF .6529 RTF .9733
SGB13250.9 R23 -.0036 R13 .9733
SG113241.5 SG2 499.7 THA 1.97

ORBIT DETERMINATION ACCURACY
ST 4182.6 SR 509.4 SS 828.7
CRT .9972 CRS -.8930 CST -.8986
LSA 4279.1 MSA 358.1 SSA 37.4
EL1 4213.3 EL2 37.6 ALF 6.93

LAUNCH DATE DEC 12 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 798.747 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.156 GAL -.50 AZL 87.74 HCA 234.84 SMA 188.81 ECC .22015 INC 2.2559 V1 30.251
RP 207.79 LAP -1.84 LOP 314.83 VP 23.969 GAP -11.35 AZP 91.30 TAL 357.21 TAP 232.05 RCA 147.25 APO 230.38 V2 26.366
RC 320.122 GL 24.37 GP -5.58 ZAL 91.85 ZAP 36.46 ETS 171.43 ZAE 57.47 ETE 176.02 ZAC 80.32 ETC 256.92 CLP 36.09

PLANETOCENTRIC CONIC

C3 10.005 VHL 3.163 DLA 25.39 RAL 183.07 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 4.877 DPA -.05 RAP 170.01 ECC 1.1647

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 2 21	3011.92	-27.92	97.30	41.77	85.08	14 52 33	2411.9	-28.31	88.65
90.00	10 16 46	3756.33	-13.77	146.71	37.74	65.01	11 19 22	3156.3	-17.03	139.54
100.00	15 47 58	2671.40	-29.82	72.38	41.91	87.77	16 32 30	2071.4	-29.81	63.57
100.00	11 13 50	3572.08	-12.07	132.31	36.88	62.44	12 13 22	2972.1	-15.66	125.36
110.00	17 41 21	2316.66	-33.99	45.37	41.84	93.88	18 19 58	1716.7	-33.08	36.24
110.00	11 36 56	3499.59	-8.47	124.67	34.73	56.76	12 35 16	2899.6	-12.79	118.24

DIFFERENTIAL CORRECTIONS
TDE 2.1370 TRA 1.7778 TC-19.4310 BAU 2.5994
RDE .2697 RRA .2012 RC3 -.3034 FAU .15819
FDE .7141 FRA 2.1094 FC-13.6884 BSP 46551
BDE 2.1540 BRA 1.7891 BC319.4334 FSP 2744

MID-COURSE EXECUTION ACCURACY
SGT13371.4 SGR 662.1 SG3 840.1
RRT .6426 RRF .6214 RTF .9732
SGB13387.8 R23 -.0063 R13 .9732
SG113378.2 SG2 507.0 THA 1.83

ORBIT DETERMINATION ACCURACY
ST 4032.9 SR 503.4 SS 771.2
CRT .9964 CRS -.8542 CST -.8751
LSA 4120.0 MSA 369.0 SSA 37.8
EL1 4063.9 EL2 42.1 ALF 7.09

LAUNCH DATE DEC 12 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 803.111 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.164 GAL -.65 AZL 87.77 HCA 236.10 SMA 188.95 ECC .22081 INC 2.2253 V1 30.251
RP 207.66 LAP -1.85 LOP 316.09 VP 23.996 GAP -11.44 AZP 91.24 TAL 356.38 TAP 232.48 RCA 147.23 APO 230.67 V2 26.381
RC 320.992 GL 23.99 GP -5.42 ZAL 93.43 ZAP 35.82 ETS 171.45 ZAE 56.54 ETE 176.01 ZAC 80.61 ETC 256.86 CLP 35.46

PLANETOCENTRIC CONIC

C3 10.028 VHL 3.167 DLA 24.36 RAL 184.45 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 4.945 DPA -.16 RAP 170.65 ECC 1.1650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 25 56	2950.15	-28.20	92.80	42.93	87.31	15 15 7	2350.1	-28.27	84.13
90.00	10 4 12	3818.99	-11.94	150.40	38.54	64.13	11 7 51	3219.0	-15.32	143.35
100.00	16 8 4	2620.88	-29.89	68.62	42.98	89.75	16 51 45	2020.9	-29.61	59.83
100.00	11 4 45	3623.49	-10.43	135.25	37.76	61.83	12 5 9	3023.5	-14.12	128.40
110.00	17 56 51	2280.56	-33.79	42.57	42.77	95.52	18 34 51	1680.6	-32.65	33.51
110.00	11 32 28	3536.58	-7.08	126.64	35.73	56.47	12 31 25	2936.6	-11.44	120.26

DIFFERENTIAL CORRECTIONS
TDE 2.0322 TRA 1.9477 TC-19.5841 BAU 2.6257
RDE .2670 RRA .2026 RC3 -.2574 FAU .15114
FDE .5909 FRA 2.1343 FC-13.0485 BSP 47061
BDE 2.0497 BRA 1.9582 BC319.5858 FSP 2650

MID-COURSE EXECUTION ACCURACY
SGT13502.7 SGR 649.5 SG3 807.8
RRT .6106 RRF .5879 RTF .9730
SGB13518.4 R23 -.0090 R13 .9730
SG113508.6 SG2 514.1 THA 1.68

ORBIT DETERMINATION ACCURACY
ST 3873.7 SR 498.0 SS 717.7
CRT .9944 CRS -.8024 CST -.8451
LSA 3952.4 MSA 381.4 SSA 38.2
EL1 3905.2 EL2 52.1 ALF 7.29

LAUNCH DATE DEC 12 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 807.477 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.171 GAL -.81 AZL 87.80 HCA 237.36 SMA 189.08 ECC .22152 INC 2.1956 V1 30.251
RP 207.54 LAP -1.85 LOP 317.35 VP 24.022 GAP -11.53 AZP 91.18 TAL 355.54 TAP 232.90 RCA 147.20 APO 230.97 V2 26.396
RC 321.856 GL 23.61 GP -5.27 ZAL 95.04 ZAP 35.19 ETS 171.47 ZAE 55.62 ETE 176.00 ZAC 80.89 ETC 256.81 CLP 34.85

PLANETOCENTRIC CONIC

C3 10.067 VHL 3.173 DLA 23.33 RAL 185.85 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 5.014 DPA -.29 RAP 171.29 ECC 1.1657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 47 35	2894.66	-28.31	88.74	44.07	89.34	15 35 49	2294.7	-28.10	80.08
90.00	9 53 40	3876.04	-10.22	153.71	39.45	63.45	10 58 16	3276.0	-13.71	146.76
100.00	16 27 6	2573.79	-29.85	65.12	44.05	91.59	17 9 59	1973.8	-29.31	56.36
100.00	10 56 50	3672.14	-8.86	138.00	38.73	61.33	11 58 2	3072.1	-12.62	131.23
110.00	18 12 0	2245.60	-33.53	39.87	43.72	97.10	18 49 25	1645.6	-32.18	30.90
110.00	11 28 26	3573.10	-5.71	128.57	36.80	56.24	12 27 59	2973.1	-10.10	122.24

DIFFERENTIAL CORRECTIONS
TDE 1.9243 TRA 2.1238 TC-19.7017 BAU 2.6517
RDE .2651 RRA .2037 RC3 -.2134 FAU .14430
FDE .4765 FRA 2.1558 FC-12.4095 BSP 47535
BDE 1.9425 BRA 2.1336 BC319.7029 FSP 2546

MID-COURSE EXECUTION ACCURACY
SGT13631.6 SGR 638.7 SG3 776.3
RRT .5777 RRF .5535 RTF .9728
SGB13646.6 R23 -.0114 R13 .9728
SG113636.6 SG2 521.2 THA 1.55

ORBIT DETERMINATION ACCURACY
ST 3713.0 SR 493.6 SS 673.1
CRT .9907 CRS -.7377 CST -.8100
LSA 3784.9 MSA 395.4 SSA 38.5
EL1 3745.1 EL2 66.6 ALF 7.51

LAUNCH DATE DEC 12 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 811.842 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.179 GAL -.97 AZL 87.83 HCA 238.62 SMA 189.22 ECC .22226 INC 2.1667 V1 30.251
RP 207.42 LAP -1.85 LOP 318.61 VP 24.048 GAP -11.61 AZP 91.13 TAL 354.69 TAP 233.30 RCA 147.16 APO 231.27 V2 26.409
RC 322.714 GL 23.22 GP -5.13 ZAL 96.67 ZAP 34.59 ETS 171.49 ZAE 54.71 ETE 175.99 ZAC 81.16 ETC 256.75 CLP 34.25

PLANETOCENTRIC CONIC

C3 10.124 VHL 3.182 DLA 22.27 RAL 187.25 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 5.084 DPA -.43 RAP 171.95 ECC 1.1666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 7 51	2843.60	-28.29	85.01	45.20	91.22	15 55 15	2243.6	-27.82	76.38
90.00	9 44 35	3929.36	-8.59	156.77	40.46	62.91	10 50 4	3329.4	-12.15	149.90
100.00	16 45 18	2529.38	-29.72	61.83	45.14	93.32	17 27 28	1929.4	-28.95	53.11
100.00	10 49 49	3718.81	-7.32	140.61	39.78	60.94	11 51 48	3118.8	-11.14	133.91
110.00	18 26 51	2211.67	-33.21	37.27	44.71	98.61	19 3 43	1611.7	-31.67	28.38
110.00	11 24 45	3609.29	-4.33	130.47	37.93	56.06	12 24 54	3009.3	-8.76	124.18

DIFFERENTIAL CORRECTIONS
TDE 1.8142 TRA 2.3092 TC-19.7797 BAU 2.6772
RDE .2641 RRA .2047 RC3 -.1714 FAU .13766
FDE .3716 FRA 2.1794 FC-11.7717 BSP 47990
BDE 1.8334 BRA 2.3183 BC319.7804 FSP 2441

MID-COURSE EXECUTION ACCURACY
SGT13758.6 SGR 629.9 SG3 746.0
RRT .5442 RRF .5194 RTF .9725
SGB13773.0 R23 -.0128 R13 .9725
SG113762.8 SG2 528.3 THA 1.43

ORBIT DETERMINATION ACCURACY
ST 3554.3 SR 490.4 SS 639.2
CRT .9846 CRS -.6602 CST -.7708
LSA 3620.9 MSA 411.8 SSA 38.7
EL1 3587.0 EL2 85.0 ALF 7.74

LAUNCH DATE DEC 12 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 816.208 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.187	GAL	-1.13	AZL	87.86	HCA	239.88	SMA	189.36	ECC	.22304	INC	2.1386	V1	30.251
RP	207.31	LAP	-1.85	LOP	319.87	VP	24.072	GAP	-11.70	AZP	91.07	TAL	353.82	TAP	233.70	RCA	147.12	APO	231.59	V2	26.422
RC	323.566	GL	22.81	GP	-5.00	ZAL	98.33	ZAP	33.99	ETS	171.50	ZAE	53.82	ETE	175.99	ZAC	81.44	ETC	256.70	CLP	33.67

PLANETOCENTRIC CONIC

C3	10.199	VHL	3.194	DLA	21.21	RAL	188.66	RAD	6567.4	VEL	11.471	PTH	1.99	VHP	5.155	DPA	-.59	RAP	172.62	ECC	1.1679

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 27 6	2795.91	-28.17	81.53	46.34	92.96	16 13 42	2195.9	-27.47	72.93
90.00	9 36 34	3980.03	-7.00	159.65	41.54	62.49	10 42 54	3380.0	-10.63	152.85
100.00	17 2 51	2487.18	-29.52	58.71	46.24	94.95	17 44 18	1887.2	-28.52	50.05
100.00	10 43 31	3763.99	-5.82	143.13	40.90	60.63	11 46 15	3164.0	-9.69	136.48
110.00	18 41 27	2178.68	-32.85	34.77	45.73	100.05	19 17 46	1578.7	-31.11	25.97
110.00	11 21 24	3645.26	-2.96	132.36	39.13	55.93	12 22 9	3045.3	-7.41	126.10

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	1.6994	TRA	2.4994	TC-19.8192	BAU 2.7025	SGT13881.0	SGR	621.8	SG3	715.2	ST	3394.4	SR	487.6	SS	611.0
RDE	.2637	RRA	.2052	RC3 -.1308	FAU .13104	RRT	.5096	RRF	.4834	RTF	.9722	CRT	.9751	CRS	-.5664	CST	-.7258
FDE	.2690	FRA	2.1931	FC-11.1232	BSP 48456	SGB13894.9	R23	-.0149	R13	.9722	LSA	3456.3	MSA	430.3	SSA	38.7
BDE	1.7198	BRA	2.5078	BC319.8196	FSP 2347	SG113884.6	SG2	534.9	THA	1.31	EL1	3427.6	EL2	107.0	ALF	7.98

LAUNCH DATE DEC 12 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 820.573 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.194	GAL	-1.29	AZL	87.89	HCA	241.14	SMA	189.49	ECC	.22386	INC	2.1111	V1	30.251
RP	207.21	LAP	-1.85	LOP	321.13	VP	24.096	GAP	-11.79	AZP	91.02	TAL	352.94	TAP	234.08	RCA	147.07	APO	231.91	V2	26.434
RC	324.413	GL	22.40	GP	-4.87	ZAL	100.01	ZAP	33.41	ETS	171.52	ZAE	52.94	ETE	175.98	ZAC	81.71	ETC	256.65	CLP	33.10

PLANETOCENTRIC CONIC

C3	10.294	VHL	3.208	DLA	20.13	RAL	190.07	RAD	6567.4	VEL	11.475	PTH	1.99	VHP	5.228	DPA	-.76	RAP	173.31	ECC	1.1694

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 45 33	2750.90	-27.97	78.25	47.50	94.59	16 31 24	2150.9	-27.04	69.71
90.00	9 29 25	4028.76	-5.46	162.40	42.70	62.17	10 36 34	3428.8	-9.15	155.66
100.00	17 19 51	2446.83	-29.24	55.74	47.36	96.49	18 0 38	1846.8	-28.04	47.14
100.00	10 37 48	3808.06	-4.34	145.56	42.09	60.40	11 41 16	3208.1	-8.25	138.96
110.00	18 55 49	2146.57	-32.44	32.35	46.78	101.42	19 31 36	1546.6	-30.53	23.66
110.00	11 18 19	3681.08	-1.60	134.23	40.38	55.85	12 19 40	3081.1	-6.07	127.99

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	1.5823	TRA	2.6977	TC-19.8224	BAU 2.7281	SGT14003.8	SGR	615.4	SG3	686.3	ST	3240.2	SR	485.9	SS	593.2
RDE	.2641	RRA	.2055	RC3 -.0930	FAU .12482	RRT	.4754	RRF	.4481	RTF	.9719	CRT	.9613	CRS	-.4632	CST	-.6814
FDE	.1752	FRA	2.2073	FC-10.4972	BSP 48944	SGB14017.3	R23	-.0166	R13	.9718	LSA	3298.7	MSA	451.2	SSA	38.7
BDE	1.6042	BRA	2.7055	BC319.8227	FSP 2256	SG114006.9	SG2	541.3	THA	1.20	EL1	3273.7	EL2	132.4	ALF	8.22

LAUNCH DATE DEC 12 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 824.938 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.202	GAL	-1.46	AZL	87.92	HCA	242.40	SMA	189.63	ECC	.22472	INC	2.0843	V1	30.251
RP	207.12	LAP	-1.85	LOP	322.40	VP	24.118	GAP	-11.88	AZP	90.97	TAL	352.05	TAP	234.45	RCA	147.02	APO	232.25	V2	26.444
RC	325.253	GL	21.97	GP	-4.75	ZAL	101.71	ZAP	32.85	ETS	171.53	ZAE	52.08	ETE	175.97	ZAC	81.98	ETC	256.59	CLP	32.54

PLANETOCENTRIC CONIC

C3	10.410	VHL	3.226	DLA	19.04	RAL	191.49	RAD	6567.4	VEL	11.480	PTH	2.00	VHP	5.301	DPA	-.94	RAP	174.00	ECC	1.1713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 20	2708.14	-27.70	75.15	48.68	96.12	16 48 28	2108.1	-26.56	66.67
90.00	9 22 57	4076.01	-3.95	165.06	43.94	61.94	10 30 53	3476.0	-7.68	158.36
100.00	17 36 22	2408.13	-28.91	52.91	48.51	97.94	18 16 30	1808.1	-27.51	44.39
100.00	10 32 36	3851.26	-2.89	147.94	43.34	60.23	11 36 47	3251.3	-6.83	141.37
110.00	19 9 57	2115.33	-31.99	30.02	47.86	102.73	19 45 12	1515.3	-29.91	21.43
110.00	11 15 30	3716.82	-.23	136.09	41.68	55.82	12 17 27	3116.8	-4.71	129.88

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	1.4630	TRA	2.9035	TC-19.7821	BAU 2.7531	SGT14122.6	SGR	610.1	SG3	657.2	ST	3094.2	SR	485.0	SS	583.3
RDE	.2652	RRA	.2056	RC3 -.0565	FAU .11857	RRT	.4405	RRF	.4124	RTF	.9714	CRT	.9420	CRS	-.3534	CST	-.6400
FDE	.0877	FRA	2.2171	FC3-9.8612	BSP 49411	SGB14135.8	R23	-.0180	R13	.9713	LSA	3150.1	MSA	474.2	SSA	38.5
BDE	1.4869	BRA	2.9108	BC319.7822	FSP 2166	SG114125.2	SG2	547.7	THA	1.09	EL1	3127.8	EL2	161.1	ALF	8.42

LAUNCH DATE DEC 12 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 829.301 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.210	GAL	-1.63	AZL	87.94	HCA	243.67	SMA	189.77	ECC	.22563	INC	2.0580	V1	30.251
RP	207.04	LAP	-1.84	LOP	323.66	VP	24.139	GAP	-11.97	AZP	90.91	TAL	351.14	TAP	234.80	RCA	146.96	APO	232.59	V2	26.454
RC	326.088	GL	21.54	GP	-4.64	ZAL	103.43	ZAP	32.30	ETS	171.53	ZAE	51.23	ETE	175.96	ZAC	82.24	ETC	256.54	CLP	32.00

PLANETOCENTRIC CONIC

C3	10.547	VHL	3.248	DLA	17.94	RAL	192.91	RAD	6567.4	VEL	11.486	PTH	2.00	VHP	5.375	DPA	-1.13	RAP	174.70	ECC	1.1736

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 20 33	2667.32	-27.37	72.21	49.89	97.56	17 5 0	2067.3	-26.04	63.79
90.00	9 17 4	4122.12	-2.47	167.64	45.23	61.78	10 25 46	3522.1	-6.23	160.97
100.00	17 52 28	2370.89	-28.53	50.21	49.69	99.31	18 31 59	1770.9	-26.95	41.76
100.00	10 27 49	3893.78	-1.45	150.28	44.66	60.14	11 32 43	3293.8	-5.41	143.73
110.00	19 23 52	2084.91	-31.52	27.78	48.98	103.98	19 58 37	1484.9	-29.27	19.29
110.00	11 12 55	3752.52	1.14	137.95	43.05	55.83	12 15 27	3152.5	-3.35	131.75

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY					ORBIT DETERMINATION ACCURACY				
TDE	1.3404	TRA	3.1162	TC-19.6996	BAU 2.7776	SGT14237.3	SGR	605.8	SG3	628.7	ST	2957.2	SR	484.7	SS	580.2
RDE	.2670	RRA	.2053	RC3 -.0223	FAU .11249	RRT	.4056	RRF	.3764	RTF	.9708	CRT	.9154	CRS	-.2400	CST	-.6043
FDE	.0049	FRA	2.2221	FC3-9.2341	BSP 49881	SGB14250.2	R23	-.0197	R13	.9708	LSA	3010.9	MSA	499.6	SSA	38.1
BDE	1.3668	BRA	3.1229	BC319.6996	FSP 2077	SG114239.4	SG2	553.6	THA	.99	EL1	2990.5	EL2	192.9	ALF	8.57

LAUNCH DATE DEC 12 1964 FLIGHT TIME 384.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 833.662 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.218	GAL	-1.80	AZL	87.97	HCA	244.93	SMA	189.91	ECC	.22658	INC	2.0323	V1	30.251
RP	206.96	LAP	-1.84	LOP	324.93	VP	24.160	GAP	-12.06	AZP	90.86	TAL	350.22	TAP	235.15	RCA	146.88	APO	232.95	V2	26.463
RC	326.917	GL	21.09	GP	-4.53	ZAL	105.16	ZAP	31.76	ETS	171.54	ZAE	50.39	ETE	175.96	ZAC	82.51	ETC	256.48	CLP	31.47

PLANETOCENTRIC CONIC

C3	10.706	VHL	3.272	DLA	16.83	RAL	194.33	RAD	6567.4	VEL	11.493	PTH	2.00	VHP	5.450	DPA	-1.34	RAP	175.42	ECC	1.1762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 37 17	2628.21	-26.99	69.41	51.12	98.91	17 21 5	2028.2	-25.48	61.07
90.00	9 11 40	4167.32	-1.02	170.16	46.59	61.70	10 21 7	3567.3	-4.79	163.51
100.00	18 8 12	2335.00	-28.11	47.62	50.90	100.61	18 47 7	1735.0	-26.36	39.26
100.00	10 23 25	3935.76	-.02	152.58	46.04	60.11	11 29 1	3335.8	-4.00	146.05
110.00	19 37 35	2055.32	-31.01	25.62	50.14	105.16	20 11 51	1455.3	-28.62	17.24
110.00	11 10 31	3788.20	2.50	139.82	44.46	55.90	12 13 40	3188.2	-1.99	133.61

DIFFERENTIAL CORRECTIONS

TDE	1.2157	TRA	3.3360	TC-19.5815	BAU	2.8027	
RDE	.2696	RRA	.2046	RC3 .0098	FAU	.10659	
FDE	-.0702	FRA	2.2236	FC3-8.6195	BSP	50335	
BDE	1.2453	BRA	3.3423	BC319.5815	FSP	1992	

MID-COURSE EXECUTION ACCURACY

SGT14352.1	SGR	602.5	SG3	601.0			
RRT	.3709	RRF	.3409	RTF	.9701		
SGB14364.7	R23	-.0210	R13	.9701			
SG114353.8	SG2	559.5	THA	.89			

ORBIT DETERMINATION ACCURACY

ST	2834.1	SR	485.2	SS	583.1		
CRT	.8802	CRS	-.1315	CST	-.5807		
LSA	2886.1	MSA	525.7	SSA	37.7		
EL1	2866.3	EL2	227.7	ALF	8.63		

LAUNCH DATE DEC 12 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 838.021 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.226	GAL	-1.98	AZL	87.99	HCA	246.20	SMA	190.06	ECC	.22758	INC	2.0071	V1	30.251
RP	206.89	LAP	-1.84	LOP	326.20	VP	24.179	GAP	-12.15	AZP	90.81	TAL	349.28	TAP	235.48	RCA	146.80	APO	233.31	V2	26.471
RC	327.742	GL	20.64	GP	-4.42	ZAL	106.90	ZAP	31.24	ETS	171.54	ZAE	49.56	ETE	175.95	ZAC	82.77	ETC	256.43	CLP	30.96

PLANETOCENTRIC CONIC

C3	10.889	VHL	3.300	DLA	15.71	RAL	195.75	RAD	6567.4	VEL	11.501	PTH	2.00	VHP	5.527	DPA	-1.55	RAP	176.14	ECC	1.1792

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 35	2590.67	-26.56	66.74	52.38	100.19	17 36 45	1990.7	-24.89	58.48
90.00	9 6 41	4211.79	.42	172.64	48.01	61.69	10 16 53	3611.8	-3.37	166.01
100.00	18 23 35	2300.39	-27.65	45.15	52.14	101.83	19 1 56	1700.4	-25.74	36.87
100.00	10 19 21	3977.30	1.39	154.86	47.47	60.14	11 25 38	3377.3	-2.60	148.34
110.00	19 51 6	2026.56	-30.48	23.55	51.33	106.29	20 24 53	1426.6	-27.95	15.27
110.00	11 8 20	3823.89	3.86	141.68	45.92	56.01	12 12 3	3223.9	-.63	135.47

DIFFERENTIAL CORRECTIONS

TDE	1.0891	TRA	3.5638	TC-19.4241	BAU	2.8278	
RDE	.2729	RRA	.2036	RC3 .0394	FAU	.10089	
FDE	-.1394	FRA	2.2199	FC3-8.0214	BSP	50810	
BDE	1.1227	BRA	3.5696	BC319.4241	FSP	1907	

MID-COURSE EXECUTION ACCURACY

SGT14465.0	SGR	600.1	SG3	573.9			
RRT	.3368	RRF	.3056	RTF	.9695		
SGB14477.4	R23	-.0227	R13	.9695			
SG114466.4	SG2	565.0	THA	.80			

ORBIT DETERMINATION ACCURACY

ST	2728.1	SR	486.5	SS	590.0		
CRT	.8350	CRS	-.0292	CST	-.5696		
LSA	2778.6	MSA	552.3	SSA	37.1		
EL1	2758.4	EL2	264.7	ALF	8.55		

LAUNCH DATE DEC 12 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 842.377 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.233	GAL	-2.16	AZL	88.02	HCA	247.46	SMA	190.20	ECC	.22864	INC	1.9824	V1	30.251
RP	206.84	LAP	-1.83	LOP	327.46	VP	24.197	GAP	-12.24	AZP	90.76	TAL	348.34	TAP	235.80	RCA	146.71	APO	233.69	V2	26.477
RC	328.562	GL	20.17	GP	-4.32	ZAL	108.64	ZAP	30.73	ETS	171.54	ZAE	48.75	ETE	175.94	ZAC	83.03	ETC	256.38	CLP	30.45

PLANETOCENTRIC CONIC

C3	11.097	VHL	3.331	DLA	14.60	RAL	197.16	RAD	6567.4	VEL	11.510	PTH	2.00	VHP	5.604	DPA	-1.78	RAP	176.87	ECC	1.1826

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 9 29	2554.58	-26.10	64.20	53.68	101.38	17 52 3	1954.6	-24.27	56.01
90.00	9 2 4	4255.65	1.83	175.08	49.48	61.74	10 13 0	3655.7	-1.96	168.46
100.00	18 38 39	2266.98	-27.16	42.79	53.42	102.99	19 16 26	1667.0	-25.10	34.60
100.00	10 15 34	4018.48	2.78	157.12	48.95	60.23	11 22 33	3418.5	-1.20	150.60
110.00	20 4 25	1998.64	-29.93	21.56	52.57	107.34	20 37 44	1398.6	-27.26	13.38
110.00	11 6 18	3859.59	5.22	143.56	47.44	56.17	12 10 37	3259.6	.74	137.34

DIFFERENTIAL CORRECTIONS

TDE	.9600	TRA	3.7987	TC-19.2259	BAU	2.8524	
RDE	.2769	RRA	.2024	RC3 .0672	FAU	.09526	
FDE	-.2026	FRA	2.2146	FC3-7.4312	BSP	51273	
BDE	.9991	BRA	3.8041	BC319.2260	FSP	1827	

MID-COURSE EXECUTION ACCURACY

SGT14573.6	SGR	598.5	SG3	547.3			
RRT	.3028	RRF	.2712	RTF	.9686		
SGB14585.8	R23	-.0237	R13	.9686			
SG114574.7	SG2	570.4	THA	.71			

ORBIT DETERMINATION ACCURACY

ST	2641.3	SR	488.4	SS	600.4		
CRT	.7787	CRS	.0640	CST	-.5720		
LSA	2690.6	MSA	578.5	SSA	36.5		
EL1	2668.9	EL2	303.2	ALF	8.30		

LAUNCH DATE DEC 12 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 846.729 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.241	GAL	-2.35	AZL	88.04	HCA	248.73	SMA	190.34	ECC	.22974	INC	1.9582	V1	30.251
RP	206.79	LAP	-1.82	LOP	328.73	VP	24.215	GAP	-12.34	AZP	90.71	TAL	347.38	TAP	236.11	RCA	146.61	APO	234.07	V2	26.483
RC	329.378	GL	19.70	GP	-4.22	ZAL	110.39	ZAP	30.23	ETS	171.54	ZAE	47.94	ETE	175.93	ZAC	83.29	ETC	256.33	CLP	29.96

PLANETOCENTRIC CONIC

C3	11.332	VHL	3.366	DLA	13.48	RAL	198.57	RAD	6567.4	VEL	11.520	PTH	2.01	VHP	5.683	DPA	-2.01	RAP	177.62	ECC	1.1865

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 1	2519.86	-25.62	61.78	55.00	102.50	18 7 1	1919.9	-23.64	53.67
90.00	8 57 46	4299.00	3.23	177.51	51.01	61.85	10 9 25	3699.0	-.56	170.88
100.00	18 53 26	2234.75	-26.65	40.53	54.73	104.07	19 30 40	1634.8	-24.45	32.42
100.00	10 12 3	4059.34	4.16	159.37	50.49	60.37	11 19 43	3459.3	.18	152.84
110.00	20 17 32	1971.56	-29.36	19.65	53.84	108.34	20 50 24	1371.6	-26.58	11.58
110.00	11 4 26	3895.30	6.57	145.44	49.00	56.38	12 9 21	3295.3	2.10	139.20

DIFFERENTIAL CORRECTIONS

TDE	.8300	TRA	4.0414	TC-18.9927	BAU	2.8773	
RDE	.2816	RRA	.2007	RC3 .0925	FAU	.08982	
FDE	-.2607	FRA	2.2035	FC3-6.8621	BSP	51716	
BDE	.8765	BRA	4.0464	BC318.9929	FSP	1747	

MID-COURSE EXECUTION ACCURACY

SGT14681.2	SGR	597.5	SG3	521.4			
RRT	.2697	RRF	.2369	RTF	.9677		
SGB14693.4	R23	-.0254	R13	.9677			
SG114682.1	SG2	575.4	THA	.63			

ORBIT DETERMINATION ACCURACY

ST	2578.0	SR	490.8	SS	612.2		
CRT	.7113	CRS	.1488	CST	-.5853		
LSA	2626.2	MSA	603.0	SSA	35.7		
EL1	2602.0	EL2	341.8	ALF	7.85		

LAUNCH DATE DEC 12 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 851.078 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.249 GAL -2.54 AZL 88.07 HCA 250.00 SMA 190.49 ECC .23090 INC 1.9342 V1 30.251
RP 206.75 LAP -1.82 LOP 330.00 VP 24.231 GAP -12.43 AZP 90.66 TAL 346.41 TAP 236.40 RCA 146.50 APO 234.47 V2 26.488
RC 330.190 GL 19.22 GP -4.13 ZAL 112.14 ZAP 29.74 ETS 171.54 ZAE 47.15 ETE 175.92 ZAC 83.55 ETC 256.28 CLP 29.48

PLANETOCENTRIC CONIC

C3 11.594 VHL 3.405 DLA 12.37 RAL 199.98 RAD 6567.4 VEL 11.532 PTH 2.01 VHP 5.762 DPA -2.26 RAP 178.37 ECC 1.1908

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 13	2486.46	-25.10	59.46	56.36	103.55	18 21 40	1886.5	-22.99	51.43
90.00	8 53 46	4341.91	4.60	179.91	52.59	62.03	10 6 8	3741.9	.83	173.27
100.00	19 7 54	2203.66	-26.12	38.38	56.07	105.09	19 44 38	1603.7	-23.79	30.35
100.00	10 8 46	4099.93	5.52	161.62	52.08	60.58	11 17 6	3499.9	1.56	155.07
110.00	20 30 28	1945.34	-28.79	17.83	55.14	109.28	21 2 53	1345.3	-25.89	9.85
110.00	11 2 42	3931.02	7.91	147.34	50.62	56.64	12 8 13	3331.0	3.46	141.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6969 TRA 4.2909 TC-18.7274 BAU 2.9028 SGT14787.2 SGR 597.2 SG3 496.1 ST 2537.6 SR 493.8 SS 624.9
RDE .2871 RRA .1987 RC3 .1156 FAU .08451 RRT .2369 RRF .2033 RTF .9665 CRT .6330 CRS .2247 CST -.6087
FDE -.3139 FRA 2.1891 FC3-6.3107 BSP 52158 SGB14799.2 R23 -.0268 R13 .9665 LSA 2585.1 MSA 624.5 SSA 34.9
BDE .7537 BRA 4.2955 BC318.7278 FSP 1669 SG114787.9 SG2 580.2 THA .55 EL1 2557.2 EL2 379.4 ALF 7.18

LAUNCH DATE DEC 12 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 855.422 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.257 GAL -2.73 AZL 88.09 HCA 251.27 SMA 190.63 ECC .23211 INC 1.9108 V1 30.251
RP 206.71 LAP -1.81 LOP 331.27 VP 24.246 GAP -12.53 AZP 90.61 TAL 345.42 TAP 236.69 RCA 146.39 APO 234.88 V2 26.492
RC 331.000 GL 18.74 GP -4.04 ZAL 113.88 ZAP 29.27 ETS 171.54 ZAE 46.37 ETE 175.91 ZAC 83.81 ETC 256.24 CLP 29.01

PLANETOCENTRIC CONIC

C3 11.885 VHL 3.447 DLA 11.26 RAL 201.37 RAD 6567.5 VEL 11.544 PTH 2.01 VHP 5.843 DPA -2.51 RAP 179.13 ECC 1.1956

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 55 6	2454.32	-24.57	57.26	57.75	104.53	18 36 0	1854.3	-22.33	49.30
90.00	8 50 1	4384.43	5.96	182.30	54.22	62.27	10 3 6	3784.4	2.20	175.64
100.00	19 22 7	2173.70	-25.57	36.32	57.45	106.04	19 58 20	1573.7	-23.12	28.37
100.00	10 5 42	4140.27	6.87	163.86	53.72	60.84	11 14 42	3540.3	2.93	157.29
110.00	20 43 11	1920.00	-28.21	16.09	56.49	110.16	21 15 11	1320.0	-25.20	8.21
110.00	11 1 7	3966.74	9.24	149.24	52.27	56.94	12 7 13	3366.7	4.82	142.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5627 TRA 4.5483 TC-18.4289 BAU 2.9282 SGT14890.7 SGR 597.4 SG3 471.4 ST 2523.2 SR 497.3 SS 637.2
RDE .2932 RRA .1963 RC3 .1365 FAU .07933 RRT .2049 RRF .1704 RTF .9652 CRT .5461 CRS .2917 CST -.6389
FDE -.3617 FRA 2.1703 FC3-5.7789 BSP 52590 SGB14902.7 R23 -.0283 R13 .9652 LSA 2570.4 MSA 641.5 SSA 34.0
BDE .6345 BRA 4.5525 BC318.4294 FSP 1592 SG114891.2 SG2 584.7 THA .47 EL1 2538.2 EL2 414.2 ALF 6.31

LAUNCH DATE DEC 12 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 859.761 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.265 GAL -2.93 AZL 88.11 HCA 252.54 SMA 190.78 ECC .23339 INC 1.8876 V1 30.251
RP 206.69 LAP -1.80 LOP 332.54 VP 24.260 GAP -12.64 AZP 90.57 TAL 344.42 TAP 236.96 RCA 146.25 APO 235.31 V2 26.494
RC 331.806 GL 18.25 GP -3.96 ZAL 115.62 ZAP 28.80 ETS 171.53 ZAE 45.61 ETE 175.90 ZAC 84.07 ETC 256.19 CLP 28.55

PLANETOCENTRIC CONIC

C3 12.206 VHL 3.494 DLA 10.15 RAL 202.76 RAD 6567.5 VEL 11.558 PTH 2.02 VHP 5.925 DPA -2.77 RAP 179.90 ECC 1.2009

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 41	2423.42	-24.03	55.16	59.18	105.45	18 50 4	1823.4	-21.68	47.28
90.00	8 46 30	4426.59	7.29	184.69	55.90	62.56	10 0 17	3826.6	3.55	178.00
100.00	19 36 3	2144.86	-25.01	34.36	58.86	106.93	20 11 48	1544.9	-22.46	26.49
100.00	10 2 49	4180.38	8.19	166.10	55.41	61.15	11 12 29	3580.4	4.28	159.49
110.00	20 55 43	1895.57	-27.62	14.43	57.86	110.99	21 27 18	1295.6	-24.51	6.64
110.00	10 59 39	4002.44	10.56	151.17	53.98	57.30	12 6 21	3402.4	6.17	144.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4281 TRA 4.8131 TC-18.0996 BAU 2.9538 SGT14991.5 SGR 598.1 SG3 447.2 ST 2534.5 SR 501.3 SS 648.2
RDE .2999 RRA .1935 RC3 .1553 FAU .07428 RRT .1738 RRF .1383 RTF .9637 CRT .4540 CRS .3506 CST -.6726
FDE -.4041 FRA 2.1474 FC3-5.2682 BSP 53019 SGB15003.4 R23 -.0299 R13 .9637 LSA 2582.2 MSA 653.2 SSA 33.1
BDE .5227 BRA 4.8170 BC318.1003 FSP 1519 SG114991.9 SG2 589.0 THA .40 EL1 2545.1 EL2 444.8 ALF 5.29

LAUNCH DATE DEC 12 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 864.095 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.274 GAL -3.13 AZL 88.14 HCA 253.81 SMA 190.93 ECC .23472 INC 1.8647 V1 30.251
RP 206.68 LAP -1.79 LOP 333.81 VP 24.273 GAP -12.74 AZP 90.52 TAL 343.41 TAP 237.22 RCA 146.11 APO 235.74 V2 26.496
RC 332.609 GL 17.76 GP -3.88 ZAL 117.35 ZAP 28.35 ETS 171.53 ZAE 44.85 ETE 175.89 ZAC 84.33 ETC 256.15 CLP 28.11

PLANETOCENTRIC CONIC

C3 12.560 VHL 3.544 DLA 9.06 RAL 204.13 RAD 6567.5 VEL 11.574 PTH 2.02 VHP 6.008 DPA -3.04 RAP 180.68 ECC 1.2067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 57	2393.74	-23.47	53.16	60.63	106.31	19 3 51	1793.7	-21.02	45.35
90.00	8 43 12	4468.42	8.59	187.07	57.62	62.91	9 57 40	3868.4	4.89	180.34
100.00	19 49 43	2117.13	-24.45	32.49	60.31	107.76	20 25 0	1517.1	-21.79	24.70
100.00	10 0 7	4220.27	9.49	168.34	57.14	61.52	11 10 27	3620.3	5.62	161.70
110.00	21 8 2	1872.05	-27.04	12.85	59.27	111.76	21 39 14	1272.1	-23.84	5.14
110.00	10 58 17	4038.11	11.86	153.11	55.73	57.70	12 5 36	3438.1	7.52	146.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2913 TRA 5.0860 TC-17.7456 BAU 2.9800 SGT15091.8 SGR 599.2 SG3 423.7 ST 2569.7 SR 505.7 SS 657.9
RDE .3074 RRA .1904 RC3 .1720 FAU .06935 RRT .1433 RRF .1068 RTF .9620 CRT .3588 CRS .4029 CST -.7073
FDE -.4422 FRA 2.1207 FC3-4.7803 BSP 53432 SGB15103.6 R23 -.0316 R13 .9620 LSA 2618.3 MSA 659.9 SSA 32.2
BDE .4235 BRA 5.0896 BC317.7465 FSP 1444 SG115092.0 SG2 593.0 THA .33 EL1 2576.3 EL2 470.8 ALF 4.18

LAUNCH DATE DEC 12 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 868.422 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.282	GAL	-3.34	AZL	88.16	HCA	255.07	SMA	191.08	ECC	.23612	INC	1.8422	V1	30.251
RP	206.67	LAP	-1.78	LOP	335.08	VP	24.285	GAP	-12.84	AZP	90.47	TAL	342.39	TAP	237.46	RCA	145.96	APO	236.19	V2	26.497
RC	333.409	GL	17.27	GP	-3.80	ZAL	119.07	ZAP	27.91	ETS	171.52	ZAE	44.10	ETE	175.87	ZAC	84.59	ETC	256.11	CLP	27.67

PLANETOCENTRIC CONIC

C3	12.948	VHL	3.598	DLA	7.97	RAL	205.50	RAD	6567.5	VEL	11.590	PTH	2.03	VHP	6.093	DPA	-3.32	RAP	181.47	ECC	1.2131		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 57	2365.26	-22.92	51.26	62.12	107.10	19 17 22	1765.3	-20.36	43.52
90.00	8 40 5	4509.94	9.87	189.45	59.40	63.32	9 55 15	3909.9	6.21	182.68
100.00	20 3 8	2090.50	-23.88	30.71	61.78	108.53	20 37 59	1490.5	-21.13	23.00
100.00	9 57 35	4259.94	10.77	170.59	58.92	61.95	11 8 35	3659.9	6.94	163.90
110.00	21 20 10	1849.47	-26.46	11.35	60.72	112.48	21 50 59	1249.5	-23.18	3.72
110.00	10 57 3	4073.73	13.15	155.06	57.52	58.16	12 4 56	3473.7	8.85	148.61

DIFFERENTIAL CORRECTIONS

TDE	.1547	TRA	5.3665	TC-17.3667	BAU	3.0064	
RDE	.3155	RRA	.1869	RC3 .1865	FAU	.06458	
FDE	-.4751	FRA	2.0902	FC3-4.3178	BSP	53854	
BDE	.3514	BRA	5.3697	BC317.3677	FSP	1374	

MID-COURSE EXECUTION ACCURACY

SGT15189.3	SGR	600.6	SG3	400.8			
RRT	.1139	RRF	.0764	RTF	.9600		
SGB15201.2	R23	-.0334	R13	.9600			
SG115189.4	SG2	596.7	THA	.26			

ORBIT DETERMINATION ACCURACY

ST	2627.1	SR	510.4	SS	665.4
CRT	.2652	CRS	.4488	CST	-.7404
LSA	2676.9	MSA	661.6	SSA	31.3
EL1	2630.7	EL2	491.5	ALF	3.06

LAUNCH DATE DEC 12 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 872.742 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.290	GAL	-3.55	AZL	88.18	HCA	256.34	SMA	191.23	ECC	.23758	INC	1.8199	V1	30.251		
RP	206.67	LAP	-1.77	LOP	336.35	VP	24.296	GAP	-12.95	AZP	90.43	TAL	341.35	TAP	237.69	RCA	145.79	APO	236.66	V2	26.497		
RC	334.204	GL	16.77	GP	-3.73	ZAL	120.78	ZAP	27.48	ETS	171.51	ZAE	43.36	ETE	175.86	ZAC	84.84	ETC	256.07	CLP	27.24		

PLANETOCENTRIC CONIC

C3	13.372	VHL	3.657	DLA	6.90	RAL	206.85	RAD	6567.5	VEL	11.609	PTH	2.03	VHP	6.179	DPA	-3.60	RAP	182.27	ECC	1.2201		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 40	2337.97	-22.36	49.45	63.64	107.84	19 30 38	1738.0	-19.71	41.78
90.00	8 37 8	4551.16	11.12	191.83	61.21	63.79	9 53 0	3951.2	7.51	185.02
100.00	20 16 18	2064.98	-23.32	29.03	63.29	109.25	20 50 43	1465.0	-20.48	21.38
100.00	9 55 11	4299.37	12.02	172.85	60.74	62.43	11 6 51	3699.4	8.24	166.11
110.00	21 32 5	1827.84	-25.89	9.93	62.19	113.15	22 2 33	1227.8	-22.53	2.38
110.00	10 55 54	4109.28	14.42	157.04	59.36	58.67	12 4 23	3509.3	10.17	150.52

DIFFERENTIAL CORRECTIONS

TDE	.0184	TRA	5.6561	TC-16.9643	BAU	3.0329	
RDE	.3243	RRA	.1830	RC3 .1991	FAU	.05991	
FDE	-.5035	FRA	2.0553	FC3-3.8788	BSP	54264	
BDE	.3248	BRA	5.6591	BC316.9655	FSP	1304	

MID-COURSE EXECUTION ACCURACY

SGT15284.6	SGR	602.4	SG3	378.5			
RRT	.0854	RRF	.0466	RTF	.9577		
SGB15296.5	R23	-.0355	R13	.9577			
SG115284.7	SG2	600.1	THA	.19			

ORBIT DETERMINATION ACCURACY

ST	2704.0	SR	515.5	SS	670.4
CRT	.1758	CRS	.4897	CST	-.7702
LSA	2755.1	MSA	659.6	SSA	30.3
EL1	2705.5	EL2	507.2	ALF	1.99

LAUNCH DATE DEC 12 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 877.054 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.298	GAL	-3.76	AZL	88.20	HCA	257.61	SMA	191.37	ECC	.23911	INC	1.7979	V1	30.251		
RP	206.68	LAP	-1.76	LOP	337.62	VP	24.305	GAP	-13.06	AZP	90.39	TAL	340.30	TAP	237.92	RCA	145.62	APO	237.13	V2	26.495		
RC	334.996	GL	16.28	GP	-3.66	ZAL	122.47	ZAP	27.06	ETS	171.50	ZAE	42.63	ETE	175.84	ZAC	85.10	ETC	256.03	CLP	26.83		

PLANETOCENTRIC CONIC

C3	13.833	VHL	3.719	DLA	5.84	RAL	208.19	RAD	6567.5	VEL	11.628	PTH	2.04	VHP	6.266	DPA	-3.89	RAP	183.08	ECC	1.2277		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 7	2311.85	-21.80	47.74	65.19	108.53	19 43 39	1711.9	-19.07	40.13
90.00	8 34 22	4592.07	12.34	194.22	63.08	64.31	9 50 54	3992.1	8.78	187.35
100.00	20 29 14	2040.57	-22.76	27.43	64.83	109.91	21 3 14	1440.6	-19.84	19.85
100.00	9 52 56	4338.58	13.25	175.12	62.61	62.96	11 5 15	3738.6	9.52	168.32
110.00	21 43 48	1807.18	-25.33	8.58	63.70	113.76	22 13 55	1207.2	-21.90	1.11
110.00	10 54 51	4144.74	15.67	159.03	61.23	59.22	12 3 56	3544.7	11.47	152.44

DIFFERENTIAL CORRECTIONS

TDE	-.1198	TRA	5.9525	TC-16.5475	BAU	3.0605	
RDE	.3337	RRA	.1787	RC3 .2098	FAU	.05537	
FDE	-.5285	FRA	2.0161	FC3-3.4650	BSP	54630	
BDE	.3545	BRA	5.9552	BC316.5488	FSP	1233	

MID-COURSE EXECUTION ACCURACY

SGT15378.9	SGR	604.3	SG3	356.8			
RRT	.0576	RRF	.0174	RTF	.9551		
SGB15390.8	R23	-.0378	R13	.9551			
SG115378.9	SG2	603.3	THA	.13			

ORBIT DETERMINATION ACCURACY

ST	2795.9	SR	520.7	SS	673.2
CRT	.0914	CRS	.5268	CST	-.7964
LSA	2848.1	MSA	654.9	SSA	29.4
EL1	2796.4	EL2	518.5	ALF	1.01

LAUNCH DATE DEC 12 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 881.358 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.306	GAL	-3.98	AZL	88.22	HCA	258.88	SMA	191.53	ECC	.24071	INC	1.7760	V1	30.251		
RP	206.70	LAP	-1.74	LOP	338.89	VP	24.314	GAP	-13.18	AZP	90.34	TAL	339.24	TAP	238.12	RCA	145.42	APO	237.63	V2	26.493		
RC	335.784	GL	15.78	GP	-3.59	ZAL	124.14	ZAP	26.65	ETS	171.49	ZAE	41.92	ETE	175.82	ZAC	85.35	ETC	256.00	CLP	26.42		

PLANETOCENTRIC CONIC

C3	14.334	VHL	3.786	DLA	4.80	RAL	209.51	RAD	6567.6	VEL	11.650	PTH	2.05	VHP	6.355	DPA	-4.19	RAP	183.89	ECC	1.2359		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 18	2286.91	-21.26	46.12	66.76	109.16	19 56 25	1686.9	-18.45	38.57
90.00	8 31 44	4632.68	13.52	196.61	64.98	64.88	9 48 57	4032.7	10.03	189.68
100.00	20 41 54	2017.26	-22.22	25.91	66.39	110.53	21 15 31	1417.3	-19.22	18.40
100.00	9 50 49	4377.56	14.44	177.40	64.52	63.54	11 3 47	3777.6	10.77	170.53
110.00	21 55 19	1787.49	-24.78	7.31	65.24	114.34	22 25 6	1187.5	-21.28	359.91
110.00	10 53 54	4180.09	16.89	161.04	63.15	59.83	12 3 34	3580.1	12.75	154.37

DIFFERENTIAL CORRECTIONS

TDE	-.2581	TRA	6.2577	TC-16.1149	BAU	3.0885	
RDE	.3437	RRA	.1740	RC3 .2187	FAU	.05093	
FDE	-.5487	FRA	1.9732	FC3-3.0762	BSP	55002	
BDE	.4298	BRA	6.2601	BC316.1164	FSP	1166	

MID-COURSE EXECUTION ACCURACY

SGT15471.4	SGR	606.5	SG3	335.7			
RRT	.0307	RRF	-.0109	RTF	.9520		
SGB15483.2	R23	-.0402	R13	.9520			
SG115471.4	SG2	606.2	THA	.07			

ORBIT DETERMINATION ACCURACY

ST	2900.8	SR	526.2	SS	673.0
CRT	.0138	CRS	.5597	CST	-.8192
LSA	2953.6	MSA	647.9	SSA	28.6
EL1	2900.8	EL2	526.2	ALF	.15

LAUNCH DATE DEC 12 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 885.653 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.314 GAL -4.21 AZL 88.25 HCA 260.15 SMA 191.68 ECC .24238 INC 1.7544 V1 30.251
RP 206.73 LAP -1.73 LOP 340.16 VP 24.322 GAP -13.30 AZP 90.30 TAL 338.17 TAP 238.32 RCA 145.22 APO 238.14 V2 26.490
RC 336.567 GL 15.29 GP -3.52 ZAL 125.78 ZAP 26.25 ETS 171.48 ZAE 41.21 ETE 175.80 ZAC 85.61 ETC 255.97 CLP 26.03

PLANETOCENTRIC CONIC

C3 14.877 VHL 3.857 DLA 3.77 RAL 210.82 RAD 6567.6 VEL 11.673 PTH 2.05 VHP 6.445 DPA -4.50 RAP 184.71 ECC 1.2448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 13	2263.12	-20.72	44.58	68.37	109.75	20 8 56	1663.1	-17.84	37.09
90.00	8 29 15	4673.00	14.68	199.01	66.92	65.51	9 47 8	4073.0	11.25	192.01
100.00	20 54 20	1995.06	-21.68	24.48	67.98	111.10	21 27 35	1395.1	-18.62	17.02
100.00	9 48 49	4416.29	15.61	179.68	66.47	64.18	11 2 26	3816.3	12.01	172.74
110.00	22 6 37	1768.79	-24.25	6.12	66.80	114.86	22 36 6	1168.8	-20.69	358.78
110.00	10 53 1	4215.32	18.08	163.08	65.12	60.48	12 3 17	3615.3	14.01	156.32

DIFFERENTIAL CORRECTIONS
TDE -.3966 TRA 6.5705 TC-15.6720 BAU 3.1174
RDE .3544 RRA .1689 RC3 .2259 FAU .04661
FDE -.5651 FRA 1.9257 FC3-2.7124 BSP 55349
BDE .5319 BRA 6.5726 BC315.6736 FSP 1098

MID-COURSE EXECUTION ACCURACY
SGT15562.2 SGR 608.9 SG3 315.1
RRT .0045 RRF -.0386 RTF .9485
SGB15574.1 R23 -.0429 R13 .9485
SG115562.2 SG2 608.9 THA .01

ORBIT DETERMINATION ACCURACY
ST 3014.9 SR 531.9 SS 670.1
CRT -.0565 CRS .5896 CST -.8381
LSA 3067.8 MSA 639.8 SSA 27.7
EL1 3015.0 EL2 531.0 ALF 179.41

LAUNCH DATE DEC 12 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 889.938 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.323 GAL -4.44 AZL 88.27 HCA 261.42 SMA 191.83 ECC .24413 INC 1.7329 V1 30.251
RP 206.77 LAP -1.71 LOP 341.43 VP 24.328 GAP -13.42 AZP 90.26 TAL 337.08 TAP 238.50 RCA 145.00 APO 238.66 V2 26.485
RC 337.346 GL 14.80 GP -3.46 ZAL 127.41 ZAP 25.86 ETS 171.46 ZAE 40.51 ETE 175.78 ZAC 85.86 ETC 255.94 CLP 25.64

PLANETOCENTRIC CONIC

C3 15.464 VHL 3.932 DLA 2.77 RAL 212.11 RAD 6567.6 VEL 11.698 PTH 2.06 VHP 6.536 DPA -4.81 RAP 185.54 ECC 1.2545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 53	2240.47	-20.19	43.13	70.00	110.29	20 21 14	1640.5	-17.24	35.69
90.00	8 26 53	4713.01	15.79	201.42	68.91	66.19	9 45 26	4113.0	12.44	194.35
100.00	21 6 31	1973.94	-21.16	23.13	69.60	111.63	21 39 25	1373.9	-18.03	15.73
100.00	9 46 56	4454.77	16.73	181.99	68.46	64.86	11 1 11	3854.8	13.21	174.97
110.00	22 17 43	1751.08	-23.74	5.00	68.39	115.35	22 46 55	1151.1	-20.13	357.72
110.00	10 52 14	4250.39	19.24	165.13	67.12	61.19	12 3 4	3650.4	15.25	158.29

DIFFERENTIAL CORRECTIONS
TDE -.5341 TRA 6.8918 TC-15.2191 BAU 3.1468
RDE .3657 RRA .1634 RC3 .2315 FAU .04238
FDE -.5771 FRA 1.8749 FC3-2.3728 BSP 55691
BDE .6473 BRA 6.8937 BC315.2209 FSP 1033

MID-COURSE EXECUTION ACCURACY
SGT15650.6 SGR 611.4 SG3 295.1
RRT -.0206 RRF -.0650 RTF .9443
SGB15662.6 R23 .0455 R13 -.9443
SG115650.6 SG2 611.3 THA 179.95

ORBIT DETERMINATION ACCURACY
ST 3135.3 SR 537.6 SS 664.2
CRT -.1192 CRS .6162 CST -.8539
LSA 3187.7 MSA 631.1 SSA 26.9
EL1 3136.0 EL2 533.7 ALF 178.79

LAUNCH DATE DEC 12 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 894.211 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.331 GAL -4.67 AZL 88.29 HCA 262.69 SMA 191.98 ECC .24596 INC 1.7116 V1 30.251
RP 206.81 LAP -1.70 LOP 342.69 VP 24.334 GAP -13.54 AZP 90.22 TAL 335.99 TAP 238.67 RCA 144.76 APO 239.20 V2 26.480
RC 338.120 GL 14.32 GP -3.40 ZAL 129.02 ZAP 25.48 ETS 171.45 ZAE 39.82 ETE 175.76 ZAC 86.12 ETC 255.91 CLP 25.27

PLANETOCENTRIC CONIC

C3 16.098 VHL 4.012 DLA 1.78 RAL 213.38 RAD 6567.6 VEL 11.725 PTH 2.07 VHP 6.629 DPA -5.13 RAP 186.38 ECC 1.2649

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 18	2218.97	-19.67	41.76	71.65	110.79	20 33 17	1619.0	-16.67	34.37
90.00	8 24 39	4752.71	16.87	203.84	70.93	66.91	9 43 51	4152.7	13.60	196.69
100.00	21 18 29	1953.92	-20.65	21.86	71.25	112.11	21 51 3	1353.9	-17.47	14.51
100.00	9 45 10	4492.99	17.82	184.30	70.49	65.60	11 0 3	3893.0	14.38	177.20
110.00	22 28 37	1734.37	-23.25	3.95	70.00	115.80	22 57 32	1134.4	-19.59	356.72
110.00	10 51 30	4285.30	20.38	167.21	69.16	61.94	12 2 56	3685.3	16.46	160.27

DIFFERENTIAL CORRECTIONS
TDE -.6719 TRA 7.2224 TC-14.7604 BAU 3.1771
RDE .3775 RRA .1575 RC3 .2356 FAU .03828
FDE -.5862 FRA 1.8191 FC3-2.0589 BSP 56008
BDE .7707 BRA 7.2242 BC314.7623 FSP 969

MID-COURSE EXECUTION ACCURACY
SGT15738.2 SGR 614.0 SG3 275.7
RRT -.0450 RRF -.0913 RTF .9395
SGB15750.1 R23 .0490 R13 -.9395
SG115738.2 SG2 613.4 THA 179.90

ORBIT DETERMINATION ACCURACY
ST 3260.4 SR 543.4 SS 655.9
CRT -.1752 CRS .6412 CST -.8664
LSA 3311.7 MSA 622.5 SSA 26.1
EL1 3261.8 EL2 534.7 ALF 178.28

LAUNCH DATE DEC 12 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 898.474 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.339 GAL -4.91 AZL 88.31 HCA 263.95 SMA 192.13 ECC .24786 INC 1.6904 V1 30.251
RP 206.87 LAP -1.68 LOP 343.96 VP 24.338 GAP -13.67 AZP 90.18 TAL 334.88 TAP 238.83 RCA 144.51 APO 239.76 V2 26.474
RC 338.890 GL 13.84 GP -3.34 ZAL 130.59 ZAP 25.11 ETS 171.43 ZAE 39.14 ETE 175.74 ZAC 86.37 ETC 255.89 CLP 24.90

PLANETOCENTRIC CONIC

C3 16.781 VHL 4.096 DLA .82 RAL 214.64 RAD 6567.7 VEL 11.754 PTH 2.07 VHP 6.724 DPA -5.45 RAP 187.22 ECC 1.2762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 29	2198.58	-19.18	40.47	73.33	111.24	20 45 7	1598.6	-16.12	33.13
90.00	8 22 31	4792.09	17.90	206.27	72.99	67.69	9 42 23	4192.1	14.72	199.03
100.00	21 30 12	1934.98	-20.16	20.67	72.91	112.55	22 2 27	1335.0	-16.93	13.36
100.00	9 43 29	4530.93	18.87	186.63	72.55	66.38	10 59 0	3930.9	15.52	179.44
110.00	22 39 19	1718.64	-22.78	2.97	71.63	116.20	23 7 57	1118.6	-19.07	355.79
110.00	10 50 52	4320.02	21.47	169.30	71.24	62.74	12 2 52	3720.0	17.65	162.26

DIFFERENTIAL CORRECTIONS
TDE -.8093 TRA 7.5603 TC-14.2985 BAU 3.2082
RDE .3900 RRA .1511 RC3 .2384 FAU .03424
FDE -.5919 FRA 1.7595 FC3-1.7667 BSP 56310
BDE .8983 BRA 7.5618 BC314.3005 FSP 905

MID-COURSE EXECUTION ACCURACY
SGT15822.5 SGR 616.7 SG3 256.9
RRT -.0687 RRF -.1167 RTF .9337
SGB15834.5 R23 .0526 R13 -.9337
SG115822.6 SG2 615.3 THA 179.85

ORBIT DETERMINATION ACCURACY
ST 3386.8 SR 549.1 SS 645.0
CRT -.2249 CRS .6643 CST -.8763
LSA 3436.6 MSA 614.1 SSA 25.4
EL1 3389.1 EL2 534.7 ALF 177.86

LAUNCH DATE DEC 12 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 902.723 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.347 GAL -5.16 AZL 88.33 HCA 265.22 SMA 192.29 ECC .24986 INC 1.6693 V1 30.251
RP 206.93 LAP -1.66 LOP 345.23 VP 24.342 GAP -13.81 AZP 90.14 TAL 333.76 TAP 238.98 RCA 144.24 APO 240.33 V2 26.466
RC 339.657 GL 13.37 GP -3.29 ZAL 132.15 ZAP 24.75 ETS 171.42 ZAE 38.47 ETE 175.71 ZAC 86.63 ETC 255.87 CLP 24.54

PLANETOCENTRIC CONIC

C3 17.516 VHL 4.185 DLA -.13 RAL 215.89 RAD 6567.7 VEL 11.786 PTH 2.08 VHP 6.820 DPA -5.78 RAP 188.08 ECC 1.2883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 20 25	2179.30	-18.70	39.26	75.03	111.66	20 56 44	1579.3	-15.59	31.96
90.00	8 20 30	4831.16	18.89	208.70	75.08	68.51	9 41 1	4231.2	15.81	201.39
100.00	21 41 42	1917.10	-19.69	19.55	74.60	112.96	22 13 39	1317.1	-16.41	12.29
100.00	9 41 54	4568.58	19.88	188.97	74.66	67.21	10 58 3	3968.6	16.63	181.69
110.00	22 49 48	1703.91	-22.33	2.06	73.29	116.58	23 18 12	1103.9	-18.58	354.93
110.00	10 50 17	4354.54	22.53	171.42	73.35	63.59	12 2 51	3754.5	18.80	164.27

DIFFERENTIAL CORRECTIONS
TDE -.9464 TRA 7.9072 TC-13.8365 BAU 3.2405
RDE .4030 RRA .1443 RC3 .2400 FAU .03033
FDE -.5943 FRA 1.6960 FC3-1.4992 BSP 56568
BDE 1.0286 BRA 7.9085 BC313.8385 FSP 842

MID-COURSE EXECUTION ACCURACY
SGT15905.8 SGR 619.5 SG3 238.6
RRT -.0915 RRF -.1415 RTF .9270
SGB15917.8 R23 .0567 R13 -.9270
SG115905.9 SG2 616.9 THA 179.80

ORBIT DETERMINATION ACCURACY
ST 3513.7 SR 554.9 SS 631.6
CRT -.2689 CRS .6857 CST -.8841
LSA 3561.6 MSA 606.0 SSA 24.7
EL1 3516.9 EL2 533.9 ALF 177.51

LAUNCH DATE DEC 12 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 906.959 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.356 GAL -5.41 AZL 88.35 HCA 266.48 SMA 192.44 ECC .25194 INC 1.6484 V1 30.251
RP 207.00 LAP -1.65 LOP 346.50 VP 24.344 GAP -13.95 AZP 90.10 TAL 332.63 TAP 239.11 RCA 143.96 APO 240.93 V2 26.458
RC 340.420 GL 12.90 GP -3.23 ZAL 133.67 ZAP 24.40 ETS 171.40 ZAE 37.81 ETE 175.68 ZAC 86.88 ETC 255.85 CLP 24.20

PLANETOCENTRIC CONIC

C3 18.305 VHL 4.278 DLA -1.05 RAL 217.11 RAD 6567.7 VEL 11.819 PTH 2.09 VHP 6.918 DPA -6.11 RAP 188.94 ECC 1.3013

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 32 6	2161.10	-18.24	38.12	76.75	112.05	21 8 7	1561.1	-15.09	30.86
90.00	8 18 35	4869.89	19.84	211.15	77.21	69.37	9 39 45	4269.9	16.86	203.75
100.00	21 52 57	1900.28	-19.24	18.50	76.31	113.33	22 24 38	1300.3	-15.92	11.28
100.00	9 40 25	4605.94	20.85	191.32	76.79	68.08	10 57 10	4005.9	17.69	183.95
110.00	23 0 5	1690.15	-21.91	1.21	74.97	116.92	23 28 15	1090.1	-18.12	354.13
110.00	10 49 46	4388.84	23.56	173.56	75.51	64.48	12 2 55	3788.8	19.93	166.30

DIFFERENTIAL CORRECTIONS
TDE-1.0828 TRA 8.2631 TC-13.3770 BAU 3.2742
RDE .4165 RRA .1371 RC3 .2404 FAU .02650
FDE -.5932 FRA 1.6281 FC3-1.2532 BSP 56833
BDE 1.1601 BRA 8.2642 BC313.3792 FSP 781

MID-COURSE EXECUTION ACCURACY
SGT15988.0 SGR 622.2 SG3 220.9
RRT -.1137 RRF -.1654 RTF .9189
SGB16000.1 R23 .0612 R13 -.9189
SG115988.2 SG2 618.2 THA 179.75

ORBIT DETERMINATION ACCURACY
ST 3639.3 SR 560.5 SS 615.5
CRT -.3078 CRS .7057 CST -.8900
LSA 3685.0 MSA 598.3 SSA 24.0
EL1 3643.5 EL2 532.7 ALF 177.23

LAUNCH DATE DEC 12 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 911.180 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.364 GAL -5.66 AZL 88.37 HCA 267.75 SMA 192.60 ECC .25411 INC 1.6274 V1 30.251
RP 207.08 LAP -1.63 LOP 347.76 VP 24.345 GAP -14.09 AZP 90.06 TAL 331.48 TAP 239.23 RCA 143.66 APO 241.54 V2 26.449
RC 341.179 GL 12.44 GP -3.18 ZAL 135.17 ZAP 24.06 ETS 171.38 ZAE 37.16 ETE 175.65 ZAC 87.13 ETC 255.84 CLP 23.86

PLANETOCENTRIC CONIC

C3 19.152 VHL 4.376 DLA -1.94 RAL 218.32 RAD 6567.8 VEL 11.855 PTH 2.10 VHP 7.018 DPA -6.45 RAP 189.80 ECC 1.3152

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 43 34	2143.97	-17.79	37.06	78.49	112.40	21 19 18	1544.0	-14.60	29.84
90.00	8 16 45	4908.29	20.74	213.61	79.37	70.28	9 38 34	4308.3	17.87	206.11
100.00	22 4 0	1884.49	-18.81	17.53	78.03	113.67	22 35 25	1284.5	-15.45	10.34
100.00	9 39 0	4643.00	21.77	193.69	78.96	69.00	10 56 23	4043.0	18.73	186.22
110.00	23 10 10	1677.35	-21.51	.43	76.66	117.23	23 38 8	1077.4	-17.69	353.38
110.00	10 49 19	4422.91	24.54	175.72	77.70	65.42	12 3 2	3822.9	21.01	168.34

DIFFERENTIAL CORRECTIONS
TDE-1.2187 TRA 8.6276 TC-12.9193 BAU 3.3085
RDE .4306 RRA .1295 RC3 .2399 FAU .02274
FDE -.5897 FRA 1.5559 FC3-1.0278 BSP 57054
BDE 1.2925 BRA 8.6286 BC312.9215 FSP 720

MID-COURSE EXECUTION ACCURACY
SGT16066.9 SGR 625.0 SG3 203.7
RRT -.1351 RRF -.1889 RTF .9091
SGB16079.0 R23 .0665 R13 -.9091
SG116067.1 SG2 619.3 THA 179.70

ORBIT DETERMINATION ACCURACY
ST 3762.5 SR 566.0 SS 597.4
CRT -.3423 CRS .7249 CST -.8940
LSA 3805.8 MSA 591.3 SSA 23.4
EL1 3767.6 EL2 531.1 ALF 176.99

LAUNCH DATE DEC 12 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 7 1966

HELIOCENTRIC CONIC DISTANCE 915.386 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.372 GAL -5.93 AZL 88.39 HCA 269.01 SMA 192.76 ECC .25637 INC 1.6066 V1 30.251
RP 207.17 LAP -1.61 LOP 349.02 VP 24.345 GAP -14.24 AZP 90.03 TAL 330.33 TAP 239.34 RCA 143.34 APO 242.17 V2 26.438
RC 341.936 GL 11.99 GP -3.13 ZAL 136.64 ZAP 23.73 ETS 171.36 ZAE 36.51 ETE 175.62 ZAC 87.39 ETC 255.83 CLP 23.53

PLANETOCENTRIC CONIC

C3 20.061 VHL 4.479 DLA -2.81 RAL 219.51 RAD 6567.8 VEL 11.893 PTH 2.11 VHP 7.120 DPA -6.79 RAP 190.68 ECC 1.3301

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 54 48	2127.89	-17.37	36.07	80.24	112.72	21 30 15	1527.9	-14.15	28.88
90.00	8 15 1	4946.35	21.60	216.07	81.56	71.23	9 37 28	4346.3	18.84	208.49
100.00	22 14 49	1869.73	-18.40	16.62	79.77	113.98	22 45 59	1269.7	-15.01	9.47
100.00	9 37 40	4679.75	22.65	196.06	81.16	69.96	10 55 40	4079.7	19.72	188.50
110.00	23 20 4	1665.51	-21.14	359.71	78.37	117.51	23 47 49	1065.5	-17.29	352.70
110.00	10 48 56	4456.73	25.48	177.89	79.92	66.40	12 3 12	3856.7	22.07	170.40

DIFFERENTIAL CORRECTIONS
TDE-1.3530 TRA 9.0016 TC-12.4672 BAU 3.3442
RDE .4451 RRA .1214 RC3 .2385 FAU .01906
FDE -.5831 FRA 1.4800 FC3 -.8224 BSP 57272
BDE 1.4244 BRA 9.0024 BC312.4695 FSP 662

MID-COURSE EXECUTION ACCURACY
SGT16144.2 SGR 627.7 SG3 187.2
RRT -.1558 RRF -.2114 RTF .8971
SGB16156.4 R23 .0723 R13 -.8971
SG116144.5 SG2 620.1 THA 179.65

ORBIT DETERMINATION ACCURACY
ST 3882.1 SR 571.4 SS 577.2
CRT -.3726 CRS .7431 CST -.8965
LSA 3922.7 MSA 584.8 SSA 22.8
EL1 3888.0 EL2 529.4 ALF 176.80

LAUNCH DATE DEC 12 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 9 1966

HELIOCENTRIC CONIC DISTANCE 919.575 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.381 GAL -6.19 AZL 88.41 HCA 270.28 SMA 192.91 ECC .25874 INC 1.5858 V1 30.251
RP 207.27 LAP -1.59 LOP 350.29 VP 24.345 GAP -14.39 AZP 89.99 TAL 329.16 TAP 239.44 RCA 143.00 APO 242.83 V2 26.427
RC 342.690 GL 11.55 GP -3.09 ZAL 138.08 ZAP 23.40 ETS 171.35 ZAE 35.88 ETE 175.59 ZAC 87.64 ETC 255.82 CLP 23.21

PLANETOCENTRIC CONIC

C3 21.033 VHL 4.586 DLA -3.66 RAL 220.68 RAD 6567.9 VEL 11.934 PTH 2.12 VHP 7.223 DPA -7.14 RAP 191.56 ECC 1.3462

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 5 48	2112.83	-16.98	35.14	82.01	113.01	21 41 1	1512.8	-13.72	27.98
90.00	8 13 22	4984.06	22.40	218.54	83.77	72.21	9 36 26	4384.1	19.76	210.87
100.00	22 25 26	1855.95	-18.02	15.77	81.53	114.26	22 56 22	1256.0	-14.59	8.66
100.00	9 36 26	4716.17	23.48	198.45	83.38	70.95	10 55 2	4116.2	20.67	190.79
110.00	23 29 45	1654.60	-20.80	359.05	80.09	117.76	23 57 19	1054.6	-16.92	352.07
110.00	10 48 36	4490.28	26.37	180.09	82.17	67.42	12 3 26	3890.3	23.08	172.48

DIFFERENTIAL CORRECTIONS
TDE-1.4879 TRA 9.3843 TC-12.0247 BAU 3.3820
RDE .4602 RRA .1129 RC3 .2363 FAU .01546
FDE -.5743 FRA 1.3995 FC3 -.6364 BSP 57425
BDE 1.5575 BRA 9.3849 BC312.0270 FSP 603

MID-COURSE EXECUTION ACCURACY
SGT16220.9 SGR 630.5 SG3 171.2
RRT -.1759 RRF -.2333 RTF .8823
SGB16233.1 R23 .0791 R13 -.8823
SG116221.3 SG2 620.6 THA 179.61

ORBIT DETERMINATION ACCURACY
ST 3998.2 SR 576.5 SS 555.2
CRT -.3998 CRS .7611 CST -.8974
LSA 4036.2 MSA 578.8 SSA 22.3
EL1 4005.0 EL2 527.6 ALF 176.64

LAUNCH DATE DEC 12 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 11 1966

HELIOCENTRIC CONIC DISTANCE 923.745 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.389 GAL -6.47 AZL 88.44 HCA 271.54 SMA 193.07 ECC .26120 INC 1.5649 V1 30.251
RP 207.37 LAP -1.56 LOP 351.55 VP 24.343 GAP -14.55 AZP 89.96 TAL 327.98 TAP 239.52 RCA 142.64 APO 243.50 V2 26.415
RC 343.441 GL 11.12 GP -3.04 ZAL 139.49 ZAP 23.09 ETS 171.33 ZAE 35.26 ETE 175.55 ZAC 87.89 ETC 255.82 CLP 22.90

PLANETOCENTRIC CONIC

C3 22.074 VHL 4.698 DLA -4.48 RAL 221.84 RAD 6567.9 VEL 11.977 PTH 2.13 VHP 7.329 DPA -7.49 RAP 192.45 ECC 1.3633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 16 35	2098.76	-16.60	34.28	83.80	113.27	21 51 34	1498.8	-13.31	27.15
90.00	8 11 48	5021.42	23.16	221.02	86.01	73.23	9 35 30	4421.4	20.64	213.25
100.00	22 35 50	1843.15	-17.66	14.99	83.30	114.52	23 6 33	1243.2	-14.20	7.91
100.00	9 35 15	4752.26	24.26	200.85	85.64	71.98	10 54 27	4152.3	21.57	193.08
110.00	23 39 15	1644.61	-20.48	358.45	81.83	117.98	24 6 39	1044.6	-16.58	351.50
110.00	10 48 19	4523.57	27.22	182.30	84.45	68.48	12 3 43	3923.6	24.06	174.57

DIFFERENTIAL CORRECTIONS
TDE-1.6204 TRA 9.7766 TC-11.5884 BAU 3.4206
RDE .4758 RRA .1039 RC3 .2333 FAU .01193
FDE -.5623 FRA 1.3152 FC3 -.4678 BSP 57576
BDE 1.6888 BRA 9.7772 BC311.5908 FSP 546

MID-COURSE EXECUTION ACCURACY
SGT16294.2 SGR 633.1 SG3 155.8
RRT -.1952 RRF -.2538 RTF .8638
SGB16306.5 R23 .0866 R13 -.8639
SG116294.7 SG2 620.9 THA 179.56

ORBIT DETERMINATION ACCURACY
ST 4108.9 SR 581.5 SS 531.1
CRT -.4235 CRS .7783 CST -.8970
LSA 4144.2 MSA 573.3 SSA 21.7
EL1 4116.4 EL2 525.8 ALF 176.51

LAUNCH DATE DEC 12 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 13 1966

HELIOCENTRIC CONIC DISTANCE 927.897 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.398 GAL -6.75 AZL 88.46 HCA 272.80 SMA 193.23 ECC .26377 INC 1.5441 V1 30.251
RP 207.48 LAP -1.54 LOP 352.81 VP 24.340 GAP -14.71 AZP 89.92 TAL 326.80 TAP 239.59 RCA 142.26 APO 244.20 V2 26.402
RC 344.188 GL 10.70 GP -3.00 ZAL 140.87 ZAP 22.79 ETS 171.31 ZAE 34.64 ETE 175.52 ZAC 88.14 ETC 255.82 CLP 22.60

PLANETOCENTRIC CONIC

C3 23.187 VHL 4.815 DLA -5.28 RAL 222.98 RAD 6567.9 VEL 12.024 PTH 2.15 VHP 7.436 DPA -7.85 RAP 193.35 ECC 1.3816

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 27 10	2085.66	-16.25	33.48	85.59	113.52	22 1 55	1485.7	-12.93	26.37
90.00	8 10 19	5058.42	23.86	223.50	88.28	74.29	9 34 37	4458.4	21.48	215.64
100.00	22 46 1	1831.30	-17.32	14.27	85.09	114.75	23 16 32	1231.3	-13.84	7.21
100.00	9 34 9	4788.02	24.99	203.25	87.91	73.05	10 53 57	4188.0	22.44	195.39
110.00	23 48 33	1635.51	-20.19	357.91	83.58	118.19	24 15 48	1035.5	-16.26	350.98
110.00	10 48 6	4556.57	28.03	184.53	86.77	69.58	12 4 3	3956.6	24.99	176.68

DIFFERENTIAL CORRECTIONS
TDE-1.7515 TRA10.1791 TC-11.1601 BAU 3.4603
RDE .4917 RRA .0945 RC3 .2298 FAU .00845
FDE -.5483 FRA 1.2264 FC3 -.3155 BSP 57712
BDE 1.8192 BRA10.1796 BC311.1625 FSP 490

MID-COURSE EXECUTION ACCURACY
SGT16364.9 SGR 635.7 SG3 141.1
RRT -.2139 RRF -.2731 RTF .8403
SGB16377.2 R23 .0954 R13 -.8403
SG116365.5 SG2 621.0 THA 179.52

ORBIT DETERMINATION ACCURACY
ST 4214.6 SR 586.1 SS 505.5
CRT -.4444 CRS .7956 CST -.8947
LSA 4247.2 MSA 568.3 SSA 21.2
EL1 4222.7 EL2 524.0 ALF 176.41

LAUNCH DATE DEC 12 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 15 1966

HELIOCENTRIC CONIC DISTANCE 932.028 EARTH TO MARS

RL 147.28 LAL .00 LOL 80.01 VL 33.406 GAL -7.04 AZL 88.48 HCA 274.06 SMA 193.39 ECC .26645 INC 1.5233 V1 30.251
RP 207.61 LAP -1.52 LOP 354.07 VP 24.336 GAP -14.88 AZP 89.89 TAL 325.60 TAP 239.65 RCA 141.86 APO 244.91 V2 26.387
RC 344.932 GL 10.28 GP -2.95 ZAL 142.23 ZAP 22.49 ETS 171.29 ZAE 34.03 ETE 175.48 ZAC 88.40 ETC 255.83 CLP 22.31

PLANETOCENTRIC CONIC

C3 24.376 VHL 4.937 DLA -6.06 RAL 224.10 RAD 6568.0 VEL 12.073 PTH 2.16 VHP 7.546 DPA -8.21 RAP 194.26 ECC 1.4012

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 37 32	2073.50	-15.91	32.74	87.40	113.73	22 12 5	1473.5	-12.57	25.66
90.00	8 8 54	5095.06	24.52	225.99	90.56	75.37	9 33 49	4495.1	22.27	218.04
100.00	22 56 0	1820.36	-17.01	13.61	86.89	114.96	23 26 20	1220.4	-13.50	6.57
100.00	9 33 7	4823.43	25.68	205.66	90.21	74.14	10 53 30	4223.4	23.25	197.70
110.00	0 1 36	1627.28	-19.92	357.42	85.34	118.37	0 28 43	1027.3	-15.98	350.52
110.00	10 47 56	4589.27	28.79	186.78	89.11	70.71	12 4 25	3989.3	25.88	178.80

DIFFERENTIAL CORRECTIONS
TDE-1.8825 TRA10.5896 TC-10.7455 BAU 3.5026
RDE .5082 RRA .0847 RC3 .2258 FAU .00505
FDE -.5320 FRA 1.1332 FC3 -.1792 BSP 57806
BDE 1.9499 BRA10.5899 BC310.7479 FSP 435

MID-COURSE EXECUTION ACCURACY
SGT16434.0 SGR 638.2 SG3 127.0
RRT -.2320 RRF -.2909 RTF .8100
SGB16446.4 R23 .1056 R13 -.8100
SG116434.7 SG2 620.8 THA 179.48

ORBIT DETERMINATION ACCURACY
ST 4314.9 SR 590.5 SS 478.5
CRT -.4633 CRS .8131 CST -.8909
LSA 4344.9 MSA 563.6 SSA 20.7
EL1 4323.7 EL2 522.3 ALF 176.32

LAUNCH DATE DEC 12 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 17 1966

HELIOCENTRIC CONIC DISTANCE 936.138 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.415	GAL	-7.33	AZL	88.50	HCA	275.31	SMA	193.55	ECC	.26924	INC	1.5024	V1	30.251
RP	207.74	LAP	-1.50	LOP	355.33	VP	24.332	GAP	-15.06	AZP	89.86	TAL	324.39	TAP	239.70	RCA	141.44	APO	245.66	V2	26.372
RC	345.671	GL	9.88	GP	-2.91	ZAL	143.55	ZAP	22.21	ETS	171.27	ZAE	33.43	ETE	175.44	ZAC	88.65	ETC	255.84	CLP	22.02

PLANETOCENTRIC CONIC

C3	25.646	VHL	5.064	DLA	-6.81	RAL	225.20	RAD	6568.0	VEL	12.125	PTH	2.17	VHP	7.658	DPA	-8.57	RAP	195.17	ECC	1.4221

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 41	2062.24	-15.60	32.06	89.22	113.93	22 22 4	1462.2	-12.24	25.00
90.00	8 7 33	5131.33	25.12	228.48	92.86	76.47	9 33 4	4531.3	23.01	220.44
100.00	23 5 47	1810.31	-16.72	13.01	88.69	115.15	23 35 57	1210.3	-13.19	5.99
100.00	9 32 8	4858.49	26.31	208.08	92.53	75.26	10 53 7	4258.5	24.02	200.02
110.00	0 10 32	1619.89	-19.69	356.98	87.11	118.53	0 37 32	1019.9	-15.72	350.10
110.00	10 47 49	4621.67	29.49	189.03	91.47	71.88	12 4 50	4021.7	26.73	180.94

DIFFERENTIAL CORRECTIONS

TDE	-2.0103	TRA	11.0128	TC	-10.3389	BAU	3.5456
RDE	.5251	RRA	.0743	RC3	.2214	FAU	.00168
FDE	-.5134	FRA	1.0359	FC3	-.0567	BSP	57888
BDE	2.0777	BRA	11.0130	BC3	10.3412	FSP	382

MID-COURSE EXECUTION ACCURACY

SGT	16501.1	SGR	640.6	SG3	113.8		
RRT	-.2494	RRF	-.3058	RTF	.7701		
SGB	16513.5	R23	.1172	R13	-.7702		
SG1	16501.9	SG2	620.3	THA	179.44		

ORBIT DETERMINATION ACCURACY

ST	4409.4	SR	594.6	SS	450.1
CRT	-.4796	CRS	.8308	CST	-.8850
LSA	4436.9	MSA	559.4	SSA	20.3
EL1	4418.8	EL2	520.7	ALF	176.25

LAUNCH DATE DEC 12 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 19 1966

HELIOCENTRIC CONIC DISTANCE 940.224 EARTH TO MARS

RL	147.28	LAL	.00	LOL	80.01	VL	33.423	GAL	-7.63	AZL	88.52	HCA	276.57	SMA	193.71	ECC	.27215	INC	1.4815	V1	30.251
RP	207.87	LAP	-1.47	LOP	356.58	VP	24.326	GAP	-15.24	AZP	89.83	TAL	323.17	TAP	239.73	RCA	140.99	APO	246.42	V2	26.356
RC	346.405	GL	9.49	GP	-2.87	ZAL	144.85	ZAP	21.93	ETS	171.25	ZAE	32.84	ETE	175.39	ZAC	88.90	ETC	255.85	CLP	21.75

PLANETOCENTRIC CONIC

C3	27.000	VHL	5.196	DLA	-7.53	RAL	226.29	RAD	6568.1	VEL	12.181	PTH	2.19	VHP	7.772	DPA	-8.93	RAP	196.09	ECC	1.4444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 39	2051.85	-15.32	31.43	91.05	114.11	22 31 51	1451.8	-11.93	24.39
90.00	8 6 16	5167.22	25.66	230.96	95.18	77.60	9 32 24	4567.2	23.70	222.84
100.00	23 15 23	1801.11	-16.45	12.45	90.50	115.31	23 45 24	1201.1	-12.91	5.46
100.00	9 31 14	4893.20	26.88	210.49	94.87	76.41	10 52 47	4293.2	24.75	202.35
110.00	0 19 17	1613.32	-19.47	356.59	88.89	118.67	0 46 11	1013.3	-15.49	349.72
110.00	10 47 45	4653.76	30.15	191.30	93.85	73.07	12 5 18	4053.8	27.54	183.08

DIFFERENTIAL CORRECTIONS

TDE	-2.1381	TRA	11.4441	TC3	-9.9466	BAU	3.5913
RDE	.5423	RRA	.0636	RC3	.2166	FAU	-.00163
FDE	-.4931	FRA	.9341	FC3	.0521	BSP	57923
BDE	2.2058	BRA	11.4443	BC3	9.9490	FSP	329

MID-COURSE EXECUTION ACCURACY

SGT	16565.9	SGR	642.9	SG3	101.4		
RRT	-.2664	RRF	-.3173	RTF	.7172		
SGB	16578.4	R23	.1307	R13	-.7172		
SG1	16566.8	SG2	619.6	THA	179.41		

ORBIT DETERMINATION ACCURACY

ST	4498.5	SR	598.4	SS	420.9
CRT	-.4944	CRS	.8493	CST	-.8767
LSA	4523.5	MSA	555.5	SSA	19.8
EL1	4508.3	EL2	519.0	ALF	176.19

LAUNCH DATE DEC 13 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 362.900 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	35.544	GAL	.30	AZL	88.81	HCA	111.53	SMA	246.21	ECC	.40190	INC	1.1894
RP	244.11	LAP	1.11	LOP	192.57	VP	23.416	GAP	23.69	AZP	90.44	TAL	1.05	TAP	112.58	RCA	147.25	APO	345.16
RC	133.550	GL	7.93	GP	2.07	ZAL	86.06	ZAP	174.34	ETS	157.24	ZAE	152.23	ETE	1.94	ZAC	91.31	ETC	255.96

V1	30.254	V2	22.475	CLP	174.73														

PLANETOCENTRIC CONIC

C3	28.587	VHL	5.347	DLA	12.41	RAL	171.24	RAD	6568.1	VEL	12.246	PTH	2.20	VHP	10.828	DPA	.12	RAP	188.05
ECC	1.4705																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 41 19	2697.44	-27.62	74.38	43.33	96.50	16 26 16	2097.4	-26.43	65.91
90.00	6 55 34	4550.08	11.09	191.77	36.67	63.78	8 11 24	3950.1	7.47	184.95
100.00	17 9 2	2414.56	-28.97	53.38	43.14	97.70	17 49 16	1814.6	-27.60	44.84
100.00	8 10 32	4308.19	12.30	173.36	36.04	62.54	9 22 21	3708.2	8.53	166.60
110.00	18 31 38	2156.06	-32.56	33.06	42.45	101.02	19 7 34	1556.1	-30.70	24.34
110.00	9 4 25	4139.46	15.48	158.73	34.21	59.14	10 13 25	3539.5	11.28	152.15

DIFFERENTIAL CORRECTIONS

TDE	.4036	TRA	-1.2152	TC3	1.0708	BAU	.4093				
RDE	-.5470	RRA	-.2371	RC3	-.0126	FAU	.05959				
FDE	.0130	FRA	.4343	FC3	-1.8046	BSP	5743				
BDE	.6798	BRA	1.2381	BC3	1.0709	FSP	459				

MID-COURSE EXECUTION ACCURACY

SGT	1810.0	SGR	641.4	SG3	171.7						
RRT	.0671	RRF	-.0832	RTF	-.7891						
SGB	1920.3	R23	-.0228	R13	-.7894						
SG1	1810.6	SG2	639.8	THA	1.56						

ORBIT DETERMINATION ACCURACY

ST	590.1	SR	591.3	SS	144.9		
CRT	-.6371	CRS	.2108	CST	.5815		
LSA	756.4	MSA	380.8	SSA	41.3		
EL1	755.8	EL2	355.9	ALF	134.91		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 364.929 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	35.415	GAL	.45	AZL	88.83	HCA	112.44	SMA	242.09	ECC	.39178	INC	1.1714
RP	243.87	LAP	1.08	LOP	193.48	VP	23.242	GAP	23.06	AZP	90.45	TAL	1.60	TAP	114.05	RCA	147.25	APO	336.94
RC	135.719	GL	7.97	GP	2.13	ZAL	84.95	ZAP	173.79	ETS	158.63	ZAE	152.18	ETE	2.20	ZAC	91.44	ETC	255.95

V1	30.254	V2	22.498	CLP	174.16														

PLANETOCENTRIC CONIC

C3	27.293	VHL	5.224	DLA	12.88	RAL	170.21	RAD	6568.1	VEL	12.193	PTH	2.19	VHP	10.561	DPA	.04	RAP	188.39
ECC	1.4492																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 8	2702.04	-27.66	74.71	41.63	96.34	16 18 10	2102.0	-26.49	66.24
90.00	6 55 29	4522.40	10.25	190.17	34.93	63.46	8 10 51	3922.4	6.60	183.39
100.00	17 1 8	2418.19	-29.01	53.64	41.44	97.57	17 41 27	1818.2	-27.66	45.10
100.00	8 10 9	4281.48	11.46	171.82	34.30	62.20	9 21 31	3681.5	7.65	165.11
110.00	18 24 24	2157.65	-32.59	33.18	40.76	100.95	19 0 22	1557.6	-30.73	24.45
110.00	9 3 23	4114.79	14.61	157.34	32.46	58.75	10 11 58	3514.8	10.37	150.81

DIFFERENTIAL CORRECTIONS

TDE	.3803	TRA	-1.1854	TC3	1.1495	BAU	.4195				
RDE	-.5333	RRA	-.2295	RC3	-.0093	FAU	.06154				
FDE	.0275	FRA	.4215	FC3	-1.9519	BSP	5893				
BDE	.6550	BRA	1.2074	BC3	1.1495	FSP	484				

MID-COURSE EXECUTION ACCURACY

SGT	1842.6	SGR	639.4	SG3	180.9						
RRT	.0753	RRF	-.0897	RTF	-.7955						
SGB	1950.4	R23	-.0218	R13	-.7957						
SG1	1843.3	SG2	637.3	THA	1.70						

ORBIT DETERMINATION ACCURACY

ST	579.1	SR	590.0	SS	144.0		
CRT	-.6233	CRS	.3075	CST	.5097		
LSA	745.0	MSA	383.8	SSA	42.8		
EL1	744.8	EL2	358.7	ALF	134.14		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 367.097 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	35.292	GAL	.60	AZL	88.85	HCA	113.36	SMA	238.31	ECC	.38217	INC	1.1532
RP	243.63	LAP	1.06	LOP	194.39	VP	23.078	GAP	22.43	AZP	90.46	TAL	2.17	TAP	115.53	RCA	147.23	APO	329.38
RC	137.915	GL	7.99	GP	2.19	ZAL	83.81	ZAP	173.22	ETS	159.79	ZAE	152.17	ETE	2.46	ZAC	91.58	ETC	255.94

V1	30.254	V2	22.522	CLP	173.59														

PLANETOCENTRIC CONIC

C3	26.105	VHL	5.109	DLA	13.35	RAL	169.15	RAD	6568.1	VEL	12.144	PTH	2.18	VHP	10.302	DPA	-.05	RAP	188.72
ECC	1.4296																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 24 49	2707.17	-27.69	75.08	39.94	96.16	16 9 56	2107.2	-26.55	66.60
90.00	6 55 20	4495.18	9.42	188.60	33.21	63.17	8 10 15	3895.2	5.74	181.85
100.00	16 53 8	2422.34	-29.04	53.95	39.76	97.41	17 33 31	1822.3	-27.71	45.40
100.00	8 9 42	4255.26	10.62	170.33	32.58	61.89	9 20 37	3655.3	6.78	163.64
110.00	18 17 4	2159.71	-32.61	33.34	39.09	100.86	18 53 4	1559.7	-30.77	24.60
110.00	9 2 15	4090.63	13.76	156.00	30.73	58.39	10 10 26	3490.6	9.48	149.51

DIFFERENTIAL CORRECTIONS

TDE	.3591	TRA	-1.1549	TC3	1.2363	BAU	.4315				
RDE	-.5203	RRA	-.2221	RC3	-.0053	FAU	.06371				
FDE	.0455	FRA	.4043	FC3	-2.1129	BSP	6057				
BDE	.6322	BRA	1.1761	BC3	1.2363	FSP	517				

MID-COURSE EXECUTION ACCURACY

SGT	1878.9	SGR	637.2	SG3	190.9						
RRT	.0825	RRF	-.0975	RTF	-.8016						
SGB	1984.0	R23	-.0229	R13	-.8019						
SG1	1879.7	SG2	634.7	THA	1.81						

ORBIT DETERMINATION ACCURACY

ST	568.4	SR	588.5	SS	144.5		
CRT	-.6108	CRS	.4242	CST	.4088		
LSA	734.4	MSA	385.9	SSA	44.5		
EL1	734.4	EL2	360.7	ALF	133.37		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 369.392 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	35.175	GAL	.75	AZL	88.87	HCA	114.27	SMA	234.81	ECC	.37305	INC	1.1346
RP	243.38	LAP	1.03	LOP	195.30	VP	22.922	GAP	21.81	AZP	90.47	TAL	2.75	TAP	117.02	RCA	147.22	APO	322.41
RC	140.134	GL	8.01	GP	2.26	ZAL	82.66	ZAP	172.65	ETS	160.78	ZAE	152.20	ETE	2.74	ZAC	91.72	ETC	255.92

V1	30.254	V2	22.547	CLP	173.01						

PLANETOCENTRIC CONIC

C3	25.014	VHL	5.001	DLA	13.82	RAL	168.06	RAD	6568.0	VEL	12.099	PTH	2.17	VHP	10.049	DPA	-.13	RAP	189.05
ECC	1.4117																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 25	2712.79	-27.73	75.49	38.26	95.96	16 1 37	2112.8	-26.62	67.00
90.00	6 55 6	4468.47	8.59	187.07	31.51	62.91	8 9 35	3868.5	4.89	180.35
100.00	16 45 3	2426.94	-29.08	54.28	38.08	97.24	17 25 30	1826.9	-27.78	45.72
100.00	8 9 9	4229.54	9.79	168.87	30.87	61.62	9 19 39	3629.5	5.93	162.21
110.00	18 9 39	2162.22	-32.64	33.52	37.43	100.76	18 45 41	1562.2	-30.82	24.78
110.00	9 1 2	4067.03	12.91	154.69	29.03	58.07	10 8 49	3467.0	8.60	148.25

DIFFERENTIAL CORRECTIONS

TDE	.3377	TRA	-1.1240	TC3	1.3235	BAU	.4426				
RDE	-.5080	RRA	-.2148	RC3	-.0008	FAU	.06591				
FDE	.0637	FRA	.3866	FC3	-2.2812	BSP	6224				
BDE	.6100	BRA	1.1443	BC3	1.3235	FSP	550				

MID-COURSE EXECUTION ACCURACY

SGT	1913.3	SGR	634.8	SG3	201.2						
RRT	.0904	RRF	-.1057	RTF	-.8076						
SGB	2015.8	R23	-.0238	R13	-.8079						
SG1	1914.2	SG2	631.8	THA	1.93						

ORBIT DETERMINATION ACCURACY

ST	556.3	SR	586.9	SS	147.2		
CRT	-.5969	CRS	.5315	CST	.3066		
LSA	723.4	MSA	387.6	SSA	46.2		
EL1	723.0	EL2	362.3	ALF	132.44		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 371.801 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	35.062	GAL	.89	AZL	88.88	HCA	115.19	SMA	231.58	ECC	.36439	INC	1.1158	V1	30.254
RP	243.12	LAP	1.01	LOP	196.22	VP	22.774	GAP	21.19	AZP	90.48	TAL	3.33	TAP	118.51	RCA	147.20	APO	315.97	V2	22.572
RC	142.373	GL	8.01	GP	2.33	ZAL	81.50	ZAP	172.07	ETS	161.62	ZAE	152.28	ETE	3.02	ZAC	91.85	ETC	255.91	CLP	172.42

PLANETOCENTRIC CONIC

C3	24.012	VHL	4.900	DLA	14.28	RAL	166.96	RAD	6568.0	VEL	12.058	PTH	2.16	VHP	9.803	DPA	-.20	RAP	189.38	ECC	1.3952

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 7 56	2718.83	-27.78	75.92	36.60	95.74	15 53 14	2118.8	-26.69	67.42
90.00	6 54 47	4442.34	7.78	185.58	29.84	62.69	8 8 50	3842.3	4.06	178.88
100.00	16 36 53	2431.96	-29.12	54.65	36.43	97.05	17 17 25	1832.0	-27.84	46.08
100.00	8 8 31	4204.44	8.98	167.45	29.19	61.37	9 18 36	3604.4	5.09	160.82
110.00	18 2 10	2165.11	-32.68	33.74	35.78	100.63	18 38 15	1565.1	-30.87	24.99
110.00	8 59 44	4044.06	12.08	153.43	27.34	57.78	10 7 8	3444.1	7.74	147.02

DIFFERENTIAL CORRECTIONS

TDE	.3175	TRA	-1.0925	TC3	1.4165	BAU	.4547
RDE	-.4963	RRA	-.2077	RC3	.0045	FAU	.06829
FDE	.0824	FRA	.3663	FC3	-2.4623	BSP	6363
BDE	.5892	BRA	1.1121	BC3	1.4165	FSP	585

MID-COURSE EXECUTION ACCURACY

SGT	1950.0	SGR	632.1	SG3	212.1		
RRT	.0982	RRF	-.1142	RTF	-.8139		
SGB	2049.9	R23	-.0252	R13	-.8143		
SG1	1951.2	SG2	628.7	THA	2.03		

ORBIT DETERMINATION ACCURACY

ST	544.0	SR	585.2	SS	151.7
CRT	-.5833	CRS	.6283	CST	.2021
LSA	712.9	MSA	388.3	SSA	48.1
EL1	711.5	EL2	363.4	ALF	131.43

LAUNCH DATE DEC 13 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 374.313 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	34.955	GAL	1.03	AZL	88.90	HCA	116.11	SMA	228.59	ECC	.35617	INC	1.0966	V1	30.254
RP	242.87	LAP	.98	LOP	197.14	VP	22.635	GAP	20.57	AZP	90.48	TAL	3.91	TAP	120.02	RCA	147.17	APO	310.01	V2	22.598
RC	144.629	GL	8.00	GP	2.40	ZAL	80.32	ZAP	171.47	ETS	162.34	ZAE	152.40	ETE	3.32	ZAC	91.99	ETC	255.90	CLP	171.82

PLANETOCENTRIC CONIC

C3	23.093	VHL	4.806	DLA	14.73	RAL	165.84	RAD	6567.9	VEL	12.020	PTH	2.15	VHP	9.564	DPA	-.27	RAP	189.70	ECC	1.3800

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 59 23	2725.24	-27.82	76.39	34.95	95.51	15 44 49	2125.2	-26.76	67.88
90.00	6 54 23	4416.85	6.98	184.14	28.18	62.49	8 8 0	3816.9	3.24	177.45
100.00	16 28 40	2437.34	-29.17	55.04	34.78	96.85	17 9 17	1837.3	-27.91	46.47
100.00	8 7 48	4179.99	8.18	166.08	27.54	61.15	9 17 28	3580.0	4.26	159.47
110.00	17 54 38	2168.35	-32.72	33.99	34.15	100.49	18 30 46	1568.4	-30.93	25.22
110.00	8 58 19	4021.74	11.27	152.21	25.68	57.51	10 5 21	3421.7	6.90	145.84

DIFFERENTIAL CORRECTIONS

TDE	.2970	TRA	-1.0602	TC3	1.5089	BAU	.4659
RDE	-.4852	RRA	-.2007	RC3	.0105	FAU	.07074
FDE	.1024	FRA	.3435	FC3	-2.6520	BSP	6491
BDE	.5689	BRA	1.0790	BC3	1.5090	FSP	620

MID-COURSE EXECUTION ACCURACY

SGT	1984.2	SGR	629.3	SG3	223.5		
RRT	.1066	RRF	-.1235	RTF	-.8196		
SGB	2081.6	R23	-.0267	R13	-.8200		
SG1	1985.4	SG2	625.3	THA	2.15		

ORBIT DETERMINATION ACCURACY

ST	530.1	SR	583.3	SS	158.7
CRT	-.5684	CRS	.7148	CST	.0974
LSA	702.3	MSA	388.1	SSA	50.1
EL1	699.2	EL2	363.9	ALF	130.22

LAUNCH DATE DEC 13 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 376.920 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	34.853	GAL	1.16	AZL	88.92	HCA	117.03	SMA	225.81	ECC	.34837	INC	1.0771	V1	30.254
RP	242.60	LAP	.96	LOP	198.06	VP	22.503	GAP	19.96	AZP	90.49	TAL	4.50	TAP	121.53	RCA	147.14	APO	304.48	V2	22.624
RC	146.900	GL	7.98	GP	2.48	ZAL	79.14	ZAP	170.87	ETS	162.97	ZAE	152.55	ETE	3.62	ZAC	92.14	ETC	255.89	CLP	171.21

PLANETOCENTRIC CONIC

C3	22.250	VHL	4.717	DLA	15.17	RAL	164.71	RAD	6567.9	VEL	11.985	PTH	2.14	VHP	9.330	DPA	-.33	RAP	190.01	ECC	1.3662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 50	2731.96	-27.86	76.87	33.32	95.27	15 36 22	2132.0	-26.84	68.36
90.00	6 53 54	4392.06	6.20	182.73	26.55	62.31	8 7 6	3792.1	2.44	176.07
100.00	16 20 26	2443.01	-29.21	55.46	33.16	96.63	17 1 9	1843.0	-27.99	46.87
100.00	8 6 59	4156.25	7.39	164.75	25.90	60.95	9 16 15	3556.3	3.47	158.16
110.00	17 47 5	2171.88	-32.76	34.25	32.54	100.34	18 23 17	1571.9	-30.99	25.48
110.00	8 56 49	4000.14	10.48	151.04	24.04	57.27	10 3 29	3400.1	6.09	144.70

DIFFERENTIAL CORRECTIONS

TDE	.2771	TRA	-1.0270	TC3	1.6037	BAU	.4771
RDE	-.4747	RRA	-.1938	RC3	.0173	FAU	.07336
FDE	.1231	FRA	.3178	FC3	-2.8543	BSP	6627
BDE	.5497	BRA	1.0451	BC3	1.6038	FSP	659

MID-COURSE EXECUTION ACCURACY

SGT	2018.1	SGR	626.3	SG3	235.6		
RRT	.1154	RRF	-.1334	RTF	-.8252		
SGB	2113.1	R23	-.0284	R13	-.8256		
SG1	2019.6	SG2	621.6	THA	2.26		

ORBIT DETERMINATION ACCURACY

ST	515.5	SR	581.2	SS	167.7
CRT	-.5531	CRS	.7858	CST	-.0011
LSA	692.4	MSA	386.7	SSA	52.3
EL1	686.6	EL2	363.6	ALF	128.86

LAUNCH DATE DEC 13 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 379.613 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	34.755	GAL	1.30	AZL	88.94	HCA	117.95	SMA	223.23	ECC	.34097	INC	1.0571	V1	30.254
RP	242.34	LAP	.93	LOP	198.98	VP	22.378	GAP	19.35	AZP	90.50	TAL	5.10	TAP	123.05	RCA	147.11	APO	299.34	V2	22.651
RC	149.184	GL	7.95	GP	2.55	ZAL	77.95	ZAP	170.25	ETS	163.52	ZAE	152.75	ETE	3.95	ZAC	92.28	ETC	255.89	CLP	170.59

PLANETOCENTRIC CONIC

C3	21.478	VHL	4.634	DLA	15.60	RAL	163.56	RAD	6567.9	VEL	11.952	PTH	2.13	VHP	9.103	DPA	-.38	RAP	190.32	ECC	1.3535

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 42 16	2738.93	-27.90	77.38	31.70	95.02	15 27 55	2138.9	-26.92	68.85
90.00	6 53 18	4368.03	5.44	181.38	24.95	62.17	8 6 6	3768.0	1.67	174.72
100.00	16 12 11	2448.92	-29.26	55.89	31.55	96.41	16 53 0	1848.9	-28.06	47.29
100.00	8 6 4	4133.27	6.63	163.47	24.30	60.79	9 14 57	3533.3	2.69	156.90
110.00	17 39 32	2175.65	-32.81	34.54	30.95	100.18	18 15 47	1575.7	-31.06	25.75
110.00	8 55 13	3979.30	9.71	149.92	22.43	57.06	10 1 32	3379.3	5.30	143.60

DIFFERENTIAL CORRECTIONS

TDE	.2574	TRA	-.9950	TC3	1.6996	BAU	.4881
RDE	-.4648	RRA	-.1870	RC3	.0250	FAU	.07608
FDE	.1450	FRA	.2910	FC3	-3.0667	BSP	6763
BDE	.5313	BRA	1.0125	BC3	1.6998	FSP	700

MID-COURSE EXECUTION ACCURACY

SGT	2052.9	SGR	623.1	SG3	248.2		
RRT	.1252	RRF	-.1443	RTF	-.8306		
SGB	2145.4	R23	-.0302	R13	-.8310		
SG1	2054.5	SG2	617.7	THA	2.39		

ORBIT DETERMINATION ACCURACY

ST	500.3	SR	579.1	SS	179.3
CRT	-.5357	CRS	.8418	CST	-.0883
LSA	683.1	MSA	384.9	SSA	54.5
EL1	673.6	EL2	363.2	ALF	127.34

LAUNCH DATE DEC 13 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 382.385 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	34.662	GAL	1.43	AZL	88.96	HCA	118.87	SMA	220.82	ECC	.33394	INC	1.0369	V1	30.254
RP	242.06	LAP	.91	LOP	199.90	VP	22.260	GAP	18.74	AZP	90.50	TAL	5.70	TAP	124.57	RCA	147.08	APO	294.56	V2	22.678
RC	151.478	GL	7.91	GP	2.64	ZAL	76.76	ZAP	169.63	ETS	163.99	ZAE	152.99	ETE	4.29	ZAC	92.43	ETC	255.88	CLP	169.96

PLANETOCENTRIC CONIC

C3	20.771	VHL	4.558	DLA	16.02	RAL	162.40	RAD	6567.8	VEL	11.923	PTH	2.12	VHP	8.882	DPA	-.43	RAP	190.63	ECC	1.3418

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 43	2746.06	-27.95	77.90	30.11	94.77	15 19 29	2146.1	-26.99	69.36
90.00	6 52 36	4344.81	4.70	180.07	23.37	62.04	8 5 1	3744.8	.92	173.43
100.00	16 3 59	2455.00	-29.31	56.34	29.96	96.18	16 44 54	1855.0	-28.14	47.73
100.00	8 5 2	4111.10	5.89	162.24	22.72	60.64	9 13 33	3511.1	1.94	155.68
110.00	17 32 0	2179.60	-32.86	34.84	29.37	100.01	18 8 19	1579.6	-31.13	26.04
110.00	8 53 30	3959.26	8.96	148.84	20.84	56.87	9 59 30	3359.3	4.54	142.55

DIFFERENTIAL CORRECTIONS

TDE	.2374	TRA	-.9617	TC3	1.7958	BAU	.4987
RDE	-.4554	RRA	-.1803	RC3	.0335	FAU	.07897
FDE	.1679	FRA	.2610	FC3	-3.2913	BSP	6897
BDE	.5135	BRA	.9785	BC3	1.7961	FSP	743

MID-COURSE EXECUTION ACCURACY

SGT	2085.8	SGR	619.9	SG3	261.5		
RRT	.1360	RRF	-.1562	RTF	-.8358		
SGB	2176.0	R23	-.0320	R13	-.8363		
SG1	2087.7	SG2	613.6	THA	2.53		

ORBIT DETERMINATION ACCURACY

ST	483.6	SR	576.8	SS	192.9
CRT	-.5166	CRS	.8843	CST	-.1641
LSA	674.4	MSA	381.7	SSA	56.9
EL1	660.0	EL2	361.9	ALF	125.54

LAUNCH DATE DEC 13 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 385.231 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	34.573	GAL	1.55	AZL	88.98	HCA	119.80	SMA	218.58	ECC	.32727	INC	1.0162	V1	30.254
RP	241.79	LAP	.88	LOP	200.83	VP	22.150	GAP	18.14	AZP	90.51	TAL	6.30	TAP	126.10	RCA	147.04	APO	290.11	V2	22.706
RC	153.781	GL	7.85	GP	2.72	ZAL	75.57	ZAP	168.99	ETS	164.41	ZAE	153.26	ETE	4.65	ZAC	92.57	ETC	255.87	CLP	169.32

PLANETOCENTRIC CONIC

C3	20.124	VHL	4.486	DLA	16.42	RAL	161.23	RAD	6567.8	VEL	11.896	PTH	2.11	VHP	8.666	DPA	-.47	RAP	190.92	ECC	1.3312

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 25 13	2753.34	-27.99	78.43	28.54	94.50	15 11 6	2153.3	-27.07	69.88
90.00	6 51 48	4322.40	3.98	178.82	21.82	61.94	8 3 50	3722.4	.20	172.18
100.00	15 55 48	2461.22	-29.35	56.80	28.39	95.94	16 36 49	1861.2	-28.22	48.18
100.00	8 3 54	4089.75	5.18	161.05	21.16	60.52	9 12 3	3489.7	1.21	154.51
110.00	17 24 29	2183.71	-32.91	35.15	27.82	99.83	18 0 53	1583.7	-31.20	26.34
110.00	8 51 41	3940.02	8.24	147.82	19.28	56.71	9 57 21	3340.0	3.81	141.54

DIFFERENTIAL CORRECTIONS

TDE	.2325	TRA	-.9142	TC3	1.9193	BAU	.5165
RDE	-.4466	RRA	-.1738	RC3	.0426	FAU	.08186
FDE	.1936	FRA	.2298	FC3	-3.5217	BSP	6705
BDE	.5035	BRA	.9306	BC3	1.9198	FSP	794

MID-COURSE EXECUTION ACCURACY

SGT	2129.6	SGR	616.8	SG3	275.1		
RRT	.1357	RRF	-.1695	RTF	-.8465		
SGB	2217.1	R23	-.0447	R13	-.8471		
SG1	2131.4	SG2	610.6	THA	2.45		

ORBIT DETERMINATION ACCURACY

ST	473.5	SR	574.6	SS	209.9
CRT	-.5290	CRS	.9161	CST	-.2638
LSA	676.7	MSA	370.2	SSA	59.0
EL1	656.2	EL2	351.9	ALF	124.89

LAUNCH DATE DEC 13 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 388.142 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	34.487	GAL	1.68	AZL	89.00	HCA	120.73	SMA	216.48	ECC	.32095	INC	.9950	V1	30.254
RP	241.51	LAP	.86	LOP	201.76	VP	22.046	GAP	17.54	AZP	90.51	TAL	6.90	TAP	127.63	RCA	147.00	APO	285.96	V2	22.734
RC	156.092	GL	7.79	GP	2.81	ZAL	74.39	ZAP	168.33	ETS	164.78	ZAE	153.57	ETE	5.03	ZAC	92.72	ETC	255.86	CLP	168.67

PLANETOCENTRIC CONIC

C3	19.532	VHL	4.420	DLA	16.81	RAL	160.06	RAD	6567.8	VEL	11.871	PTH	2.11	VHP	8.457	DPA	-.50	RAP	191.21	ECC	1.3214

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 16 49	2760.57	-28.02	78.95	26.99	94.24	15 2 50	2160.6	-27.14	70.40
90.00	6 50 52	4300.99	3.29	177.62	20.30	61.86	8 2 33	3701.0	-.50	170.99
100.00	15 47 44	2467.41	-29.39	57.25	26.85	95.70	16 28 51	1867.4	-28.29	48.62
100.00	8 2 38	4069.38	4.50	159.93	19.63	60.42	9 10 28	3469.4	.52	153.39
110.00	17 17 5	2187.82	-32.95	35.46	26.29	99.65	17 53 33	1587.8	-31.27	26.64
110.00	8 49 46	3921.73	7.56	146.84	17.74	56.56	9 55 8	3321.7	3.11	140.58

DIFFERENTIAL CORRECTIONS

TDE	.2066	TRA	-.8889	TC3	2.0004	BAU	.5225
RDE	-.4381	RRA	-.1672	RC3	.0533	FAU	.08511
FDE	.2167	FRA	.1928	FC3	-3.7722	BSP	7004
BDE	.4843	BRA	.9045	BC3	2.0011	FSP	839

MID-COURSE EXECUTION ACCURACY

SGT	2155.7	SGR	613.2	SG3	290.0		
RRT	.1542	RRF	-.1826	RTF	-.8479		
SGB	2241.2	R23	-.0412	R13	-.8485		
SG1	2158.0	SG2	605.3	THA	2.73		

ORBIT DETERMINATION ACCURACY

ST	452.7	SR	572.0	SS	225.3
CRT	-.4924	CRS	.9357	CST	-.2983
LSA	665.9	MSA	368.2	SSA	62.0
EL1	638.3	EL2	353.1	ALF	122.20

LAUNCH DATE DEC 13 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 391.115 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	34.406	GAL	1.80	AZL	89.03	HCA	121.66	SMA	214.52	ECC	.31495	INC	.9735	V1	30.254
RP	241.22	LAP	.83	LOP	202.69	VP	21.948	GAP	16.95	AZP	90.51	TAL	7.50	TAP	129.16	RCA	146.96	APO	282.09	V2	22.762
RC	158.408	GL	7.70	GP	2.91	ZAL	73.21	ZAP	167.67	ETS	165.11	ZAE	153.91	ETE	5.44	ZAC	92.87	ETC	255.85	CLP	168.01

PLANETOCENTRIC CONIC

C3	18.992	VHL	4.358	DLA	17.18	RAL	158.89	RAD	6567.8	VEL	11.848	PTH	2.10	VHP	8.252	DPA	-.53	RAP	191.50	ECC	1.3126

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 8 32	2767.76	-28.06	79.47	25.47	93.98	14 54 40	2167.8	-27.21	70.91
90.00	6 49 48	4280.53	2.64	176.47	18.80	61.80	8 1 9	3680.5	-1.16	169.85
100.00	15 39 46	2473.56	-29.43	57.70	25.34	95.47	16 21 0	1873.6	-28.36	49.06
100.00	8 1 16	4049.95	3.84	158.86	18.13	60.33	9 8 46	3450.0	-.13	152.33
110.00	17 9 47	2191.95	-33.00	35.77	24.79	99.47	17 46 18	1592.0	-31.34	26.94
110.00	8 47 45	3904.33	6.91	145.92	16.24	56.44	9 52 49	3304.3	2.45	139.67

DIFFERENTIAL CORRECTIONS

TDE	.1846	TRA	-.8593	TC3	2.0893	BAU	.5307
RDE	-.4301	RRA	-.1606	RC3	.0650	FAU	.08850
FDE	.2419	FRA	.1534	FC3	-4.0343	BSP	7213
BDE	.4681	BRA	.8741	BC3	2.0903	FSP	889

MID-COURSE EXECUTION ACCURACY

SGT	2184.7	SGR	609.8	SG3	305.6		
RRT	.1706	RRF	-.1974	RTF	-.8510		
SGB	2268.2	R23	-.0410	R13	-.8516		
SG1	2187.4	SG2	600.1	THA	2.95		

ORBIT DETERMINATION ACCURACY

ST	433.3	SR	569.3	SS	243.1
CRT	-.4607	CRS	.9488	CST	-.3314
LSA	659.5	MSA	363.1	SSA	65.0
EL1	623.3	EL2	351.3	ALF	119.52

LAUNCH DATE DEC 13 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 394.145 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	34.329	GAL	1.91	AZL	89.05	HCA	122.59	SMA	212.69	ECC	.30926	INC	.9513
RP	240.93	LAP	.80	LOP	203.62	VP	21.857	GAP	16.37	AZP	90.51	TAL	8.10	TAP	130.69	RCA	146.91	APO	278.47
RC	160.729	GL	7.61	GP	3.01	ZAL	72.04	ZAP	166.99	ETS	165.40	ZAE	154.29	ETE	5.88	ZAC	93.03	ETC	255.85

PLANETOCENTRIC CONIC

C3	18.498	VHL	4.301	DLA	17.53	RAL	157.72	RAD	6567.7	VEL	11.827	PTH	2.09	VHP	8.053	DPA	-.55	RAP	191.77

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 0 24	2774.82	-28.09	79.99	23.97	93.73	14 46 38	2174.8	-27.28	71.42
90.00	6 48 37	4261.09	2.01	175.39	17.34	61.75	7 59 38	3661.1	-1.78	168.76
100.00	15 31 56	2479.62	-29.47	58.15	23.84	95.24	16 13 16	1879.6	-28.43	49.50
100.00	7 59 45	4031.52	3.22	157.84	16.66	60.27	9 6 57	3431.5	-.76	151.32
110.00	17 2 34	2196.03	-33.04	36.08	23.31	99.29	17 39 10	1596.0	-31.41	27.24
110.00	8 45 36	3887.88	6.29	145.05	14.77	56.33	9 50 24	3287.9	1.82	138.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1646	TRA	-.8285	TC3	2.1790	BAU	.5392	SGT	2213.9	SGR	606.3	SG3	321.9	ST	414.5	SR	566.6	SS	262.3
RDE	-.4225	RRA	-.1541	RC3	.0777	FAU	.09205	RRT	.1870	RRF	-.2135	RTF	-.8544	CRT	-.4297	CRS	.9565	CST	-.3574
FDE	.2682	FRA	.1116	FC3	-4.3080	BSP	7392	SGB	2295.4	R23	-.0421	R13	-.8551	LSA	655.8	MSA	356.3	SSA	68.0
BDE	.4535	BRA	.8427	BC3	2.1804	FSP	942	SG1	2217.0	SG2	594.8	THA	3.16	EL1	609.9	EL2	347.8	ALF	116.77

LAUNCH DATE DEC 13 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 397.227 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	34.235	GAL	2.02	AZL	89.07	HCA	123.52	SMA	210.98	ECC	.30387	INC	.9288
RP	240.64	LAP	.77	LOP	204.56	VP	21.771	GAP	15.79	AZP	90.51	TAL	8.70	TAP	132.23	RCA	146.87	APO	275.08
RC	163.052	GL	7.51	GP	3.11	ZAL	70.88	ZAP	166.30	ETS	165.65	ZAE	154.71	ETE	6.35	ZAC	93.18	ETC	255.84

PLANETOCENTRIC CONIC

C3	18.048	VHL	4.248	DLA	17.85	RAL	156.55	RAD	6567.7	VEL	11.808	PTH	2.09	VHP	7.858	DPA	-.55	RAP	192.04

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 52 25	2781.68	-28.12	80.49	22.49	93.48	14 38 46	2181.7	-27.34	71.91
90.00	6 47 17	4242.70	1.42	174.36	15.90	61.72	7 58 0	3642.7	-2.37	167.73
100.00	15 24 15	2485.49	-29.51	58.58	22.38	95.01	16 5 41	1885.5	-28.50	49.92
100.00	7 58 7	4014.12	2.63	156.88	15.22	60.21	9 5 1	3414.1	-1.35	150.36
110.00	16 55 31	2199.99	-33.09	36.38	21.86	99.12	17 32 11	1600.0	-31.48	27.53
110.00	8 43 21	3872.38	5.70	144.23	13.32	56.24	9 47 54	3272.4	1.23	138.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1469	TRA	-.7965	TC3	2.2685	BAU	.5478	SGT	2242.3	SGR	603.0	SG3	339.0	ST	396.5	SR	563.7	SS	282.1
RDE	-.4154	RRA	-.1475	RC3	.0915	FAU	.09574	RRT	.2033	RRF	-.2307	RTF	-.8580	CRT	-.4010	CRS	.9598	CST	-.3793
FDE	.2948	FRA	.0663	FC3	-4.5925	BSP	7522	SGB	2322.0	R23	-.0443	R13	-.8588	LSA	654.6	MSA	347.9	SSA	71.1
BDE	.4406	BRA	.8100	BC3	2.2704	FSP	998	SG1	2245.9	SG2	589.5	THA	3.36	EL1	598.2	EL2	342.3	ALF	114.08

LAUNCH DATE DEC 13 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 400.359 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	34.184	GAL	2.13	AZL	89.09	HCA	124.46	SMA	209.37	ECC	.29875	INC	.9056
RP	240.34	LAP	.75	LOP	205.49	VP	21.691	GAP	15.21	AZP	90.51	TAL	9.30	TAP	133.76	RCA	146.82	APO	271.91
RC	165.375	GL	7.39	GP	3.22	ZAL	69.74	ZAP	165.59	ETS	165.88	ZAE	155.16	ETE	6.85	ZAC	93.34	ETC	255.83

PLANETOCENTRIC CONIC

C3	17.638	VHL	4.200	DLA	18.16	RAL	155.39	RAD	6567.7	VEL	11.791	PTH	2.08	VHP	7.669	DPA	-.55	RAP	192.30

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 44 37	2788.26	-28.15	80.97	21.05	93.24	14 31 6	2188.3	-27.40	72.38
90.00	6 45 48	4225.42	.86	173.40	14.49	61.69	7 56 14	3625.4	-2.93	166.77
100.00	15 16 46	2491.12	-29.54	59.00	20.94	94.80	15 58 17	1891.1	-28.56	50.33
100.00	7 56 21	3997.79	2.08	155.99	13.81	60.17	9 2 58	3397.8	-1.90	149.47
110.00	16 48 36	2203.79	-33.13	36.67	20.43	98.95	17 25 20	1603.8	-31.54	27.81
110.00	8 41 0	3857.88	5.15	143.47	11.90	56.16	9 45 18	3257.9	.67	137.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1305	TRA	-.7640	TC3	2.3553	BAU	.5559	SGT	2269.0	SGR	599.8	SG3	356.8	ST	378.8	SR	560.8	SS	302.6
RDE	-.4086	RRA	-.1410	RC3	.1065	FAU	.09960	RRT	.2203	RRF	-.2493	RTF	-.8615	CRT	-.3724	CRS	.9602	CST	-.3960
FDE	.3223	FRA	.0174	FC3	-4.8889	BSP	7652	SGB	2347.0	R23	-.0472	R13	-.8623	LSA	655.3	MSA	338.4	SSA	74.3
BDE	.4290	BRA	.7769	BC3	2.3577	FSP	1058	SG1	2273.2	SG2	584.0	THA	3.57	EL1	587.8	EL2	335.4	ALF	111.39

LAUNCH DATE DEC 13 1964 FLIGHT TIME 170.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 403.537 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	34.117	GAL	2.24	AZL	89.12	HCA	125.40	SMA	207.85	ECC	.29390	INC	.8818
RP	240.04	LAP	.72	LOP	206.43	VP	21.617	GAP	14.65	AZP	90.51	TAL	9.89	TAP	135.29	RCA	146.76	APO	268.94
RC	167.697	GL	7.25	GP	3.34	ZAL	68.61	ZAP	164.87	ETS	166.07	ZAE	155.64	ETE	7.40	ZAC	93.50	ETC	255.83

PLANETOCENTRIC CONIC

C3	17.264	VHL	4.155	DLA	18.45	RAL	154.24	RAD	6567.7	VEL	11.775	PTH	2.08	VHP	7.484	DPA	-.54	RAP	192.56

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 37 4	2794.48	-28.17	81.42	19.63	93.01	14 23 38	2194.5	-27.45	72.83
90.00	6 44 10	4209.28	.34	172.50	13.12	61.68	7 54 19	3609.3	-3.45	165.87
100.00	15 9 29	2496.43	-29.57	59.39	19.53	94.59	15 51 5	1896.4	-28.62	50.72
100.00	7 54 26	3982.55	1.56	155.15	12.43	60.14	9 0 48	3382.6	-2.42	148.63
110.00	16 41 53	2207.36	-33.17	36.94	19.03	98.80	17 18 40	1607.4	-31.60	28.07
110.00	8 38 31	3844.39	4.64	142.76	10.52	56.10	9 42 36	3244.4	.16	136.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1146	TRA	-.7311	TC3	2.4438	BAU	.5648	SGT	2297.5	SGR	596.8	SG3	375.9	ST	361.0	SR	557.7	SS	324.0
RDE	-.4022	RRA	-.1344	RC3	.1229	FAU	.10374	RRT	.2388	RRF	-.2695	RTF	-.8652	CRT	-.3414	CRS	.9582	CST	-.4063
FDE	.3508	FRA	-.0358	FC3	-5.2021	BSP	7741	SGB	2373.8	R23	-.0504	R13	-.8662	LSA	657.6	MSA	328.4	SSA	77.6
BDE	.4182	BRA	.7433	BC3	2.4469	FSP	1119	SG1	2302.2	SG2	578.4	THA	3.79	EL1	578.1	EL2	327.3	ALF	108.63

LAUNCH DATE DEC 13 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 406.757 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	34.052	GAL	2.35	AZL	89.14	HCA	126.34	SMA	206.43	ECC	.28931	INC	.8575	V1	30.254
RP	239.73	LAP	.69	LOP	207.38	VP	21.548	GAP	14.09	AZP	90.51	TAL	10.48	TAP	136.82	RCA	146.71	APO	266.16	V2	22.912
RC	170.016	GL	7.11	GP	3.46	ZAL	67.50	ZAP	164.14	ETS	166.25	ZAE	156.15	ETE	7.99	ZAC	93.67	ETC	255.82	CLP	164.51

PLANETOCENTRIC CONIC

C3	16.924	VHL	4.114	DLA	18.71	RAL	153.10	RAD	6567.7	VEL	11.760	PTH	2.08	VHP	7.304	DPA	-.52	RAP	192.80	ECC	1.2785

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 29 45	2800.26	-28.19	81.84	18.25	92.80	14 16 25	2200.3	-27.50	73.25
90.00	6 42 22	4194.31	-.15	171.66	11.77	61.68	7 52 17	3594.3	-3.93	165.03
100.00	15 2 26	2501.36	-29.60	59.75	18.14	94.40	15 44 7	1901.4	-28.67	51.07
100.00	7 52 22	3968.45	1.09	154.38	11.08	60.13	8 58 30	3368.5	-2.90	147.85
110.00	16 35 21	2210.65	-33.20	37.19	17.66	98.65	17 12 12	1610.7	-31.65	28.31
110.00	8 35 56	3831.92	4.17	142.10	9.16	56.04	9 39 48	3231.9	-.32	135.89

DIFFERENTIAL CORRECTIONS

TDE	.1001	TRA	-.6984	TC3	2.5266	BAU	.5725
RDE	-.3961	RRA	-.1277	RC3	.1405	FAU	.10802
FDE	.3792	FRA	-.0925	FC3	-5.5256	BSP	7861
BDE	.4086	BRA	.7100	BC3	2.5305	FSP	1187

MID-COURSE EXECUTION ACCURACY

SGT	2322.8	SGR	594.1	SG3	395.6		
RRT	.2582	RRF	-.2909	RTF	-.8685		
SGB	2397.6	R23	-.0540	R13	-.8696		
SG1	2328.2	SG2	572.7	THA	4.02		

ORBIT DETERMINATION ACCURACY

ST	343.9	SR	554.6	SS	345.2
CRT	-.3112	CRS	.9545	CST	-.4131
LSA	661.2	MSA	318.2	SSA	80.9
EL1	569.7	EL2	318.1	ALF	106.04

LAUNCH DATE DEC 13 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 410.018 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.991	GAL	2.45	AZL	89.17	HCA	127.29	SMA	205.10	ECC	.28496	INC	.8324	V1	30.254
RP	239.42	LAP	.66	LOP	208.32	VP	21.484	GAP	13.53	AZP	90.50	TAL	11.06	TAP	138.35	RCA	146.66	APO	263.54	V2	22.943
RC	172.331	GL	6.95	GP	3.59	ZAL	66.41	ZAP	163.38	ETS	166.40	ZAE	156.70	ETE	8.64	ZAC	93.84	ETC	255.82	CLP	163.76

PLANETOCENTRIC CONIC

C3	16.615	VHL	4.076	DLA	18.95	RAL	151.97	RAD	6567.7	VEL	11.747	PTH	2.07	VHP	7.128	DPA	-.48	RAP	193.03	ECC	1.2734

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 22 41	2805.58	-28.21	82.23	16.89	92.61	14 9 27	2205.6	-27.55	73.63
90.00	6 40 25	4180.54	-.59	170.90	10.45	61.69	7 50 5	3580.5	-4.37	164.26
100.00	14 55 38	2505.86	-29.62	60.09	16.79	94.23	15 37 24	1905.9	-28.72	51.40
100.00	7 50 9	3955.49	.65	153.66	9.76	60.11	8 56 5	3355.5	-3.33	147.14
110.00	16 29 2	2213.64	-33.23	37.42	16.32	98.52	17 5 56	1613.6	-31.70	28.53
110.00	8 33 14	3820.48	3.73	141.50	7.84	56.00	9 36 55	3220.5	-.76	135.30

DIFFERENTIAL CORRECTIONS

TDE	.0924	TRA	-.6597	TC3	2.6238	BAU	.5839
RDE	-.3903	RRA	-.1210	RC3	.1596	FAU	.11260
FDE	.4083	FRA	-.1537	FC3	-5.8669	BSP	7803
BDE	.4011	BRA	.6707	BC3	2.6286	FSP	1256

MID-COURSE EXECUTION ACCURACY

SGT	2356.5	SGR	591.9	SG3	416.7		
RRT	.2748	RRF	-.3140	RTF	-.8739		
SGB	2429.7	R23	-.0613	R13	-.8751		
SG1	2362.5	SG2	567.6	THA	4.19		

ORBIT DETERMINATION ACCURACY

ST	327.9	SR	551.3	SS	366.8
CRT	-.3052	CRS	.9495	CST	-.4380
LSA	667.7	MSA	305.1	SSA	84.5
EL1	564.3	EL2	305.1	ALF	104.66

LAUNCH DATE DEC 13 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 413.314 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.932	GAL	2.54	AZL	89.19	HCA	128.23	SMA	203.85	ECC	.28083	INC	.8067	V1	30.254
RP	239.11	LAP	.63	LOP	209.27	VP	21.425	GAP	12.98	AZP	90.50	TAL	11.63	TAP	139.87	RCA	146.60	APO	261.09	V2	22.975
RC	174.639	GL	6.78	GP	3.72	ZAL	65.34	ZAP	162.61	ETS	166.54	ZAE	157.27	ETE	9.35	ZAC	94.01	ETC	255.81	CLP	163.00

PLANETOCENTRIC CONIC

C3	16.335	VHL	4.042	DLA	19.16	RAL	150.86	RAD	6567.7	VEL	11.735	PTH	2.07	VHP	6.957	DPA	-.44	RAP	193.26	ECC	1.2688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 15 57	2810.28	-28.22	82.57	15.56	92.44	14 2 47	2210.3	-27.58	73.97
90.00	6 38 17	4168.05	-.99	170.20	9.17	61.70	7 47 45	3568.0	-4.77	163.55
100.00	14 49 8	2509.83	-29.64	60.38	15.47	94.08	15 30 57	1909.8	-28.76	51.69
100.00	7 47 47	3943.73	.25	153.02	8.48	60.11	8 53 31	3343.7	-3.73	146.49
110.00	16 22 58	2216.21	-33.26	37.62	15.01	98.41	16 59 55	1616.2	-31.74	28.72
110.00	8 30 26	3810.11	3.34	140.96	6.55	55.96	9 33 56	3210.1	-1.15	134.76

DIFFERENTIAL CORRECTIONS

TDE	.0737	TRA	-.6344	TC3	2.6836	BAU	.5874
RDE	-.3848	RRA	-.1141	RC3	.1801	FAU	.11730
FDE	.4379	FRA	-.2178	FC3	-6.2170	BSP	8048
BDE	.3918	BRA	.6446	BC3	2.6896	FSP	1331

MID-COURSE EXECUTION ACCURACY

SGT	2371.3	SGR	590.0	SG3	438.4		
RRT	.3016	RRF	-.3388	RTF	-.8747		
SGB	2443.6	R23	-.0623	R13	-.8761		
SG1	2378.4	SG2	560.8	THA	4.54		

ORBIT DETERMINATION ACCURACY

ST	311.0	SR	547.9	SS	388.5
CRT	-.2467	CRS	.9439	CST	-.4132
LSA	671.7	MSA	298.6	SSA	87.3
EL1	555.4	EL2	297.3	ALF	101.23

LAUNCH DATE DEC 13 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 416.646 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.876	GAL	2.64	AZL	89.22	HCA	129.18	SMA	202.67	ECC	.27693	INC	.7802	V1	30.254
RP	238.79	LAP	.60	LOP	210.22	VP	21.371	GAP	12.44	AZP	90.49	TAL	12.20	TAP	141.38	RCA	146.54	APO	258.79	V2	23.007
RC	176.939	GL	6.60	GP	3.86	ZAL	64.30	ZAP	161.82	ETS	166.66	ZAE	157.87	ETE	10.13	ZAC	94.18	ETC	255.81	CLP	162.22

PLANETOCENTRIC CONIC

C3	16.080	VHL	4.010	DLA	19.35	RAL	149.76	RAD	6567.6	VEL	11.725	PTH	2.07	VHP	6.791	DPA	-.38	RAP	193.47	ECC	1.2646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 9 32	2814.35	-28.23	82.87	14.27	92.29	13 56 26	2214.4	-27.62	74.26
90.00	6 35 58	4156.81	-1.36	169.57	7.91	61.71	7 45 15	3556.8	-5.13	162.92
100.00	14 42 55	2513.23	-29.66	60.63	14.18	93.94	15 24 48	1913.2	-28.79	51.93
100.00	7 45 16	3933.17	-.11	152.44	7.22	60.11	8 50 49	3333.2	-4.09	145.91
110.00	16 17 10	2218.37	-33.28	37.78	13.72	98.31	16 54 8	1618.4	-31.77	28.88
110.00	8 27 31	3800.80	2.98	140.47	5.29	55.93	9 30 51	3200.8	-1.51	134.27

DIFFERENTIAL CORRECTIONS

TDE	.0560	TRA	-.6087	TC3	2.7414	BAU	.5909
RDE	-.3795	RRA	-.1071	RC3	.2022	FAU	.12225
FDE	.4688	FRA	-.2865	FC3	-6.5821	BSP	8264
BDE	.3836	BRA	.6180	BC3	2.7489	FSP	1409

MID-COURSE EXECUTION ACCURACY

SGT	2385.4	SGR	588.7	SG3	461.3		
RRT	.3295	RRF	-.3655	RTF	-.8757		
SGB	2456.9	R23	-.0641	R13	-.8772		
SG1	2393.7	SG2	553.9	THA	4.91		

ORBIT DETERMINATION ACCURACY

ST	295.3	SR	544.4	SS	411.0
CRT	-.1842	CRS	.9378	CST	-.3825
LSA	677.6	MSA	292.2	SSA	89.8
EL1	548.2	EL2	288.3	ALF	97.90

LAUNCH DATE DEC 13 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 420.011 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.823	GAL	2.73	AZL	89.25	HCA	130.14	SMA	201.55	ECC	.27323	INC	.7529	V1	30.254
RP	238.47	LAP	.58	LOP	211.17	VP	21.321	GAP	11.90	AZP	90.49	TAL	12.75	TAP	142.89	RCA	146.48	APO	256.62	V2	23.040
RC	179.231	GL	6.40	GP	4.01	ZAL	63.28	ZAP	161.02	ETS	166.76	ZAE	158.50	ETE	10.99	ZAC	94.36	ETC	255.80	CLP	161.43

PLANETOCENTRIC CONIC

C3	15.849	VHL	3.981	DLA	19.51	RAL	148.68	RAD	6567.6	VEL	11.715	PTH	2.06	VHP	6.628	DPA	-.31	RAP	193.68	ECC	1.2608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 3 26	2817.78	-28.24	83.12	13.00	92.16	13 50 24	2217.8	-27.64	74.51
90.00	6 33 28	4146.83	-1.68	169.02	6.69	61.73	7 42 35	3546.8	-5.44	162.36
100.00	14 37 0	2516.06	-29.67	60.84	12.92	93.83	15 18 56	1916.1	-28.82	52.14
100.00	7 42 35	3923.78	-.43	151.93	5.99	60.11	8 47 59	3323.8	-4.40	145.39
110.00	16 11 36	2220.10	-33.29	37.91	12.47	98.23	16 48 36	1620.1	-31.80	29.01
110.00	8 24 29	3792.51	2.66	140.04	4.06	55.91	9 27 41	3192.5	-1.83	133.84

DIFFERENTIAL CORRECTIONS

TDE	.0505	TRA	-.5723	TC3	2.8219	BAU	.5998
RDE	-.3744	RRA	-.0999	RC3	.2259	FAU	.12753
FDE	.4978	FRA	-.3619	FC3	-6.9662	BSP	8221
BDE	.3778	BRA	.5810	BC3	2.8309	FSP	1489

MID-COURSE EXECUTION ACCURACY

SGT	2411.9	SGR	588.2	SG3	485.6		
RRT	.3513	RRF	-.3932	RTF	-.8800		
SGB	2482.6	R23	-.0717	R13	-.8816		
SG1	2421.2	SG2	548.6	THA	5.16		

ORBIT DETERMINATION ACCURACY

ST	280.3	SR	540.8	SS	431.7
CRT	-.1769	CRS	.9304	CST	-.3991
LSA	685.3	MSA	281.2	SSA	93.1
EL1	543.8	EL2	274.3	ALF	97.04

LAUNCH DATE DEC 13 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 423.408 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.772	GAL	2.81	AZL	89.28	HCA	131.09	SMA	200.50	ECC	.26973	INC	.7248	V1	30.254
RP	238.14	LAP	.55	LOP	212.12	VP	21.276	GAP	11.37	AZP	90.48	TAL	13.30	TAP	144.39	RCA	146.42	APO	254.59	V2	23.073
RC	181.513	GL	6.19	GP	4.16	ZAL	62.28	ZAP	160.19	ETS	166.85	ZAE	159.16	ETE	11.94	ZAC	94.55	ETC	255.80	CLP	160.61

PLANETOCENTRIC CONIC

C3	15.641	VHL	3.955	DLA	19.65	RAL	147.63	RAD	6567.6	VEL	11.706	PTH	2.06	VHP	6.470	DPA	-.22	RAP	193.87	ECC	1.2574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 57 41	2820.48	-28.25	83.32	11.77	92.06	13 44 41	2220.5	-27.66	74.70
90.00	6 30 47	4138.13	-1.96	168.53	5.49	61.75	7 39 45	3538.1	-5.72	161.87
100.00	14 31 24	2518.25	-29.68	61.00	11.68	93.75	15 13 22	1918.2	-28.84	52.30
100.00	7 39 45	3915.59	-.71	151.48	4.80	60.12	8 45 0	3315.6	-4.68	144.94
110.00	16 6 18	2221.34	-33.31	38.01	11.24	98.18	16 43 20	1621.3	-31.82	29.10
110.00	8 21 20	3785.27	2.39	139.66	2.87	55.89	9 24 25	3185.3	-2.10	133.46

DIFFERENTIAL CORRECTIONS

TDE	.0499	TRA	-.5331	TC3	2.9072	BAU	.6102
RDE	-.3694	RRA	-.0924	RC3	.2516	FAU	.13315
FDE	.5250	FRA	-.4435	FC3	-7.3699	BSP	8081
BDE	.3728	BRA	.5410	BC3	2.9181	FSP	1570

MID-COURSE EXECUTION ACCURACY

SGT	2442.5	SGR	588.4	SG3	511.3		
RRT	.3726	RRF	-.4221	RTF	-.8848		
SGB	2512.3	R23	-.0811	R13	-.8867		
SG1	2452.8	SG2	543.8	THA	5.40		

ORBIT DETERMINATION ACCURACY

ST	265.5	SR	536.9	SS	451.0
CRT	-.1947	CRS	.9219	CST	-.4352
LSA	693.1	MSA	269.1	SSA	96.9
EL1	540.2	EL2	258.9	ALF	97.15

LAUNCH DATE DEC 13 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 426.832 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.723	GAL	2.90	AZL	89.30	HCA	132.05	SMA	199.52	ECC	.26642	INC	.6957	V1	30.254
RP	237.81	LAP	.52	LOP	213.08	VP	21.236	GAP	10.85	AZP	90.47	TAL	13.84	TAP	145.89	RCA	146.36	APO	252.67	V2	23.106
RC	183.786	GL	5.97	GP	4.33	ZAL	61.32	ZAP	159.34	ETS	166.92	ZAE	159.85	ETE	12.99	ZAC	94.73	ETC	255.79	CLP	159.78

PLANETOCENTRIC CONIC

C3	15.452	VHL	3.931	DLA	19.76	RAL	146.60	RAD	6567.6	VEL	11.698	PTH	2.06	VHP	6.316	DPA	-.12	RAP	194.05	ECC	1.2543

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 52 20	2822.32	-28.25	83.45	10.57	92.00	13 39 22	2222.3	-27.68	74.84
90.00	6 27 55	4130.79	-2.19	168.12	4.33	61.76	7 36 45	3530.8	-5.95	161.46
100.00	14 26 11	2519.67	-29.68	61.11	10.49	93.69	15 8 11	1919.7	-28.86	52.40
100.00	7 36 44	3908.67	-.94	151.10	3.64	60.12	8 41 53	3308.7	-4.91	144.56
110.00	16 1 20	2222.00	-33.31	38.06	10.05	98.15	16 38 22	1622.0	-31.83	29.15
110.00	8 18 5	3779.11	2.15	139.34	1.70	55.88	9 21 4	3179.1	-2.34	133.14

DIFFERENTIAL CORRECTIONS

TDE	.0312	TRA	-.5132	TC3	2.9394	BAU	.6099
RDE	-.3647	RRA	-.0848	RC3	.2788	FAU	.13881
FDE	.5570	FRA	-.5256	FC3	-7.7775	BSP	8388
BDE	.3661	BRA	.5202	BC3	2.9526	FSP	1666

MID-COURSE EXECUTION ACCURACY

SGT	2444.1	SGR	589.8	SG3	537.5		
RRT	.4069	RRF	-.4536	RTF	-.8842		
SGB	2514.3	R23	-.0828	R13	-.8863		
SG1	2456.5	SG2	536.1	THA	5.89		

ORBIT DETERMINATION ACCURACY

ST	252.5	SR	533.1	SS	473.3
CRT	-.1067	CRS	.9151	CST	-.3767
LSA	700.6	MSA	267.5	SSA	97.8
EL1	534.0	EL2	250.6	ALF	93.71

LAUNCH DATE DEC 13 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 430.285 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.677	GAL	2.98	AZL	89.33	HCA	133.01	SMA	198.59	ECC	.26329	INC	.6657	V1	30.254
RP	237.48	LAP	.49	LOP	214.04	VP	21.199	GAP	10.34	AZP	90.45	TAL	14.37	TAP	147.37	RCA	146.30	APO	250.87	V2	23.140
RC	186.049	GL	5.74	GP	4.50	ZAL	60.39	ZAP	158.47	ETS	166.98	ZAE	160.55	ETE	14.18	ZAC	94.93	ETC	255.79	CLP	158.93

PLANETOCENTRIC CONIC

C3	15.281	VHL	3.909	DLA	19.85	RAL	145.59	RAD	6567.6	VEL	11.690	PTH	2.06	VHP	6.166	DPA	-.01	RAP	194.22	ECC	1.2515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 47 21	2823.36	-28.25	83.53	9.40	91.96	13 34 24	2223.4	-27.68	74.91
90.00	6 24 50	4124.74	-2.39	167.78	3.20	61.78	7 33 35	3524.7	-6.15	161.12
100.00	14 21 18	2520.39	-29.69	61.16	9.32	93.67	15 3 18	1920.4	-28.86	52.46
100.00	7 33 34	3902.95	-1.14	150.78	2.50	60.13	8 38 37	3302.9	-5.10	144.24
110.00	15 56 38	2222.12	-33.31	38.07	8.88	98.14	16 33 40	1622.1	-31.83	29.16
110.00	8 14 43	3773.98	1.96	139.07	.57	55.87	9 17 37	3174.0	-2.54	132.87

DIFFERENTIAL CORRECTIONS

TDE	.0241	TRA	-.4844	TC3	2.9903	BAU	.6141
RDE	-.3601	RRA	-.0768	RC3	.3080	FAU	.14485
FDE	.5856	FRA	-.6156	FC3	-8.2063	BSP	8436
BDE	.3609	BRA	.4905	BC3	3.0061	FSP	1760

MID-COURSE EXECUTION ACCURACY

SGT	2456.9	SGR	592.4	SG3	565.4		
RRT	.4360	RRF	-.4858	RTF	-.8860		
SGB	2527.3	R23	-.0895	R13	-.8884		
SG1	2471.1	SG2	530.0	THA	6.20		

ORBIT DETERMINATION ACCURACY

ST	239.7	SR	529.1	SS	493.0
CRT	-.0788	CRS	.9069	CST	-.3695
LSA	708.5	MSA	262.0	SSA	99.7
EL1	529.5	EL2	238.8	ALF	92.57

LAUNCH DATE DEC 13 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 433.764 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.633	GAL	3.06	AZL	89.37	HCA	133.97	SMA	197.71	ECC	.26032	INC	.6346
RP	237.15	LAP	.46	LOP	215.00	VP	21.166	GAP	9.83	AZP	90.44	TAL	14.88	TAP	148.85	RCA	146.24	APO	249.18
RC	188.300	GL	5.49	GP	4.69	ZAL	59.48	ZAP	157.58	ETS	167.03	ZAE	161.28	ETE	15.51	ZAC	95.13	ETC	255.78

V1	30.254	V2	23.174	CLP	158.05														

PLANETOCENTRIC CONIC

C3	15.126	VHL	3.889	DLA	19.91	RAL	144.60	RAD	6567.6	VEL	11.684	PTH	2.05	VHP	6.019	DPA	.12	RAP	194.37
ECC	1.2489																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 42 45	2823.53	-28.26	83.54	8.26	91.95	13 29 49	2223.5	-27.69	74.92
90.00	6 21 35	4120.01	-2.54	167.52	2.10	61.79	7 30 15	3520.0	-6.29	160.85
100.00	14 16 47	2520.33	-29.69	61.16	8.18	93.67	14 58 47	1920.3	-28.86	52.45
100.00	7 30 14	3898.44	-1.29	150.54	1.40	60.13	8 35 12	3298.4	-5.25	143.99
110.00	15 52 15	2221.65	-33.31	38.03	7.74	98.16	16 29 16	1621.7	-31.82	29.12
110.00	8 11 15	3769.89	1.80	138.86	359.47	55.86	9 14 5	3169.9	-2.69	132.66

DIFFERENTIAL CORRECTIONS

TDE	.0181	TRA	-.4563	TC3	3.0366	BAU	.6179
RDE	-.3556	RRA	-.0685	RC3	.3393	FAU	.15117
FDE	.6140	FRA	-.7110	FC3	-8.6524	BSP	8485
BDE	.3561	BRA	.4614	BC3	3.0555	FSP	1860

MID-COURSE EXECUTION ACCURACY

SGT	2468.0	SGR	596.4	SG3	594.6		
RRT	.4662	RRF	-.5191	RTF	-.8877		
SGB	2539.0	R23	-.0969	R13	-.8904		
SG1	2484.3	SG2	524.2	THA	6.73		

ORBIT DETERMINATION ACCURACY

ST	227.5	SR	525.0	SS	512.4
CRT	-.0546	CRS	.8986	CST	-.3638
LSA	716.5	MSA	257.4	SSA	101.2
EL1	525.2	EL2	227.0	ALF	91.67

LAUNCH DATE DEC 13 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 437.268 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.591	GAL	3.13	AZL	89.40	HCA	134.93	SMA	196.88	ECC	.25752	INC	.6024
RP	236.81	LAP	.43	LOP	215.97	VP	21.137	GAP	9.33	AZP	90.43	TAL	15.39	TAP	150.32	RCA	146.18	APO	247.58
RC	190.540	GL	5.23	GP	4.88	ZAL	58.60	ZAP	156.67	ETS	167.07	ZAE	162.03	ETE	17.01	ZAC	95.33	ETC	255.78

V1	30.254	V2	23.209	CLP	157.16														

PLANETOCENTRIC CONIC

C3	14.987	VHL	3.871	DLA	19.94	RAL	143.64	RAD	6567.6	VEL	11.678	PTH	2.05	VHP	5.877	DPA	.27	RAP	194.52
ECC	1.2466																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 38 34	2822.80	-28.25	83.49	7.16	91.98	13 25 37	2222.8	-27.68	74.87
90.00	6 18 7	4116.59	-2.65	167.33	1.03	61.80	7 26 43	3516.6	-6.40	160.66
100.00	14 12 38	2519.48	-29.68	61.09	7.07	93.70	14 54 37	1919.5	-28.85	52.39
100.00	7 26 44	3895.15	-1.40	150.36	.33	60.14	8 31 39	3295.2	-5.36	143.81
110.00	15 48 10	2220.57	-33.30	37.95	6.63	98.21	16 25 11	1620.6	-31.81	29.04
110.00	8 7 41	3766.82	1.68	138.70	358.40	55.85	9 10 28	3166.8	-2.81	132.50

DIFFERENTIAL CORRECTIONS

TDE	.0148	TRA	-.4275	TC3	3.0812	BAU	.6218
RDE	-.3512	RRA	-.0598	RC3	.3729	FAU	.15784
FDE	.6407	FRA	-.8133	FC3	-9.1181	BSP	8483
BDE	.3515	BRA	.4317	BC3	3.1037	FSP	1963

MID-COURSE EXECUTION ACCURACY

SGT	2478.9	SGR	602.0	SG3	625.3		
RRT	.4964	RRF	-.5533	RTF	-.8896		
SGB	2550.9	R23	-.1053	R13	-.8926		
SG1	2497.6	SG2	518.7	THA	7.19		

ORBIT DETERMINATION ACCURACY

ST	215.4	SR	520.6	SS	530.5
CRT	-.0453	CRS	.8895	CST	-.3699
LSA	724.2	MSA	252.9	SSA	102.5
EL1	520.8	EL2	215.1	ALF	91.30

LAUNCH DATE DEC 13 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 440.796 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.551	GAL	3.21	AZL	89.43	HCA	135.90	SMA	196.10	ECC	.25486	INC	.5690
RP	236.46	LAP	.40	LOP	216.93	VP	21.112	GAP	8.83	AZP	90.41	TAL	15.88	TAP	151.78	RCA	146.12	APO	246.08
RC	192.768	GL	4.95	GP	5.09	ZAL	57.75	ZAP	155.73	ETS	167.10	ZAE	162.80	ETE	18.71	ZAC	95.54	ETC	255.77

V1	30.254	V2	23.244	CLP	156.24														

PLANETOCENTRIC CONIC

C3	14.861	VHL	3.855	DLA	19.94	RAL	142.71	RAD	6567.6	VEL	11.672	PTH	2.05	VHP	5.738	DPA	.44	RAP	194.65
ECC	1.2446																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 34 47	2821.14	-28.25	83.37	6.08	92.04	13 21 48	2221.1	-27.67	74.75
90.00	6 14 27	4114.49	-2.72	167.21	359.98	61.80	7 23 1	3514.5	-6.47	160.54
100.00	14 8 51	2517.80	-29.68	60.97	6.00	93.77	14 50 49	1917.8	-28.84	52.27
100.00	7 23 4	3893.06	-1.47	150.24	359.29	60.14	8 27 57	3293.1	-5.43	143.69
110.00	15 44 24	2218.85	-33.28	37.82	5.55	98.29	16 21 23	1618.9	-31.78	28.91
110.00	8 4 0	3764.77	1.60	138.59	357.36	55.85	9 6 45	3164.8	-2.89	132.39

DIFFERENTIAL CORRECTIONS

TDE	.0198	TRA	-.3924	TC3	3.1377	BAU	.6287
RDE	-.3467	RRA	-.0505	RC3	.4094	FAU	.16500
FDE	.6619	FRA	-.9268	FC3	-9.6123	BSP	8313
BDE	.3472	BRA	.3956	BC3	3.1643	FSP	2063

MID-COURSE EXECUTION ACCURACY

SGT	2497.6	SGR	609.5	SG3	658.2		
RRT	.5242	RRF	-.5878	RTF	-.8929		
SGB	2570.9	R23	-.1161	R13	-.8964		
SG1	2518.9	SG2	514.7	THA	7.61		

ORBIT DETERMINATION ACCURACY

ST	201.9	SR	515.9	SS	545.5
CRT	-.0961	CRS	.8782	CST	-.4259
LSA	730.0	MSA	246.1	SSA	104.9
EL1	516.3	EL2	200.8	ALF	92.54

LAUNCH DATE DEC 13 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 444.345 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.513	GAL	3.27	AZL	89.47	HCA	136.87	SMA	195.36	ECC	.25236	INC	.5345
RP	236.12	LAP	.37	LOP	217.90	VP	21.091	GAP	8.35	AZP	90.39	TAL	16.35	TAP	153.23	RCA	146.06	APO	244.66
RC	194.983	GL	4.66	GP	5.31	ZAL	56.94	ZAP	154.77	ETS	167.13	ZAE	163.58	ETE	20.66	ZAC	95.76	ETC	255.76

V1	30.254	V2	23.279	CLP	155.30														

PLANETOCENTRIC CONIC

C3	14.747	VHL	3.840	DLA	19.92	RAL	141.81	RAD	6567.6	VEL	11.668	PTH	2.05	VHP	5.603	DPA	.62	RAP	194.76
ECC	1.2427																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 31 26	2818.46	-28.24	83.17	5.03	92.14	13 18 25	2218.5	-27.65	74.56
90.00	6 10 35	4113.73	-2.74	167.17	358.97	61.81	7 19 9	3513.7	-6.49	160.49
100.00	14 5 29	2515.20	-29.66	60.78	4.95	93.87	14 47 24	1915.2	-28.81	52.08
100.00	7 19 13	3892.22	-1.50	150.19	358.28	60.14	8 24 6	3292.2	-5.46	143.65
110.00	15 40 59	2216.42	-33.26	37.63	4.50	98.40	16 17 55	1616.4	-31.74	28.73
110.00	8 0 13	3763.77	1.57	138.54	356.36	55.85	9 2 57	3163.8	-2.93	132.34

DIFFERENTIAL CORRECTIONS

TDE	.0060	TRA	-.3787	TC3	3.1348	BAU	.6243
RDE	-.3426	RRA	-.0412	RC3	.4471	FAU	.17197
FDE	.6935	FRA	-1.0344	FC3	-10.0959	BSP	8608
BDE	.3427	BRA	.3809	BC3	3.1666	FSP	2192

MID-COURSE EXECUTION ACCURACY

SGT	2481.5	SGR	619.3	SG3	690.6		
RRT	.5606	RRF	-.6231	RTF	-.8910		
SGB	2557.6	R23	-.1229	R13	-.8950		
SG1	2506.8	SG2	507.7	THA	8.31		

ORBIT DETERMINATION ACCURACY

ST	194.4	SR	511.7	SS	566.1
CRT	-.0028	CRS	.8719	CST	-.3572
LSA	739.7	MSA	249.8	SSA	102.9
EL1	511.7	EL2	194.4	ALF	90.07

LAUNCH DATE DEC 13 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 447.916 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.477 GAL 3.34 AZL 89.50 HCA 137.85 SMA 194.67 ECC .24998 INC .4985 V1 30.254
RP 235.77 LAP .33 LOP 218.88 VP 21.072 GAP 7.87 AZP 90.37 TAL 16.82 TAP 154.66 RCA 146.00 APO 243.33 V2 23.315
RC 197.185 GL 4.36 GP 5.54 ZAL 56.16 ZAP 153.78 ETS 167.14 ZAE 164.36 ETE 22.89 ZAC 95.99 ETC 255.76 CLP 154.33

PLANETOCENTRIC CONIC

C3 14.644 VHL 3.827 DLA 19.87 RAL 140.93 RAD 6567.6 VEL 11.663 PTH 2.05 VHP 5.472 DPA .83 RAP 194.87 ECC 1.2410

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 28 30	2814.82	-28.23	82.91	4.02	92.27	13 15 25	2214.8	-27.62	74.29
90.00	6 6 31	4114.26	-2.73	167.20	357.98	61.80	7 15 5	3514.3	-6.48	160.52
100.00	14 2 29	2511.75	-29.65	60.52	3.93	94.00	14 44 21	1911.8	-28.78	51.83
100.00	7 15 13	3892.56	-1.49	150.21	357.29	60.14	8 20 6	3292.6	-5.45	143.67
110.00	15 37 52	2213.32	-33.23	37.40	3.47	98.53	16 14 45	1613.3	-31.69	28.51
110.00	7 56 19	3763.75	1.57	138.54	355.38	55.85	8 59 3	3163.8	-2.93	132.33

DIFFERENTIAL CORRECTIONS
TDE .0047 TRA -.3551 TC3 3.1550 BAU .6250
RDE -.3383 RRA -.0311 RC3 .4883 FAU .17954
FDE .7167 FRA-1.1548 FC-10.6141 BSP 8618
BDE .3384 BRA .3564 BC3 3.1926 FSP 2313

MID-COURSE EXECUTION ACCURACY
SGT 2480.0 SGR 631.5 SG3 725.6
RRT .5918 RRF -.6579 RTF -.8916
SGB 2559.1 R23 -.1333 R13 -.8962
SG1 2509.2 SG2 503.1 THA 8.93

ORBIT DETERMINATION ACCURACY
ST 184.5 SR 506.9 SS 582.0
CRT -.0025 CRS .8625 CST -.3673
LSA 746.5 MSA 248.8 SSA 102.8
EL1 506.9 EL2 184.5 ALF 90.06

LAUNCH DATE DEC 13 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 451.507 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.442 GAL 3.40 AZL 89.54 HCA 138.82 SMA 194.01 ECC .24774 INC .4609 V1 30.254
RP 235.42 LAP .30 LOP 219.85 VP 21.057 GAP 7.40 AZP 90.35 TAL 17.26 TAP 156.09 RCA 145.94 APO 242.07 V2 23.351
RC 199.372 GL 4.04 GP 5.78 ZAL 55.41 ZAP 152.77 ETS 167.15 ZAE 165.15 ETE 25.46 ZAC 96.23 ETC 255.75 CLP 153.34

PLANETOCENTRIC CONIC

C3 14.551 VHL 3.815 DLA 19.79 RAL 140.08 RAD 6567.6 VEL 11.659 PTH 2.05 VHP 5.345 DPA 1.06 RAP 194.95 ECC 1.2395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 25 59	2810.16	-28.22	82.57	3.03	92.44	13 12 49	2210.2	-27.58	73.96
90.00	6 2 15	4116.10	-2.67	167.30	357.02	61.80	7 10 51	3516.1	-6.42	160.63
100.00	13 59 53	2507.39	-29.63	60.20	2.93	94.17	14 41 40	1907.4	-28.73	51.51
100.00	7 11 3	3894.09	-1.44	150.30	356.34	60.14	8 15 57	3294.1	-5.40	143.75
110.00	15 35 5.	2209.51	-33.19	37.11	2.46	98.70	16 11 55	1609.5	-31.63	28.23
110.00	7 52 19	3764.74	1.60	138.59	354.44	55.85	8 55 4	3164.7	-2.89	132.39

DIFFERENTIAL CORRECTIONS
TDE .0050 TRA -.3325 TC3 3.1700 BAU .6253
RDE -.3340 RRA -.0204 RC3 .5325 FAU .18748
FDE .7377 FRA-1.2825 FC-11.1543 BSP 8618
BDE .3341 BRA .3331 BC3 3.2144 FSP 2440

MID-COURSE EXECUTION ACCURACY
SGT 2476.1 SGR 646.4 SG3 762.3
RRT .6223 RRF -.6921 RTF -.8920
SGB 2559.1 R23 -.1448 R13 -.8974
SG1 2509.9 SG2 499.1 THA 9.61

ORBIT DETERMINATION ACCURACY
ST 175.2 SR 501.9 SS 596.8
CRT -.0155 CRS .8525 CST -.3873
LSA 752.7 MSA 248.3 SSA 102.4
EL1 501.9 EL2 175.1 ALF 90.35

LAUNCH DATE DEC 13 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 455.119 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.409 GAL 3.46 AZL 89.58 HCA 139.80 SMA 193.39 ECC .24563 INC .4219 V1 30.254
RP 235.06 LAP .27 LOP 220.83 VP 21.046 GAP 6.93 AZP 90.32 TAL 17.70 TAP 157.50 RCA 145.89 APO 240.89 V2 23.387
RC 201.544 GL 3.70 GP 6.04 ZAL 54.69 ZAP 151.72 ETS 167.15 ZAE 165.93 ETE 28.44 ZAC 96.47 ETC 255.74 CLP 152.32

PLANETOCENTRIC CONIC

C3 14.468 VHL 3.804 DLA 19.69 RAL 139.25 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 5.221 DPA 1.31 RAP 195.03 ECC 1.2381

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 23 53	2804.48	-28.20	82.15	2.06	92.65	13 10 38	2204.5	-27.54	73.55
90.00	5 57 47	4119.22	-2.57	167.47	356.09	61.79	7 6 26	3519.2	-6.32	160.80
100.00	13 57 39	2502.11	-29.60	59.81	1.96	94.37	14 39 21	1902.1	-28.68	51.13
100.00	7 6 42	3896.82	-1.34	150.45	355.41	60.13	8 11 39	3296.8	-5.31	143.90
110.00	15 32 38	2204.96	-33.14	36.76	1.48	98.90	16 9 23	1605.0	-31.56	27.89
110.00	7 48 12	3766.73	1.68	138.69	353.52	55.85	8 50 59	3166.7	-2.81	132.49

DIFFERENTIAL CORRECTIONS
TDE .0100 TRA -.3077 TC3 3.1871 BAU .6266
RDE -.3295 RRA -.0088 RC3 .5802 FAU .19585
FDE .7537 FRA-1.4197 FC-11.7194 BSP 8509
BDE .3297 BRA .3078 BC3 3.2395 FSP 2565

MID-COURSE EXECUTION ACCURACY
SGT 2474.0 SGR 664.4 SG3 800.9
RRT .6507 RRF -.7252 RTF -.8930
SGB 2561.7 R23 -.1576 R13 -.8992
SG1 2513.1 SG2 496.6 THA 10.32

ORBIT DETERMINATION ACCURACY
ST 165.3 SR 496.6 SS 609.3
CRT -.0720 CRS .8411 CST -.4404
LSA 757.4 MSA 247.0 SSA 102.4
EL1 496.7 EL2 164.8 ALF 91.54

LAUNCH DATE DEC 13 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 458.748 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.378 GAL 3.52 AZL 89.62 HCA 140.79 SMA 192.80 ECC .24363 INC .3810 V1 30.254
RP 234.71 LAP .24 LOP 221.81 VP 21.037 GAP 6.48 AZP 90.30 TAL 18.11 TAP 158.90 RCA 145.83 APO 239.78 V2 23.424
RC 203.699 GL 3.35 GP 6.32 ZAL 54.00 ZAP 150.65 ETS 167.14 ZAE 166.69 ETE 31.90 ZAC 96.73 ETC 255.74 CLP 151.28

PLANETOCENTRIC CONIC

C3 14.392 VHL 3.794 DLA 19.55 RAL 138.46 RAD 6567.6 VEL 11.652 PTH 2.05 VHP 5.101 DPA 1.59 RAP 195.08 ECC 1.2369

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 22 14	2797.71	-28.18	81.66	1.12	92.89	13 8 52	2197.7	-27.48	73.06
90.00	5 53 6	4123.65	-2.42	167.72	355.18	61.78	7 1 50	3523.7	-6.18	161.05
100.00	13 55 51	2495.85	-29.57	59.35	1.02	94.61	14 37 26	1895.9	-28.61	50.67
100.00	7 2 11	3900.74	-1.21	150.66	354.51	60.13	8 7 12	3300.7	-5.18	144.12
110.00	15 30 31	2199.63	-33.08	36.35	.52	99.13	16 7 11	1599.6	-31.47	27.50
110.00	7 43 59	3769.73	1.79	138.85	352.63	55.86	8 46 49	3169.7	-2.70	132.65

DIFFERENTIAL CORRECTIONS
TDE .0076 TRA -.2926 TC3 3.1741 BAU .6226
RDE -.3253 RRA .0031 RC3 .6304 FAU .20426
FDE .7745 FRA-1.5582 FC-12.2872 BSP 8611
BDE .3254 BRA .2926 BC3 3.2361 FSP 2713

MID-COURSE EXECUTION ACCURACY
SGT 2453.5 SGR 685.7 SG3 840.0
RRT .6799 RRF -.7569 RTF -.8916
SGB 2547.6 R23 -.1706 R13 -.8989
SG1 2499.3 SG2 493.6 THA 11.20

ORBIT DETERMINATION ACCURACY
ST 158.6 SR 491.6 SS 624.5
CRT -.0614 CRS .8325 CST -.4387
LSA 764.5 MSA 249.3 SSA 100.7
EL1 491.7 EL2 158.2 ALF 91.27

LAUNCH DATE DEC 13 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 462.397 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.348	GAL	3.57	AZL	89.66	HCA	141.77	SMA	192.25	ECC	.24174	INC	.3377
RP	234.35	LAP	.21	LOP	222.80	VP	21.031	GAP	6.03	AZP	90.27	TAL	18.52	TAP	160.29	RCA	145.78	APO	238.73
RC	205.837	GL	2.98	GP	6.61	ZAL	53.34	ZAP	149.55	ETS	167.13	ZAE	167.42	ETE	35.93	ZAC	96.99	ETC	255.73

V1	30.254	V2	23.461	CLP	150.20														

PLANETOCENTRIC CONIC

C3	14.323	VHL	3.785	DLA	19.39	RAL	137.69	RAD	6567.6	VEL	11.649	PTH	2.05	VHP	4.984	DPA	1.89	RAP	195.12

ECC	1.2357																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 20 59	2789.89	-28.15	81.09	.21	93.18	13 7 29	2189.9	-27.41	72.50
90.00	5 48 13	4129.36	-2.24	168.04	354.30	61.76	6 57 3	3529.4	-6.00	161.38
100.00	13 54 25	2488.64	-29.53	58.82	.10	94.89	14 35 53	1888.6	-28.54	50.15
100.00	6 57 29	3905.85	-1.04	150.94	353.63	60.12	8 2 35	3305.8	-5.00	144.40
110.00	15 28 44	2193.53	-33.02	35.89	359.59	99.40	16 5 18	1593.5	-31.37	27.06
110.00	7 39 39	3773.72	1.95	139.06	351.77	55.87	8 42 33	3173.7	-2.55	132.86

DIFFERENTIAL CORRECTIONS

TDE	.0147	TRA	-.2718	TC3	3.1750	BAU	.6220
RDE	-.3205	RRA	.0163	RC3	.6854	FAU	.21335
FDE	.7827	FRA	-1.7110	FC	-12.8956	BSP	8497
BDE	.3209	BRA	.2723	BC3	3.2481	FSP	2848

MID-COURSE EXECUTION ACCURACY

SGT	2442.6	SGR	710.8	SG3	882.1		
RRT	.7053	RRF	-.7869	RTF	-.8916		
SGB	2543.9	R23	-.1851	R13	-.9002		
SG1	2495.7	SG2	493.2	THA	12.08		

ORBIT DETERMINATION ACCURACY

ST	151.1	SR	485.6	SS	634.2
CRT	-.1456	CRS	.8195	CST	-.5081
LSA	767.1	MSA	249.7	SSA	100.2
EL1	486.1	EL2	149.3	ALF	92.86

LAUNCH DATE DEC 13 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 466.062 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.320	GAL	3.62	AZL	89.71	HCA	142.76	SMA	191.73	ECC	.23995	INC	.2933
RP	233.98	LAP	.18	LOP	223.79	VP	21.029	GAP	5.58	AZP	90.23	TAL	18.90	TAP	161.66	RCA	145.73	APO	237.74
RC	207.958	GL	2.58	GP	6.92	ZAL	52.72	ZAP	148.41	ETS	167.11	ZAE	168.09	ETE	40.62	ZAC	97.27	ETC	255.72

V1	30.254	V2	23.498	CLP	149.10														

PLANETOCENTRIC CONIC

C3	14.261	VHL	3.776	DLA	19.19	RAL	136.95	RAD	6567.6	VEL	11.647	PTH	2.04	VHP	4.871	DPA	2.22	RAP	195.15

ECC	1.2347																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 20 11	2780.96	-28.12	80.44	359.32	93.50	13 6 32	2181.0	-27.33	71.86
90.00	5 43 8	4136.37	-2.01	168.43	353.44	61.75	6 52 5	3536.4	-5.78	161.77
100.00	13 53 23	2480.41	-29.48	58.21	359.20	95.21	14 34 43	1880.4	-28.44	49.56
100.00	6 52 37	3912.16	-.82	151.29	352.78	60.12	7 57 49	3312.2	-4.79	144.75
110.00	15 27 18	2186.60	-32.94	35.37	358.67	99.70	16 3 44	1586.6	-31.25	26.55
110.00	7 35 12	3778.73	2.14	139.32	350.93	55.88	8 38 11	3178.7	-2.35	133.12

DIFFERENTIAL CORRECTIONS

TDE	.0172	TRA	-.2580	TC3	3.1529	BAU	.6176
RDE	-.3160	RRA	.0300	RC3	.7434	FAU	.22250
FDE	.7943	FRA	-1.8652	FC	-13.5073	BSP	8517
BDE	.3164	BRA	.2598	BC3	3.2394	FSP	3006

MID-COURSE EXECUTION ACCURACY

SGT	2417.3	SGR	739.9	SG3	924.5		
RRT	.7295	RRF	-.8147	RTF	-.8900		
SGB	2528.0	R23	-.2005	R13	-.9002		
SG1	2479.4	SG2	493.4	THA	13.11		

ORBIT DETERMINATION ACCURACY

ST	145.8	SR	479.9	SS	645.8
CRT	-.1876	CRS	.8093	CST	-.5429
LSA	771.7	MSA	251.6	SSA	98.7
EL1	480.8	EL2	142.9	ALF	93.58

LAUNCH DATE DEC 13 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 469.744 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.294	GAL	3.67	AZL	89.75	HCA	143.75	SMA	191.24	ECC	.23826	INC	.2461
RP	233.62	LAP	.15	LOP	224.78	VP	21.028	GAP	5.15	AZP	90.20	TAL	19.27	TAP	163.02	RCA	145.67	APO	236.81
RC	210.060	GL	2.17	GP	7.25	ZAL	52.13	ZAP	147.24	ETS	167.09	ZAE	168.69	ETE	46.05	ZAC	97.56	ETC	255.71

V1	30.254	V2	23.536	CLP	147.97														

PLANETOCENTRIC CONIC

C3	14.205	VHL	3.769	DLA	18.96	RAL	136.24	RAD	6567.6	VEL	11.644	PTH	2.04	VHP	4.762	DPA	2.58	RAP	195.16

ECC	1.2338																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 19 47	2770.92	-28.07	79.70	358.45	93.87	13 5 58	2170.9	-27.24	71.14
90.00	5 37 50	4144.66	-1.75	168.89	352.61	61.73	6 46 55	3544.7	-5.51	162.24
100.00	13 52 45	2471.15	-29.42	57.53	358.32	95.56	14 33 56	1871.2	-28.34	48.89
100.00	6 47 34	3919.66	-.57	151.70	351.96	60.11	7 52 54	3319.7	-4.54	145.17
110.00	15 26 11	2178.83	-32.85	34.78	357.77	100.04	16 2 30	1578.8	-31.11	25.98
110.00	7 30 37	3784.75	2.37	139.64	350.12	55.89	8 33 42	3184.8	-2.12	133.43

DIFFERENTIAL CORRECTIONS

TDE	.0226	TRA	-.2444	TC3	3.1274	BAU	.6133
RDE	-.3111	RRA	.0448	RC3	.8060	FAU	.23204
FDE	.7995	FRA	-2.0292	FC	-14.1423	BSP	8473
BDE	.3119	BRA	.2485	BC3	3.2296	FSP	3163

MID-COURSE EXECUTION ACCURACY

SGT	2390.1	SGR	773.3	SG3	968.9		
RRT	.7508	RRF	-.8403	RTF	-.8882		
SGB	2512.1	R23	-.2168	R13	-.9004		
SG1	2462.7	SG2	495.7	THA	14.24		

ORBIT DETERMINATION ACCURACY

ST	141.7	SR	473.8	SS	655.4
CRT	-.2604	CRS	.7975	CST	-.5956
LSA	774.8	MSA	253.4	SSA	97.3
EL1	475.3	EL2	136.3	ALF	94.85

LAUNCH DATE DEC 13 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 473.442 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.268	GAL	3.72	AZL	89.80	HCA	144.74	SMA	190.78	ECC	.23667	INC	.1973
RP	233.25	LAP	.11	LOP	225.77	VP	21.031	GAP	4.72	AZP	90.16	TAL	19.62	TAP	164.37	RCA	145.63	APO	235.93
RC	212.144	GL	1.74	GP	7.61	ZAL	51.56	ZAP	146.04	ETS	167.06	ZAE	169.19	ETE	52.26	ZAC	97.87	ETC	255.70

V1	30.254	V2	23.574	CLP	146.81														

PLANETOCENTRIC CONIC

C3	14.154	VHL	3.762	DLA	18.70	RAL	135.55	RAD	6567.6	VEL	11.642	PTH	2.04	VHP	4.656	DPA	2.97	RAP	195.15

ECC	1.2329																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 19 49	2759.73	-28.02	78.89	357.60	94.27	13 5 49	2159.7	-27.13	70.34
90.00	5 32 19	4154.26	-1.44	169.43	351.81	61.72	6 41 34	3554.3	-5.21	162.78
100.00	13 52 31	2460.84	-29.35	56.77	357.46	95.96	14 33 31	1860.8	-28.21	48.15
100.00	6 42 19	3928.38	-.27	152.18	351.16	60.11	7 47 48	3328.4	-4.25	145.65
110.00	15 25 25	2170.17	-32.74	34.12	356.89	100.41	16 1 35	1570.2	-30.96	25.36
110.00	7 25 54	3791.81	2.64	140.00	349.34	55.91	8 29 6	3191.8	-1.85	133.80

DIFFERENTIAL CORRECTIONS

TDE	.0297	TRA	-.2328	TC3	3.0952	BAU	.6085
RDE	-.3059	RRA	.0607	RC3	.8733	FAU	.24193
FDE	.7990	FRA	-2.2000	FC	-14.7985	BSP	8418
BDE	.3073	BRA	.2406	BC3	3.2161	FSP	3328

MID-COURSE EXECUTION ACCURACY

SGT	2359.2	SGR	811.4	SG3	1014.9		
RRT	.7693	RRF	-.8634	RTF	-.8860		
SGB	2494.9	R23	-.2339	R13	-.9007		
SG1	2444.2	SG2	500.3	THA	15.49		

ORBIT DETERMINATION ACCURACY

ST	139.8	SR	467.2	SS	663.3
CRT	-.3520	CRS	.7848	CST	-.6547
LSA	776.7	MSA	255.5	SSA	96.0
EL1	470.0	EL2	130.1	ALF	96.51

LAUNCH DATE DEC 13 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 477.156 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.244	GAL	3.76	AZL	89.86	HCA	145.74	SMA	190.34	ECC	.23517	INC	.1435	V1	30.254
RP	232.88	LAP	.08	LOP	226.77	VP	21.036	GAP	4.30	AZP	90.12	TAL	19.96	TAP	165.70	RCA	145.58	APO	235.10	V2	23.612
RC	214.210	GL	1.28	GP	7.99	ZAL	51.04	ZAP	144.81	ETS	167.03	ZAE	169.55	ETE	59.23	ZAC	98.20	ETC	255.70	CLP	145.61

PLANETOCENTRIC CONIC

C3	14.107	VHL	3.756	DLA	18.41	RAL	134.89	RAD	6567.6	VEL	11.640	PTH	2.04	VHP	4.554	DPA	3.40	RAP	195.13	ECC	1.2322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 20 17	2747.36	-27.95	77.99	356.76	94.72	13 6 4	2147.4	-27.01	69.45
90.00	5 26 35	4165.18	-1.09	170.04	351.02	61.70	6 36 1	3565.2	-4.86	163.39
100.00	13 52 40	2449.44	-29.26	55.93	356.61	96.39	14 33 30	1849.4	-28.07	47.33
100.00	6 36 53	3938.33	.06	152.72	350.38	60.11	7 42 32	3338.3	-3.91	146.20
110.00	15 24 59	2160.61	-32.62	33.40	356.02	100.82	16 1 0	1560.6	-30.79	24.66
110.00	7 21 4	3799.93	2.95	140.43	348.58	55.93	8 24 23	3199.9	-1.54	134.22

DIFFERENTIAL CORRECTIONS

TDE	.0382	TRA	-.2225	TC3	3.0564	BAU	.6034
RDE	-.3003	RRA	.0780	RC3	.9462	FAU	.25227
FDE	.7908	FRA	-2.3820	FC	-15.4812	BSP	8330
BDE	.3027	BRA	.2358	BC3	3.1995	FSP	3493

MID-COURSE EXECUTION ACCURACY

SGT	2324.4	SGR	854.9	SG3	1063.0		
RRT	.7853	RRF	-.8842	RTF	-.8833		
SGB	2476.6	R23	-.2511	R13	-.9010		
SG1	2424.0	SG2	507.5	THA	16.87		

ORBIT DETERMINATION ACCURACY

ST	140.2	SR	460.1	SS	669.8
CRT	-.4540	CRS	.7704	CST	-.7108
LSA	777.4	MSA	258.2	SSA	94.4
EL1	464.8	EL2	123.7	ALF	98.48

LAUNCH DATE DEC 13 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 480.884 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.222	GAL	3.80	AZL	89.91	HCA	146.74	SMA	189.93	ECC	.23375	INC	.0901	V1	30.254
RP	232.51	LAP	.05	LOP	227.77	VP	21.043	GAP	3.89	AZP	90.07	TAL	20.28	TAP	167.02	RCA	145.53	APO	234.32	V2	23.650
RC	216.258	GL	.79	GP	8.39	ZAL	50.54	ZAP	143.54	ETS	167.00	ZAE	169.74	ETE	66.85	ZAC	98.54	ETC	255.68	CLP	144.38

PLANETOCENTRIC CONIC

C3	14.065	VHL	3.750	DLA	18.08	RAL	134.26	RAD	6567.6	VEL	11.638	PTH	2.04	VHP	4.456	DPA	3.86	RAP	195.09	ECC	1.2315

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 21 10	2733.78	-27.87	77.01	355.94	95.21	13 6 44	2133.8	-26.86	68.49
90.00	5 20 37	4177.44	-.69	170.72	350.26	61.69	6 30 15	3577.4	-4.47	164.08
100.00	13 53 14	2436.91	-29.17	55.01	355.78	96.86	14 33 51	1836.9	-27.91	46.43
100.00	6 31 15	3949.55	.45	153.34	349.63	60.11	7 37 4	3349.5	-3.53	146.81
110.00	15 24 54	2150.08	-32.49	32.61	355.17	101.27	16 0 44	1550.1	-30.59	23.91
110.00	7 16 4	3809.14	3.30	140.91	347.85	55.96	8 19 33	3209.1	-1.19	134.70

DIFFERENTIAL CORRECTIONS

TDE	.0474	TRA	-.2153	TC3	3.0056	BAU	.5970
RDE	-.2944	RRA	.0965	RC3	1.0238	FAU	.26268
FDE	.7782	FRA	-2.5679	FC	-16.1685	BSP	8254
BDE	.2982	BRA	.2360	BC3	3.1752	FSP	3670

MID-COURSE EXECUTION ACCURACY

SGT	2281.9	SGR	903.4	SG3	1111.6		
RRT	.7980	RRF	-.9024	RTF	-.8797		
SGB	2454.2	R23	-.2687	R13	-.9013		
SG1	2399.0	SG2	517.9	THA	18.42		

ORBIT DETERMINATION ACCURACY

ST	143.5	SR	452.7	SS	675.5
CRT	-.5519	CRS	.7562	CST	-.7547
LSA	777.9	MSA	261.1	SSA	92.7
EL1	460.1	EL2	117.8	ALF	100.63

LAUNCH DATE DEC 13 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 484.628 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.200	GAL	3.84	AZL	89.97	HCA	147.75	SMA	189.54	ECC	.23241	INC	.0271	V1	30.254
RP	232.14	LAP	.02	LOP	228.78	VP	21.053	GAP	3.48	AZP	90.03	TAL	20.58	TAP	168.33	RCA	145.49	APO	233.59	V2	23.689
RC	218.287	GL	.28	GP	8.82	ZAL	50.08	ZAP	142.23	ETS	166.96	ZAE	169.73	ETE	74.88	ZAC	98.90	ETC	255.67	CLP	143.12

PLANETOCENTRIC CONIC

C3	14.027	VHL	3.745	DLA	17.71	RAL	133.64	RAD	6567.6	VEL	11.637	PTH	2.04	VHP	4.361	DPA	4.36	RAP	195.04	ECC	1.2308

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 22 29	2718.95	-27.78	75.93	355.13	95.74	13 7 48	2118.9	-26.69	67.43
90.00	5 14 25	4191.08	-.25	171.48	349.53	61.68	6 24 16	3591.1	-4.03	164.85
100.00	13 54 11	2423.20	-29.05	54.01	354.96	97.38	14 34 35	1823.2	-27.72	45.46
100.00	6 25 23	3962.06	.87	154.03	348.90	60.12	7 31 26	3362.1	-3.11	147.50
110.00	15 25 10	2138.54	-32.33	31.75	354.32	101.76	16 0 49	1538.5	-30.37	23.08
110.00	7 10 54	3819.48	3.69	141.45	347.14	55.99	8 14 33	3219.5	-.80	135.24

DIFFERENTIAL CORRECTIONS

TDE	.0580	TRA	-.2099	TC3	2.9475	BAU	.5905
RDE	-.2878	RRA	.1167	RC3	1.1080	FAU	.27352
FDE	.7554	FRA	-2.7649	FC	-16.8818	BSP	8157
BDE	.2936	BRA	.2401	BC3	3.1489	FSP	3848

MID-COURSE EXECUTION ACCURACY

SGT	2235.1	SGR	958.0	SG3	1162.2		
RRT	.8080	RRF	-.9184	RTF	-.8754		
SGB	2431.8	R23	-.2854	R13	-.9018		
SG1	2373.0	SG2	531.6	THA	20.16		

ORBIT DETERMINATION ACCURACY

ST	149.9	SR	444.6	SS	679.7
CRT	-.6463	CRS	.7396	CST	-.7841
LSA	776.9	MSA	265.0	SSA	90.7
EL1	455.7	EL2	111.6	ALF	103.09

LAUNCH DATE DEC 13 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 488.386 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.180	GAL	3.87	AZL	90.03	HCA	148.75	SMA	189.18	ECC	.23114	INC	.0210	V1	30.254
RP	231.76	LAP	-.02	LOP	229.78	VP	21.065	GAP	3.09	AZP	89.97	TAL	20.86	TAP	169.62	RCA	145.45	APO	232.90	V2	23.728
RC	220.299	GL	-.27	GP	9.28	ZAL	49.65	ZAP	140.88	ETS	166.92	ZAE	169.50	ETE	82.99	ZAC	99.29	ETC	255.66	CLP	141.82

PLANETOCENTRIC CONIC

C3	13.993	VHL	3.741	DLA	17.30	RAL	133.05	RAD	6567.6	VEL	11.635	PTH	2.04	VHP	4.271	DPA	4.89	RAP	194.97	ECC	1.2303

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 24 13	2702.81	-27.66	74.76	354.33	96.31	13 9 16	2102.8	-26.50	66.29
90.00	5 7 58	4206.15	.24	172.32	348.81	61.68	6 18 4	3606.1	-3.55	165.69
100.00	13 55 34	2408.26	-28.91	52.92	354.16	97.94	14 35 42	1808.3	-27.51	44.40
100.00	6 19 18	3975.93	1.34	154.79	348.20	60.13	7 25 34	3375.9	-2.64	148.26
110.00	15 25 48	2125.94	-32.15	30.81	353.49	102.29	16 1 13	1525.9	-30.12	22.18
110.00	7 5 34	3831.01	4.13	142.06	346.46	56.04	8 9 25	3231.0	-.36	135.85

DIFFERENTIAL CORRECTIONS

TDE	.0693	TRA	-.2075	TC3	2.8797	BAU	.5835
RDE	-.2806	RRA	.1385	RC3	1.1986	FAU	.28458
FDE	.7234	FRA	-2.9680	FC	-17.6073	BSP	8058
BDE	.2890	BRA	.2494	BC3	3.1192	FSP	4030

MID-COURSE EXECUTION ACCURACY

SGT	2182.6	SGR	1018.9	SG3	1214.0		
RRT	.8150	RRF	-.9323	RTF	-.8699		
SGB	2408.7	R23	-.3012	R13	-.9025		
SG1	2345.2	SG2	549.5	THA	22.11		

ORBIT DETERMINATION ACCURACY

ST	159.5	SR	435.7	SS	682.8
CRT	-.7276	CRS	.7218	CST	-.7956
LSA	775.2	MSA	269.8	SSA	88.5
EL1	451.8	EL2	105.5	ALF	105.79

LAUNCH DATE DEC 13 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 492.157 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.161 GAL 3.90 AZL 90.10 HCA 149.77 SMA 188.83 ECC .22995 INC .0933 V1 30.254
RP 231.38 LAP -.05 LOP 230.79 VP 21.079 GAP 2.70 AZP 89.92 TAL 21.13 TAP 170.90 RCA 145.41 APO 232.26 V2 23.768
RC 222.292 GL -.85 GP 9.77 ZAL 49.25 ZAP 139.49 ETS 166.89 ZAE 169.04 ETE 90.83 ZAC 99.70 ETC 255.65 CLP 140.49

PLANETOCENTRIC CONIC

C3 13.962 VHL 3.737 DLA 16.85 RAL 132.48 RAD 6567.5 VEL 11.634 PTH 2.04 VHP 4.183 DPA 5.47 RAP 194.88 ECC 1.2298

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 26 24	2685.30	-27.52	73.50	353.54	96.93	13 11 9	2085.3	-26.28	65.06
90.00	5 1 14	4222.69	.77	173.25	348.11	61.69	6 11 37	3622.7	-3.02	166.62
100.00	13 57 21	2392.03	-28.76	51.74	353.36	98.54	14 37 13	1792.0	-27.28	43.25
100.00	6 12 58	3991.20	1.86	155.62	347.51	60.16	7 19 30	3391.2	-2.13	149.10
110.00	15 26 46	2112.22	-31.95	29.79	352.66	102.86	16 1 59	1512.2	-29.85	21.21
110.00	7 0 2	3843.77	4.62	142.73	345.79	56.09	8 4 6	3243.8	.13	136.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0820 TRA -.2069 TC3 2.8030 BAU .5764 SGT 2124.5 SGR 1086.5 SG3 1266.8 ST 172.2 SR 426.0 SS 685.3
RDE -.2725 RRA .1622 RC3 1.2962 FAU .29584 RRT .8190 RRF -.9441 RTF -.8634 CRT -.7970 CRS .7022 CST -.7884
FDE .6806 FRA-3.1801 FC-18.3442 BSP 7954 SGB 2386.2 R23 -.3148 R13 -.9038 LSA 772.8 MSA 276.0 SSA 85.8
BDE .2846 BRA .2629 BC3 3.0882 FSP 4218 SG1 2316.7 SG2 571.7 THA 24.30 EL1 448.8 EL2 98.7 ALF 108.80

LAUNCH DATE DEC 13 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 495.942 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.142 GAL 3.93 AZL 90.17 HCA 150.78 SMA 188.51 ECC .22882 INC .1651 V1 30.254
RP 231.01 LAP -.08 LOP 231.81 VP 21.095 GAP 2.31 AZP 89.85 TAL 21.38 TAP 172.16 RCA 145.37 APO 231.65 V2 23.807
RC 224.266 GL -1.47 GP 10.30 ZAL 48.89 ZAP 138.06 ETS 166.85 ZAE 168.36 ETE 98.12 ZAC 100.13 ETC 255.64 CLP 139.12

PLANETOCENTRIC CONIC

C3 13.935 VHL 3.733 DLA 16.35 RAL 131.93 RAD 6567.5 VEL 11.633 PTH 2.04 VHP 4.100 DPA 6.10 RAP 194.78 ECC 1.2293

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 29 2	2666.35	-27.36	72.14	352.76	97.59	13 13 28	2066.4	-26.03	63.73
90.00	4 54 13	4240.79	1.36	174.26	347.44	61.71	6 4 54	3640.8	-2.44	167.63
100.00	13 59 33	2374.43	-28.57	50.46	352.56	99.19	14 39 8	1774.4	-27.01	42.01
100.00	6 6 23	4007.95	2.42	156.54	346.85	60.20	7 13 11	3408.0	-1.56	150.02
110.00	15 28 8	2097.30	-31.72	28.69	351.83	103.48	16 3 5	1497.3	-29.54	20.16
110.00	6 54 18	3857.84	5.15	143.47	345.15	56.16	7 58 35	3257.8	.67	137.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0949 TRA -.2102 TC3 2.7145 BAU .5691 SGT 2059.5 SGR 1161.1 SG3 1320.1 ST 187.3 SR 415.7 SS 687.9
RDE -.2636 RRA .1878 RC3 1.4010 FAU .30717 RRT .8196 RRF -.9541 RTF -.8551 CRT -.8490 CRS .6823 CST -.7670
FDE .6287 FRA-3.3966 FC-19.0832 BSP 7859 SGB 2364.3 R23 -.3262 R13 -.9057 LSA 770.8 MSA 283.1 SSA 82.9
BDE .2802 BRA .2819 BC3 3.0548 FSP 4413 SG1 2287.1 SG2 598.9 THA 26.78 EL1 446.5 EL2 92.1 ALF 111.92

LAUNCH DATE DEC 13 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 499.740 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.125 GAL 3.96 AZL 90.24 HCA 151.80 SMA 188.21 ECC .22776 INC .2414 V1 30.254
RP 230.62 LAP -.11 LOP 232.83 VP 21.113 GAP 1.94 AZP 89.79 TAL 21.61 TAP 173.41 RCA 145.34 APO 231.07 V2 23.847
RC 226.222 GL -2.14 GP 10.87 ZAL 48.56 ZAP 136.60 ETS 166.81 ZAE 167.47 ETE 104.68 ZAC 100.60 ETC 255.62 CLP 137.71

PLANETOCENTRIC CONIC

C3 13.912 VHL 3.730 DLA 15.80 RAL 131.40 RAD 6567.5 VEL 11.632 PTH 2.04 VHP 4.021 DPA 6.77 RAP 194.67 ECC 1.2290

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 32 7	2645.89	-27.17	70.67	351.98	98.31	13 16 13	2045.9	-25.74	62.30
90.00	4 46 53	4260.54	1.99	175.36	346.79	61.75	5 57 54	3660.5	-1.80	168.73
100.00	14 2 12	2355.38	-28.36	49.09	351.77	99.88	14 41 27	1755.4	-26.70	40.68
100.00	5 59 29	4026.28	3.04	157.55	346.21	60.25	7 6 36	3426.3	-.94	151.03
110.00	15 29 52	2081.10	-31.45	27.50	351.01	104.13	16 4 33	1481.1	-29.19	19.02
110.00	6 48 19	3873.32	5.74	144.28	344.53	56.24	7 52 52	3273.3	1.26	138.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1091 TRA -.2155 TC3 2.6182 BAU .5626 SGT 1990.3 SGR 1243.5 SG3 1374.1 ST 205.4 SR 404.2 SS 690.6
RDE -.2535 RRA .2158 RC3 1.5142 FAU .31863 RRT .8172 RRF -.9625 RTF -.8453 CRT -.8906 CRS .6603 CST -.7295
FDE .5623 FRA-3.6212 FC-19.8276 BSP 7748 SGB 2346.8 R23 -.3335 R13 -.9087 LSA 768.5 MSA 292.5 SSA 79.3
BDE .2759 BRA .3050 BC3 3.0245 FSP 4606 SG1 2260.4 SG2 631.0 THA 29.58 EL1 445.4 EL2 84.8 ALF 115.33

LAUNCH DATE DEC 13 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 503.551 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.109 GAL 3.98 AZL 90.32 HCA 152.82 SMA 187.92 ECC .22676 INC .3213 V1 30.254
RP 230.24 LAP -.15 LOP 233.85 VP 21.133 GAP 1.57 AZP 89.71 TAL 21.83 TAP 174.64 RCA 145.31 APO 230.54 V2 23.887
RC 228.159 GL -2.85 GP 11.48 ZAL 48.26 ZAP 135.08 ETS 166.78 ZAE 166.38 ETE 110.43 ZAC 101.10 ETC 255.60 CLP 136.27

PLANETOCENTRIC CONIC

C3 13.894 VHL 3.727 DLA 15.20 RAL 130.89 RAD 6567.5 VEL 11.631 PTH 2.04 VHP 3.946 DPA 7.50 RAP 194.55 ECC 1.2287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 35 40	2623.80	-26.94	69.10	351.21	99.06	13 19 24	2023.8	-25.41	60.76
90.00	4 39 13	4282.05	2.68	176.56	346.16	61.80	5 50 35	3682.0	-1.11	169.93
100.00	14 5 18	2334.78	-28.11	47.61	350.98	100.62	14 44 12	1734.8	-26.35	39.25
100.00	5 52 17	4046.30	3.72	158.65	345.58	60.32	6 59 43	3446.3	-.26	152.13
110.00	15 31 59	2063.53	-31.15	26.22	350.19	104.84	16 6 23	1463.5	-28.80	17.80
110.00	6 42 5	3890.32	6.38	145.18	343.94	56.35	7 46 55	3290.3	1.91	138.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1230 TRA -.2253 TC3 2.5079 BAU .5562 SGT 1913.1 SGR 1334.0 SG3 1428.2 ST 224.7 SR 391.6 SS 693.9
RDE -.2418 RRA .2462 RC3 1.6361 FAU .33009 RRT .8108 RRF -.9696 RTF -.8325 CRT -.9194 CRS .6373 CST -.6821
FDE .4807 FRA-3.8495 FC-20.5680 BSP 7675 SGB 2332.3 R23 -.3367 R13 -.9127 LSA 766.4 MSA 303.7 SSA 75.4
BDE .2713 BRA .3337 BC3 2.9944 FSP 4802 SG1 2234.4 SG2 668.5 THA 32.78 EL1 444.7 EL2 77.8 ALF 118.78

LAUNCH DATE DEC 13 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 507.374 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.094	GAL	4.01	AZL	90.41	HCA	153.84	SMA	187.66	ECC	.22581	INC	.4076	V1	30.254
RP	229.86	LAP	-.18	LOP	234.87	VP	21.155	GAP	1.20	AZP	89.63	TAL	22.02	TAP	175.86	RCA	145.28	APO	230.03	V2	23.927
RC	230.076	GL	-3.62	GP	12.13	ZAL	48.01	ZAP	133.53	ETS	166.75	ZAE	165.13	ETE	115.39	ZAC	101.64	ETC	255.59	CLP	134.79

PLANETOCENTRIC CONIC

C3	13.881	VHL	3.726	DLA	14.54	RAL	130.38	RAD	6567.5	VEL	11.630	PTH	2.04	VHP	3.876	DPA	8.28	RAP	194.42	ECC	1.2284		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 39 43	2599.97	-26.67	67.40	350.43	99.87	13 23 3	2000.0	-25.04	59.12
90.00	4 31 11	4305.45	3.44	177.87	345.55	61.88	5 42 56	3705.5	-.35	171.24
100.00	14 8 51	2312.52	-27.82	46.02	350.19	101.41	14 47 24	1712.5	-25.96	37.71
100.00	5 44 44	4068.14	4.46	159.86	344.99	60.41	6 52 32	3468.1	.48	153.33
110.00	15 34 31	2044.46	-30.81	24.84	349.36	105.59	16 8 36	1444.5	-28.37	16.49
110.00	6 35 33	3908.95	7.08	146.16	343.37	56.47	7 40 42	3309.0	2.62	139.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1376	TRA	-.2371	TC3	2.3880	BAU	.5514	SGT	1831.1	SGR	1433.9	SG3	1482.7	ST	245.7	SR	377.8	SS	699.9
RDE	-.2284	RRA	.2798	RC3	1.7678	FAU	.34155	RRT	.8006	RRF	-.9754	RTF	-.8171	CRT	-.9401	CRS	.6145	CST	-.6214
FDE	.3824	FRA	-4.0880	FC	-21.3025	BSP	7609	SGB	2325.7	R23	-.3336	R13	-.9186	LSA	766.2	MSA	317.6	SSA	70.8
BDE	.2666	BRA	.3667	BC3	2.9711	FSP	4995	SG1	2214.6	SG2	710.4	THA	36.43	EL1	445.0	EL2	71.1	ALF	122.37

LAUNCH DATE DEC 13 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 511.209 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.080	GAL	4.02	AZL	90.50	HCA	154.87	SMA	187.41	ECC	.22492	INC	.5013	V1	30.254
RP	229.47	LAP	-.21	LOP	235.90	VP	21.179	GAP	.85	AZP	89.55	TAL	22.20	TAP	177.07	RCA	145.26	APO	229.56	V2	23.968
RC	231.973	GL	-4.44	GP	12.84	ZAL	47.79	ZAP	131.93	ETS	166.73	ZAE	163.72	ETE	119.64	ZAC	102.22	ETC	255.57	CLP	133.27

PLANETOCENTRIC CONIC

C3	13.873	VHL	3.725	DLA	13.81	RAL	129.90	RAD	6567.5	VEL	11.630	PTH	2.04	VHP	3.809	DPA	9.13	RAP	194.28	ECC	1.2283		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 44 17	2574.26	-26.36	65.58	349.65	100.73	13 27 11	1974.3	-24.61	57.35
90.00	4 22 43	4330.92	4.25	179.29	344.96	61.98	5 34 54	3730.9	.47	172.66
100.00	14 12 54	2288.45	-27.48	44.31	349.39	102.25	14 51 3	1688.4	-25.52	36.06
100.00	5 36 47	4091.97	5.25	161.18	344.41	60.53	6 44 59	3492.0	1.29	154.63
110.00	15 37 29	2023.78	-30.42	23.35	348.53	106.39	16 11 13	1423.8	-27.88	15.08
110.00	6 28 41	3929.39	7.85	147.25	342.82	56.62	7 34 11	3329.4	3.40	140.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1521	TRA	-.2536	TC3	2.2555	BAU	.5480	SGT	1743.3	SGR	1542.7	SG3	1535.7	ST	268.0	SR	362.9	SS	708.5
RDE	-.2130	RRA	.3161	RC3	1.9089	FAU	.35270	RRT	.7851	RRF	-.9802	RTF	-.7972	CRT	-.9522	CRS	.5944	CST	-.5531
FDE	.2674	FRA	-4.3241	FC	-22.0100	BSP	7584	SGB	2327.9	R23	-.3239	R13	-.9263	LSA	768.1	MSA	333.5	SSA	66.0
BDE	.2617	BRA	.4052	BC3	2.9548	FSP	5193	SG1	2201.5	SG2	756.7	THA	40.56	EL1	446.2	EL2	66.6	ALF	126.04

LAUNCH DATE DEC 13 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 515.057 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.067	GAL	4.04	AZL	90.60	HCA	155.90	SMA	187.18	ECC	.22408	INC	.6019	V1	30.254
RP	229.09	LAP	-.25	LOP	236.93	VP	21.204	GAP	.50	AZP	89.45	TAL	22.37	TAP	178.26	RCA	145.23	APO	229.12	V2	24.009
RC	233.848	GL	-5.34	GP	13.61	ZAL	47.62	ZAP	130.29	ETS	166.71	ZAE	162.18	ETE	123.24	ZAC	102.85	ETC	255.54	CLP	131.71

PLANETOCENTRIC CONIC

C3	13.872	VHL	3.725	DLA	13.00	RAL	129.42	RAD	6567.5	VEL	11.630	PTH	2.04	VHP	3.748	DPA	10.04	RAP	194.13	ECC	1.2283		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 49 23	2546.51	-25.99	63.64	348.86	101.64	13 31 49	1946.5	-24.13	55.46
90.00	4 13 48	4358.65	5.14	180.85	344.40	62.11	5 26 27	3758.7	1.37	174.20
100.00	14 17 28	2262.41	-27.09	42.47	348.59	103.14	14 55 11	1662.4	-25.01	34.29
100.00	5 28 24	4117.98	6.12	162.62	343.86	60.68	6 37 2	3518.0	2.17	156.06
110.00	15 40 54	2001.34	-29.98	21.75	347.70	107.24	16 14 16	1401.3	-27.33	13.56
110.00	6 21 27	3951.81	8.68	148.44	342.29	56.81	7 27 19	3351.8	4.26	142.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1670	TRA	-.2725	TC3	2.1126	BAU	.5475	SGT	1651.5	SGR	1662.9	SG3	1588.6	ST	291.3	SR	346.6	SS	722.8
RDE	-.1945	RRA	.3566	RC3	2.0618	FAU	.36374	RRT	.7639	RRF	-.9842	RTF	-.7724	CRT	-.9553	CRS	.5781	CST	-.4699
FDE	.1267	FRA	-4.5710	FC	-22.7005	BSP	7591	SGB	2343.7	R23	-.3055	R13	-.9361	LSA	774.2	MSA	352.8	SSA	60.6
BDE	.2563	BRA	.4488	BC3	2.9519	FSP	5378	SG1	2201.0	SG2	805.3	THA	45.26	EL1	447.9	EL2	66.6	ALF	129.82

LAUNCH DATE DEC 13 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 518.918 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.054	GAL	4.05	AZL	90.71	HCA	156.93	SMA	186.96	ECC	.22328	INC	.7116	V1	30.254
RP	228.70	LAP	-.28	LOP	237.96	VP	21.231	GAP	.16	AZP	89.35	TAL	22.51	TAP	179.44	RCA	145.21	APO	228.70	V2	24.049
RC	235.703	GL	-6.31	GP	14.43	ZAL	47.48	ZAP	128.60	ETS	166.70	ZAE	160.50	ETE	126.30	ZAC	103.54	ETC	255.52	CLP	130.11

PLANETOCENTRIC CONIC

C3	13.881	VHL	3.726	DLA	12.12	RAL	128.94	RAD	6567.5	VEL	11.630	PTH	2.04	VHP	3.691	DPA	11.02	RAP	193.98	ECC	1.2284		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 55 3	2516.55	-25.57	61.55	348.06	102.61	13 36 59	1916.5	-23.58	53.44
90.00	4 4 22	4388.89	6.10	182.56	343.86	62.29	5 17 31	3788.9	2.34	175.89
100.00	14 22 34	2234.26	-26.64	40.50	347.78	104.09	14 59 49	1634.3	-24.44	32.39
100.00	5 19 31	4146.41	7.07	164.20	343.33	60.88	6 28 37	3546.4	3.13	157.62
110.00	15 44 47	1976.99	-29.48	20.03	346.85	108.15	16 17 44	1377.0	-26.72	11.94
110.00	6 13 47	3976.44	9.60	149.76	341.79	57.03	7 20 4	3376.4	5.19	143.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1923	TRA	-.2846	TC3	1.9887	BAU	.5553	SGT	1576.0	SGR	1802.2	SG3	1647.7	ST	327.8	SR	326.6	SS	750.5
RDE	-.1692	RRA	.4046	RC3	2.2357	FAU	.37598	RRT	.7418	RRF	-.9875	RTF	-.7489	CRT	-.9375	CRS	.5644	CST	-.3247
FDE	-.0747	FRA	-4.8562	FC	-23.4494	BSP	7422	SGB	2394.1	R23	-.2757	R13	-.9486	LSA	789.5	MSA	389.0	SSA	52.8
BDE	.2561	BRA	.4947	BC3	2.9922	FSP	5477	SG1	2237.6	SG2	851.2	THA	50.14	EL1	455.4	EL2	81.8	ALF	135.11

LAUNCH DATE DEC 13 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 522.787 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.042 GAL 4.06 AZL 90.83 HCA 157.97 SMA 186.76 ECC .22253 INC .8313 V1 30.254
RP 228.31 LAP -.31 LOP 239.00 VP 21.259 GAP -.17 AZP 89.23 TAL 22.64 TAP 180.61 RCA 145.20 APO 228.32 V2 24.090
RC 237.537 GL -7.37 GP 15.33 ZAL 47.40 ZAP 126.87 ETS 166.70 ZAE 158.72 ETE 128.89 ZAC 104.28 ETC 255.49 CLP 128.48

PLANETOCENTRIC CONIC

C3 13.899 VHL 3.728 DLA 11.14 RAL 128.48 RAD 6567.5 VEL 11.631 PTH 2.04 VHP 3.640 DPA 12.08 RAP 193.84 ECC 1.2287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 1 21	2484.07	-25.06	59.30	347.26	103.63	13 42 45	1884.1	-22.94	51.27
90.00	3 54 20	4421.95	7.14	184.43	343.36	62.53	5 8 2	3822.0	3.40	177.74
100.00	14 28 17	2203.67	-26.12	38.38	346.96	105.09	15 5 1	1603.7	-23.79	30.35
100.00	5 10 5	4177.58	8.10	165.94	342.84	61.13	6 19 42	3577.6	4.18	159.34
110.00	15 49 13	1950.45	-28.90	18.18	346.00	109.10	16 21 43	1350.5	-26.02	10.19
110.00	6 5 39	4003.56	10.60	151.23	341.33	57.31	7 12 22	3403.6	6.22	144.88

DIFFERENTIAL CORRECTIONS
TDE .2008 TRA -.3170 TC3 1.8073 BAU .5596
RDE -.1448 RRA .4522 RC3 2.4086 FAU .38533
FDE -.2476 FRA-5.0871 FC-24.0008 BSP 7665
BDE .2476 BRA .5523 BC3 3.0112 FSP 5683

MID-COURSE EXECUTION ACCURACY
SGT 1468.9 SGR 1943.4 SG3 1692.9
RRT .7005 RRF -.9901 RTF -.7045
SGB 2436.1 R23 -.2415 R13 -.9603
SG1 2263.8 SG2 899.9 THA 56.02

ORBIT DETERMINATION ACCURACY
ST 345.0 SR 312.4 SS 779.7
CRT -.9106 CRS .5839 CST -.2536
LSA 812.6 MSA 402.3 SSA 48.3
EL1 455.0 EL2 97.9 ALF 138.12

LAUNCH DATE DEC 13 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 526.669 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.032 GAL 4.07 AZL 90.96 HCA 159.01 SMA 186.57 ECC .22183 INC .9631 V1 30.254
RP 227.92 LAP -.35 LOP 240.04 VP 21.289 GAP -.50 AZP 89.10 TAL 22.75 TAP 181.76 RCA 145.18 APO 227.95 V2 24.132
RC 239.350 GL -8.54 GP 16.31 ZAL 47.38 ZAP 125.10 ETS 166.71 ZAE 156.82 ETE 131.08 ZAC 105.09 ETC 255.45 CLP 126.80

PLANETOCENTRIC CONIC

C3 13.932 VHL 3.733 DLA 10.06 RAL 128.01 RAD 6567.5 VEL 11.633 PTH 2.04 VHP 3.594 DPA 13.22 RAP 193.70 ECC 1.2293

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 8 19	2448.85	-24.48	56.89	346.45	104.70	13 49 8	1848.9	-22.22	48.94
90.00	3 43 38	4458.19	8.27	186.49	342.88	62.82	4 57 56	3858.2	4.56	179.77
100.00	14 34 38	2170.46	-25.51	36.10	346.14	106.14	15 10 49	1570.5	-23.05	28.16
100.00	5 0 0	4211.81	9.22	167.87	342.38	61.44	6 10 11	3611.8	5.33	161.23
110.00	15 54 11	1921.54	-28.24	16.19	345.13	110.11	16 26 13	1321.5	-25.24	8.30
110.00	5 56 56	4033.50	11.70	152.85	340.90	57.65	7 4 10	3433.5	7.34	146.46

DIFFERENTIAL CORRECTIONS
TDE .2114 TRA -.3506 TC3 1.6212 BAU .5700
RDE -.1146 RRA .5059 RC3 2.5954 FAU .39417
FDE -.4585 FRA-5.3253 FC-24.4938 BSP 7918
BDE .2404 BRA .6155 BC3 3.0601 FSP 5853

MID-COURSE EXECUTION ACCURACY
SGT 1367.1 SGR 2099.2 SG3 1736.1
RRT .6470 RRF -.9922 RTF -.6487
SGB 2505.1 R23 -.1993 R13 -.9720
SG1 2320.9 SG2 942.8 THA 62.18

ORBIT DETERMINATION ACCURACY
ST 365.4 SR 300.5 SS 821.6
CRT -.8539 CRS .6257 CST -.1657
LSA 849.7 MSA 418.3 SSA 43.1
EL1 456.2 EL2 125.2 ALF 141.49

LAUNCH DATE DEC 13 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 530.561 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.022 GAL 4.08 AZL 91.11 HCA 160.05 SMA 186.39 ECC .22116 INC 1.1087 V1 30.254
RP 227.53 LAP -.38 LOP 241.09 VP 21.320 GAP -.82 AZP 88.96 TAL 22.84 TAP 182.90 RCA 145.17 APO 227.62 V2 24.173
RC 241.142 GL -9.81 GP 17.37 ZAL 47.41 ZAP 123.28 ETS 166.73 ZAE 154.82 ETE 132.93 ZAC 105.98 ETC 255.41 CLP 125.09

PLANETOCENTRIC CONIC

C3 13.982 VHL 3.739 DLA 8.86 RAL 127.54 RAD 6567.6 VEL 11.635 PTH 2.04 VHP 3.555 DPA 14.45 RAP 193.58 ECC 1.2301

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 16 2	2410.57	-23.79	54.29	345.63	105.83	13 56 13	1810.6	-21.39	46.44
90.00	3 32 8	4498.05	9.50	188.77	342.45	63.20	4 47 6	3898.0	5.83	182.01
100.00	14 41 42	2134.29	-24.80	33.64	345.30	107.25	15 17 16	1534.3	-22.20	25.81
100.00	4 49 10	4249.54	10.44	170.00	341.96	61.83	5 59 59	3649.5	6.59	163.33
110.00	15 59 46	1889.96	-27.48	14.05	344.26	111.18	16 31 16	1290.0	-24.36	6.28
110.00	5 47 35	4066.64	12.90	154.67	340.51	58.07	6 55 21	3466.6	8.58	148.23

DIFFERENTIAL CORRECTIONS
TDE .2197 TRA -.3891 TC3 1.4224 BAU .5859
RDE -.0790 RRA .5649 RC3 2.7930 FAU .40175
FDE -.6930 FRA-5.5535 FC-24.8757 BSP 8283
BDE .2335 BRA .6860 BC3 3.1344 FSP 6021

MID-COURSE EXECUTION ACCURACY
SGT 1268.5 SGR 2268.3 SG3 1773.6
RRT .5743 RRF -.9938 RTF -.5741
SGB 2598.8 R23 -.1533 R13 -.9819
SG1 2407.7 SG2 978.2 THA 68.47

ORBIT DETERMINATION ACCURACY
ST 383.6 SR 296.0 SS 874.9
CRT -.7600 CRS .6944 CST -.0845
LSA 902.1 MSA 430.1 SSA 38.2
EL1 456.8 EL2 161.6 ALF 144.51

LAUNCH DATE DEC 13 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 534.465 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.012 GAL 4.08 AZL 91.27 HCA 161.10 SMA 186.23 ECC .22053 INC 1.2701 V1 30.254
RP 227.14 LAP -.41 LOP 242.14 VP 21.352 GAP -1.14 AZP 88.80 TAL 22.92 TAP 184.02 RCA 145.16 APO 227.30 V2 24.214
RC 242.914 GL -11.22 GP 18.53 ZAL 47.52 ZAP 121.41 ETS 166.77 ZAE 152.71 ETE 134.49 ZAC 106.96 ETC 255.37 CLP 123.35

PLANETOCENTRIC CONIC

C3 14.055 VHL 3.749 DLA 7.52 RAL 127.05 RAD 6567.6 VEL 11.638 PTH 2.04 VHP 3.522 DPA 15.78 RAP 193.48 ECC 1.2313

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 24 35	2368.81	-22.99	51.49	344.80	107.01	14 4 3	1768.8	-20.44	43.75
90.00	3 19 45	4542.08	10.85	191.31	342.07	63.68	4 35 27	3942.1	7.22	184.50
100.00	14 49 32	2094.80	-23.98	31.00	344.45	108.41	15 24 27	1494.8	-21.24	23.27
100.00	4 37 28	4291.33	11.77	172.39	341.59	62.32	5 49 0	3691.3	7.97	165.66
110.00	16 6 2	1855.40	-26.61	11.74	343.37	112.29	16 36 57	1255.4	-23.35	4.10
110.00	5 37 28	4103.49	14.21	156.71	340.17	58.58	6 45 51	3503.5	9.95	150.20

DIFFERENTIAL CORRECTIONS
TDE .2261 TRA -.4323 TC3 1.2119 BAU .6084
RDE -.0357 RRA .6309 RC3 3.0027 FAU .40804
FDE -.9621 FRA-5.7755 FC-25.1347 BSP 8745
BDE .2289 BRA .7648 BC3 3.2380 FSP 6163

MID-COURSE EXECUTION ACCURACY
SGT 1178.7 SGR 2453.1 SG3 1805.3
RRT .4768 RRF -.9951 RTF -.4750
SGB 2721.5 R23 -.1076 R13 -.9893
SG1 2529.2 SG2 1004.8 THA 74.61

ORBIT DETERMINATION ACCURACY
ST 400.2 SR 304.4 SS 943.7
CRT -.6183 CRS .7812 CST -.0084
LSA 974.6 MSA 438.5 SSA 33.5
EL1 457.1 EL2 209.5 ALF 147.07

LAUNCH DATE DEC 13 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 538.379 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.004	GAL	4.08	AZL	91.45	HCA	162.15	SMA	186.08	ECC	.21994	INC	1.4500	V1	30.254
RP	226.75	LAP	-.44	LOP	243.19	VP	21.386	GAP	-1.44	AZP	88.62	TAL	22.98	TAP	185.13	RCA	145.15	APO	227.01	V2	24.256
RC	244.666	GL	-12.79	GP	19.80	ZAL	47.71	ZAP	119.51	ETS	166.83	ZAE	150.49	ETE	135.81	ZAC	108.04	ETC	255.31	CLP	121.56

PLANETOCENTRIC CONIC

C3	14.157	VHL	3.763	DLA	6.03	RAL	126.55	RAD	6567.6	VEL	11.642	PTH	2.04	VHP	3.497	DPA	17.23	RAP	193.41	ECC	1.2330

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 34 3	2323.12	-22.05	48.48	343.96	108.23	14 12 46	1723.1	-19.35	40.84
90.00	3 6 17	4590.98	12.31	194.16	341.75	64.29	4 22 48	3991.0	8.75	187.29
100.00	14 58 15	2051.53	-23.02	28.14	343.60	109.62	15 32 27	1451.5	-20.13	20.53
100.00	4 24 46	4337.81	13.23	175.07	341.28	62.95	5 37 3	3737.8	9.49	168.27
110.00	16 13 3	1817.45	-25.61	9.25	342.48	113.46	16 43 20	1217.5	-22.21	1.74
110.00	5 26 27	4144.65	15.66	159.02	339.89	59.22	6 35 32	3544.7	11.46	152.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2312	TRA	-.4783	TC3	.9956	BAU	.6393	SGT	1105.3	SGR	2659.0	SG3	1832.6	ST	415.6	SR	333.9	SS	1033.7
RDE	.0183	RRA	.7067	RC3	3.2274	FAU	.41326	RRT	.3528	RRF	-.9962	RTF	-.3498	CRT	-.4315	CRS	.8674	CST	.0643
FDE	-1.2766	FRA	-6.0014	FC	-25.2714	BSP	9273	SGB	2879.6	R23	-.0666	R13	-.9940	LSA	1074.5	MSA	444.2	SSA	28.9
BDE	.2319	BRA	.8533	BC3	3.3774	FSP	6252	SG1	2692.3	SG2	1021.4	THA	80.24	EL1	457.5	EL2	273.6	ALF	148.54

LAUNCH DATE DEC 13 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 542.303 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	32.996	GAL	4.08	AZL	91.65	HCA	163.21	SMA	185.94	ECC	.21938	INC	1.6524	V1	30.254
RP	226.36	LAP	-.48	LOP	244.24	VP	21.421	GAP	-1.74	AZP	88.42	TAL	23.03	TAP	186.23	RCA	145.15	APO	226.74	V2	24.297
RC	246.398	GL	-14.54	GP	21.19	ZAL	47.99	ZAP	117.55	ETS	166.92	ZAE	148.17	ETE	136.91	ZAC	109.23	ETC	255.24	CLP	119.75

PLANETOCENTRIC CONIC

C3	14.300	VHL	3.782	DLA	4.37	RAL	126.03	RAD	6567.6	VEL	11.648	PTH	2.04	VHP	3.481	DPA	18.79	RAP	193.38	ECC	1.2353

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 44 35	2272.92	-20.94	45.21	343.13	109.51	14 22 28	1672.9	-18.09	37.70
90.00	2 51 33	4645.61	13.90	197.38	341.51	65.08	4 8 58	4045.6	10.42	190.42
100.00	15 7 59	2003.94	-21.90	25.05	342.75	110.87	15 41 23	1403.9	-18.86	17.57
100.00	4 10 50	4389.82	14.81	178.12	341.05	63.74	5 24 0	3789.8	11.17	171.23
110.00	16 20 55	1775.65	-24.45	6.56	341.59	114.67	16 50 31	1175.6	-20.91	359.19
110.00	5 14 23	4190.88	17.25	161.66	339.70	60.02	6 24 14	3590.9	13.14	154.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2323	TRA	-.5306	TC3	.7686	BAU	.6780	SGT	1054.4	SGR	2884.4	SG3	1850.8	ST	427.4	SR	390.9	SS	1142.3
RDE	.0844	RRA	.7918	RC3	3.4620	FAU	.41653	RRT	.1962	RRF	-.9971	RTF	-.1924	CRT	-.2450	CRS	.9309	CST	.1191
FDE	-1.6281	FRA	-6.2098	FC	-25.2177	BSP	9936	SGB	3071.1	R23	-.0325	R13	-.9965	LSA	1200.2	MSA	446.2	SSA	24.7
BDE	.2471	BRA	.9531	BC3	3.5463	FSP	6316	SG1	2892.9	SG2	1030.9	THA	85.30	EL1	459.7	EL2	352.4	ALF	145.02

LAUNCH DATE DEC 13 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 546.238 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	32.988	GAL	4.08	AZL	91.88	HCA	164.27	SMA	185.82	ECC	.21886	INC	1.8823	V1	30.254
RP	225.97	LAP	-.51	LOP	245.30	VP	21.457	GAP	-2.04	AZP	88.19	TAL	23.05	TAP	187.32	RCA	145.15	APO	226.49	V2	24.339
RC	248.110	GL	-16.49	GP	22.73	ZAL	48.39	ZAP	115.56	ETS	167.03	ZAE	145.74	ETE	137.83	ZAC	110.56	ETC	255.15	CLP	117.89

PLANETOCENTRIC CONIC

C3	14.495	VHL	3.807	DLA	2.49	RAL	125.47	RAD	6567.6	VEL	11.657	PTH	2.05	VHP	3.475	DPA	20.50	RAP	193.41	ECC	1.2386

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 56 23	2217.47	-19.64	41.66	342.31	110.82	14 33 20	1617.5	-16.63	34.28
90.00	2 35 17	4707.07	15.63	201.06	341.37	66.08	3 53 44	4107.1	12.26	194.00
100.00	15 18 53	1951.36	-20.58	21.70	341.91	112.17	15 51 24	1351.4	-17.40	14.35
100.00	3 55 28	4448.42	16.55	181.60	340.93	64.75	5 9 36	3848.4	13.01	174.60
110.00	16 29 47	1729.42	-23.10	3.64	340.70	115.93	16 58 37	1129.4	-19.42	356.43
110.00	5 1 3	4243.11	19.00	164.70	339.61	61.04	6 11 46	3643.1	15.00	157.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2286	TRA	-.5886	TC3	.5337	BAU	.7245	SGT	1034.2	SGR	3128.4	SG3	1856.3	ST	435.1	SR	478.9	SS	1266.9
RDE	.1646	RRA	.8875	RC3	3.7001	FAU	.41705	RRT	.0139	RRF	-.9977	RTF	-.0095	CRT	-.0981	CRS	.9676	CST	.1520
FDE	-2.0092	FRA	-6.3923	FC	-24.9088	BSP	10745	SGB	3294.9	R23	-.0060	R13	-.9977	LSA	1350.8	MSA	445.7	SSA	21.0
BDE	.2817	BRA	1.0649	BC3	3.7384	FSP	6352	SG1	3128.4	SG2	1034.1	THA	89.70	EL1	487.8	EL2	425.1	ALF	112.79

LAUNCH DATE DEC 13 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 550.184 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	32.981	GAL	4.07	AZL	92.15	HCA	165.33	SMA	185.70	ECC	.21837	INC	2.1452	V1	30.254
RP	225.58	LAP	-.54	LOP	246.37	VP	21.494	GAP	-2.33	AZP	87.92	TAL	23.07	TAP	188.39	RCA	145.15	APO	226.25	V2	24.381
RC	249.803	GL	-18.69	GP	24.43	ZAL	48.92	ZAP	113.53	ETS	167.18	ZAE	143.20	ETE	138.59	ZAC	112.04	ETC	255.04	CLP	116.01

PLANETOCENTRIC CONIC

C3	14.763	VHL	3.842	DLA	.37	RAL	124.86	RAD	6567.6	VEL	11.668	PTH	2.05	VHP	3.480	DPA	22.36	RAP	193.51	ECC	1.2430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 9 39	2155.91	-18.10	37.80	341.51	112.15	14 45 35	1555.9	-14.94	30.55
90.00	2 17 9	4776.78	17.50	205.32	341.37	67.38	3 36 46	4176.8	14.29	198.12
100.00	15 31 10	1892.97	-19.04	18.05	341.10	113.49	16 2 43	1293.0	-15.70	10.85
100.00	3 38 19	4514.95	18.44	185.64	340.95	66.04	4 53 34	3915.0	15.04	178.49
110.00	16 39 48	1678.11	-21.54	.48	339.84	117.21	17 7 47	1078.1	-17.72	353.43
110.00	4 46 10	4302.58	20.93	168.24	339.67	62.33	5 57 52	3702.6	17.06	161.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2212	TRA	-.6508	TC3	.2989	BAU	.7816	SGT	1050.4	SGR	3405.2	SG3	1853.8	ST	440.0	SR	606.6	SS	1420.2
RDE	.2676	RRA	1.0008	RC3	3.9489	FAU	.41572	RRT	-.1733	RRF	-.9983	RTF	.1777	CRT	.0070	CRS	.9862	CST	.1697
FDE	-2.4498	FRA	-6.5728	FC	-24.3786	BSP	11595	SGB	3563.5	R23	.0130	R13	-.9982	LSA	1542.9	MSA	444.4	SSA	17.5
BDE	.3472	BRA	1.1938	BC3	3.9602	FSP	6290	SG1	3410.5	SG2	1032.9	THA	93.37	EL1	606.6	EL2	440.0	ALF	89.38

LAUNCH DATE DEC 13 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 554.140 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	32.975	GAL	4.07	AZL	92.45	HCA	166.39	SMA	185.60	ECC	.21790	INC	2.4491
RP	225.19	LAP	-.58	LOP	247.43	VP	21.532	GAP	-2.61	AZP	87.62	TAL	23.06	TAP	189.45	RCA	145.16	APO	226.04
RC	251.477	GL	-21.18	GP	26.33	ZAL	49.63	ZAP	111.46	ETS	167.38	ZAE	140.53	ETE	139.21	ZAC	113.70	ETC	254.90

V1	30.254	V2	24.423	CLP	114.10														

PLANETOCENTRIC CONIC

C3	15.131	VHL	3.890	DLA	-2.02	RAL	124.18	RAD	6567.6	VEL	11.684	PTH	2.05	VHP	3.500	DPA	24.39	RAP	193.70

ECC	1.2490	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
		90.00	14 24 44	2087.09	-16.28	33.57	340.77	113.49	14 59 31	1487.1	-12.97	26.46
		90.00	1 56 41	4856.61	19.52	210.31	341.56	69.07	3 17 37	4256.6	16.50	202.93
		100.00	15 45 8	1827.74	-17.22	14.06	340.34	114.82	16 15 36	1227.7	-13.73	7.00
		100.00	3 18 58	4591.19	20.47	190.39	341.16	67.73	4 35 29	3991.2	17.28	183.05
		110.00	16 51 13	1620.88	-19.72	357.03	339.01	118.51	17 18 14	1020.9	-15.76	350.15
		110.00	4 29 22	4370.82	23.02	172.43	339.93	64.01	5 42 13	3770.8	19.34	165.23

DIFFERENTIAL CORRECTIONS

TDE	.2096	TRA	-.7169	TC3	.0720	BAU	.8507		
RDE	.4003	RRA	1.1366	RC3	4.2049	FAU	.41223		
FDE	-2.9479	FRA	-6.7471	FC	-23.5855	BSP	12469		
BDE	.4519	BRA	1.3436	BC3	4.2055	FSP	6117		

MID-COURSE EXECUTION ACCURACY

SGT	1102.3	SGR	3722.3	SG3	1841.8		
RRT	-.3424	RRF	-.9987	RTF	.3464		
SGB	3882.1	R23	.0254	R13	-.9984		
SG1	3742.9	SG2	1029.9	THA	96.27		

ORBIT DETERMINATION ACCURACY

ST	442.5	SR	780.9	SS	1601.9		
CRT	.0663	CRS	.9944	CST	.1689		
LSA	1781.9	MSA	443.2	SSA	14.5		
EL1	781.7	EL2	441.1	ALF	86.84		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 558.101 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	32.970	GAL	4.06	AZL	92.81	HCA	167.46	SMA	185.50	ECC	.21746	INC	2.8048
RP	224.80	LAP	-.61	LOP	248.50	VP	21.571	GAP	-2.89	AZP	87.26	TAL	23.04	TAP	190.50	RCA	145.16	APO	225.84
RC	253.132	GL	-24.02	GP	28.43	ZAL	50.54	ZAP	109.37	ETS	167.62	ZAE	137.74	ETE	139.70	ZAC	115.56	ETC	254.72

V1	30.254	V2	24.465	CLP	112.16														

PLANETOCENTRIC CONIC

C3	15.638	VHL	3.955	DLA	-4.76	RAL	123.42	RAD	6567.6	VEL	11.706	PTH	2.06	VHP	3.539	DPA	26.61	RAP	194.02

ECC	1.2574	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
		90.00	14 42 8	2009.37	-14.12	28.89	340.14	114.80	15 15 38	1409.4	-10.66	21.92
		90.00	1 33 14	4949.17	21.66	216.25	342.02	71.30	2 55 43	4349.2	18.91	208.66
		100.00	16 1 15	1754.18	-15.07	9.66	339.67	116.13	16 30 29	1154.2	-11.43	2.75
		100.00	2 56 49	4679.59	22.65	196.05	341.64	69.95	4 14 48	4079.6	19.71	188.49
		110.00	17 4 22	1556.58	-17.58	353.27	338.28	119.80	17 30 18	956.6	-13.49	346.55
		110.00	4 10 11	4449.95	25.29	177.45	340.48	66.20	5 24 21	3850.0	21.86	169.99

DIFFERENTIAL CORRECTIONS

TDE	.1712	TRA	-.8101	TC3	-.1996	BAU	.9189		
RDE	.5451	RRA	1.2724	RC3	4.3905	FAU	.39953		
FDE	-3.3596	FRA	-6.7599	FC	-22.1177	BSP	13934		
BDE	.5713	BRA	1.5084	BC3	4.3950	FSP	6115		

MID-COURSE EXECUTION ACCURACY

SGT	1213.9	SGR	4013.0	SG3	1783.9		
RRT	-.5195	RRF	-.9990	RTF	.5238		
SGB	4192.5	R23	.0366	R13	-.9983		
SG1	4065.6	SG2	1023.7	THA	99.54		

ORBIT DETERMINATION ACCURACY

ST	431.7	SR	970.9	SS	1747.3		
CRT	-.0016	CRS	.9976	CST	.0661		
LSA	1998.2	MSA	435.0	SSA	12.3		
EL1	970.9	EL2	431.7	ALF	90.05		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 562.072 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	32.965	GAL	4.04	AZL	93.23	HCA	168.53	SMA	185.42	ECC	.21705	INC	3.2275
RP	224.41	LAP	-.64	LOP	249.58	VP	21.611	GAP	-3.16	AZP	86.84	TAL	23.00	TAP	191.53	RCA	145.17	APO	225.66
RC	254.766	GL	-27.25	GP	30.79	ZAL	51.70	ZAP	107.25	ETS	167.92	ZAE	134.81	ETE	140.09	ZAC	117.66	ETC	254.49

V1	30.254	V2	24.506	CLP	110.19														

PLANETOCENTRIC CONIC

C3	16.349	VHL	4.043	DLA	-7.88	RAL	122.55	RAD	6567.7	VEL	11.736	PTH	2.07	VHP	3.600	DPA	29.05	RAP	194.50

ECC	1.2691	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
		90.00	15 2 33	1920.74	-11.53	23.67	339.66	116.04	15 34 34	1320.7	-7.93	16.84
		90.00	1 5 51	5057.99	23.85	223.47	342.83	74.27	2 30 9	4458.0	21.47	215.62
		100.00	16 20 6	1670.57	-12.50	4.77	339.16	117.37	16 47 57	1070.6	-8.74	358.01
		100.00	2 30 59	4783.39	24.90	202.94	342.49	72.91	3 50 42	4183.4	22.33	195.09
		110.00	17 19 41	1484.01	-15.08	349.13	337.68	121.05	17 44 25	884.0	-10.86	342.58
		110.00	3 47 54	4542.71	27.70	183.59	341.41	69.11	5 3 36	3942.7	24.60	175.79

DIFFERENTIAL CORRECTIONS

TDE	.1260	TRA	-.9077	TC3	-.4453	BAU	.9991		
RDE	.7346	RRA	1.4387	RC3	4.5492	FAU	.38324		
FDE	-3.8101	FRA	-6.7478	FC	-20.2938	BSP	15457		
BDE	.7453	BRA	1.7011	BC3	4.5710	FSP	5973		

MID-COURSE EXECUTION ACCURACY

SGT	1359.3	SGR	4342.0	SG3	1709.9		
RRT	-.6457	RRF	-.9992	RTF	.6498		
SGB	4549.8	R23	.0430	R13	-.9983		
SG1	4434.9	SG2	1016.2	THA	102.07		

ORBIT DETERMINATION ACCURACY

ST	428.7	SR	1215.3	SS	1911.8		
CRT	-.1071	CRS	.9990	CST	-.0642		
LSA	2265.1	MSA	429.7	SSA	10.2		
EL1	1216.3	EL2	425.9	ALF	92.47		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 566.057 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	32.960	GAL	4.03	AZL	93.74	HCA	169.61	SMA	185.34	ECC	.21667	INC	3.7381
RP	224.02	LAP	-.67	LOP	250.66	VP	21.652	GAP	-3.42	AZP	86.32	TAL	22.96	TAP	192.56	RCA	145.18	APO	225.50
RC	256.380	GL	-30.96	GP	33.43	ZAL	53.18	ZAP	105.10	ETS	168.30	ZAE	131.71	ETE	140.41	ZAC	120.03	ETC	254.19

V1	30.254	V2	24.548	CLP	108.19														

PLANETOCENTRIC CONIC

C3	17.363	VHL	4.167	DLA	-11.44	RAL	121.52	RAD	6567.7	VEL	11.779	PTH	2.08	VHP	3.692	DPA	31.75	RAP	195.19

ECC	1.2857	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
		90.00	15 27 7	1818.03	-8.39	17.75	339.47	117.14	15 57 25	1218.0	-4.69	11.03
		90.00	0 33 2	5188.37	25.96	232.44	344.11	78.29	1 59 31	4588.4	24.09	224.27
		100.00	16 42 41	1574.23	-9.43	359.28	338.92	118.50	17 8 55	974.2	-5.55	352.64
		100.00	2 0 10	4907.40	27.11	211.49	343.88	76.89	3 21 57	4307.4	25.03	203.31
		110.00	17 37 51	1401.46	-12.13	344.55	337.31	122.21	18 1 12	801.5	-7.79	338.15
		110.00	3 21 29	4652.94	30.13	191.24	342.90	73.04	4 39 2	4052.9	27.52	183.03

DIFFERENTIAL CORRECTIONS

TDE	.0798	TRA	-1.0047	TC3	-.6359	BAU	1.1004		
RDE	1.0001	RRA	1.6596	RC3	4.6979	FAU	.36564		
FDE	-4.3431	FRA	-6.7518	FC	-18.2310	BSP	16679		
BDE	1.0033	BRA	1.9400	BC3	4.7407	FSP	5550		

MID-COURSE EXECUTION ACCURACY

SGT	1509.9	SGR	4758.1	SG3	1630.7		
RRT	-.7246	RRF	-.9994	RTF	.7281		
SGB	4992.0	R23	.0441	R13	-.9984		
SG1	4888.1	SG2	1012.9	THA	103.54		

ORBIT DETERMINATION ACCURACY

ST	437.2	SR	1546.9	SS	2114.6		
CRT	-.2163	CRS	.9996	CST	-.1909		
LSA	2621.3	MSA	429.3	SSA	8.2		
EL1	1550.0	EL2	426.0	ALF	93.78		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 570.047 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 32.957 GAL 4.01 AZL 94.37 HCA 170.68 SMA 185.28 ECC .21631 INC 4.3671 V1 30.254
RP 223.63 LAP -.71 LOP 251.74 VP 21.694 GAP -3.68 AZP 85.69 TAL 22.89 TAP 193.57 RCA 145.20 APO 225.35 V2 24.590
RC 257.974 GL -35.22 GP 36.40 ZAL 55.03 ZAP 102.95 ETS 168.78 ZAE 128.45 ETE 140.66 ZAC 122.71 ETC 253.79 CLP 106.17

PLANETOCENTRIC CONIC

C3 18.840 VHL 4.341 DLA -15.53 RAL 120.27 RAD 6567.8 VEL 11.842 PTH 2.10 VHP 3.826 DPA 34.70 RAP 196.16 ECC 1.3101

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 59	1695.39	-4.52	10.82	339.77	117.98	16 26 15	1095.4	-.75	4.18
90.00	23 48 17	5349.13	27.68	243.88	345.99	83.77	25 17 26	4749.1	26.53	235.41
100.00	17 10 48	1460.45	-5.67	352.92	339.13	119.40	17 35 8	860.5	-1.71	346.37
100.00	1 22 5	5059.30	28.98	222.39	345.81	82.33	2 46 25	4459.3	27.61	213.85
110.00	18 0 4	1306.13	-8.62	339.40	337.33	123.21	18 21 50	706.1	-4.19	333.11
110.00	2 49 19	4786.39	32.38	200.99	345.14	78.40	4 9 5	4186.4	30.45	192.31

DIFFERENTIAL CORRECTIONS
TDE .0077 TRA-1.1254 TC3 -.8127 BAU 1.2085
RDE 1.3290 RRA 1.9158 RC3 4.7287 FAU .33944
FDE-4.7816 FRA-6.6135 FC-15.5975 BSP 18268
BDE 1.3290 BRA 2.2219 BC3 4.7980 FSP 5123

MID-COURSE EXECUTION ACCURACY
SGT 1695.6 SGR 5178.6 SG3 1509.6
RRT -.7887 RRF -.9995 RTF .7918
SGB 5449.1 R23 .0447 R13 -.9985
SG1 5355.1 SG2 1008.1 THA 105.02

ORBIT DETERMINATION ACCURACY
ST 463.1 SR 1926.8 SS 2275.6
CRT -.3911 CRS .9999 CST -.3770
LSA 2987.0 MSA 427.7 SSA 6.7
EL1 1935.7 EL2 424.3 ALF 95.64

LAUNCH DATE DEC 13 1964 FLIGHT TIME 262.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 574.045 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 32.953 GAL 4.00 AZL 95.16 HCA 171.76 SMA 185.22 ECC .21598 INC 5.1614 V1 30.254
RP 223.24 LAP -.74 LOP 252.82 VP 21.736 GAP -3.93 AZP 84.89 TAL 22.81 TAP 194.58 RCA 145.22 APO 225.22 V2 24.632
RC 259.547 GL -40.12 GP 39.73 ZAL 57.34 ZAP 100.81 ETS 169.37 ZAE 125.01 ETE 140.88 ZAC 125.73 ETC 253.26 CLP 104.12

PLANETOCENTRIC CONIC

C3 21.064 VHL 4.590 DLA -20.21 RAL 118.72 RAD 6567.9 VEL 11.935 PTH 2.12 VHP 4.020 DPA 37.95 RAP 197.49 ECC 1.3467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 39 53	1540.03	.48	2.14	340.94	118.31	17 5 33	940.0	4.26	355.50
90.00	22 54 2	5557.56	28.29	259.08	348.46	91.35	24 26 39	4957.6	28.18	250.41
100.00	17 48 10	1319.68	-.93	345.16	340.16	119.88	18 10 10	719.7	3.06	338.64
100.00	0 32 22	5253.14	29.89	236.70	348.48	89.79	1 59 55	4653.1	29.54	227.91
110.00	18 28 29	1193.33	-4.37	333.44	338.01	123.94	18 48 22	593.3	.11	327.22
110.00	2 8 32	4952.25	33.95	213.66	348.29	85.74	3 31 5	4352.3	32.99	204.56

DIFFERENTIAL CORRECTIONS
TDE -.0908 TRA-1.2717 TC3 -.9486 BAU 1.3329
RDE 1.7626 RRA 2.2384 RC3 4.6371 FAU .30676
FDE-5.1343 FRA-6.3646 FC-12.6078 BSP 19851
BDE 1.7649 BRA 2.5744 BC3 4.7331 FSP 4556

MID-COURSE EXECUTION ACCURACY
SGT 1906.0 SGR 5641.4 SG3 1357.1
RRT -.8364 RRF -.9996 RTF .8393
SGB 5954.7 R23 .0439 R13 -.9987
SG1 5869.4 SG2 1004.3 THA 106.27

ORBIT DETERMINATION ACCURACY
ST 520.7 SR 2378.2 SS 2397.5
CRT -.5702 CRS 1.0000 CST -.5633
LSA 3390.0 MSA 427.6 SSA 5.4
EL1 2397.3 EL2 424.3 ALF 97.35

LAUNCH DATE DEC 13 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 578.049 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 32.950 GAL 3.98 AZL 96.20 HCA 172.84 SMA 185.17 ECC .21567 INC 6.1981 V1 30.254
RP 222.85 LAP -.77 LOP 253.91 VP 21.779 GAP -4.18 AZP 83.85 TAL 22.73 TAP 195.57 RCA 145.23 APO 225.10 V2 24.674
RC 261.100 GL -45.74 GP 43.47 ZAL 60.17 ZAP 98.71 ETS 170.09 ZAE 121.39 ETE 141.10 ZAC 129.13 ETC 252.54 CLP 102.04

PLANETOCENTRIC CONIC

C3 24.555 VHL 4.955 DLA -25.54 RAL 116.73 RAD 6568.0 VEL 12.080 PTH 2.16 VHP 4.303 DPA 41.49 RAP 199.30 ECC 1.4041

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 49 18	1303.79	8.01	348.87	344.09	117.25	18 11 2	703.8	11.60	342.03
90.00	21 28 46	5868.35	25.75	281.40	350.70	102.20	23 6 34	5268.3	27.18	273.02
100.00	18 45 42	1121.69	5.76	334.27	342.86	119.38	19 4 24	521.7	9.63	327.62
100.00	23 15 3	5525.69	28.26	256.74	351.26	100.18	24 47 8	4925.7	29.37	248.11
110.00	19 8 0	1051.72	1.03	326.04	339.93	124.17	19 25 32	451.7	5.51	319.81
110.00	1 13 10	5168.42	33.77	230.50	352.15	95.68	2 39 18	4568.4	34.18	221.28

DIFFERENTIAL CORRECTIONS
TDE -.2129 TRA-1.4454 TC3-1.0130 BAU 1.4698
RDE 2.3265 RRA 2.6415 RC3 4.3611 FAU .26569
FDE-5.2904 FRA-5.9381 FC3-9.3675 BSP 21740
BDE 2.3362 BRA 3.0111 BC3 4.4772 FSP 3913

MID-COURSE EXECUTION ACCURACY
SGT 2121.2 SGR 6113.6 SG3 1164.0
RRT -.8692 RRF -.9997 RTF .8720
SGB 6471.1 R23 .0422 R13 -.9988
SG1 6392.9 SG2 1003.2 THA 107.22

ORBIT DETERMINATION ACCURACY
ST 608.5 SR 2878.3 SS 2429.4
CRT -.7025 CRS 1.0000 CST -.6998
LSA 3790.9 MSA 431.0 SSA 4.4
EL1 2910.6 EL2 428.3 ALF 98.64

LAUNCH DATE DEC 13 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 582.057 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 32.948 GAL 3.95 AZL 97.61 HCA 173.92 SMA 185.13 ECC .21538 INC 7.6055 V1 30.254
RP 222.47 LAP -.80 LOP 255.01 VP 21.823 GAP -4.42 AZP 82.44 TAL 22.63 TAP 196.55 RCA 145.25 APO 225.00 V2 24.716
RC 262.633 GL -52.15 GP 47.60 ZAL 63.57 ZAP 96.67 ETS 170.99 ZAE 117.61 ETE 141.39 ZAC 132.90 ETC 251.58 CLP 99.92

PLANETOCENTRIC CONIC

C3 30.357 VHL 5.510 DLA -31.55 RAL 114.08 RAD 6568.2 VEL 12.318 PTH 2.22 VHP 4.726 DPA 45.30 RAP 201.74 ECC 1.4996

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.46	17 34 2	1361.91	18.84	358.67	350.30	115.79	17 56 44	761.9	22.15	351.31
104.54	21 22 52	627.66	18.86	304.38	350.31	115.78	21 33 19	27.7	22.17	297.02
75.46	17 34 2	1361.91	18.84	358.67	350.30	115.79	17 56 44	761.9	22.15	351.31
104.54	21 22 52	627.66	18.86	304.38	350.31	115.78	21 33 19	27.7	22.17	297.02
110.00	20 17 9	832.37	9.33	314.48	344.79	123.03	20 31 2	232.4	13.62	308.00
110.00	23 38 55	5493.23	28.94	254.49	354.85	109.03	25 10 28	4893.2	31.26	246.05

DIFFERENTIAL CORRECTIONS
TDE -.3731 TRA-1.6721 TC3-1.0091 BAU 1.6363
RDE 3.0852 RRA 3.1865 RC3 3.9036 FAU .21851
FDE-5.1750 FRA-5.3381 FC3-6.2316 BSP 23413
BDE 3.1077 BRA 3.5986 BC3 4.0319 FSP 3114

MID-COURSE EXECUTION ACCURACY
SGT 2355.9 SGR 6627.0 SG3 940.7
RRT -.8943 RRF -.9997 RTF .8972
SGB 7033.3 R23 .0397 R13 -.9990
SG1 6961.4 SG2 1003.7 THA 108.02

ORBIT DETERMINATION ACCURACY
ST 725.5 SR 3416.3 SS 2339.4
CRT -.7921 CRS 1.0000 CST -.7918
LSA 4180.6 MSA 438.7 SSA 3.5
EL1 3465.1 EL2 436.6 ALF 99.70

LAUNCH DATE DEC 13 1964 FLIGHT TIME 290.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 631.357 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 32.948 GAL 3.44 AZL 81.00 HCA 187.48 SMA 185.13 ECC .21281 INC 8.9999 V1 30.254
RP 217.98 LAP -1.17 LOP 268.42 VP 22.379 GAP -6.86 AZP 98.92 TAL 19.80 TAP 207.28 RCA 145.73 APO 224.53 V2 25.208
RC 279.589 GL 58.91 GP -42.61 ZAL 68.97 ZAP 82.07 ETS 171.48 ZAE 106.00 ETE 193.13 ZAC 43.67 ETC 251.81 CLP 79.20

PLANETOCENTRIC CONIC

C3 36.093 VHL 6.008 DLA 71.76 RAL 173.10 RAD 6568.4 VEL 12.548 PTH 2.27 VHP 4.278 DPA -32.23 RAP 150.36 ECC 1.5940

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
11.85	9 33 17	4359.63	-49.09	243.31	126.95	16.03	10 45 57	3759.6	-56.72	239.71
11.85	2 5 42	4802.08	-19.75	249.92	23.21	11.08	3 25 44	4202.1	-27.59	248.61
20.83	6 7 40	4564.24	-33.15	237.72	70.67	21.96	7 23 45	3964.2	-40.51	234.22
159.17	16 44 0	2800.59	-33.15	85.55	70.66	21.96	17 30 41	2200.6	-40.51	82.05
20.83	6 7 40	4564.24	-33.15	237.72	70.67	21.96	7 23 45	3964.2	-40.51	234.22
159.17	16 44 0	2800.59	-33.15	85.55	70.66	21.96	17 30 41	2200.6	-40.51	82.05

DIFFERENTIAL CORRECTIONS
TDE 5.5128 TRA .1556 TC3-2.5320 BAU 1.8682
RDE 4.5519 RRA .5473 RC3-2.9288 FAU .28226
FDE 9.7581 FRA 1.1985 FC3-6.7703 BSP 28437
BDE 7.1492 BRA .5690 BC3 3.8716 FSP 3992

MID-COURSE EXECUTION ACCURACY
SGT 6092.8 SGR 5831.8 SG3 1113.6
RRT .9659 RRF .9994 RTF .9603
SGB 8434.0 R23 .1555 R13 .9874
SG1 8362.0 SG2 1100.1 THA 43.70

ORBIT DETERMINATION ACCURACY
ST 5260.3 SR 4371.2 SS 3464.5
CRT .9961 CRS-1.0000 CST -.9959
LSA 7659.3 MSA 340.2 SSA 4.6
EL1 6833.0 EL2 295.5 ALF 39.71

LAUNCH DATE DEC 13 1964 FLIGHT TIME 292.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 635.490 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 32.950 GAL 3.38 AZL 81.99 HCA 188.62 SMA 185.17 ECC .21272 INC 8.0059 V1 30.254
RP 217.62 LAP -1.20 LOP 269.57 VP 22.427 GAP -7.04 AZP 97.92 TAL 19.50 TAP 208.12 RCA 145.78 APO 224.56 V2 25.248
RC 280.887 GL 55.52 GP -38.91 ZAL 67.50 ZAP 80.22 ETS 170.92 ZAE 105.29 ETE 190.77 ZAC 47.07 ETC 252.97 CLP 77.39

PLANETOCENTRIC CONIC

C3 30.885 VHL 5.557 DLA 68.83 RAL 167.44 RAD 6568.2 VEL 12.339 PTH 2.23 VHP 4.015 DPA -28.72 RAP 151.84 ECC 1.5083

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
24.22	5 52 21	4515.96	-34.89	232.88	61.79	26.12	7 7 37	3916.0	-41.98	228.57
155.78	16 14 13	2770.30	-34.88	84.26	61.77	26.12	17 0 23	2170.3	-41.98	79.96
24.22	5 52 21	4515.96	-34.89	232.88	61.79	26.12	7 7 37	3916.0	-41.98	228.57
155.78	16 14 13	2770.30	-34.88	84.26	61.77	26.12	17 0 23	2170.3	-41.98	79.96
24.22	5 52 21	4515.96	-34.89	232.88	61.79	26.12	7 7 37	3916.0	-41.98	228.57
155.78	16 14 13	2770.30	-34.88	84.26	61.77	26.12	17 0 23	2170.3	-41.98	79.96

DIFFERENTIAL CORRECTIONS
TDE 5.1905 TRA -.0104 TC3-3.0383 BAU 1.7859
RDE 3.8919 RRA .3763 RC3-3.0784 FAU .31892
FDE10.4763 FRA 1.0230 FC3-8.9397 BSP 27967
BDE 6.4875 BRA .3764 BC3 4.3252 FSP 4617

MID-COURSE EXECUTION ACCURACY
SGT 6327.8 SGR 5381.6 SG3 1292.9
RRT .9689 RRF .9993 RTF .9639
SGB 8306.7 R23 .1624 R13 .9862
SG1 8243.6 SG2 1022.1 THA 40.23

ORBIT DETERMINATION ACCURACY
ST 5352.2 SR 4026.7 SS 3760.1
CRT .9966 CRS-1.0000 CST -.9966
LSA 7674.6 MSA 316.7 SSA 5.3
EL1 6692.6 EL2 263.9 ALF 36.93

LAUNCH DATE DEC 13 1964 FLIGHT TIME 294.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 639.634 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 32.953 GAL 3.33 AZL 82.76 HCA 189.76 SMA 185.21 ECC .21264 INC 7.2392 V1 30.254
RP 217.27 LAP -1.22 LOP 270.71 VP 22.475 GAP -7.21 AZP 97.14 TAL 19.19 TAP 208.95 RCA 145.83 APO 224.60 V2 25.287
RC 282.167 GL 52.58 GP -35.63 ZAL 66.33 ZAP 78.36 ETS 170.50 ZAE 104.31 ETE 188.71 ZAC 50.11 ETC 253.85 CLP 75.63

PLANETOCENTRIC CONIC

C3 27.247 VHL 5.220 DLA 66.16 RAL 163.75 RAD 6568.1 VEL 12.191 PTH 2.19 VHP 3.834 DPA -25.57 RAP 153.02 ECC 1.4484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
27.33	5 44 32	4474.88	-35.98	228.27	55.05	29.97	6 59 6	3874.9	-42.80	223.25
152.67	15 52 34	2748.72	-35.97	83.04	55.03	29.96	16 38 23	2148.7	-42.79	78.02
27.33	5 44 32	4474.88	-35.98	228.27	55.05	29.97	6 59 6	3874.9	-42.80	223.25
152.67	15 52 34	2748.72	-35.97	83.04	55.03	29.96	16 38 23	2148.7	-42.79	78.02
27.33	5 44 32	4474.88	-35.98	228.27	55.05	29.97	6 59 6	3874.9	-42.80	223.25
152.67	15 52 34	2748.72	-35.97	83.04	55.03	29.96	16 38 23	2148.7	-42.79	78.02

DIFFERENTIAL CORRECTIONS
TDE 4.9104 TRA -.1457 TC3-3.5579 BAU 1.7333
RDE 3.3197 RRA .2565 RC3-3.1593 FAU .34861
FDE10.7446 FRA .8242 FC-11.0765 BSP 27522
BDE 5.9272 BRA .2950 BC3 4.7582 FSP 5094

MID-COURSE EXECUTION ACCURACY
SGT 6557.7 SGR 4964.0 SG3 1440.1
RRT .9712 RRF .9992 RTF .9664
SGB 8224.7 R23 .1694 R13 .9849
SG1 8169.7 SG2 949.4 THA 36.90

ORBIT DETERMINATION ACCURACY
ST 5392.3 SR 3651.2 SS 3915.0
CRT .9968 CRS-1.0000 CST -.9969
LSA 7592.4 MSA 301.7 SSA 6.1
EL1 6507.7 EL2 240.4 ALF 34.07

LAUNCH DATE DEC 13 1964 FLIGHT TIME 296.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 643.789 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 32.955 GAL 3.27 AZL 83.37 HCA 190.90 SMA 185.26 ECC .21257 INC 6.6302 V1 30.254
RP 216.91 LAP -1.25 LOP 271.86 VP 22.523 GAP -7.37 AZP 96.51 TAL 18.86 TAP 209.76 RCA 145.88 APO 224.64 V2 25.327
RC 283.431 GL 50.01 GP -32.72 ZAL 65.41 ZAP 76.53 ETS 170.18 ZAE 103.13 ETE 186.92 ZAC 52.80 ETC 254.54 CLP 73.92

PLANETOCENTRIC CONIC

C3 24.583 VHL 4.958 DLA 63.74 RAL 161.24 RAD 6568.0 VEL 12.081 PTH 2.16 VHP 3.709 DPA -22.75 RAP 153.96 ECC 1.4046

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.17	5 41 3	4439.22	-36.63	223.98	49.74	33.45	6 55 2	3839.2	-43.16	218.37
149.83	15 36 0	2733.49	-36.62	81.95	49.72	33.45	16 21 33	2133.5	-43.15	76.33
30.17	5 41 3	4439.22	-36.63	223.98	49.74	33.45	6 55 2	3839.2	-43.16	218.37
149.83	15 36 0	2733.49	-36.62	81.95	49.72	33.45	16 21 33	2133.5	-43.15	76.33
30.17	5 41 3	4439.22	-36.63	223.98	49.74	33.45	6 55 2	3839.2	-43.16	218.37
149.83	15 36 0	2733.49	-36.62	81.95	49.72	33.45	16 21 33	2133.5	-43.15	76.33

DIFFERENTIAL CORRECTIONS
TDE 4.6900 TRA -.2478 TC3-4.0707 BAU 1.6965
RDE 2.8508 RRA .1797 RC3-3.1740 FAU .37061
FDE10.7476 FRA .6546 FC-13.0518 BSP 27465
BDE 5.4884 BRA .3061 BC3 5.1618 FSP 5494

MID-COURSE EXECUTION ACCURACY
SGT 6788.7 SGR 4580.3 SG3 1556.8
RRT .9730 RRF .9990 RTF .9683
SGB 8189.4 R23 .1760 R13 .9835
SG1 8141.8 SG2 881.2 THA 33.73

ORBIT DETERMINATION ACCURACY
ST 5424.5 SR 3298.8 SS 3985.6
CRT .9969 CRS-1.0000 CST -.9970
LSA 7490.5 MSA 292.2 SSA 7.0
EL1 6344.9 EL2 221.9 ALF 31.27

LAUNCH DATE DEC 13 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 647.955 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 32.958 GAL 3.21 AZL 83.87 HCA 192.05 SMA 185.31 ECC .21252 INC 6.1340 V1 30.254
RP 216.57 LAP -1.28 LOP 273.02 VP 22.571 GAP -7.54 AZP 96.00 TAL 18.51 TAP 210.57 RCA 145.93 APO 224.69 V2 25.365
RC 284.679 GL 47.76 GP -30.14 ZAL 64.71 ZAP 74.72 ETS 169.95 ZAE 101.81 ETE 185.37 ZAC 55.19 ETC 255.08 CLP 72.26

PLANETOCENTRIC CONIC

C3 22.556 VHL 4.749 DLA 61.56 RAL 159.49 RAD 6567.9 VEL 11.997 PTH 2.14 VHP 3.623 DPA -20.24 RAP 154.73 ECC 1.3712

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
32.74	5 40 15	4407.75	-36.95	220.04	45.46	36.57	6 53 43	3807.7	-43.21	213.92
147.26	15 22 52	2722.91	-36.95	81.01	45.45	36.57	16 8 15	2122.9	-43.20	74.90
32.74	5 40 15	4407.75	-36.95	220.04	45.46	36.57	6 53 43	3807.7	-43.21	213.92
147.26	15 22 52	2722.91	-36.95	81.01	45.45	36.57	16 8 15	2122.9	-43.20	74.90
32.74	5 40 15	4407.75	-36.95	220.04	45.46	36.57	6 53 43	3807.7	-43.21	213.92
147.26	15 22 52	2722.91	-36.95	81.01	45.45	36.57	16 8 15	2122.9	-43.20	74.90

DIFFERENTIAL CORRECTIONS
TDE 4.5070 TRA -.3352 TC3-4.5902 BAU 1.6790
RDE 2.4633 RRA .1245 RC3-3.1516 FAU .38743
FDE10.5581 FRA .4919 FC-14.8703 BSP 27395
BDE 5.1363 BRA .3576 BC3 5.5680 FSP 5761

MID-COURSE EXECUTION ACCURACY
SGT 7021.1 SGR 4229.9 SG3 1646.8
RRT .9745 RRF .9988 RTF .9698
SGB 8196.8 R23 .1815 R13 .9823
SG1 8156.0 SG2 816.4 THA 30.76

ORBIT DETERMINATION ACCURACY
ST 5444.8 SR 2974.6 SS 3990.9
CRT .9969 CRS-1.0000 CST -.9971
LSA 7371.6 MSA 284.5 SSA 7.9
EL1 6201.0 EL2 205.8 ALF 28.61

LAUNCH DATE DEC 13 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 652.129 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 32.961 GAL 3.15 AZL 84.28 HCA 193.21 SMA 185.36 ECC .21247 INC 5.7223 V1 30.254
RP 216.22 LAP -1.31 LOP 274.17 VP 22.619 GAP -7.69 AZP 95.57 TAL 18.15 TAP 211.36 RCA 145.98 APO 224.74 V2 25.404
RC 285.910 GL 45.78 GP -27.86 ZAL 64.19 ZAP 72.96 ETS 169.79 ZAE 100.38 ETE 184.05 ZAC 57.32 ETC 255.52 CLP 70.65

PLANETOCENTRIC CONIC

C3 20.964 VHL 4.579 DLA 59.59 RAL 158.27 RAD 6567.9 VEL 11.931 PTH 2.12 VHP 3.564 DPA -18.00 RAP 155.36 ECC 1.3450

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.10	5 41 16	4379.43	-37.07	216.41	41.97	39.37	6 54 16	3779.4	-43.06	209.89
144.90	15 12 7	2715.88	-37.06	80.24	41.95	39.36	15 57 23	2115.9	-43.05	73.72
35.10	5 41 16	4379.43	-37.07	216.41	41.97	39.37	6 54 16	3779.4	-43.06	209.89
144.90	15 12 7	2715.88	-37.06	80.24	41.95	39.36	15 57 23	2115.9	-43.05	73.72
35.10	5 41 16	4379.43	-37.07	216.41	41.97	39.37	6 54 16	3779.4	-43.06	209.89
144.90	15 12 7	2715.88	-37.06	80.24	41.95	39.36	15 57 23	2115.9	-43.05	73.72

DIFFERENTIAL CORRECTIONS
TDE 4.3666 TRA -.3993 TC3-5.0935 BAU 1.6696
RDE 2.1487 RRA .0913 RC3-3.0894 FAU .39826
FDE10.2734 FRA .3756 FC-16.4465 BSP 27687
BDE 4.8667 BRA .4097 BC3 5.9572 FSP 5986

MID-COURSE EXECUTION ACCURACY
SGT 7251.8 SGR 3909.5 SG3 1712.7
RRT .9758 RRF .9985 RTF .9710
SGB 8238.5 R23 .1857 R13 .9812
SG1 8203.8 SG2 755.7 THA 28.01

ORBIT DETERMINATION ACCURACY
ST 5474.1 SR 2691.0 SS 3962.3
CRT .9968 CRS-1.0000 CST -.9971
LSA 7268.3 MSA 278.9 SSA 8.8
EL1 6096.7 EL2 192.0 ALF 26.13

LAUNCH DATE DEC 13 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 656.313 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 32.965 GAL 3.09 AZL 84.63 HCA 194.37 SMA 185.42 ECC .21243 INC 5.3746 V1 30.254
RP 215.88 LAP -1.33 LOP 275.34 VP 22.666 GAP -7.85 AZP 95.21 TAL 17.78 TAP 212.15 RCA 146.03 APO 224.81 V2 25.442
RC 287.127 GL 44.03 GP -25.83 ZAL 63.82 ZAP 71.25 ETS 169.68 ZAE 98.89 ETE 182.91 ZAC 59.20 ETC 255.87 CLP 69.08

PLANETOCENTRIC CONIC

C3 19.680 VHL 4.436 DLA 57.80 RAL 157.44 RAD 6567.8 VEL 11.877 PTH 2.11 VHP 3.526 DPA -16.01 RAP 155.89 ECC 1.3239

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.25	5 43 31	4353.65	-37.02	213.08	39.10	41.87	6 56 5	3753.6	-42.77	206.23
142.75	15 3 12	2711.50	-37.01	79.62	39.08	41.86	15 48 23	2111.5	-42.76	72.77
37.25	5 43 31	4353.65	-37.02	213.08	39.10	41.87	6 56 5	3753.6	-42.77	206.23
142.75	15 3 12	2711.50	-37.01	79.62	39.08	41.86	15 48 23	2111.5	-42.76	72.77
37.25	5 43 31	4353.65	-37.02	213.08	39.10	41.87	6 56 5	3753.6	-42.77	206.23
142.75	15 3 12	2711.50	-37.01	79.62	39.08	41.86	15 48 23	2111.5	-42.76	72.77

DIFFERENTIAL CORRECTIONS
TDE 4.2496 TRA -.4520 TC3-5.5960 BAU 1.6713
RDE 1.8878 RRA .0703 RC3-3.0059 FAU .40493
FDE 9.9147 FRA .2876 FC-17.8129 BSP 28021
BDE 4.6500 BRA .4575 BC3 6.3522 FSP 6132

MID-COURSE EXECUTION ACCURACY
SGT 7481.7 SGR 3617.5 SG3 1758.5
RRT .9768 RRF .9981 RTF .9718
SGB 8310.4 R23 .1887 R13 .9802
SG1 8280.8 SG2 700.1 THA 25.48

ORBIT DETERMINATION ACCURACY
ST 5500.3 SR 2440.0 SS 3904.5
CRT .9967 CRS-1.0000 CST -.9971
LSA 7167.8 MSA 275.1 SSA 9.7
EL1 6014.6 EL2 180.4 ALF 23.88

LAUNCH DATE DEC 13 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 660.505 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 32.968 GAL 3.02 AZL 84.92 HCA 195.53 SMA 185.48 ECC .21241 INC 5.0768 V1 30.254
RP 215.54 LAP -1.36 LOP 276.50 VP 22.714 GAP -8.00 AZP 94.89 TAL 17.39 TAP 212.92 RCA 146.08 APO 224.88 V2 25.480
RC 288.329 GL 42.46 GP -24.02 ZAL 63.60 ZAP 69.59 ETS 169.62 ZAE 97.36 ETE 181.93 ZAC 60.89 ETC 256.16 CLP 67.55

PLANETOCENTRIC CONIC

C3 18.621 VHL 4.315 DLA 56.17 RAL 156.89 RAD 6567.8 VEL 11.832 PTH 2.10 VHP 3.504 DPA -14.22 RAP 156.35 ECC 1.3065

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.23	5 46 40	4329.89	-36.87	210.01	36.71	44.11	6 58 50	3729.9	-42.39	202.89
140.77	14 55 41	2709.14	-36.86	79.14	36.70	44.10	15 40 50	2109.1	-42.38	72.02
39.23	5 46 40	4329.89	-36.87	210.01	36.71	44.11	6 58 50	3729.9	-42.39	202.89
140.77	14 55 41	2709.14	-36.86	79.14	36.70	44.10	15 40 50	2109.1	-42.38	72.02
39.23	5 46 40	4329.89	-36.87	210.01	36.71	44.11	6 58 50	3729.9	-42.39	202.89
140.77	14 55 41	2709.14	-36.86	79.14	36.70	44.10	15 40 50	2109.1	-42.38	72.02

DIFFERENTIAL CORRECTIONS
TDE 4.1513 TRA -.4953 TC3-6.0976 BAU 1.6819
RDE 1.6705 RRA .0575 RC3-2.9090 FAU .40834
FDE 9.5150 FRA .2246 FC-18.9840 BSP 28418
BDE 4.4748 BRA .4986 BC3 6.7560 FSP 6221

MID-COURSE EXECUTION ACCURACY
SGT 7711.7 SGR 3352.9 SG3 1788.2
RRT .9776 RRF .9977 RTF .9726
SGB 8409.1 R23 .1904 R13 .9794
SG1 8383.9 SG2 649.7 THA 23.17

ORBIT DETERMINATION ACCURACY
ST 5525.5 SR 2219.7 SS 3827.9
CRT .9966 CRS-1.0000 CST -.9970
LSA 7073.6 MSA 272.5 SSA 10.7
EL1 5952.2 EL2 170.5 ALF 21.84

LAUNCH DATE DEC 13 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 664.704 EARTH TO MARS
RL 147.26 LAL .00 LOL 81.03 VL 32.972 GAL 2.95 AZL 85.18 HCA 196.70 SMA 185.55 ECC .21240 INC 4.8187 V1 30.254
RP 215.21 LAP -1.38 LOP 277.67 VP 22.761 GAP -8.14 AZP 94.62 TAL 16.99 TAP 213.68 RCA 146.14 APO 224.96 V2 25.517
RC 289.516 GL 41.07 GP -22.40 ZAL 63.49 ZAP 67.97 ETS 169.58 ZAE 95.80 ETE 181.10 ZAC 62.41 ETC 256.41 CLP 66.07
PLANETOCENTRIC CONIC
C3 17.731 VHL 4.211 DLA 54.67 RAL 156.56 RAD 6567.7 VEL 11.795 PTH 2.09 VHP 3.494 DPA -12.62 RAP 156.75 ECC 1.2918

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.07	5 50 31	4307.70	-36.65	207.16	34.74	46.13	7 2 18	3707.7	-41.95	199.83
138.93	14 49 15	2708.42	-36.64	78.78	34.73	46.12	15 34 24	2108.4	-41.94	71.44
41.07	5 50 31	4307.70	-36.65	207.16	34.74	46.13	7 2 18	3707.7	-41.95	199.83
138.93	14 49 15	2708.42	-36.64	78.78	34.73	46.12	15 34 24	2108.4	-41.94	71.44
41.07	5 50 31	4307.70	-36.65	207.16	34.74	46.13	7 2 18	3707.7	-41.95	199.83
138.93	14 49 15	2708.42	-36.64	78.78	34.73	46.12	15 34 24	2108.4	-41.94	71.44

DIFFERENTIAL CORRECTIONS
TDE 4.0743 TRA -.5230 TC3-6.5835 BAU 1.6952
RDE 1.4920 RRA .0555 RC3-2.7926 FAU .40744
FDE 9.1197 FRA .2189 FC-19.8942 BSP 29051
BDE 4.3389 BRA .5259 BC3 7.1513 FSP 6323

MID-COURSE EXECUTION ACCURACY
SGT 7936.5 SGR 3109.6 SG3 1801.9
RRT .9779 RRF .9971 RTF .9730
SGB 8523.9 R23 .1911 R13 .9786
SG1 8502.3 SG2 607.1 THA 21.08

ORBIT DETERMINATION ACCURACY
ST 5558.6 SR 2031.8 SS 3749.3
CRT .9963 CRS-1.0000 CST -.9968
LSA 7000.6 MSA 274.1 SSA 11.6
EL1 5916.0 EL2 163.7 ALF 20.03

LAUNCH DATE DEC 13 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 668.914 EARTH TO MARS
RL 147.26 LAL .00 LOL 81.03 VL 32.976 GAL 2.88 AZL 85.41 HCA 197.87 SMA 185.62 ECC .21240 INC 4.5930 V1 30.254
RP 214.88 LAP -1.41 LOP 278.84 VP 22.808 GAP -8.29 AZP 94.37 TAL 16.57 TAP 214.44 RCA 146.19 APO 225.04 V2 25.554
RC 290.691 GL 39.81 GP -20.95 ZAL 63.49 ZAP 66.41 ETS 169.57 ZAE 94.24 ETE 180.38 ZAC 63.77 ETC 256.61 CLP 64.63
PLANETOCENTRIC CONIC
C3 16.969 VHL 4.119 DLA 53.28 RAL 156.42 RAD 6567.7 VEL 11.762 PTH 2.08 VHP 3.494 DPA -11.19 RAP 157.12 ECC 1.2793

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.78	5 54 53	4286.81	-36.38	204.52	33.10	47.96	7 6 20	3686.8	-41.48	197.00
137.22	14 43 44	2708.98	-36.37	78.52	33.09	47.95	15 28 53	2109.0	-41.47	71.01
42.78	5 54 53	4286.81	-36.38	204.52	33.10	47.96	7 6 20	3686.8	-41.48	197.00
137.22	14 43 44	2708.98	-36.37	78.52	33.09	47.95	15 28 53	2109.0	-41.47	71.01
42.78	5 54 53	4286.81	-36.38	204.52	33.10	47.96	7 6 20	3686.8	-41.48	197.00
137.22	14 43 44	2708.98	-36.37	78.52	33.09	47.95	15 28 53	2109.0	-41.47	71.01

DIFFERENTIAL CORRECTIONS
TDE 4.0011 TRA -.5492 TC3-7.0798 BAU 1.7178
RDE 1.3356 RRA .0511 RC3-2.6858 FAU .40633
FDE 8.6752 FRA .1892 FC-20.7307 BSP 29490
BDE 4.2182 BRA .5515 BC3 7.5721 FSP 6287

MID-COURSE EXECUTION ACCURACY
SGT 8162.4 SGR 2891.5 SG3 1807.2
RRT .9784 RRF .9963 RTF .9735
SGB 8659.4 R23 .1898 R13 .9781
SG1 8641.0 SG2 564.4 THA 19.20

ORBIT DETERMINATION ACCURACY
ST 5581.1 SR 1859.2 SS 3645.7
CRT .9961 CRS -.9999 CST -.9968
LSA 6915.4 MSA 270.5 SSA 12.6
EL1 5880.6 EL2 155.1 ALF 18.37

LAUNCH DATE DEC 13 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 673.132 EARTH TO MARS
RL 147.26 LAL .00 LOL 81.03 VL 32.981 GAL 2.81 AZL 85.61 HCA 199.04 SMA 185.69 ECC .21242 INC 4.3935 V1 30.254
RP 214.56 LAP -1.43 LOP 280.02 VP 22.855 GAP -8.42 AZP 94.15 TAL 16.14 TAP 215.18 RCA 146.24 APO 225.13 V2 25.590
RC 291.851 GL 38.68 GP -19.64 ZAL 63.59 ZAP 64.89 ETS 169.59 ZAE 92.68 ETE 179.76 ZAC 65.00 ETC 256.78 CLP 63.22
PLANETOCENTRIC CONIC
C3 16.307 VHL 4.038 DLA 51.99 RAL 156.42 RAD 6567.7 VEL 11.734 PTH 2.07 VHP 3.501 DPA -9.90 RAP 157.45 ECC 1.2684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.38	5 59 42	4266.95	-36.07	202.03	31.75	49.62	7 10 49	3666.9	-40.99	194.38
135.62	14 38 56	2710.62	-36.05	78.36	31.73	49.61	15 24 6	2110.6	-40.98	70.71
44.38	5 59 42	4266.95	-36.07	202.03	31.75	49.62	7 10 49	3666.9	-40.99	194.38
135.62	14 38 56	2710.62	-36.05	78.36	31.73	49.61	15 24 6	2110.6	-40.98	70.71
44.38	5 59 42	4266.95	-36.07	202.03	31.75	49.62	7 10 49	3666.9	-40.99	194.38
135.62	14 38 56	2710.62	-36.05	78.36	31.73	49.61	15 24 6	2110.6	-40.98	70.71

DIFFERENTIAL CORRECTIONS
TDE 3.9364 TRA -.5681 TC3-7.5754 BAU 1.7444
RDE 1.2028 RRA .0504 RC3-2.5755 FAU .40324
FDE 8.2345 FRA .1818 FC-21.4073 BSP 29969
BDE 4.1160 BRA .5704 BC3 8.0012 FSP 6230

MID-COURSE EXECUTION ACCURACY
SGT 8386.9 SGR 2693.1 SG3 1803.3
RRT .9787 RRF .9954 RTF .9740
SGB 8808.6 R23 .1872 R13 .9777
SG1 8792.9 SG2 527.2 THA 17.51

ORBIT DETERMINATION ACCURACY
ST 5601.8 SR 1708.1 SS 3538.0
CRT .9959 CRS -.9999 CST -.9967
LSA 6836.9 MSA 268.3 SSA 13.7
EL1 5854.6 EL2 148.0 ALF 16.90

LAUNCH DATE DEC 13 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 677.358 EARTH TO MARS
RL 147.26 LAL .00 LOL 81.03 VL 32.985 GAL 2.73 AZL 85.78 HCA 200.22 SMA 185.76 ECC .21244 INC 4.2160 V1 30.254
RP 214.24 LAP -1.46 LOP 281.20 VP 22.902 GAP -8.56 AZP 93.96 TAL 15.69 TAP 215.91 RCA 146.30 APO 225.23 V2 25.626
RC 292.998 GL 37.65 GP -18.45 ZAL 63.77 ZAP 63.42 ETS 169.61 ZAE 91.13 ETE 179.23 ZAC 66.13 ETC 256.92 CLP 61.86
PLANETOCENTRIC CONIC
C3 15.726 VHL 3.966 DLA 50.79 RAL 156.55 RAD 6567.6 VEL 11.709 PTH 2.06 VHP 3.516 DPA -8.75 RAP 157.77 ECC 1.2588

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.90	6 4 54	4247.93	-35.73	199.69	30.63	51.14	7 15 42	3647.9	-40.48	191.92
134.10	14 34 46	2713.12	-35.72	78.28	30.62	51.13	15 19 59	2113.1	-40.47	70.51
45.90	6 4 54	4247.93	-35.73	199.69	30.63	51.14	7 15 42	3647.9	-40.48	191.92
134.10	14 34 46	2713.12	-35.72	78.28	30.62	51.13	15 19 59	2113.1	-40.47	70.51
45.90	6 4 54	4247.93	-35.73	199.69	30.63	51.14	7 15 42	3647.9	-40.48	191.92
134.10	14 34 46	2713.12	-35.72	78.28	30.62	51.13	15 19 59	2113.1	-40.47	70.51

DIFFERENTIAL CORRECTIONS
TDE 3.8820 TRA -.5761 TC3-8.0601 BAU 1.7718
RDE 1.0899 RRA .0536 RC3-2.4617 FAU .39819
FDE 7.8071 FRA .2029 FC-21.9211 BSP 30569
BDE 4.0321 BRA .5786 BC3 8.4276 FSP 6168

MID-COURSE EXECUTION ACCURACY
SGT 8605.7 SGR 2511.3 SG3 1791.1
RRT .9787 RRF .9943 RTF .9742
SGB 8964.6 R23 .1835 R13 .9773
SG1 8950.9 SG2 495.3 THA 15.99

ORBIT DETERMINATION ACCURACY
ST 5626.0 SR 1576.3 SS 3430.1
CRT .9956 CRS -.9999 CST -.9965
LSA 6769.9 MSA 267.2 SSA 14.7
EL1 5841.0 EL2 142.0 ALF 15.60

LAUNCH DATE DEC 13 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 681.591 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	32.990	GAL	2.65	AZL	85.94	HCA	201.40	SMA	185.84	ECC	.21248	INC	4.0567
RP	213.93	LAP	-1.48	LOP	282.38	VP	22.948	GAP	-8.69	AZP	93.78	TAL	15.24	TAP	216.64	RCA	146.35	APO	225.33
RC	294.131	GL	36.71	GP	-17.37	ZAL	64.02	ZAP	62.00	ETS	169.66	ZAE	89.60	ETE	178.77	ZAC	67.15	ETC	257.04

V1	30.254	V2	25.662	CLP	60.53														

PLANETOCENTRIC CONIC

C3	15.208	VHL	3.900	DLA	49.66	RAL	156.79	RAD	6567.6	VEL	11.687	PTH	2.06	VHP	3.535	DPA	-7.70	RAP	158.08
ECC	1.2503																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.33	6 10 26	4229.54	-35.38	197.47	29.72	52.55	7 20 56	3629.5	-39.96	189.60
132.67	14 31 6	2716.43	-35.36	78.28	29.71	52.54	15 16 22	2116.4	-39.95	70.41
47.33	6 10 26	4229.54	-35.38	197.47	29.72	52.55	7 20 56	3629.5	-39.96	189.60
132.67	14 31 6	2716.43	-35.36	78.28	29.71	52.54	15 16 22	2116.4	-39.95	70.41
47.33	6 10 26	4229.54	-35.38	197.47	29.72	52.55	7 20 56	3629.5	-39.96	189.60
132.67	14 31 6	2716.43	-35.36	78.28	29.71	52.54	15 16 22	2116.4	-39.95	70.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.8327	TRA	-.5775	TC3	-8.5435	BAU	1.8015	SGT	8822.1	SGR	2345.2	SG3	1772.5	ST	5648.3	SR	1460.3	SS	3321.5
RDE	.9929	RRA	.0586	RC3	-2.3482	FAU	.39180	RRT	.9785	RRF	.9930	RTF	.9744	CRT	.9953	CRS	-.9999	CST	-.9963
FDE	7.3922	FRA	.2401	FC	-22.3035	BSP	31184	SGB	9128.5	R23	.1786	R13	.9769	LSA	6707.9	MSA	267.0	SSA	15.8
BDE	3.9592	BRA	.5805	BC3	8.8604	FSP	6092	SG1	9116.5	SG2	468.4	THA	14.62	EL1	5832.4	EL2	137.0	ALF	14.44

LAUNCH DATE DEC 13 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 685.832 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	32.994	GAL	2.57	AZL	86.09	HCA	202.59	SMA	185.93	ECC	.21254	INC	3.9130
RP	213.62	LAP	-1.50	LOP	283.57	VP	22.994	GAP	-8.82	AZP	93.61	TAL	14.76	TAP	217.35	RCA	146.41	APO	225.44
RC	295.251	GL	35.86	GP	-16.39	ZAL	64.35	ZAP	60.62	ETS	169.71	ZAE	88.08	ETE	178.37	ZAC	68.09	ETC	257.14

V1	30.254	V2	25.697	CLP	59.25														

PLANETOCENTRIC CONIC

C3	14.743	VHL	3.840	DLA	48.60	RAL	157.11	RAD	6567.6	VEL	11.667	PTH	2.05	VHP	3.559	DPA	-6.76	RAP	158.38
ECC	1.2426																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.70	6 16 17	4211.67	-35.01	195.35	28.99	53.85	7 26 29	3611.7	-39.45	187.40
131.30	14 27 52	2720.42	-35.00	78.34	28.98	53.84	15 13 13	2120.4	-39.44	70.39
48.70	6 16 17	4211.67	-35.01	195.35	28.99	53.85	7 26 29	3611.7	-39.45	187.40
131.30	14 27 52	2720.42	-35.00	78.34	28.98	53.84	15 13 13	2120.4	-39.44	70.39
48.70	6 16 17	4211.67	-35.01	195.35	28.99	53.85	7 26 29	3611.7	-39.45	187.40
131.30	14 27 52	2720.42	-35.00	78.34	28.98	53.84	15 13 13	2120.4	-39.44	70.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.7873	TRA	-.5723	TC3	-9.0254	BAU	1.8329	SGT	9035.7	SGR	2194.0	SG3	1749.6	ST	5668.5	SR	1357.3	SS	3210.8
RDE	.9085	RRA	.0642	RC3	-2.2384	FAU	.38472	RRT	.9780	RRF	.9914	RTF	.9746	CRT	.9950	CRS	-.9998	CST	-.9961
FDE	6.9866	FRA	.2851	FC	-22.5910	BSP	31789	SGB	9298.3	R23	.1723	R13	.9766	LSA	6649.2	MSA	266.4	SSA	16.8
BDE	3.8947	BRA	.5759	BC3	9.2989	FSP	5986	SG1	9287.6	SG2	445.1	THA	13.39	EL1	5827.2	EL2	132.4	ALF	13.41

LAUNCH DATE DEC 13 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 690.080 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	32.999	GAL	2.49	AZL	86.22	HCA	203.78	SMA	186.01	ECC	.21260	INC	3.7825
RP	213.31	LAP	-1.52	LOP	284.76	VP	23.040	GAP	-8.94	AZP	93.46	TAL	14.28	TAP	218.05	RCA	146.46	APO	225.56
RC	296.356	GL	35.08	GP	-15.49	ZAL	64.75	ZAP	59.29	ETS	169.76	ZAE	86.59	ETE	178.03	ZAC	68.95	ETC	257.23

V1	30.254	V2	25.731	CLP	58.00														

PLANETOCENTRIC CONIC

C3	14.322	VHL	3.784	DLA	47.58	RAL	157.53	RAD	6567.6	VEL	11.649	PTH	2.05	VHP	3.588	DPA	-5.92	RAP	158.68
ECC	1.2357																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.02	6 22 25	4194.16	-34.63	193.31	28.41	55.06	7 32 20	3594.2	-38.93	185.30
129.98	14 25 1	2725.06	-34.62	78.46	28.40	55.05	15 10 26	2125.1	-38.92	70.45
50.02	6 22 25	4194.16	-34.63	193.31	28.41	55.06	7 32 20	3594.2	-38.93	185.30
129.98	14 25 1	2725.06	-34.62	78.46	28.40	55.05	15 10 26	2125.1	-38.92	70.45
50.02	6 22 25	4194.16	-34.63	193.31	28.41	55.06	7 32 20	3594.2	-38.93	185.30
129.98	14 25 1	2725.06	-34.62	78.46	28.40	55.05	15 10 26	2125.1	-38.92	70.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.7448	TRA	-.5606	TC3	-9.5034	BAU	1.8648	SGT	9244.8	SGR	2054.8	SG3	1722.0	ST	5686.1	SR	1266.1	SS	3100.8
RDE	.8351	RRA	.0708	RC3	-2.1297	FAU	.37662	RRT	.9772	RRF	.9895	RTF	.9747	CRT	.9946	CRS	-.9998	CST	-.9959
FDE	6.5965	FRA	.3423	FC	-22.7658	BSP	32421	SGB	9470.4	R23	.1648	R13	.9764	LSA	6593.8	MSA	266.6	SSA	17.8
BDE	3.8367	BRA	.5650	BC3	9.7391	FSP	5876	SG1	9460.8	SG2	426.3	THA	12.28	EL1	5824.0	EL2	128.4	ALF	12.49

LAUNCH DATE DEC 13 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 694.335 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.004	GAL	2.40	AZL	86.34	HCA	204.97	SMA	186.10	ECC	.21268	INC	3.6634
RP	213.01	LAP	-1.55	LOP	285.95	VP	23.085	GAP	-9.07	AZP	93.32	TAL	13.78	TAP	218.75	RCA	146.52	APO	225.68
RC	297.448	GL	34.36	GP	-14.67	ZAL	65.21	ZAP	58.00	ETS	169.83	ZAE	85.12	ETE	177.73	ZAC	69.75	ETC	257.30

V1	30.254	V2	25.765	CLP	56.78														

PLANETOCENTRIC CONIC

C3	13.938	VHL	3.733	DLA	46.61	RAL	158.01	RAD	6567.5	VEL	11.633	PTH	2.04	VHP	3.620	DPA	-5.16	RAP	158.98
ECC	1.2294																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.29	6 28 51	4176.89	-34.24	191.33	27.98	56.20	7 38 28	3576.9	-38.41	183.27
128.71	14 22 27	2730.33	-34.23	78.64	27.97	56.19	15 7 58	2130.3	-38.39	70.58
51.29	6 28 51	4176.89	-34.24	191.33	27.98	56.20	7 38 28	3576.9	-38.41	183.27
128.71	14 22 27	2730.33	-34.23	78.64	27.97	56.19	15 7 58	2130.3	-38.39	70.58
51.29	6 28 51	4176.89	-34.24	191.33	27.98	56.20	7 38 28	3576.9	-38.41	183.27
128.71	14 22 27	2730.33	-34.23	78.64	27.97	56.19	15 7 58	2130.3	-38.39	70.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.7027	TRA	-.5433	TC3	-9.9838	BAU	1.8982	SGT	9451.7	SGR	1927.4	SG3	1691.6	ST	5698.6	SR	1184.6	SS	2989.8
RDE	.7706	RRA	.0777	RC3	-2.0251	FAU	.36809	RRT	.9760	RRF	.9873	RTF	.9748	CRT	.9942	CRS	-.9998	CST	-.9956
FDE	6.2179	FRA	.4066	FC	-22.8641	BSP	33024	SGB	9646.3	R23	.1564	R13	.9761	LSA	6538.0	MSA	267.2	SSA	18.8
BDE	3.7820	BRA	.5488	BC3	10.1871	FSP	5752	SG1	9637.5	SG2	411.3	THA	11.28	EL1	5819.1	EL2	125.0	ALF	11.68

LAUNCH DATE DEC 13 1964 FLIGHT TIME 322.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 698.598 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.010	GAL	2.32	AZL	86.45	HCA	206.16	SMA	186.19	ECC	.21278	INC	3.5543
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.130	GAP	-9.19	AZP	93.19	TAL	13.27	TAP	219.43	RCA	146.57	APO	225.81
RC	298.526	GL	33.70	GP	-13.92	ZAL	65.72	ZAP	56.74	ETS	169.89	ZAE	83.67	ETE	177.47	ZAC	70.49	ETC	257.35

V1	30.254	V2	25.798	CLP	55.60														

PLANETOCENTRIC CONIC

C3	13.584	VHL	3.686	DLA	45.68	RAL	158.56	RAD	6567.5	VEL	11.618	PTH	2.04	VHP	3.654	DPA	-4.47	RAP	159.29
ECC	1.2236																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.53	6 35 33	4159.81	-33.85	189.41	27.67	57.27	7 44 53	3559.8	-37.88	181.30
127.47	14 20 10	2736.18	-33.84	78.88	27.66	57.26	15 5 46	2136.2	-37.87	70.77
52.53	6 35 33	4159.81	-33.85	189.41	27.67	57.27	7 44 53	3559.8	-37.88	181.30
127.47	14 20 10	2736.18	-33.84	78.88	27.66	57.26	15 5 46	2136.2	-37.87	70.77
52.53	6 35 33	4159.81	-33.85	189.41	27.67	57.27	7 44 53	3559.8	-37.88	181.30
127.47	14 20 10	2736.18	-33.84	78.88	27.66	57.26	15 5 46	2136.2	-37.87	70.77

DIFFERENTIAL CORRECTIONS

TDE	3.6637	TRA	-.5178	TC-10.4549	BAU	1.9306	
RDE	.7139	RRA	.0852	RC3-1.9224	FAU	.35889	
FDE	5.8553	FRA	.4795	FC-22.8717	BSP	33679	
BDE	3.7326	BRA	.5248	BC310.6302	FSP	5623	

MID-COURSE EXECUTION ACCURACY

SGT	9651.9	SGR	1809.9	SG3	1658.0		
RRT	.9745	RRF	.9846	RTF	.9748		
SGB	9820.1	R23	.1471	R13	.9759		
SG1	9811.9	SG2	399.5	THA	10.37		

ORBIT DETERMINATION ACCURACY

ST	5710.4	SR	1112.1	SS	2880.1		
CRT	.9938	CRS	-.9997	CST	-.9953		
LSA	6486.1	MSA	267.8	SSA	19.8		
EL1	5816.5	EL2	121.7	ALF	10.96		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 702.868 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.015	GAL	2.23	AZL	86.55	HCA	207.36	SMA	186.28	ECC	.21289	INC	3.4537
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.174	GAP	-9.30	AZP	93.07	TAL	12.74	TAP	220.10	RCA	146.63	APO	225.94
RC	299.592	GL	33.08	GP	-13.23	ZAL	66.30	ZAP	55.53	ETS	169.96	ZAE	82.25	ETE	177.25	ZAC	71.18	ETC	257.40

V1	30.254	V2	25.831	CLP	54.45														

PLANETOCENTRIC CONIC

C3	13.258	VHL	3.641	DLA	44.78	RAL	159.18	RAD	6567.5	VEL	11.604	PTH	2.03	VHP	3.692	DPA	-3.85	RAP	159.61
ECC	1.2182																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.74	6 42 34	4142.69	-33.44	187.53	27.47	58.29	7 51 37	3542.7	-37.36	179.38
126.26	14 18 4	2742.73	-33.43	79.18	27.46	58.28	15 3 47	2142.7	-37.35	71.04
53.74	6 42 34	4142.69	-33.44	187.53	27.47	58.29	7 51 37	3542.7	-37.36	179.38
126.26	14 18 4	2742.73	-33.43	79.18	27.46	58.28	15 3 47	2142.7	-37.35	71.04
53.74	6 42 34	4142.69	-33.44	187.53	27.47	58.29	7 51 37	3542.7	-37.36	179.38
126.26	14 18 4	2742.73	-33.43	79.18	27.46	58.28	15 3 47	2142.7	-37.35	71.04

DIFFERENTIAL CORRECTIONS

TDE	3.6254	TRA	-.4875	TC-10.9282	BAU	1.9638	
RDE	.6642	RRA	.0925	RC3-1.8239	FAU	.34948	
FDE	5.5108	FRA	.5549	FC-22.8201	BSP	34329	
BDE	3.6857	BRA	.4962	BC311.0794	FSP	5495	

MID-COURSE EXECUTION ACCURACY

SGT	9851.2	SGR	1702.5	SG3	1623.0		
RRT	.9725	RRF	.9814	RTF	.9748		
SGB	9997.3	R23	.1371	R13	.9757		
SG1	9989.6	SG2	390.9	THA	9.56		

ORBIT DETERMINATION ACCURACY

ST	5718.9	SR	1047.7	SS	2773.1		
CRT	.9933	CRS	-.9997	CST	-.9950		
LSA	6435.9	MSA	268.7	SSA	20.8		
EL1	5812.8	EL2	118.8	ALF	10.32		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 707.144 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.021	GAL	2.13	AZL	86.64	HCA	208.56	SMA	186.38	ECC	.21302	INC	3.3608
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.218	GAP	-9.42	AZP	92.95	TAL	12.20	TAP	220.77	RCA	146.68	APO	226.08
RC	300.645	GL	32.51	GP	-12.59	ZAL	66.93	ZAP	54.36	ETS	170.03	ZAE	80.86	ETE	177.06	ZAC	71.82	ETC	257.43

V1	30.254	V2	25.863	CLP	53.34														

PLANETOCENTRIC CONIC

C3	12.956	VHL	3.599	DLA	43.90	RAL	159.85	RAD	6567.5	VEL	11.591	PTH	2.03	VHP	3.732	DPA	-3.30	RAP	159.94
ECC	1.2132																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.93	6 49 52	4125.57	-33.03	185.67	27.37	59.25	7 58 38	3525.6	-36.83	177.49
125.07	14 16 9	2749.89	-33.02	79.54	27.36	59.24	15 1 58	2149.9	-36.82	71.36
54.93	6 49 52	4125.57	-33.03	185.67	27.37	59.25	7 58 38	3525.6	-36.83	177.49
125.07	14 16 9	2749.89	-33.02	79.54	27.36	59.24	15 1 58	2149.9	-36.82	71.36
54.93	6 49 52	4125.57	-33.03	185.67	27.37	59.25	7 58 38	3525.6	-36.83	177.49
125.07	14 16 9	2749.89	-33.02	79.54	27.36	59.24	15 1 58	2149.9	-36.82	71.36

DIFFERENTIAL CORRECTIONS

TDE	3.5880	TRA	-.4493	TC-11.3957	BAU	1.9964	
RDE	.6200	RRA	.1002	RC3-1.7283	FAU	.33974	
FDE	5.1790	FRA	.6377	FC-22.7021	BSP	34982	
BDE	3.6412	BRA	.4603	BC311.5260	FSP	5358	

MID-COURSE EXECUTION ACCURACY

SGT	10045.1	SGR	1603.4	SG3	1586.2		
RRT	.9700	RRF	.9777	RTF	.9747		
SGB	10172.3	R23	.1268	R13	.9755		
SG1	10165.0	SG2	385.1	THA	8.81		

ORBIT DETERMINATION ACCURACY

ST	5724.5	SR	989.9	SS	2666.3		
CRT	.9929	CRS	-.9996	CST	-.9945		
LSA	6386.3	MSA	270.0	SSA	21.7		
EL1	5808.2	EL2	116.1	ALF	9.75		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 711.427 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.026	GAL	2.04	AZL	86.73	HCA	209.77	SMA	186.48	ECC	.21316	INC	3.2746
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.261	GAP	-9.53	AZP	92.84	TAL	11.65	TAP	221.42	RCA	146.73	APO	226.23
RC	301.687	GL	31.98	GP	-12.00	ZAL	67.61	ZAP	53.22	ETS	170.10	ZAE	79.50	ETE	176.89	ZAC	72.43	ETC	257.46

V1	30.254	V2	25.895	CLP	52.25														

PLANETOCENTRIC CONIC

C3	12.674	VHL	3.560	DLA	43.05	RAL	160.58	RAD	6567.5	VEL	11.578	PTH	2.02	VHP	3.774	DPA	-2.80	RAP	160.29
ECC	1.2086																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.11	6 57 30	4108.24	-32.61	183.82	27.36	60.18	8 5 58	3508.2	-36.30	175.63
123.89	14 14 19	2757.79	-32.60	79.95	27.35	60.17	15 0 17	2157.8	-36.29	71.76
56.11	6 57 30	4108.24	-32.61	183.82	27.36	60.18	8 5 58	3508.2	-36.30	175.63
123.89	14 14 19	2757.79	-32.60	79.95	27.35	60.17	15 0 17	2157.8	-36.29	71.76
56.11	6 57 30	4108.24	-32.61	183.82	27.36	60.18	8 5 58	3508.2	-36.30	175.63
123.89	14 14 19	2757.79	-32.60	79.95	27.35	60.17	15 0 17	2157.8	-36.29	71.76

DIFFERENTIAL CORRECTIONS

TDE	3.5489	TRA	-.4060	TC-11.8627	BAU	2.0291	
RDE	.5807	RRA	.1076	RC3-1.6363	FAU	.32990	
FDE	4.8623	FRA	.7219	FC-22.5340	BSP	35633	
BDE	3.5961	BRA	.4200	BC311.9750	FSP	5226	

MID-COURSE EXECUTION ACCURACY

SGT	10235.4	SGR	1512.3	SG3	1548.5		
RRT	.9669	RRF	.9734	RTF	.9747		
SGB	10346.6	R23	.1164	R13	.9753		
SG1	10339.5	SG2	382.0	THA	8.14		

ORBIT DETERMINATION ACCURACY

ST	5723.4	SR	938.0	SS	2561.2		
CRT	.9924	CRS	-.9996	CST	-.9941		
LSA	6334.3	MSA	271.6	SSA	22.7		
EL1	5798.7	EL2	113.6	ALF	9.24		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 715.716 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.032	GAL	1.94	AZL	86.81	HCA	210.98	SMA	186.58	ECC	.21331	INC	3.1942
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.304	GAP	-9.64	AZP	92.74	TAL	11.08	TAP	222.06	RCA	146.78	APO	226.38
RC	302.717	GL	31.48	GP	-11.45	ZAL	68.34	ZAP	52.11	ETS	170.17	ZAE	78.16	ETE	176.74	ZAC	72.99	ETC	257.47

V1	30.254	V2	25.926	CLP	51.20														

PLANETOCENTRIC CONIC

C3	12.412	VHL	3.523	DLA	42.21	RAL	161.36	RAD	6567.5	VEL	11.567	PTH	2.02	VHP	3.818	DPA	-2.35	RAP	160.64
ECC	1.2043																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.29	7 5 28	4090.58	-32.18	181.98	27.44	61.07	8 13 38	3490.6	-35.76	173.76
122.71	14 12 34	2766.51	-32.17	80.44	27.43	61.05	14 58 40	2166.5	-35.75	72.22
57.29	7 5 28	4090.58	-32.18	181.98	27.44	61.07	8 13 38	3490.6	-35.76	173.76
122.71	14 12 34	2766.51	-32.17	80.44	27.43	61.05	14 58 40	2166.5	-35.75	72.22
57.29	7 5 28	4090.58	-32.18	181.98	27.44	61.07	8 13 38	3490.6	-35.76	173.76
122.71	14 12 34	2766.51	-32.17	80.44	27.43	61.05	14 58 40	2166.5	-35.75	72.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.5085	TRA	-.3577	TC-12.3300	BAU	2.0620	SGT10423.6	SGR	1428.3	SG3	1510.0	ST	5716.8	SR	890.8	SS	2455.3
RDE	.5454	RRA	.1146	RC3-1.5482	FAU	.32007	RRT	.9632	RRF	.9684	RTF	.9746	CRT	.9920	CRS	-.9996	CST -.9935
FDE	4.5556	FRA	.8027	FC-22.3252	BSP	36240	SGB10521.0	R23	.1057	R13	.9752	LSA	6279.2	MSA	272.7	SSA	23.6
BDE	3.5506	BRA	.3756	BC312.4268	FSP	5076	SG110514.1	SG2	380.4	THA	7.53	EL1	5784.7	EL2	110.9	ALF	8.79

LAUNCH DATE DEC 13 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 720.012 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.038	GAL	1.84	AZL	86.88	HCA	212.19	SMA	186.68	ECC	.21349	INC	3.1192
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.346	GAP	-9.74	AZP	92.64	TAL	10.50	TAP	222.69	RCA	146.83	APO	226.54
RC	303.736	GL	31.01	GP	-10.94	ZAL	69.12	ZAP	51.04	ETS	170.24	ZAE	76.85	ETE	176.61	ZAC	73.53	ETC	257.48

V1	30.254	V2	25.956	CLP	50.18														

PLANETOCENTRIC CONIC

C3	12.166	VHL	3.488	DLA	41.38	RAL	162.19	RAD	6567.5	VEL	11.557	PTH	2.02	VHP	3.864	DPA	-1.96	RAP	161.01
ECC	1.2002																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.47	7 13 47	4072.55	-31.74	180.13	27.60	61.93	8 21 39	3472.6	-35.22	171.90
121.53	14 10 50	2776.06	-31.73	80.99	27.59	61.91	14 57 6	2176.1	-35.21	72.76
58.47	7 13 47	4072.55	-31.74	180.13	27.60	61.93	8 21 39	3472.6	-35.22	171.90
121.53	14 10 50	2776.06	-31.73	80.99	27.59	61.91	14 57 6	2176.1	-35.21	72.76
58.47	7 13 47	4072.55	-31.74	180.13	27.60	61.93	8 21 39	3472.6	-35.22	171.90
121.53	14 10 50	2776.06	-31.73	80.99	27.59	61.91	14 57 6	2176.1	-35.21	72.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.4669	TRA	-.3025	TC-12.7921	BAU	2.0942	SGT10606.8	SGR	1350.8	SG3	1470.9	ST	5704.7	SR	848.5	SS	2351.3
RDE	.5139	RRA	.1218	RC3-1.4626	FAU	.31011	RRT	.9587	RRF	.9627	RTF	.9745	CRT	.9916	CRS	-.9995	CST -.9929
FDE	4.2633	FRA	.8907	FC-22.0675	BSP	36867	SGB10692.5	R23	.0958	R13	.9749	LSA	6222.2	MSA	275.1	SSA	24.5
BDE	3.5048	BRA	.3261	BC312.8754	FSP	4933	SG110685.7	SG2	381.5	THA	6.97	EL1	5766.4	EL2	108.6	ALF	8.39

LAUNCH DATE DEC 13 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 724.314 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.044	GAL	1.74	AZL	86.95	HCA	213.41	SMA	186.79	ECC	.21368	INC	3.0489
RP	211.08	LAP	-1.68	LOP	294.40	VP	23.388	GAP	-9.85	AZP	92.55	TAL	9.91	TAP	223.32	RCA	146.87	APO	226.70
RC	304.746	GL	30.56	GP	-10.47	ZAL	69.95	ZAP	50.00	ETS	170.31	ZAE	75.56	ETE	176.51	ZAC	74.04	ETC	257.49

V1	30.254	V2	25.986	CLP	49.18														

PLANETOCENTRIC CONIC

C3	11.936	VHL	3.455	DLA	40.56	RAL	163.06	RAD	6567.5	VEL	11.547	PTH	2.02	VHP	3.912	DPA	-1.61	RAP	161.40
ECC	1.1964																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.66	7 22 29	4053.99	-31.29	178.25	27.83	62.76	8 30 3	3454.0	-34.67	170.02
120.34	14 9 5	2786.57	-31.28	81.61	27.82	62.74	14 55 32	2186.6	-34.66	73.38
59.66	7 22 29	4053.99	-31.29	178.25	27.83	62.76	8 30 3	3454.0	-34.67	170.02
120.34	14 9 5	2786.57	-31.28	81.61	27.82	62.74	14 55 32	2186.6	-34.66	73.38
59.66	7 22 29	4053.99	-31.29	178.25	27.83	62.76	8 30 3	3454.0	-34.67	170.02
120.34	14 9 5	2786.57	-31.28	81.61	27.82	62.74	14 55 32	2186.6	-34.66	73.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.4243	TRA	-.2417	TC-13.2506	BAU	2.1259	SGT10786.9	SGR	1279.4	SG3	1431.6	ST	5687.7	SR	810.1	SS	2248.2
RDE	.4855	RRA	.1285	RC3-1.3804	FAU	.30023	RRT	.9534	RRF	.9560	RTF	.9744	CRT	.9912	CRS	-.9994	CST -.9921
FDE	3.9833	FRA	.9733	FC-21.7756	BSP	37508	SGB10862.5	R23	.0857	R13	.9747	LSA	6163.0	MSA	276.7	SSA	25.4
BDE	3.4585	BRA	.2738	BC313.3223	FSP	4794	SG110855.8	SG2	383.4	THA	6.46	EL1	5744.1	EL2	106.0	ALF	8.04

LAUNCH DATE DEC 13 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 728.618 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.051	GAL	1.64	AZL	87.02	HCA	214.62	SMA	186.90	ECC	.21389	INC	2.9828
RP	210.82	LAP	-1.69	LOP	295.62	VP	23.429	GAP	-9.95	AZP	92.46	TAL	9.30	TAP	223.93	RCA	146.92	APO	226.87
RC	305.746	GL	30.14	GP	-10.03	ZAL	70.83	ZAP	48.99	ETS	170.38	ZAE	74.30	ETE	176.41	ZAC	74.52	ETC	257.48

V1	30.254	V2	26.015	CLP	48.21														

PLANETOCENTRIC CONIC

C3	11.721	VHL	3.424	DLA	39.74	RAL	163.97	RAD	6567.4	VEL	11.537	PTH	2.01	VHP	3.961	DPA	-1.30	RAP	161.80
ECC	1.1929																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.86	7 31 37	4034.75	-30.83	176.34	28.13	63.56	8 38 52	3434.7	-34.10	168.11
119.14	14 7 16	2798.17	-30.82	82.32	28.12	63.55	14 53 54	2198.2	-34.09	74.09
60.86	7 31 37	4034.75	-30.83	176.34	28.13	63.56	8 38 52	3434.7	-34.10	168.11
119.14	14 7 16	2798.17	-30.82	82.32	28.12	63.55	14 53 54	2198.2	-34.09	74.09
60.86	7 31 37	4034.75	-30.83	176.34	28.13	63.56	8 38 52	3434.7	-34.10	168.11
119.14	14 7 16	2798.17	-30.82	82.32	28.12	63.55	14 53 54	2198.2	-34.09	74.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.3978	TRA	-.1570	TC-13.6457	BAU	2.1478	SGT10943.1	SGR	1212.8	SG3	1387.4	ST	5694.3	SR	780.4	SS	2169.7
RDE	.4629	RRA	.1379	RC3-1.2903	FAU	.28835	RRT	.9462	RRF	.9484	RTF	.9741	CRT	.9910	CRS	-.9994	CST -.9912
FDE	3.7549	FRA	1.0970	FC-21.2987	BSP	38562	SGB11010.1	R23	.0787	R13	.9744	LSA	6136.9	MSA	282.7	SSA	25.8
BDE	3.4292	BRA	.2089	BC313.7066	FSP	4733	SG111003.2	SG2	390.2	THA	5.99	EL1	5746.6	EL2	103.7	ALF	7.74

LAUNCH DATE DEC 13 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 732.933 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.057	GAL	1.53	AZL	87.08	HCA	215.84	SMA	187.01	ECC	.21412	INC	2.9203
RP	210.58	LAP	-1.71	LOP	296.84	VP	23.469	GAP	-10.05	AZP	92.37	TAL	8.68	TAP	224.53	RCA	146.96	APO	227.05
RC	306.737	GL	29.74	GP	-9.61	ZAL	71.75	ZAP	48.01	ETS	170.45	ZAE	73.06	ETE	176.33	ZAC	74.98	ETC	257.47

V1	30.254	V2	26.043	CLP	47.27														

PLANETOCENTRIC CONIC

C3	11.520	VHL	3.394	DLA	38.93	RAL	164.93	RAD	6567.4	VEL	11.529	PTH	2.01	VHP	4.012	DPA	-1.03	RAP	162.22

ECC	1.1896	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		62.09	7 41 13	4014.68	-30.35	174.39	28.49	64.35	8 48 7	3414.7	-33.53	166.15							
		117.91	14 5 18	2811.01	-30.34	83.13	28.49	64.33	14 52 9	2211.0	-33.52	74.89							
		62.09	7 41 13	4014.68	-30.35	174.39	28.49	64.35	8 48 7	3414.7	-33.53	166.15							
		117.91	14 5 18	2811.01	-30.34	83.13	28.49	64.33	14 52 9	2211.0	-33.52	74.89							
		62.09	7 41 13	4014.68	-30.35	174.39	28.49	64.35	8 48 7	3414.7	-33.53	166.15							
		117.91	14 5 18	2811.01	-30.34	83.13	28.49	64.33	14 52 9	2211.0	-33.52	74.89							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.3404	TRA	-.0941	TC-14.1292	BAU	2.1841	SGT11127.8	SGR	1152.5	SG3	1350.4	ST	5646.7	SR	746.2	SS	2057.0		
RDE	.4383	RRA	.1427	RC3-1.2190	FAU	.27963	RRT	.9393	RRF	.9398	RTF	.9740	CRT	.9907	CRS	-.9992	CST	-.9902	
FDE	3.4777	FRA	1.1601	FC-21.0152	BSP	38938	SGB11187.3	R23	.0691	R13	.9743	LSA	6049.1	MSA	283.4	SSA	26.9		
BDE	3.3690	BRA	.1709	BC314.1817	FSP	4555	SG111180.4	SG2	393.5	THA	5.56	EL1	5694.9	EL2	100.9	ALF	7.46		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 737.252 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.063	GAL	1.42	AZL	87.14	HCA	217.07	SMA	187.12	ECC	.21437	INC	2.8615
RP	210.34	LAP	-1.72	LOP	298.06	VP	23.509	GAP	-10.15	AZP	92.28	TAL	8.05	TAP	225.12	RCA	147.01	APO	227.23
RC	307.719	GL	29.35	GP	-9.23	ZAL	72.73	ZAP	47.06	ETS	170.51	ZAE	71.85	ETE	176.26	ZAC	75.42	ETC	257.45

V1	30.254	V2	26.071	CLP	46.36														

PLANETOCENTRIC CONIC

C3	11.331	VHL	3.366	DLA	38.12	RAL	165.93	RAD	6567.4	VEL	11.520	PTH	2.01	VHP	4.064	DPA	-.80	RAP	162.65

ECC	1.1865	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		63.34	7 51 20	3993.56	-29.86	172.37	28.92	65.12	8 57 53	3393.6	-32.94	164.14							
		116.66	14 3 8	2825.29	-29.84	84.04	28.92	65.10	14 50 13	2225.3	-32.93	75.81							
		63.34	7 51 20	3993.56	-29.86	172.37	28.92	65.12	8 57 53	3393.6	-32.94	164.14							
		116.66	14 3 8	2825.29	-29.84	84.04	28.92	65.10	14 50 13	2225.3	-32.93	75.81							
		63.34	7 51 20	3993.56	-29.86	172.37	28.92	65.12	8 57 53	3393.6	-32.94	164.14							
		116.66	14 3 8	2825.29	-29.84	84.04	28.92	65.10	14 50 13	2225.3	-32.93	75.81							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.2861	TRA	-.0197	TC-14.5871	BAU	2.2167	SGT11301.8	SGR	1096.6	SG3	1312.4	ST	5600.9	SR	716.4	SS	1951.9		
RDE	.4169	RRA	.1480	RC3-1.1473	FAU	.27048	RRT	.9312	RRF	.9300	RTF	.9739	CRT	.9905	CRS	-.9990	CST	-.9890	
FDE	3.2229	FRA	1.2307	FC-20.6650	BSP	39442	SGB11354.9	R23	.0602	R13	.9741	LSA	5967.5	MSA	284.9	SSA	27.8		
BDE	3.3124	BRA	.1493	BC314.6322	FSP	4399	SG111347.9	SG2	398.2	THA	5.17	EL1	5645.7	EL2	97.9	ALF	7.22		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 741.576 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.070	GAL	1.31	AZL	87.19	HCA	218.29	SMA	187.23	ECC	.21464	INC	2.8057
RP	210.10	LAP	-1.74	LOP	299.29	VP	23.548	GAP	-10.24	AZP	92.20	TAL	7.40	TAP	225.70	RCA	147.04	APO	227.42
RC	308.691	GL	28.98	GP	-8.87	ZAL	73.74	ZAP	46.14	ETS	170.57	ZAE	70.66	ETE	176.19	ZAC	75.84	ETC	257.43

V1	30.254	V2	26.098	CLP	45.47														

PLANETOCENTRIC CONIC

C3	11.156	VHL	3.340	DLA	37.30	RAL	166.96	RAD	6567.4	VEL	11.513	PTH	2.01	VHP	4.117	DPA	-.60	RAP	163.10

ECC	1.1836	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		64.64	8 2 1	3971.21	-29.35	170.27	29.41	65.87	9 8 12	3371.2	-32.34	162.05							
		115.36	14 0 42	2841.20	-29.33	85.07	29.41	65.85	14 48 3	2241.2	-32.33	76.85							
		64.64	8 2 1	3971.21	-29.35	170.27	29.41	65.87	9 8 12	3371.2	-32.34	162.05							
		115.36	14 0 42	2841.20	-29.33	85.07	29.41	65.85	14 48 3	2241.2	-32.33	76.85							
		64.64	8 2 1	3971.21	-29.35	170.27	29.41	65.87	9 8 12	3371.2	-32.34	162.05							
		115.36	14 0 42	2841.20	-29.33	85.07	29.41	65.85	14 48 3	2241.2	-32.33	76.85							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.2301	TRA	.0616	TC-15.0403	BAU	2.2490	SGT11474.5	SGR	1045.4	SG3	1274.9	ST	5549.2	SR	689.6	SS	1849.9		
RDE	.3976	RRA	.1533	RC3-1.0778	FAU	.26144	RRT	.9218	RRF	.9190	RTF	.9738	CRT	.9904	CRS	-.9987	CST	-.9876	
FDE	2.9821	FRA	1.3037	FC-20.2878	BSP	39938	SGB11522.0	R23	.0522	R13	.9740	LSA	5882.9	MSA	287.2	SSA	28.7		
BDE	3.2545	BRA	.1652	BC315.0788	FSP	4244	SG111515.0	SG2	403.9	THA	4.81	EL1	5591.1	EL2	94.8	ALF	7.02		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 745.905 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.076	GAL	1.19	AZL	87.25	HCA	219.52	SMA	187.35	ECC	.21493	INC	2.7528
RP	209.88	LAP	-1.75	LOP	300.52	VP	23.586	GAP	-10.34	AZP	92.12	TAL	6.74	TAP	226.27	RCA	147.08	APO	227.61
RC	309.654	GL	28.62	GP	-8.53	ZAL	74.81	ZAP	45.24	ETS	170.63	ZAE	69.50	ETE	176.14	ZAC	76.24	ETC	257.41

V1	30.254	V2	26.124	CLP	44.60														

PLANETOCENTRIC CONIC

C3	10.993	VHL	3.316	DLA	36.47	RAL	168.03	RAD	6567.4	VEL	11.506	PTH	2.00	VHP	4.172	DPA	-.43	RAP	163.56

ECC	1.1809	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		65.99	8 13 21	3947.37	-28.82	168.08	29.96	66.61	9 19 8	3347.4	-31.72	159.86							
		114.01	13 57 54	2858.98	-28.80	86.25	29.95	66.59	14 45 33	2259.0	-31.71	78.03							
		65.99	8 13 21	3947.37	-28.82	168.08	29.96	66.61	9 19 8	3347.4	-31.72	159.86							
		114.01	13 57 54	2858.98	-28.80	86.25	29.95	66.59	14 45 33	2259.0	-31.71	78.03							
		65.99	8 13 21	3947.37	-28.82	168.08	29.96	66.61	9 19 8	3347.4	-31.72	159.86							
		114.01	13 57 54	2858.98	-28.80	86.25	29.95	66.59	14 45 33	2259.0	-31.71	78.03							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.1721	TRA	.1497	TC-15.4759	BAU	2.2793	SGT11639.1	SGR	997.7	SG3	1236.5	ST	5491.0	SR	665.6	SS	1751.2		
RDE	.3804	RRA	.1585	RC3-1.0086	FAU	.25217	RRT	.9108	RRF	.9065	RTF	.9736	CRT	.9904	CRS	-.9982	CST	-.9859	
FDE	2.7546	FRA	1.3772	FC-19.8585	BSP	40474	SGB11681.8	R23	.0452	R13	.9738	LSA	5794.5	MSA	290.1	SSA	29.5		
BDE	3.1948	BRA	.2180	BC315.5087	FSP	4103	SG111674.5	SG2	410.7	THA	4.47	EL1	5530.5	EL2	91.5	ALF	6.85		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 750.239 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.083	GAL	1.07	AZL	87.30	HCA	220.75	SMA	187.47	ECC	.21524	INC	2.7025
RP	209.66	LAP	-1.76	LOP	301.75	VP	23.624	GAP	-10.43	AZP	92.05	TAL	6.07	TAP	226.83	RCA	147.12	APO	227.82
RC	310.607	GL	28.27	GP	-8.22	ZAL	75.92	ZAP	44.37	ETS	170.69	ZAE	68.35	ETE	176.09	ZAC	76.63	ETC	257.38

V1	30.254	V2	26.149	CLP	43.76														

PLANETOCENTRIC CONIC

C3	10.843	VHL	3.293	DLA	35.64	RAL	169.14	RAD	6567.4	VEL	11.499	PTH	2.00	VHP	4.228	DPA	-.30	RAP	164.04

ECC	1.1784																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.40	8 25 27	3921.63	-28.27	165.75	30.56	67.33	9 30 49	3321.6	-31.08	157.55
112.60	13 54 36	2879.07	-28.26	87.59	30.55	67.32	14 42 36	2279.1	-31.07	79.39
67.40	8 25 27	3921.63	-28.27	165.75	30.56	67.33	9 30 49	3321.6	-31.08	157.55
112.60	13 54 36	2879.07	-28.26	87.59	30.55	67.32	14 42 36	2279.1	-31.07	79.39
67.40	8 25 27	3921.63	-28.27	165.75	30.56	67.33	9 30 49	3321.6	-31.08	157.55
112.60	13 54 36	2879.07	-28.26	87.59	30.55	67.32	14 42 36	2279.1	-31.07	79.39

DIFFERENTIAL CORRECTIONS

TDE	3.1117	TRA	.2442	TC-15.9047	BAU	2.3095	
RDE	.3648	RRA	.1633	RC3 -.9425	FAU	.24326	
FDE	2.5375	FRA	1.4454	FC-19.4230	BSP	41022	
BDE	3.1331	BRA	.2938	BC315.9326	FSP	3965	

MID-COURSE EXECUTION ACCURACY

SGT11802.5	SGR	954.2	SG3	1199.3			
RRT	.8987	RRF	.8927	RTF	.9736		
SGB11841.0	R23	.0380	R13	.9737			
SG111833.7	SG2	417.4	THA	4.16			

ORBIT DETERMINATION ACCURACY

ST	5425.9	SR	643.7	SS	1654.0		
CRT	.9905	CRS	-.9975	CST	-.9839		
LSA	5701.2	MSA	292.6	SSA	30.4		
EL1	5463.2	EL2	87.8	ALF	6.70		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 754.577 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.090	GAL	.95	AZL	87.35	HCA	221.99	SMA	187.58	ECC	.21557	INC	2.6544
RP	209.44	LAP	-1.78	LOP	302.99	VP	23.660	GAP	-10.52	AZP	91.97	TAL	5.39	TAP	227.37	RCA	147.15	APO	228.02
RC	311.551	GL	27.93	GP	-7.92	ZAL	77.07	ZAP	43.52	ETS	170.74	ZAE	67.23	ETE	176.05	ZAC	77.00	ETC	257.35

V1	30.254	V2	26.174	CLP	42.94														

PLANETOCENTRIC CONIC

C3	10.704	VHL	3.272	DLA	34.79	RAL	170.27	RAD	6567.4	VEL	11.493	PTH	2.00	VHP	4.285	DPA	-.19	RAP	164.53

ECC	1.1762																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.88	8 38 26	3893.61	-27.70	163.27	31.22	68.05	9 43 20	3293.6	-30.42	155.08
111.12	13 50 43	2901.84	-27.69	89.13	31.21	68.04	14 39 4	2301.8	-30.42	80.94
68.88	8 38 26	3893.61	-27.70	163.27	31.22	68.05	9 43 20	3293.6	-30.42	155.08
111.12	13 50 43	2901.84	-27.69	89.13	31.21	68.04	14 39 4	2301.8	-30.42	80.94
68.88	8 38 26	3893.61	-27.70	163.27	31.22	68.05	9 43 20	3293.6	-30.42	155.08
111.12	13 50 43	2901.84	-27.69	89.13	31.21	68.04	14 39 4	2301.8	-30.42	80.94

DIFFERENTIAL CORRECTIONS

TDE	3.0474	TRA	.3452	TC-16.3195	BAU	2.3388	
RDE	.3506	RRA	.1682	RC3 -.8769	FAU	.23423	
FDE	2.3275	FRA	1.5150	FC-18.9444	BSP	41546	
BDE	3.0675	BRA	.3840	BC316.3430	FSP	3829	

MID-COURSE EXECUTION ACCURACY

SGT11960.5	SGR	913.7	SG3	1161.5			
RRT	.8847	RRF	.8772	RTF	.9734		
SGB11995.3	R23	.0321	R13	.9734			
SG111987.8	SG2	425.0	THA	3.87			

ORBIT DETERMINATION ACCURACY

ST	5350.8	SR	623.6	SS	1557.0		
CRT	.9908	CRS	-.9964	CST	-.9813		
LSA	5599.6	MSA	296.3	SSA	31.2		
EL1	5386.4	EL2	83.9	ALF	6.59		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 758.920 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.097	GAL	.83	AZL	87.39	HCA	223.23	SMA	187.71	ECC	.21593	INC	2.6086
RP	209.24	LAP	-1.79	LOP	304.23	VP	23.696	GAP	-10.61	AZP	91.90	TAL	4.69	TAP	227.91	RCA	147.17	APO	228.24
RC	312.486	GL	27.59	GP	-7.64	ZAL	78.27	ZAP	42.70	ETS	170.79	ZAE	66.13	ETE	176.02	ZAC	77.36	ETC	257.31

V1	30.254	V2	26.198	CLP	42.14														

PLANETOCENTRIC CONIC

C3	10.578	VHL	3.252	DLA	33.94	RAL	171.44	RAD	6567.4	VEL	11.488	PTH	2.00	VHP	4.343	DPA	-.11	RAP	165.04

ECC	1.1741																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.46	8 52 30	3862.62	-27.11	160.58	31.92	68.76	9 56 53	3262.6	-29.75	152.41
109.54	13 45 58	2928.02	-27.10	90.92	31.92	68.74	14 34 46	2328.0	-29.74	82.74
70.46	8 52 30	3862.62	-27.11	160.58	31.92	68.76	9 56 53	3262.6	-29.75	152.41
109.54	13 45 58	2928.02	-27.10	90.92	31.92	68.74	14 34 46	2328.0	-29.74	82.74
110.00	14 19 48	2824.77	-29.48	83.83	32.89	71.85	15 6 53	2224.8	-31.67	75.31
110.00	13 17 51	3013.86	-24.79	96.53	30.84	65.67	14 8 5	2413.9	-27.85	88.70

DIFFERENTIAL CORRECTIONS

TDE	2.9808	TRA	.4526	TC-16.7218	BAU	2.3675	
RDE	.3379	RRA	.1726	RC3 -.8136	FAU	.22544	
FDE	2.1298	FRA	1.5804	FC-18.4509	BSP	42120	
BDE	2.9999	BRA	.4844	BC316.7416	FSP	3706	

MID-COURSE EXECUTION ACCURACY

SGT12116.5	SGR	876.8	SG3	1124.5			
RRT	.8692	RRF	.8601	RTF	.9732		
SGB12148.2	R23	.0264	R13	.9733			
SG112140.5	SG2	432.6	THA	3.60			

ORBIT DETERMINATION ACCURACY

ST	5269.2	SR	605.5	SS	1463.8		
CRT	.9912	CRS	-.9947	CST	-.9783		
LSA	5493.9	MSA	299.9	SSA	32.0		
EL1	5303.3	EL2	79.5	ALF	6.50		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 352.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 763.266 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.104	GAL	.71	AZL	87.44	HCA	224.46	SMA	187.83	ECC	.21631	INC	2.5647
RP	209.04	LAP	-1.80	LOP	305.47	VP	23.732	GAP	-10.70	AZP	91.83	TAL	3.97	TAP	228.44	RCA	147.20	APO	228.46
RC	313.411	GL	27.25	GP	-7.38	ZAL	79.51	ZAP	41.89	ETS	170.84	ZAE	65.05	ETE	175.99	ZAC	77.72	ETC	257.27

V1	30.254	V2	26.221	CLP	41.36														

PLANETOCENTRIC CONIC

C3	10.464	VHL	3.235	DLA	33.07	RAL	172.64	RAD	6567.4	VEL	11.483	PTH	2.00	VHP	4.402	DPA	-.05	RAP	165.57

ECC	1.1722																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.16	9 7 52	3827.92	-26.50	157.64	32.68	69.46	10 11 40	3227.9	-29.05	149.48
107.84	13 40 11	2958.33	-26.49	93.00	32.68	69.44	14 29 29	2358.3	-29.04	84.85
72.16	9 7 52	3827.92	-26.50	157.64	32.68	69.46	10 11 40	3227.9	-29.05	149.48
107.84	13 40 11	2958.33	-26.49	93.00	32.68	69.44	14 29 29	2358.3	-29.04	84.85
110.00	14 59 34	2714.48	-31.55	75.91	34.47	76.11	15 44 48	2114.5	-33.14	67.05
110.00	12 47 40	3119.76	-21.65	103.15	30.34	62.88	13 39 40	2519.8	-25.11	95.71

DIFFERENTIAL CORRECTIONS

TDE	2.9101	TRA	.5641	TC-17.1183	BAU	2.3971	
RDE	.3266	RRA	.1766	RC3 -.7536	FAU	.21719	
FDE	1.9436	FRA	1.6397	FC-17.9691	BSP	42599	
BDE	2.9283	BRA	.5911	BC317.1349	FSP	3569	

MID-COURSE EXECUTION ACCURACY

SGT12273.7	SGR	843.6	SG3	1089.5			
RRT	.8524	RRF	.8416	RTF	.9732		
SGB12302.6	R23	.0210	R13	.9733			
SG112294.7	SG2	440.3	THA	3.36			

ORBIT DETERMINATION ACCURACY

ST	5177.5	SR	589.4	SS	1374.0		
CRT	.9918	CRS	-.9922	CST	-.9747		
LSA	5380.3	MSA	303.3	SSA	32.7		
EL1	5210.4	EL2	74.8	ALF	6.44		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 767.616 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.111	GAL	.58	AZL	87.48	HCA	225.71	SMA	187.95	ECC	.21672	INC	2.5226	V1	30.254
RP	208.85	LAP	-1.81	LOP	306.71	VP	23.766	GAP	-10.79	AZP	91.76	TAL	3.25	TAP	228.95	RCA	147.22	APO	228.69	V2	26.243
RC	314.329	GL	26.92	GP	-7.13	ZAL	80.80	ZAP	41.11	ETS	170.89	ZAE	63.98	ETE	175.97	ZAC	78.06	ETC	257.23	CLP	40.60

PLANETOCENTRIC CONIC

C3	10.363	VHL	3.219	DLA	32.18	RAL	173.87	RAD	6567.4	VEL	11.478	PTH	2.00	VHP	4.462	DPA	-.01	RAP	166.10	ECC	1.1705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.03	9 24 55	3788.28	-25.87	154.34	33.49	70.15	10 28 4	3188.3	-28.33	146.20
105.97	13 32 56	2994.04	-25.86	95.48	33.49	70.14	14 22 50	2394.0	-28.32	87.35
74.03	9 24 55	3788.28	-25.87	154.34	33.49	70.15	10 28 4	3188.3	-28.33	146.20
105.97	13 32 56	2994.04	-25.86	95.48	33.49	70.14	14 22 50	2394.0	-28.32	87.35
110.00	15 26 38	2642.52	-32.60	70.57	35.61	79.11	16 10 41	2042.5	-33.76	61.52
110.00	12 30 23	3187.80	-19.49	107.24	30.38	61.34	13 23 31	2587.8	-23.16	100.02

DIFFERENTIAL CORRECTIONS

TDE	2.8350	TRA	.6857	TC-17.4876	BAU	2.4246	
RDE	.3160	RRA	.1810	RC3 -.6931	FAU	.20862	
FDE	1.7595	FRA	1.7065	FC-17.4293	BSP	43154	
BDE	2.8526	BRA	.7091	BC317.5013	FSP	3452	

MID-COURSE EXECUTION ACCURACY

SGT12421.8	SGR	812.7	SG3	1053.2			
RRT	.8332	RRF	.8212	RTF	.9729		
SGB12448.4	R23	.0172	R13	.9729			
SG112440.3	SG2	448.7	THA	3.12			

ORBIT DETERMINATION ACCURACY

ST	5075.7	SR	574.2	SS	1283.2		
CRT	.9925	CRS	-.9885	CST	-.9696		
LSA	5257.6	MSA	309.5	SSA	33.5		
EL1	5107.6	EL2	69.7	ALF	6.41		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 771.969 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.118	GAL	.45	AZL	87.52	HCA	226.95	SMA	188.08	ECC	.21716	INC	2.4823	V1	30.254
RP	208.67	LAP	-1.81	LOP	307.95	VP	23.799	GAP	-10.88	AZP	91.69	TAL	2.50	TAP	229.45	RCA	147.24	APO	228.92	V2	26.264
RC	315.238	GL	26.58	GP	-6.89	ZAL	82.12	ZAP	40.36	ETS	170.93	ZAE	62.94	ETE	175.94	ZAC	78.39	ETC	257.18	CLP	39.86

PLANETOCENTRIC CONIC

C3	10.274	VHL	3.205	DLA	31.28	RAL	175.13	RAD	6567.4	VEL	11.474	PTH	1.99	VHP	4.523	DPA	-.00	RAP	166.66	ECC	1.1691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.12	9 44 15	3741.68	-25.21	150.54	34.35	70.84	10 46 37	3141.7	-27.59	142.43
103.88	13 23 37	3037.17	-25.20	98.49	34.35	70.83	14 14 14	2437.2	-27.58	90.38
76.12	9 44 15	3741.68	-25.21	150.54	34.35	70.84	10 46 37	3141.7	-27.59	142.43
103.88	13 23 37	3037.17	-25.20	98.49	34.35	70.83	14 14 14	2437.2	-27.58	90.38
110.00	15 49 26	2583.54	-33.27	66.10	36.61	81.68	16 32 30	1983.5	-34.07	56.94
110.00	12 17 37	3243.32	-17.64	110.49	30.66	60.23	13 11 40	2643.3	-21.47	103.45

DIFFERENTIAL CORRECTIONS

TDE	2.7652	TRA	.8167	TC-17.8189	BAU	2.4490	
RDE	.3074	RRA	.1849	RC3 -.6332	FAU	.20000	
FDE	1.5986	FRA	1.7667	FC-16.8533	BSP	43824	
BDE	2.7823	BRA	.8373	BC317.8302	FSP	3347	

MID-COURSE EXECUTION ACCURACY

SGT12563.2	SGR	785.1	SG3	1017.0			
RRT	.8125	RRF	.7992	RTF	.9728		
SGB12587.7	R23	.0133	R13	.9728			
SG112579.4	SG2	457.1	THA	2.91			

ORBIT DETERMINATION ACCURACY

ST	4981.2	SR	561.8	SS	1204.4		
CRT	.9934	CRS	-.9835	CST	-.9642		
LSA	5145.8	MSA	314.3	SSA	34.0		
EL1	5012.4	EL2	63.9	ALF	6.39		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 776.326 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.125	GAL	.31	AZL	87.56	HCA	228.20	SMA	188.21	ECC	.21762	INC	2.4434	V1	30.254
RP	208.49	LAP	-1.82	LOP	309.20	VP	23.832	GAP	-10.96	AZP	91.63	TAL	1.75	TAP	229.95	RCA	147.25	APO	229.16	V2	26.285
RC	316.140	GL	26.25	GP	-6.67	ZAL	83.49	ZAP	39.62	ETS	170.97	ZAE	61.92	ETE	175.93	ZAC	78.72	ETC	257.14	CLP	39.14

PLANETOCENTRIC CONIC

C3	10.198	VHL	3.193	DLA	30.36	RAL	176.41	RAD	6567.4	VEL	11.471	PTH	1.99	VHP	4.585	DPA	-.01	RAP	167.23	ECC	1.1678

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.56	10 6 58	3684.50	-24.53	145.99	35.26	71.52	11 8 23	3084.5	-26.82	137.91
101.44	13 11 7	3091.39	-24.52	102.31	35.25	71.51	14 2 38	2491.4	-26.81	94.22
78.56	10 6 58	3684.50	-24.53	145.99	35.26	71.52	11 8 23	3084.5	-26.82	137.91
101.44	13 11 7	3091.39	-24.52	102.31	35.25	71.51	14 2 38	2491.4	-26.81	94.22
110.00	16 9 54	2531.67	-33.71	62.11	37.54	84.00	16 52 5	1931.7	-34.18	52.90
110.00	12 7 22	3292.22	-15.97	113.29	31.09	59.37	13 2 14	2692.2	-19.91	106.39

DIFFERENTIAL CORRECTIONS

TDE	2.6753	TRA	.9409	TC-18.1892	BAU	2.4812	
RDE	.2986	RRA	.1878	RC3 -.5809	FAU	.19290	
FDE	1.4232	FRA	1.8097	FC-16.3751	BSP	44164	
BDE	2.6919	BRA	.9595	BC318.1985	FSP	3207	

MID-COURSE EXECUTION ACCURACY

SGT12721.2	SGR	759.6	SG3	985.4			
RRT	.7911	RRF	.7754	RTF	.9727		
SGB12743.9	R23	.0078	R13	.9727			
SG112735.4	SG2	464.1	THA	2.71			

ORBIT DETERMINATION ACCURACY

ST	4848.1	SR	548.5	SS	1113.0		
CRT	.9943	CRS	-.9758	CST	-.9565		
LSA	4994.0	MSA	319.4	SSA	34.9		
EL1	4878.7	EL2	58.1	ALF	6.42		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 780.686 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.133	GAL	.18	AZL	87.59	HCA	229.44	SMA	188.34	ECC	.21811	INC	2.4060	V1	30.254
RP	208.32	LAP	-1.83	LOP	310.45	VP	23.864	GAP	-11.05	AZP	91.56	TAL	.98	TAP	230.43	RCA	147.26	APO	229.41	V2	26.304
RC	317.035	GL	25.91	GP	-6.46	ZAL	84.90	ZAP	38.90	ETS	171.01	ZAE	60.91	ETE	175.91	ZAC	79.03	ETC	257.09	CLP	38.44

PLANETOCENTRIC CONIC

C3	10.136	VHL	3.184	DLA	29.42	RAL	177.71	RAD	6567.4	VEL	11.468	PTH	1.99	VHP	4.648	DPA	-.04	RAP	167.81	ECC	1.1668

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.65	10 35 44	3608.05	-23.82	140.06	36.21	72.20	11 35 52	3008.1	-26.03	132.00
98.35	12 52 45	3165.39	-23.81	107.55	36.21	72.18	13 45 31	2565.4	-26.03	99.49
100.00	13 49 59	2982.16	-26.84	94.92	37.15	76.33	14 39 41	2382.2	-28.46	86.49
100.00	12 21 11	3266.52	-20.86	113.89	35.06	68.09	13 15 38	2666.5	-23.65	106.21
110.00	16 28 52	2484.38	-33.99	58.45	38.43	86.15	17 10 16	1884.4	-34.15	49.20
110.00	11 58 47	3337.07	-14.39	115.81	31.66	58.66	12 54 24	2737.1	-18.44	109.03

DIFFERENTIAL CORRECTIONS

TDE	2.5866	TRA	1.0768	TC-18.4915	BAU	2.5068	
RDE	.2909	RRA	.1905	RC3 -.5241	FAU	.18463	
FDE	1.2599	FRA	1.8508	FC-15.7694	BSP	44616	
BDE	2.6029	BRA	1.0935	BC318.4989	FSP	3078	

MID-COURSE EXECUTION ACCURACY

SGT12855.2	SGR	735.1	SG3	948.8			
RRT	.7664	RRF	.7486	RTF	.9725		
SGB12876.2	R23	.0035	R13	.9726			
SG112867.6	SG2	471.8	THA	2.51			

ORBIT DETERMINATION ACCURACY

ST	4715.8	SR	536.8	SS	1027.6		
CRT	.9953	CRS	-.9650	CST	-.9469		
LSA	4845.3	MSA	324.9	SSA	35.6		
EL1	4746.0	EL2	51.8	ALF	6.46		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 785.047 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.140	GAL	.04	AZL	87.63	HCA	230.69	SMA	188.47	ECC	.21863	INC	2.3699
RP	208.16	LAP	-1.83	LOP	311.70	VP	23.894	GAP	-11.13	AZP	91.50	TAL	.20	TAP	230.90	RCA	147.26	APO	229.67
RC	317.924	GL	25.56	GP	-6.27	ZAL	86.35	ZAP	38.20	ETS	171.05	ZAE	59.92	ETE	175.90	ZAC	79.34	ETC	257.04

V1	30.254	V2	26.323	CLP	37.76														

PLANETOCENTRIC CONIC

C3	10.088	VHL	3.176	DLA	28.47	RAL	179.04	RAD	6567.4	VEL	11.466	PTH	1.99	VHP	4.712	DPA	-.09	RAP	168.40
ECC	1.1660																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
86.93	11 23 52	3468.92	-23.09	129.57	37.21	72.87	12 21 41	2868.9	-25.22	121.54
93.07	12 15 11	3302.62	-23.08	117.40	37.21	72.86	13 10 14	2702.6	-25.21	109.36
100.00	14 28 12	2874.20	-28.35	87.25	38.61	80.09	15 16 6	2274.2	-29.42	78.61
100.00	11 53 33	3372.57	-18.03	120.49	35.17	65.74	12 49 45	2772.6	-21.15	113.09
110.00	16 46 47	2440.35	-34.14	55.02	39.31	88.17	17 27 28	1840.3	-34.02	45.77
110.00	11 51 26	3379.19	-12.89	118.15	32.33	58.06	12 47 45	2779.2	-17.02	111.47

DIFFERENTIAL CORRECTIONS

TDE	2.4949	TRA	1.2039	TC-18.7541	BAU	2.5301	
RDE	.2845	RRA	.1908	RC3 -.4674	FAU	.17616	
FDE	1.1095	FRA	1.8466	FC-15.1180	BSP	44871	
BDE	2.5110	BRA	1.2190	BC318.7599	FSP	2893	

MID-COURSE EXECUTION ACCURACY

SGT12972.4	SGR	710.5	SG3	908.6			
RRT	.7393	RRF	.7176	RTF	.9733		
SGB12991.9	R23	-.0043	R13	.9733			
SG112983.1	SG2	478.1	THA	2.32			

ORBIT DETERMINATION ACCURACY

ST	4575.2	SR	526.6	SS	944.4		
CRT	.9962	CRS	-.9523	CST	-.9378		
LSA	4690.0	MSA	322.5	SSA	36.3		
EL1	4605.1	EL2	45.4	ALF	6.54		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 789.411 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.147	GAL	-.11	AZL	87.66	HCA	231.95	SMA	188.60	ECC	.21918	INC	2.3350
RP	208.01	LAP	-1.84	LOP	312.95	VP	23.924	GAP	-11.22	AZP	91.44	TAL	359.41	TAP	231.36	RCA	147.26	APO	229.94
RC	318.808	GL	25.21	GP	-6.08	ZAL	87.84	ZAP	37.51	ETS	171.08	ZAE	58.95	ETE	175.88	ZAC	79.65	ETC	256.99

V1	30.254	V2	26.341	CLP	37.09														

PLANETOCENTRIC CONIC

C3	10.054	VHL	3.171	DLA	27.50	RAL	180.38	RAD	6567.4	VEL	11.465	PTH	1.99	VHP	4.777	DPA	-.15	RAP	169.01
ECC	1.1655																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 54 44	3190.12	-26.22	110.05	39.30	78.91	13 47 54	2590.1	-27.49	101.61
90.00	10 55 3	3580.08	-18.55	135.98	36.86	68.22	11 54 43	2980.1	-21.35	128.42
100.00	14 56 27	2797.73	-29.12	81.70	39.83	82.92	15 43 5	2197.7	-29.79	72.96
100.00	11 36 1	3447.71	-15.87	125.03	35.62	64.33	12 33 28	2847.7	-19.19	117.81
110.00	17 3 57	2398.77	-34.18	51.77	40.19	90.09	17 43 55	1798.8	-33.79	42.55
110.00	11 45 1	3419.43	-11.43	120.35	33.09	57.56	12 42 0	2819.4	-15.63	113.76

DIFFERENTIAL CORRECTIONS

TDE	2.4101	TRA	1.3757	TC-19.0200	BAU	2.5572	
RDE	.2804	RRA	.1965	RC3 -.4155	FAU	.16863	
FDE	.9952	FRA	1.9511	FC-14.5202	BSP	45657	
BDE	2.4263	BRA	1.3897	BC319.0246	FSP	2871	

MID-COURSE EXECUTION ACCURACY

SGT13126.7	SGR	697.4	SG3	880.4			
RRT	.7108	RRF	.6938	RTF	.9722		
SGB13145.2	R23	.0023	R13	.9722			
SG113136.0	SG2	490.3	THA	2.17			

ORBIT DETERMINATION ACCURACY

ST	4450.1	SR	520.7	SS	897.9		
CRT	.9969	CRS	-.9327	CST	-.9229		
LSA	4556.7	MSA	340.0	SSA	36.8		
EL1	4480.2	EL2	40.5	ALF	6.65		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 793.777 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.155	GAL	-.25	AZL	87.70	HCA	233.20	SMA	188.73	ECC	.21977	INC	2.3012
RP	207.86	LAP	-1.84	LOP	314.21	VP	23.953	GAP	-11.30	AZP	91.38	TAL	358.60	TAP	231.80	RCA	147.25	APO	230.21
RC	319.685	GL	24.85	GP	-5.90	ZAL	89.36	ZAP	36.85	ETS	171.11	ZAE	57.99	ETE	175.87	ZAC	79.95	ETC	256.93

V1	30.254	V2	26.357	CLP	36.44														

PLANETOCENTRIC CONIC

C3	10.036	VHL	3.168	DLA	26.50	RAL	181.74	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	4.843	DPA	-.23	RAP	169.63
ECC	1.1652																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 29 9	3093.55	-27.30	103.19	40.67	82.19	14 20 43	2493.6	-28.10	94.61
90.00	10 31 30	3675.91	-16.03	141.88	37.26	66.34	11 32 46	3075.9	-19.09	134.54
100.00	15 20 42	2733.96	-29.56	77.01	40.95	85.35	16 6 16	2134.0	-29.89	68.22
100.00	11 22 39	3510.73	-13.97	128.75	36.26	63.30	12 21 9	2910.7	-17.45	121.68
110.00	17 20 29	2359.13	-34.14	48.67	41.08	91.92	17 59 49	1759.1	-33.49	39.49
110.00	11 39 20	3458.32	-10.00	122.46	33.93	57.14	12 36 59	2858.3	-14.26	115.95

DIFFERENTIAL CORRECTIONS

TDE	2.3112	TRA	1.5325	TC-19.2549	BAU	2.5838	
RDE	.2754	RRA	.1986	RC3 -.3663	FAU	.16150	
FDE	.8540	FRA	1.9860	FC-13.9321	BSP	46273	
BDE	2.3276	BRA	1.5453	BC319.2584	FSP	2802	

MID-COURSE EXECUTION ACCURACY

SGT13262.5	SGR	680.5	SG3	848.4			
RRT	.6821	RRF	.6628	RTF	.9720		
SGB13280.0	R23	-.0015	R13	.9720			
SG113270.6	SG2	497.3	THA	2.01			

ORBIT DETERMINATION ACCURACY

ST	4297.8	SR	512.5	SS	827.0		
CRT	.9973	CRS	-.9046	CST	-.9033		
LSA	4392.5	MSA	349.5	SSA	37.4		
EL1	4328.0	EL2	37.6	ALF	6.78		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 798.145 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.162	GAL	-.40	AZL	87.73	HCA	234.45	SMA	188.87	ECC	.22039	INC	2.2685
RP	207.73	LAP	-1.85	LOP	318.46	VP	23.981	GAP	-11.39	AZP	91.32	TAL	357.78	TAP	232.24	RCA	147.24	APO	230.49
RC	320.558	GL	24.48	GP	-5.73	ZAL	90.92	ZAP	36.20	ETS	171.13	ZAE	57.05	ETE	175.86	ZAC	80.24	ETC	256.88

V1	30.254	V2	26.373	CLP	35.81														

PLANETOCENTRIC CONIC

C3	10.033	VHL	3.167	DLA	25.49	RAL	183.12	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	4.910	DPA	-.33	RAP	170.26
ECC	1.1651																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 56 34	3019.45	-27.88	97.84	41.89	84.81	14 46 54	2419.5	-28.30	89.20
90.00	10 15 5	3749.88	-13.96	146.32	37.89	65.11	11 17 35	3149.9	-17.20	139.15
100.00	15 42 38	2677.51	-29.80	72.83	42.03	87.53	16 27 16	2077.5	-29.82	64.03
100.00	11 11 42	3567.06	-12.23	132.02	37.02	62.51	12 11 9	2967.1	-15.81	125.06
110.00	17 36 33	2321.08	-34.01	45.71	41.98	93.67	18 15 14	1721.1	-33.13	36.58
110.00	11 34 16	3496.25	-8.59	124.49	34.86	56.79	12 32 33	2896.3	-12.91	118.05

DIFFERENTIAL CORRECTIONS

TDE	2.2087	TRA	1.6963	TC-19.4722	BAU	2.6121	
RDE	.2715	RRA	.2006	RC3 -.3202	FAU	.15493	
FDE	.7252	FRA	2.0197	FC-13.3691	BSP	46701	
BDE	2.2253	BRA	1.7081	BC319.4748	FSP	2682	

MID-COURSE EXECUTION ACCURACY

SGT13404.4	SGR	666.2	SG3	818.9			
RRT	.6529	RRF	.6317	RTF	.9719		
SGB13420.9	R23	-.0049	R13	.9719			
SG113411.5	SG2	504.4	THA	1.86			

ORBIT DETERMINATION ACCURACY

ST	4139.9	SR	505.7	SS	765.9		
CRT	.9970	CRS	-.8676	CST	-.8794		
LSA	4225.0	MSA	360.2	SSA	37.9		
EL1	4170.5	EL2	39.1	ALF	6.94		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 802.513 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.170	GAL	-.55	AZL	87.76	HCA	235.71	SMA	189.00	ECC	.22104	INC	2.2368	V1	30.254
RP	207.60	LAP	-1.85	LOP	316.72	VP	24.008	GAP	-11.47	AZP	91.26	TAL	356.95	TAP	232.66	RCA	147.22	APO	230.78	V2	26.388
RC	321.425	GL	24.11	GP	-5.57	ZAL	92.50	ZAP	35.57	ETS	171.16	ZAE	56.12	ETE	175.86	ZAC	80.53	ETC	256.83	CLP	35.19

PLANETOCENTRIC CONIC

C3	10.046	VHL	3.169	DLA	24.46	RAL	184.52	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	4.978	DPA	-.45	RAP	170.91	ECC	1.1653

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 20 38	2956.16	-28.18	93.24	43.05	87.10	15 9 54	2356.2	-28.29	84.57
90.00	10 2 9	3813.70	-12.10	150.09	38.68	64.20	11 5 42	3213.7	-15.47	143.03
100.00	16 3 2	2625.97	-29.89	69.00	43.10	89.55	16 46 48	2026.0	-29.63	60.21
100.00	11 2 25	3619.13	-10.57	135.00	37.89	61.88	12 2 44	3019.1	-14.25	128.14
110.00	17 52 13	2284.38	-33.81	42.86	42.91	95.35	18 30 17	1684.4	-32.70	33.80
110.00	11 29 43	3533.48	-7.20	126.48	35.85	56.49	12 28 37	2933.5	-11.56	120.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1037	TRA	1.8671	TC	-19.6307	BAU	2.6367	SGT	13530.0	SGR	653.2	SG3	787.4	ST	3979.8	SR	499.9	SS	711.5
RDE	.2683	RRA	.2022	RC3	-.2733	FAU	.14793	RRT	.6212	RRF	.5986	RTF	.9715	CRT	.9957	CRS	-.8185	CST	-.8493
FDE	.6025	FRA	2.0497	FC	-12.7481	BSP	47193	SGB	13545.8	R23	-.0074	R13	.9715	LSA	4056.4	MSA	372.8	SSA	38.3
BDE	2.1207	BRA	1.8780	BC	319.6326	FSP	2581	SG1	13536.1	SG2	511.6	THA	1.72	EL1	4010.8	EL2	46.1	ALF	7.13

LAUNCH DATE DEC 13 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 806.882 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.178	GAL	-.71	AZL	87.79	HCA	236.97	SMA	189.14	ECC	.22173	INC	2.2059	V1	30.254
RP	207.48	LAP	-1.85	LOP	317.98	VP	24.034	GAP	-11.56	AZP	91.20	TAL	356.10	TAP	233.07	RCA	147.20	APO	231.07	V2	26.402
RC	322.286	GL	23.72	GP	-5.42	ZAL	94.12	ZAP	34.95	ETS	171.18	ZAE	55.21	ETE	175.85	ZAC	80.82	ETC	256.77	CLP	34.58

PLANETOCENTRIC CONIC

C3	10.076	VHL	3.174	DLA	23.42	RAL	185.92	RAD	6567.4	VEL	11.466	PTH	1.99	VHP	5.047	DPA	-.57	RAP	171.57	ECC	1.1658

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 42 37	2899.52	-28.31	89.10	44.18	89.17	15 30 56	2299.5	-28.12	80.44
90.00	9 51 22	3871.54	-10.36	153.45	39.58	63.50	10 55 53	3271.5	-13.84	146.50
100.00	16 22 20	2578.01	-29.86	65.44	44.18	91.42	17 5 18	1978.0	-29.34	56.67
100.00	10 54 20	3668.28	-8.98	137.78	38.85	61.37	11 55 28	3068.3	-12.74	131.00
110.00	18 7 33	2248.84	-33.55	40.12	43.86	96.95	18 45 2	1648.8	-32.23	31.14
110.00	11 25 37	3570.21	-5.81	128.42	36.92	58.26	12 25 7	2970.2	-10.21	122.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.9952	TRA	2.0450	TC	-19.7636	BAU	2.6624	SGT	13659.3	SGR	642.3	SG3	757.3	ST	3816.8	SR	495.3	SS	667.6
RDE	.2662	RRA	.2038	RC3	-.2286	FAU	.14118	RRT	.5885	RRF	.5653	RTF	.9712	CRT	.9929	CRS	-.7573	CST	-.8144
FDE	.4909	FRA	2.0793	FC	-12.1303	BSP	47639	SGB	13674.4	R23	-.0087	R13	.9712	LSA	3886.9	MSA	386.9	SSA	38.7
BDE	2.0129	BRA	2.0551	BC	319.7649	FSP	2477	SG1	13664.5	SG2	519.1	THA	1.59	EL1	3848.3	EL2	58.4	ALF	7.34

LAUNCH DATE DEC 13 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 811.252 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.185	GAL	-.87	AZL	87.82	HCA	238.23	SMA	189.27	ECC	.22246	INC	2.1759	V1	30.254
RP	207.36	LAP	-1.85	LOP	319.24	VP	24.059	GAP	-11.64	AZP	91.15	TAL	355.24	TAP	233.47	RCA	147.17	APO	231.38	V2	26.416
RC	323.141	GL	23.33	GP	-5.28	ZAL	95.77	ZAP	34.35	ETS	171.20	ZAE	54.31	ETE	175.84	ZAC	81.10	ETC	256.72	CLP	33.99

PLANETOCENTRIC CONIC

C3	10.124	VHL	3.182	DLA	22.36	RAL	187.34	RAD	6567.4	VEL	11.468	PTH	1.99	VHP	5.117	DPA	-.72	RAP	172.24	ECC	1.1666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 3 11	2847.51	-28.30	85.30	45.32	91.07	15 50 38	2247.5	-27.85	76.66
90.00	9 42 5	3925.45	-8.71	156.54	40.58	62.95	10 47 31	3325.4	-12.27	149.68
100.00	16 40 47	2532.83	-29.74	62.08	45.26	93.18	17 22 59	1932.8	-28.98	53.36
100.00	10 47 11	3715.36	-7.44	140.42	39.89	60.96	11 49 6	3115.4	-11.25	133.71
110.00	18 22 34	2214.35	-33.24	37.48	44.84	98.49	18 59 29	1614.4	-31.71	28.58
110.00	11 21 52	3606.60	-4.43	130.33	38.05	56.07	12 21 59	3006.6	-8.86	124.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.8822	TRA	2.2282	TC	-19.8649	BAU	2.6888	SGT	13788.2	SGR	632.5	SG3	728.2	ST	3650.5	SR	491.3	SS	629.0
RDE	.2646	RRA	.2047	RC3	-.1866	FAU	.13483	RRT	.5556	RRF	.5306	RTF	.9709	CRT	.9881	CRS	-.6790	CST	-.7715
FDE	.3813	FRA	2.0999	FC	-11.5302	BSP	48115	SGB	13802.7	R23	-.0116	R13	.9709	LSA	3714.7	MSA	403.0	SSA	38.9
BDE	1.9007	BRA	2.2376	BC	319.8658	FSP	2382	SG1	13792.6	SG2	525.7	THA	1.46	EL1	3682.6	EL2	75.0	ALF	7.58

LAUNCH DATE DEC 13 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 815.621 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.193	GAL	-1.03	AZL	87.85	HCA	239.49	SMA	189.41	ECC	.22322	INC	2.1467	V1	30.254
RP	207.26	LAP	-1.85	LOP	320.50	VP	24.083	GAP	-11.73	AZP	91.09	TAL	354.37	TAP	233.86	RCA	147.13	APO	231.70	V2	26.428
RC	323.990	GL	22.92	GP	-5.14	ZAL	97.45	ZAP	33.77	ETS	171.22	ZAE	53.43	ETE	175.83	ZAC	81.38	ETC	256.66	CLP	33.42

PLANETOCENTRIC CONIC

C3	10.191	VHL	3.192	DLA	21.28	RAL	188.76	RAD	6567.4	VEL	11.471	PTH	1.99	VHP	5.187	DPA	-.87	RAP	172.92	ECC	1.1677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 22 41	2798.99	-28.19	81.75	46.46	92.85	16 9 20	2199.0	-27.49	73.15
90.00	9 33 57	3976.60	-7.11	159.46	41.66	62.52	10 40 13	3376.6	-10.74	152.65
100.00	16 58 32	2489.92	-29.53	58.91	46.36	94.84	17 40 2	1889.9	-28.55	50.24
100.00	10 40 47	3760.91	-5.92	142.96	41.01	60.65	11 43 28	3160.9	-9.79	136.30
110.00	18 37 20	2180.83	-32.87	34.93	45.85	99.95	19 13 41	1580.8	-31.15	26.13
110.00	11 18 28	3642.76	-3.06	132.23	39.24	55.94	12 19 11	3042.8	-7.51	125.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7687	TRA	2.4205	TC	-19.9158	BAU	2.7134	SGT	13910.2	SGR	624.4	SG3	698.8	ST	3489.9	SR	488.6	SS	601.6
RDE	.2640	RRA	.2055	RC3	-.1454	FAU	.12839	RRT	.5216	RRF	.4957	RTF	.9706	CRT	.9804	CRS	-.5902	CST	-.7273
FDE	.2834	FRA	2.1192	FC	-10.9070	BSP	48614	SGB	13924.3	R23	-.0132	R13	.9705	LSA	3550.0	MSA	420.3	SSA	39.0
BDE	1.7883	BRA	2.4292	BC	319.9163	FSP	2295	SG1	13914.1	SG2	532.6	THA	1.34	EL1	3522.7	EL2	95.4	ALF	7.82

LAUNCH DATE DEC 13 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 819.990 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.201 GAL -1.19 AZL 87.88 HCA 240.75 SMA 189.55 ECC .22403 INC 2.1181 V1 30.254
RP 207.16 LAP -1.85 LOP 321.77 VP 24.106 GAP -11.81 AZP 91.04 TAL 353.48 TAP 234.24 RCA 147.09 APO 232.02 V2 26.439
RC 324.833 GL 22.50 GP -5.01 ZAL 99.14 ZAP 33.19 ETS 171.23 ZAE 52.56 ETE 175.83 ZAC 81.66 ETC 256.61 CLP 32.86

PLANETOCENTRIC CONIC

C3 10.277 VHL 3.206 DLA 20.19 RAL 190.19 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 5.259 DPA -1.04 RAP 173.61 ECC 1.1691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 41 21	2753.24	-27.99	78.42	47.62	94.51	16 27 15	2153.2	-27.07	69.87
90.00	9 26 41	4025.73	-5.56	162.23	42.82	62.19	10 33 46	3425.7	-9.24	155.49
100.00	17 15 44	2448.92	-29.26	55.89	47.48	96.41	17 56 33	1848.9	-28.06	47.29
100.00	10 34 59	3805.29	-4.44	145.41	42.20	60.41	11 38 25	3205.3	-8.34	138.80
110.00	18 51 51	2148.20	-32.46	32.47	46.90	101.35	19 27 39	1548.2	-30.56	23.77
110.00	11 15 21	3678.77	-1.68	134.11	40.49	55.85	12 16 40	3078.8	-6.15	127.87

DIFFERENTIAL CORRECTIONS
TDE 1.6504 TRA 2.6175 TC-19.9312 BAU 2.7384
RDE .2642 RRA .2058 RC3 -.1064 FAU .12213
FDE .1913 FRA 2.1315 FC-10.2888 BSP 49073
BDE 1.6714 BRA 2.6256 BC319.9315 FSP 2201

MID-COURSE EXECUTION ACCURACY
SGT14030.2 SGR 617.5 SG3 669.9
RRT .4869 RRF .4601 RTF .9702
SGB14043.8 R23 -.0149 R13 .9702
SG114033.5 SG2 539.2 THA 1.23

ORBIT DETERMINATION ACCURACY
ST 3329.2 SR 486.6 SS 581.7
CRT .9688 CRS -.4897 CST -.6817
LSA 3385.9 MSA 439.3 SSA 39.0
EL1 3362.5 EL2 119.5 ALF 8.07

LAUNCH DATE DEC 13 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 824.358 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.209 GAL -1.36 AZL 87.91 HCA 242.02 SMA 189.69 ECC .22488 INC 2.0903 V1 30.254
RP 207.08 LAP -1.85 LOP 323.03 VP 24.128 GAP -11.90 AZP 90.98 TAL 352.58 TAP 234.60 RCA 147.04 APO 232.35 V2 26.449
RC 325.671 GL 22.07 GP -4.88 ZAL 100.86 ZAP 32.64 ETS 171.24 ZAE 51.70 ETE 175.82 ZAC 81.93 ETC 256.55 CLP 32.31

PLANETOCENTRIC CONIC

C3 10.384 VHL 3.222 DLA 19.09 RAL 191.62 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 5.332 DPA -1.22 RAP 174.31 ECC 1.1709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 21	2709.79	-27.71	75.27	48.80	96.06	16 44 31	2109.8	-26.58	66.78
90.00	9 20 8	4073.34	-4.04	164.91	44.05	61.95	10 28 1	3473.3	-7.76	158.20
100.00	17 32 27	2409.59	-28.93	53.02	48.63	97.89	18 12 36	1809.6	-27.53	44.49
100.00	10 29 43	3848.78	-2.97	147.81	43.46	60.24	11 33 52	3248.8	-6.91	141.24
110.00	19 6 9	2116.44	-32.01	30.10	47.98	102.69	19 41 25	1516.4	-29.93	21.51
110.00	11 12 30	3714.69	-.31	135.98	41.80	55.82	12 14 25	3114.7	-4.79	129.76

DIFFERENTIAL CORRECTIONS
TDE 1.5293 TRA 2.8227 TC-19.9088 BAU 2.7637
RDE .2650 RRA .2060 RC3 -.0694 FAU .11607
FDE .1029 FRA 2.1427 FC3-9.6771 BSP 49506
BDE 1.5521 BRA 2.8302 BC319.9089 FSP 2110

MID-COURSE EXECUTION ACCURACY
SGT14150.1 SGR 611.7 SG3 641.8
RRT .4521 RRF .4242 RTF .9697
SGB14163.3 R23 -.0167 R13 .9697
SG114152.8 SG2 545.5 THA 1.12

ORBIT DETERMINATION ACCURACY
ST 3175.0 SR 485.3 SS 570.1
CRT .9520 CRS -.3781 CST -.6354
LSA 3228.9 MSA 462.0 SSA 38.9
EL1 3208.5 EL2 146.9 ALF 8.30

LAUNCH DATE DEC 13 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 828.724 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.217 GAL -1.53 AZL 87.94 HCA 243.28 SMA 189.84 ECC .22578 INC 2.0631 V1 30.254
RP 207.00 LAP -1.84 LOP 324.30 VP 24.149 GAP -11.99 AZP 90.93 TAL 351.67 TAP 234.95 RCA 146.98 APO 232.70 V2 26.459
RC 326.503 GL 21.63 GP -4.76 ZAL 102.59 ZAP 32.09 ETS 171.25 ZAE 50.86 ETE 175.81 ZAC 82.20 ETC 256.50 CLP 31.78

PLANETOCENTRIC CONIC

C3 10.512 VHL 3.242 DLA 17.98 RAL 193.06 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 5.406 DPA -1.42 RAP 175.02 ECC 1.1730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 16 46	2668.32	-27.38	72.28	50.00	97.53	17 1 15	2068.3	-26.05	63.86
90.00	9 14 10	4119.78	-2.55	167.50	45.35	61.79	10 22 50	3519.8	-6.30	160.84
100.00	17 48 44	2371.76	-28.54	50.27	49.81	99.28	18 28 16	1771.8	-26.96	41.82
100.00	10 24 53	3891.57	-1.52	150.16	44.78	60.14	11 29 45	3291.6	-5.48	143.61
110.00	19 20 13	2085.52	-31.53	27.82	49.10	103.96	19 54 59	1485.5	-29.29	19.33
110.00	11 9 53	3750.57	1.06	137.85	43.16	55.83	12 12 24	3150.6	-3.43	131.65

DIFFERENTIAL CORRECTIONS
TDE 1.4057 TRA 3.0352 TC-19.8427 BAU 2.7886
RDE .2666 RRA .2057 RC3 -.0346 FAU .11017
FDE .0227 FRA 2.1487 FC3-9.0737 BSP 49986
BDE 1.4308 BRA 3.0422 BC319.8428 FSP 2025

MID-COURSE EXECUTION ACCURACY
SGT14266.3 SGR 607.1 SG3 614.3
RRT .4174 RRF .3884 RTF .9692
SGB14279.2 R23 -.0183 R13 .9692
SG114268.5 SG2 551.6 THA 1.02

ORBIT DETERMINATION ACCURACY
ST 3030.2 SR 484.9 SS 565.7
CRT .9287 CRS -.2661 CST -.5977
LSA 3082.2 MSA 485.7 SSA 38.6
EL1 3063.6 EL2 177.8 ALF 8.48

LAUNCH DATE DEC 13 1964 FLIGHT TIME 384.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 833.089 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.224 GAL -1.71 AZL 87.96 HCA 244.55 SMA 189.98 ECC .22672 INC 2.0364 V1 30.254
RP 206.93 LAP -1.84 LOP 325.56 VP 24.169 GAP -12.08 AZP 90.88 TAL 350.74 TAP 235.29 RCA 146.91 APO 233.05 V2 26.467
RC 327.330 GL 21.19 GP -4.65 ZAL 104.34 ZAP 31.56 ETS 171.26 ZAE 50.02 ETE 175.81 ZAC 82.47 ETC 256.45 CLP 31.25

PLANETOCENTRIC CONIC

C3 10.663 VHL 3.265 DLA 16.86 RAL 194.50 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 5.481 DPA -1.62 RAP 175.74 ECC 1.1755

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 42	2628.60	-26.99	69.44	51.24	98.90	17 17 30	2028.6	-25.48	61.09
90.00	9 8 42	4165.28	-1.08	170.04	46.71	61.70	10 18 8	3565.3	-4.86	163.40
100.00	18 4 39	2335.30	-28.11	47.65	51.02	100.60	18 43 34	1735.3	-26.36	39.28
100.00	10 20 27	3933.81	-.09	152.48	46.16	60.11	11 26 0	3333.8	-4.07	145.95
110.00	19 34 5	2055.44	-31.01	25.63	50.26	105.16	20 8 21	1455.4	-28.62	17.25
110.00	11 7 29	3786.43	2.43	139.72	44.58	55.89	12 10 36	3186.4	-2.06	133.52

DIFFERENTIAL CORRECTIONS
TDE 1.2801 TRA 3.2552 TC-19.7312 BAU 2.8127
RDE .2689 RRA .2052 RC3 -.0015 FAU .10428
FDE -.0535 FRA 2.1518 FC3-8.4667 BSP 50444
BDE 1.3080 BRA 3.2617 BC319.7312 FSP 1941

MID-COURSE EXECUTION ACCURACY
SGT14377.5 SGR 603.4 SG3 586.9
RRT .3824 RRF .3526 RTF .9684
SGB14390.2 R23 -.0198 R13 .9684
SG114379.4 SG2 557.5 THA .92

ORBIT DETERMINATION ACCURACY
ST 2898.3 SR 485.1 SS 567.7
CRT .8974 CRS -.1535 CST -.5677
LSA 2948.6 MSA 512.1 SSA 38.2
EL1 2931.0 EL2 211.6 ALF 8.59

LAUNCH DATE DEC 13 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 837.451 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.232	GAL	-1.89	AZL	87.99	HCA	245.81	SMA	190.12	ECC	.22771	INC	2.0103	V1	30.254
RP	206.86	LAP	-1.83	LOP	326.83	VP	24.188	GAP	-12.17	AZP	90.82	TAL	349.81	TAP	235.62	RCA	146.83	APO	233.42	V2	26.474
RC	328.152	GL	20.73	GP	-4.54	ZAL	106.09	ZAP	31.04	ETS	171.27	ZAE	49.20	ETE	175.80	ZAC	82.74	ETC	256.40	CLP	30.74

PLANETOCENTRIC CONIC

C3	10.837	VHL	3.292	DLA	15.74	RAL	195.93	RAD	6567.4	VEL	11.499	PTH	2.00	VHP	5.556	DPA	-1.84	RAP	176.47	ECC	1.1784

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 11	2590.46	-26.56	66.73	52.50	100.19	17 33 21	1990.5	-24.88	58.46
90.00	9 3 41	4210.04	.36	172.54	48.13	61.69	10 13 51	3610.0	-3.42	165.91
100.00	18 20 12	2300.12	-27.65	45.14	52.26	101.84	18 58 33	1700.1	-25.73	36.86
100.00	10 16 20	3975.61	1:33	154.77	47.60	60.13	11 22 36	3375.6	-2.65	148.25
110.00	19 47 45	2026.19	-30.47	23.52	51.45	106.30	20 21 32	1426.2	-27.94	15.24
110.00	11 5 16	3822.31	3.80	141.60	46.06	56.00	12 8 59	3222.3	-.69	135.39

DIFFERENTIAL CORRECTIONS

TDE	1.1518	TRA	3.4821	TC-19.5835	BAU	2.8373	
RDE	.2720	RRA	.2043	RC3 .0290	FAU	.09867	
FDE	-.1221	FRA	2.1504	FC3-7.8818	BSP	50896	
BDE	1.1835	BRA	3.4881	BC319.5835	FSP	1861	

MID-COURSE EXECUTION ACCURACY

SGT14488.4	SGR	600.7	SG3	560.6			
RRT	.3479	RRF	.3173	RTF	.9677		
SGB14500.8	R23	-.0213	R13	.9677			
SG114489.9	SG2	563.1	THA	.83			

ORBIT DETERMINATION ACCURACY

ST	2781.5	SR	486.2	SS	574.1		
CRT	.8564	CRS	-.0492	CST	-.5525		
LSA	2830.4	MSA	538.7	SSA	37.7		
EL1	2812.7	EL2	248.2	ALF	8.58		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 841.810 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.240	GAL	-2.07	AZL	88.02	HCA	247.08	SMA	190.27	ECC	.22875	INC	1.9847	V1	30.254
RP	206.81	LAP	-1.83	LOP	328.10	VP	24.206	GAP	-12.26	AZP	90.77	TAL	348.85	TAP	235.93	RCA	146.74	APO	233.79	V2	26.480
RC	328.970	GL	20.26	GP	-4.44	ZAL	107.86	ZAP	30.54	ETS	171.27	ZAE	48.39	ETE	175.79	ZAC	83.01	ETC	256.35	CLP	30.25

PLANETOCENTRIC CONIC

C3	11.037	VHL	3.322	DLA	14.61	RAL	197.37	RAD	6567.4	VEL	11.508	PTH	2.00	VHP	5.633	DPA	-2.06	RAP	177.21	ECC	1.1816

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 6 16	2553.80	-26.09	64.15	53.80	101.41	17 48 50	1953.8	-24.26	55.96
90.00	8 59 1	4254.20	1.79	175.00	49.61	61.73	10 9 56	3654.2	-2.01	168.38
100.00	18 35 27	2266.18	-27.15	42.74	53.54	103.01	19 13 13	1666.2	-25.09	34.54
100.00	10 12 31	4017.04	2.73	157.04	49.09	60.22	11 19 28	3417.0	-1.25	150.52
110.00	20 1 14	1997.78	-29.91	21.50	52.69	107.38	20 34 31	1397.8	-27.24	13.33
110.00	11 3 14	3858.19	5.16	143.48	47.58	56.16	12 7 32	3258.2	.68	137.26

DIFFERENTIAL CORRECTIONS

TDE	1.0217	TRA	3.7174	TC-19.3980	BAU	2.8622	
RDE	.2757	RRA	.2031	RC3 .0574	FAU	.09317	
FDE	-.1865	FRA	2.1459	FC3-7.3084	BSP	51353	
BDE	1.0582	BRA	3.7229	BC319.3981	FSP	1780	

MID-COURSE EXECUTION ACCURACY

SGT14598.6	SGR	598.8	SG3	534.8			
RRT	.3139	RRF	.2822	RTF	.9668		
SGB14610.9	R23	-.0229	R13	.9668			
SG114599.8	SG2	568.5	THA	.74			

ORBIT DETERMINATION ACCURACY

ST	2684.2	SR	487.8	SS	584.3		
CRT	.8045	CRS	.0487	CST	-.5493		
LSA	2731.7	MSA	566.3	SSA	37.0		
EL1	2713.0	EL2	286.7	ALF	8.41		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 846.166 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.248	GAL	-2.25	AZL	88.04	HCA	248.35	SMA	190.41	ECC	.22984	INC	1.9596	V1	30.254
RP	206.77	LAP	-1.82	LOP	329.37	VP	24.223	GAP	-12.36	AZP	90.72	TAL	347.89	TAP	236.24	RCA	146.65	APO	234.18	V2	26.486
RC	329.784	GL	19.79	GP	-4.34	ZAL	109.62	ZAP	30.05	ETS	171.28	ZAE	47.60	ETE	175.78	ZAC	83.28	ETC	256.30	CLP	29.76

PLANETOCENTRIC CONIC

C3	11.263	VHL	3.356	DLA	13.48	RAL	198.79	RAD	6567.4	VEL	11.517	PTH	2.01	VHP	5.711	DPA	-2.30	RAP	177.96	ECC	1.1854

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 59	2518.52	-25.60	61.68	55.13	102.54	18 3 58	1918.5	-23.61	53.57
90.00	8 54 42	4297.81	.3.19	177.44	51.15	61.85	10 6 20	3697.8	-.60	170.81
100.00	18 50 23	2233.41	-26.63	40.44	54.85	104.11	19 27 37	1633.4	-24.42	32.33
100.00	10 8 59	4058.15	4.12	159.31	50.64	60.37	11 16 37	3458.1	.14	152.78
110.00	20 14 30	1970.23	-29.33	19.56	53.96	108.39	20 47 20	1370.2	-26.54	11.49
110.00	11 1 21	3894.10	6.52	145.38	49.15	56.37	12 6 15	3294.1	2.06	139.14

DIFFERENTIAL CORRECTIONS

TDE	.8906	TRA	3.9594	TC-19.1727	BAU	2.8869	
RDE	.2803	RRA	.2014	RC3 .0834	FAU	.08784	
FDE	-.2441	FRA	2.1360	FC3-6.7523	BSP	51824	
BDE	.9337	BRA	3.9645	BC319.1729	FSP	1703	

MID-COURSE EXECUTION ACCURACY

SGT14704.9	SGR	597.6	SG3	509.5			
RRT	.2805	RRF	.2477	RTF	.9658		
SGB14717.1	R23	-.0246	R13	.9658			
SG114705.9	SG2	573.6	THA	.65			

ORBIT DETERMINATION ACCURACY

ST	2609.6	SR	490.1	SS	595.8		
CRT	.7414	CRS	.1357	CST	-.5601		
LSA	2655.9	MSA	591.7	SSA	36.3		
EL1	2635.1	EL2	325.7	ALF	8.05		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 850.518 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.256	GAL	-2.45	AZL	88.07	HCA	249.62	SMA	190.56	ECC	.23099	INC	1.9349	V1	30.254
RP	206.73	LAP	-1.81	LOP	330.64	VP	24.238	GAP	-12.45	AZP	90.67	TAL	346.91	TAP	236.53	RCA	146.54	APO	234.58	V2	26.490
RC	330.595	GL	19.30	GP	-4.24	ZAL	111.39	ZAP	29.56	ETS	171.28	ZAE	46.81	ETE	175.77	ZAC	83.54	ETC	256.25	CLP	29.29

PLANETOCENTRIC CONIC

C3	11.516	VHL	3.394	DLA	12.35	RAL	200.22	RAD	6567.4	VEL	11.528	PTH	2.01	VHP	5.791	DPA	-2.54	RAP	178.72	ECC	1.1895

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 22	2484.57	-25.07	59.33	56.49	103.61	18 18 46	1884.6	-22.95	51.31
90.00	8 50 40	4340.99	4.57	179.86	52.74	62.02	10 3 1	3741.0	.80	173.22
100.00	19 5 2	2201.81	-26.08	38.25	56.20	105.15	19 41 44	1601.8	-23.75	30.23
100.00	10 5 40	4098.98	5.49	161.56	52.23	60.57	11 13 59	3499.0	1.53	155.02
110.00	20 27 34	1943.55	-28.75	17.71	55.27	109.35	20 59 58	1343.5	-25.84	9.74
110.00	10 59 38	3930.01	7.87	147.28	50.77	56.63	12 5 8	3330.0	3.43	141.01

DIFFERENTIAL CORRECTIONS

TDE	.7570	TRA	4.2091	TC-18.9133	BAU	2.9119	
RDE	.2855	RRA	.1995	RC3 .1074	FAU	.08259	
FDE	-.2963	FRA	2.1235	FC3-6.2088	BSP	52259	
BDE	.8091	BRA	4.2138	BC318.9137	FSP	1626	

MID-COURSE EXECUTION ACCURACY

SGT14810.1	SGR	597.1	SG3	484.7			
RRT	.2475	RRF	.2141	RTF	.9646		
SGB14822.1	R23	-.0258	R13	.9646			
SG114810.8	SG2	578.5	THA	.57			

ORBIT DETERMINATION ACCURACY

ST	2558.4	SR	493.0	SS	608.4		
CRT	.6668	CRS	.2127	CST	-.5825		
LSA	2603.7	MSA	614.6	SSA	35.5		
EL1	2579.8	EL2	364.3	ALF	7.47		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 854.866 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.265 GAL -2.64 AZL 88.09 HCA 250.89 SMA 190.71 ECC .23219 INC 1.9105 V1 30.254
RP 206.70 LAP -1.81 LOP 331.90 VP 24.253 GAP -12.55 AZP 90.63 TAL 345.92 TAP 236.81 RCA 146.43 APO 234.99 V2 26.493
RC 331.403 GL 18.82 GP -4.15 ZAL 113.16 ZAP 29.09 ETS 171.27 ZAE 46.04 ETE 175.76 ZAC 83.80 ETC 256.21 CLP 28.82

PLANETOCENTRIC CONIC

C3 11.799 VHL 3.435 DLA 11.23 RAL 201.63 RAD 6567.4 VEL 11.541 PTH 2.01 VHP 5.871 DPA -2.80 RAP 179.49 ECC 1.1942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 26	2451.91	-24.53	57.09	57.89	104.61	18 33 18	1851.9	-22.28	49.14
90.00	8 46 54	4383.78	5.94	182.27	54.38	62.26	9 59 57	3783.8	2.18	175.60
100.00	19 19 24	2171.35	-25.52	36.16	57.59	106.11	19 55 36	1571.3	-23.07	28.22
100.00	10 2 35	4139.57	6.84	163.82	53.88	60.83	11 11 35	3539.6	2.90	157.25
110.00	20 40 27	1917.76	-28.15	15.94	56.62	110.24	21 12 25	1317.8	-25.14	8.06
110.00	10 58 2	3965.93	9.21	149.20	52.44	56.93	12 4 8	3365.9	4.79	142.90

DIFFERENTIAL CORRECTIONS
TDE .6227 TRA 4.4673 TC-18.6171 BAU 2.9367
RDE .2914 RRA .1972 RC3 .1291 FAU .07750
FDE -.3440 FRA 2.1066 FC3-5.6867 BSP 52708
BDE .6875 BRA 4.4716 BC318.6176 FSP 1552

MID-COURSE EXECUTION ACCURACY
SGT14912.0 SGR 597.2 SG3 460.6
RRT .2154 RRF .1810 RTF .9633
SGB14924.0 R23 -.0275 R13 .9633
SG114912.6 SG2 583.1 THA .50

ORBIT DETERMINATION ACCURACY
ST 2533.9 SR 496.4 SS 620.8
CRT .5829 CRS .2816 CST -.6122
LSA 2578.6 MSA 633.8 SSA 34.6
EL1 2550.7 EL2 400.7 ALF 6.68

LAUNCH DATE DEC 13 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 859.208 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.273 GAL -2.84 AZL 88.11 HCA 252.15 SMA 190.86 ECC .23345 INC 1.8866 V1 30.254
RP 206.68 LAP -1.80 LOP 333.17 VP 24.267 GAP -12.65 AZP 90.58 TAL 344.92 TAP 237.07 RCA 146.30 APO 235.41 V2 26.495
RC 332.208 GL 18.32 GP -4.07 ZAL 114.92 ZAP 28.64 ETS 171.27 ZAE 45.27 ETE 175.75 ZAC 84.06 ETC 256.16 CLP 28.37

PLANETOCENTRIC CONIC

C3 12.112 VHL 3.480 DLA 10.11 RAL 203.03 RAD 6567.5 VEL 11.554 PTH 2.02 VHP 5.952 DPA -3.06 RAP 180.27 ECC 1.1993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 9	2420.50	-23.97	54.96	59.32	105.54	18 47 30	1820.5	-21.61	47.09
90.00	8 43 21	4426.21	7.27	184.67	56.07	62.56	9 57 8	3826.2	3.54	177.98
100.00	19 33 30	2142.01	-24.95	34.16	59.01	107.01	20 9 12	1542.0	-22.39	26.31
100.00	9 59 42	4179.93	8.17	166.07	55.58	61.15	11 9 22	3579.9	4.26	159.47
110.00	20 53 7	1892.87	-27.55	14.25	58.01	111.08	21 24 40	1292.9	-24.44	6.46
110.00	10 56 34	4001.83	10.54	151.13	54.16	57.29	12 3 16	3401.8	6.15	144.79

DIFFERENTIAL CORRECTIONS
TDE .4865 TRA 4.7309 TC-18.2966 BAU 2.9627
RDE .2980 RRA .1945 RC3 .1486 FAU .07255
FDE -.3868 FRA 2.0853 FC3-5.1857 BSP 53109
BDE .5706 BRA 4.7349 BC318.2972 FSP 1478

MID-COURSE EXECUTION ACCURACY
SGT15014.0 SGR 597.7 SG3 437.1
RRT .1838 RRF .1484 RTF .9617
SGB15025.9 R23 -.0292 R13 .9617
SG115014.4 SG2 587.5 THA .42

ORBIT DETERMINATION ACCURACY
ST 2534.0 SR 500.3 SS 632.3
CRT .4918 CRS .3426 CST -.6465
LSA 2578.8 MSA 648.0 SSA 33.7
EL1 2546.3 EL2 433.5 ALF 5.71

LAUNCH DATE DEC 13 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 863.545 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.281 GAL -3.04 AZL 88.14 HCA 253.42 SMA 191.01 ECC .23476 INC 1.8629 V1 30.254
RP 206.67 LAP -1.79 LOP 334.44 VP 24.279 GAP -12.75 AZP 90.53 TAL 343.90 TAP 237.33 RCA 146.16 APO 235.85 V2 26.497
RC 333.009 GL 17.83 GP -3.98 ZAL 116.67 ZAP 28.19 ETS 171.27 ZAE 44.52 ETE 175.74 ZAC 84.32 ETC 256.12 CLP 27.93

PLANETOCENTRIC CONIC

C3 12.457 VHL 3.529 DLA 9.01 RAL 204.43 RAD 6567.5 VEL 11.569 PTH 2.02 VHP 6.035 DPA -3.33 RAP 181.05 ECC 1.2050

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 36	2390.33	-23.41	52.93	60.79	106.40	19 1 27	1790.3	-20.94	45.13
90.00	8 40 2	4468.30	8.59	187.06	57.81	62.91	9 54 30	3868.3	4.89	180.34
100.00	19 47 20	2113.80	-24.38	32.27	60.46	107.85	20 22 34	1513.8	-21.71	24.49
100.00	9 56 59	4220.06	9.49	168.33	57.33	61.52	11 7 19	3620.1	5.61	161.69
110.00	21 5 36	1868.92	-26.96	12.64	59.43	111.86	21 36 45	1268.9	-23.75	4.95
110.00	10 55 13	4037.71	11.85	153.08	55.92	57.70	12 2 31	3437.7	7.50	146.69

DIFFERENTIAL CORRECTIONS
TDE .3498 TRA 5.0049 TC-17.9431 BAU 2.9883
RDE .3053 RRA .1914 RC3 .1659 FAU .06768
FDE -.4242 FRA 2.0602 FC3-4.7036 BSP 53545
BDE .4643 BRA 5.0086 BC317.9439 FSP 1408

MID-COURSE EXECUTION ACCURACY
SGT15113.4 SGR 598.7 SG3 414.0
RRT .1532 RRF .1168 RTF .9599
SGB15125.3 R23 -.0308 R13 .9598
SG115113.7 SG2 591.6 THA .35

ORBIT DETERMINATION ACCURACY
ST 2560.7 SR 504.6 SS 642.0
CRT .3971 CRS .3956 CST -.6831
LSA 2606.1 MSA 656.7 SSA 32.8
EL1 2568.8 EL2 461.6 ALF 4.62

LAUNCH DATE DEC 13 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 867.875 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.289 GAL -3.25 AZL 88.16 HCA 254.69 SMA 191.15 ECC .23615 INC 1.8396 V1 30.254
RP 206.67 LAP -1.77 LOP 335.71 VP 24.291 GAP -12.86 AZP 90.49 TAL 342.87 TAP 237.57 RCA 146.01 APO 236.30 V2 26.497
RC 333.807 GL 17.33 GP -3.91 ZAL 118.41 ZAP 27.75 ETS 171.26 ZAE 43.78 ETE 175.72 ZAC 84.59 ETC 256.08 CLP 27.50

PLANETOCENTRIC CONIC

C3 12.836 VHL 3.583 DLA 7.91 RAL 205.81 RAD 6567.5 VEL 11.585 PTH 2.03 VHP 6.119 DPA -3.60 RAP 181.85 ECC 1.2112

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 46	2361.37	-22.84	51.00	62.28	107.21	19 15 7	1761.4	-20.27	43.27
90.00	8 36 54	4510.09	9.87	189.46	59.59	63.33	9 52 5	3910.1	6.21	182.69
100.00	20 0 55	2086.72	-23.80	30.46	61.94	108.64	20 35 42	1486.7	-21.04	22.76
100.00	9 54 26	4259.98	10.77	170.60	59.12	61.95	11 5 26	3660.0	6.94	163.91
110.00	21 17 52	1845.92	-26.37	11.11	60.88	112.59	21 48 38	1245.9	-23.07	3.50
110.00	10 53 59	4073.54	13.15	155.05	57.72	58.16	12 1 52	3473.5	8.84	148.60

DIFFERENTIAL CORRECTIONS
TDE .2127 TRA 5.2852 TC-17.5639 BAU 3.0142
RDE .3133 RRA .1879 RC3 .1812 FAU .06296
FDE -.4577 FRA 2.0303 FC3-4.2463 BSP 53956
BDE .3787 BRA 5.2886 BC317.5648 FSP 1338

MID-COURSE EXECUTION ACCURACY
SGT15209.4 SGR 600.0 SG3 391.6
RRT .1234 RRF .0857 RTF .9577
SGB15221.2 R23 -.0329 R13 .9577
SG115209.6 SG2 595.4 THA .28

ORBIT DETERMINATION ACCURACY
ST 2610.0 SR 509.2 SS 649.9
CRT .3025 CRS .4434 CST -.7178
LSA 2656.3 MSA 660.7 SSA 31.8
EL1 2614.7 EL2 484.5 ALF 3.50

LAUNCH DATE DEC 13 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 872.198 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.297	GAL	-3.46	AZL	88.18	HCA	255.96	SMA	191.31	ECC	.23759	INC	1.8166	V1	30.254
RP	206.68	LAP	-1.76	LOP	336.98	VP	24.301	GAP	-12.96	AZP	90.44	TAL	341.83	TAP	237.79	RCA	145.85	APO	236.76	V2	26.496
RC	334.601	GL	16.82	GP	-3.83	ZAL	120.14	ZAP	27.33	ETS	171.25	ZAE	43.04	ETE	175.71	ZAC	84.84	ETC	256.05	CLP	27.08

PLANETOCENTRIC CONIC

C3	13.251	VHL	3.640	DLA	6.82	RAL	207.18	RAD	6567.5	VEL	11.603	PTH	2.03	VHP	6.204	DPA	-3.89	RAP	182.65	ECC	1.2181

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 39	2333.61	-22.27	49.17	63.81	107.96	19 28 32	1733.6	-19.61	41.50
90.00	8 33 58	4551.56	11.13	191.86	61.43	63.79	9 49 49	3951.6	7.52	185.04
100.00	20 14 15	2060.75	-23.23	28.75	63.46	109.37	20 48 35	1460.8	-20.37	21.11
100.00	9 52 3	4299.66	12.03	172.82	60.96	62.43	11 3 42	3699.7	8.25	166.12
110.00	21 29 56	1823.88	-25.78	9.67	62.37	113.27	22 0 20	1223.9	-22.41	2.14
110.00	10 52 51	4109.30	14.42	157.04	59.58	58.67	12 1 20	3509.3	10.17	150.52

DIFFERENTIAL CORRECTIONS

TDE	.0744	TRA	5.5742	TC-17.1654	BAU	3.0410	
RDE	.3219	RRA	.1841	RC3 .1944	FAU	.05837	
FDE	-.4862	FRA	1.9977	FC3-3.0133	BSP	54347	
BDE	.3304	BRA	5.5772	BC317.1665	FSP	1268	

MID-COURSE EXECUTION ACCURACY

SGT15305.8	SGR	601.6	SG3	369.8			
RRT .0945	RRF	.0558	RTF	.9553			
SGB15317.6	R23	-.0548	R13	.9553			
SG115305.9	SG2	598.9	THA	.21			

ORBIT DETERMINATION ACCURACY

ST	2679.8	SR	514.3	SS	655.5		
CRT	.2103	CRS	.4850	CST	-.7507		
LSA	2727.4	MSA	660.1	SSA	30.9		
EL1	2682.1	EL2	502.3	ALF	2.40		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 876.514 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.305	GAL	-3.67	AZL	88.21	HCA	257.23	SMA	191.46	ECC	.23911	INC	1.7938	V1	30.254
RP	206.69	LAP	-1.75	LOP	338.25	VP	24.310	GAP	-13.07	AZP	90.40	TAL	340.78	TAP	238.01	RCA	145.68	APO	237.24	V2	26.494
RC	335.390	GL	16.32	GP	-3.76	ZAL	121.85	ZAP	26.91	ETS	171.24	ZAE	42.32	ETE	175.69	ZAC	85.10	ETC	256.01	CLP	26.67

PLANETOCENTRIC CONIC

C3	13.703	VHL	3.702	DLA	5.75	RAL	208.54	RAD	6567.5	VEL	11.623	PTH	2.04	VHP	6.291	DPA	-4.18	RAP	183.46	ECC	1.2255

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 15	2307.05	-21.70	47.43	65.37	108.65	19 41 42	1707.1	-18.95	39.83
90.00	8 31 10	4592.73	12.36	194.26	63.30	64.32	9 47 43	3992.7	8.80	187.39
100.00	20 27 19	2035.91	-22.66	27.12	65.01	110.04	21 1 15	1435.9	-19.72	19.56
100.00	9 49 48	4330.11	13.27	175.15	62.84	62.97	11 2 7	3739.1	9.54	168.34
110.00	21 41 48	1802.82	-25.21	8.30	63.88	113.89	22 11 50	1202.8	-21.76	.84
110.00	10 51 48	4144.96	15.67	159.04	61.47	59.23	12 0 53	3545.0	11.48	152.45

DIFFERENTIAL CORRECTIONS

TDE	-.0642	TRA	5.8706	TC-16.7459	BAU	3.0680	
RDE	.3312	RRA	.1799	RC3 .2056	FAU	.05388	
FDE	-.5103	FRA	1.9603	FC3-3.4040	BSP	54713	
BDE	.3374	BRA	5.8733	BC316.7471	FSP	1201	

MID-COURSE EXECUTION ACCURACY

SGT15398.6	SGR	603.6	SG3	348.5			
RRT .0664	RRF	.0265	RTF	.9525			
SGB15410.5	R23	-.0369	R13	.9525			
SG115398.7	SG2	602.3	THA	.15			

ORBIT DETERMINATION ACCURACY

ST	2766.6	SR	519.5	SS	658.2		
CRT	.1234	CRS	.5221	CST	-.7799		
LSA	2815.4	MSA	656.0	SSA	29.9		
EL1	2767.4	EL2	515.4	ALF	1.37		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 880.820 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.314	GAL	-3.89	AZL	88.23	HCA	258.50	SMA	191.61	ECC	.24069	INC	1.7713	V1	30.254
RP	206.72	LAP	-1.74	LOP	339.52	VP	24.319	GAP	-13.19	AZP	90.35	TAL	339.71	TAP	238.21	RCA	145.49	APO	237.73	V2	26.491
RC	336.176	GL	15.82	GP	-3.69	ZAL	123.54	ZAP	26.50	ETS	171.23	ZAE	41.61	ETE	175.67	ZAC	85.36	ETC	255.98	CLP	26.27

PLANETOCENTRIC CONIC

C3	14.195	VHL	3.768	DLA	4.70	RAL	209.88	RAD	6567.6	VEL	11.644	PTH	2.04	VHP	6.379	DPA	-4.48	RAP	184.28	ECC	1.2336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 35	2281.68	-21.14	45.78	66.96	109.29	19 54 37	1681.7	-18.31	38.24
90.00	8 28 32	4633.60	13.55	196.67	65.22	64.90	9 45 46	4033.6	10.06	189.73
100.00	20 40 8	2012.19	-22.09	25.58	66.59	110.66	21 13 40	1412.2	-19.09	18.08
100.00	9 47 41	4378.32	14.47	177.44	64.77	63.55	11 0 39	3778.3	10.80	170.57
110.00	21 53 27	1782.75	-24.65	7.01	65.43	114.47	22 23 9	1182.8	-21.14	359.62
110.00	10 50 51	4180.52	16.90	161.07	63.40	59.84	12 0 32	3580.5	12.77	154.40

DIFFERENTIAL CORRECTIONS

TDE	-.2024	TRA	6.1752	TC-16.3118	BAU	3.0958	
RDE	.3412	RRA	.1752	RC3 .2150	FAU	.04952	
FDE	-.5307	FRA	1.9186	FC3-3.0204	BSP	55100	
BDE	.3967	BRA	6.1777	BC316.3132	FSP	1134	

MID-COURSE EXECUTION ACCURACY

SGT15490.5	SGR	605.7	SG3	327.9			
RRT .0392	RRF	-.0021	RTF	.9493			
SGB15502.4	R23	-.0394	R13	.9493			
SG115490.6	SG2	605.2	THA	.09			

ORBIT DETERMINATION ACCURACY

ST	2867.3	SR	525.0	SS	658.5		
CRT	.0433	CRS	.5558	CST	-.8046		
LSA	2916.7	MSA	650.0	SSA	29.0		
EL1	2867.4	EL2	524.5	ALF	.47		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 885.118 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.322	GAL	-4.12	AZL	88.25	HCA	259.77	SMA	191.76	ECC	.24235	INC	1.7489	V1	30.254
RP	206.75	LAP	-1.72	LOP	340.79	VP	24.326	GAP	-13.30	AZP	90.31	TAL	338.64	TAP	238.41	RCA	145.29	APO	238.24	V2	26.488
RC	336.957	GL	15.33	GP	-3.62	ZAL	125.21	ZAP	26.11	ETS	171.22	ZAE	40.90	ETE	175.65	ZAC	85.62	ETC	255.95	CLP	25.87

PLANETOCENTRIC CONIC

C3	14.729	VHL	3.838	DLA	3.66	RAL	211.21	RAD	6567.6	VEL	11.667	PTH	2.05	VHP	6.468	DPA	-4.79	RAP	185.11	ECC	1.2424

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 40	2257.48	-20.59	44.22	68.58	109.88	20 7 17	1657.5	-17.69	36.74
90.00	8 26 3	4674.17	14.71	199.08	67.18	65.53	9 43 57	4074.2	11.28	192.08
100.00	20 52 43	1989.58	-21.54	24.13	68.19	111.24	21 25 53	1389.6	-18.47	16.69
100.00	9 45 41	4417.29	15.64	179.74	66.73	64.19	10 59 18	3817.3	12.04	172.80
110.00	22 4 53	1763.69	-24.10	5.80	67.01	115.01	22 34 17	1163.7	-20.53	358.47
110.00	10 50 0	4215.95	18.10	163.11	65.38	60.50	12 0 16	3615.9	14.04	156.36

DIFFERENTIAL CORRECTIONS

TDE	-.3401	TRA	6.4886	TC-15.8644	BAU	3.1241	
RDE	.3517	RRA	.1701	RC3 .2227	FAU	.04524	
FDE	-.5473	FRA	1.8730	FC3-2.6593	BSP	55456	
BDE	.4892	BRA	6.4908	BC315.8660	FSP	1069	

MID-COURSE EXECUTION ACCURACY

SGT15580.7	SGR	608.0	SG3	307.7			
RRT .0129	RRF	-.0300	RTF	.9455			
SGB15592.5	R23	-.0422	R13	.9455			
SG115580.7	SG2	608.0	THA	.03			

ORBIT DETERMINATION ACCURACY

ST	2978.5	SR	530.6	SS	656.1		
CRT	-.0292	CRS	.5863	CST	-.8252		
LSA	3028.1	MSA	642.6	SSA	28.1		
EL1	2978.5	EL2	530.4	ALF	179.69		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 889.406 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.330 GAL -4.35 AZL 88.27 HCA 261.04 SMA 191.92 ECC .24408 INC 1.7268 V1 30.254
RP 206.79 LAP -1.71 LOP 342.06 VP 24.332 GAP -13.42 AZP 90.27 TAL 337.55 TAP 238.58 RCA 145.07 APO 238.76 V2 26.483
RC 337.733 GL 14.83 GP -3.56 ZAL 126.86 ZAP 25.72 ETS 171.21 ZAE 40.21 ETE 175.63 ZAC 85.88 ETC 255.92 CLP 25.49

PLANETOCENTRIC CONIC

C3 15.306 VHL 3.912 DLA 2.65 RAL 212.52 RAD 6567.6 VEL 11.691 PTH 2.06 VHP 6.559 DPA -5.10 RAP 185.94 ECC 1.2519

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 29	2234.44	-20.05	42.74	70.22	110.43	20 19 43	1634.4	-17.09	35.32
90.00	8 23 41	4714.42	15.83	201.51	69.18	66.21	9 42 16	4114.4	12.48	194.43
100.00	21 5 3	1968.09	-21.01	22.76	69.82	111.77	21 37 51	1368.1	-17.87	15.37
100.00	9 43 48	4456.00	16.77	182.06	68.74	64.89	10 58 4	3856.0	13.25	175.04
110.00	22 16 8	1745.64	-23.58	4.66	68.61	115.50	22 45 13	1145.6	-19.95	357.39
110.00	10 49 13	4251.21	19.27	165.18	67.40	61.20	12 0 4	3651.2	15.28	158.33

DIFFERENTIAL CORRECTIONS
TDE -.4787 TRA 6.8091 TC-15.4100 BAU 3.1537
RDE .3629 RRA .1646 RC3 .2288 FAU .04107
FDE -.5601 FRA 1.8233 FC3-2.3229 BSP 55780
BDE .6007 BRA 6.8111 BC315.4117 FSP 1005

MID-COURSE EXECUTION ACCURACY
SGT15669.5 SGR 610.5 SG3 288.1
RRT -.0127 RRF -.0570 RTF .9410
SGB15681.4 R23 .0451 R13 -.9410
SG115669.5 SG2 610.5 THA 179.97

ORBIT DETERMINATION ACCURACY
ST 3096.9 SR 536.4 SS 650.8
CRT -.0949 CRS .6139 CST -.8425
LSA 3146.3 MSA 634.2 SSA 27.3
EL1 3097.4 EL2 533.9 ALF 179.03

LAUNCH DATE DEC 13 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 893.683 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.339 GAL -4.58 AZL 88.30 HCA 262.30 SMA 192.07 ECC .24589 INC 1.7048 V1 30.254
RP 206.84 LAP -1.69 LOP 343.33 VP 24.337 GAP -13.55 AZP 90.23 TAL 336.45 TAP 238.75 RCA 144.84 APO 239.30 V2 26.477
RC 338.506 GL 14.34 GP -3.49 ZAL 128.48 ZAP 25.35 ETS 171.20 ZAE 39.52 ETE 175.60 ZAC 86.13 ETC 255.90 CLP 25.12

PLANETOCENTRIC CONIC

C3 15.930 VHL 3.991 DLA 1.65 RAL 213.81 RAD 6567.6 VEL 11.718 PTH 2.06 VHP 6.652 DPA -5.42 RAP 186.78 ECC 1.2622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 2	2212.56	-19.52	41.35	71.89	110.93	20 31 55	1612.6	-16.50	33.98
90.00	8 21 27	4754.36	16.91	203.94	71.22	66.94	9 40 41	4154.4	13.64	196.79
100.00	21 17 9	1947.71	-20.49	21.47	71.48	112.26	21 49 37	1347.7	-17.29	14.13
100.00	9 42 2	4494.44	17.86	184.39	70.78	65.63	10 56 56	3894.4	14.42	177.28
110.00	22 27 9	1728.59	-23.08	3.59	70.23	115.95	22 55 58	1128.6	-19.40	356.38
110.00	10 48 31	4286.32	20.41	167.27	69.46	61.96	11 59 57	3686.3	16.50	160.32

DIFFERENTIAL CORRECTIONS
TDE -.6163 TRA 7.1399 TC-14.9457 BAU 3.1834
RDE .3747 RRA .1587 RC3 .2333 FAU .03702
FDE -.5690 FRA 1.7695 FC3-2.0118 BSP 56111
BDE .7212 BRA 7.1417 BC314.9475 FSP 941

MID-COURSE EXECUTION ACCURACY
SGT15756.2 SGR 613.1 SG3 269.1
RRT -.0373 RRF -.0833 RTF .9360
SGB15768.2 R23 .0484 R13 -.9360
SG115756.2 SG2 612.7 THA 179.92

ORBIT DETERMINATION ACCURACY
ST 3220.8 SR 542.2 SS 642.7
CRT -.1531 CRS .6389 CST -.8565
LSA 3269.3 MSA 625.7 SSA 26.5
EL1 3221.9 EL2 535.6 ALF 178.48

LAUNCH DATE DEC 13 1964 FLIGHT TIME 414.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 897.948 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.347 GAL -4.82 AZL 88.32 HCA 263.57 SMA 192.22 ECC .24779 INC 1.6830 V1 30.254
RP 206.90 LAP -1.67 LOP 344.60 VP 24.341 GAP -13.68 AZP 90.19 TAL 335.33 TAP 238.90 RCA 144.59 APO 239.85 V2 26.470
RC 339.274 GL 13.86 GP -3.43 ZAL 130.08 ZAP 24.98 ETS 171.18 ZAE 38.85 ETE 175.58 ZAC 86.39 ETC 255.88 CLP 24.76

PLANETOCENTRIC CONIC

C3 16.603 VHL 4.075 DLA .68 RAL 215.09 RAD 6567.7 VEL 11.747 PTH 2.07 VHP 6.746 DPA -5.74 RAP 187.63 ECC 1.2732

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 21	2191.82	-19.01	40.04	73.58	111.39	20 43 53	1591.8	-15.94	32.72
90.00	8 19 20	4793.97	17.95	206.38	73.30	67.73	9 39 14	4194.0	14.77	199.15
100.00	21 29 0	1928.42	-19.99	20.26	73.16	112.70	22 1 9	1328.4	-16.74	12.97
100.00	9 40 21	4532.60	18.92	186.73	72.87	66.42	10 55 54	3932.6	15.57	179.54
110.00	22 37 58	1712.55	-22.60	2.59	71.88	116.36	23 6 31	1112.6	-18.87	355.44
110.00	10 47 53	4321.23	21.51	169.38	71.55	62.77	11 59 54	3721.2	17.69	162.33

DIFFERENTIAL CORRECTIONS
TDE -.7533 TRA 7.4778 TC-14.4798 BAU 3.2145
RDE .3870 RRA .1524 RC3 .2364 FAU .03305
FDE -.5747 FRA 1.7114 FC3-1.7233 BSP 56409
BDE .8469 BRA 7.4794 BC314.4818 FSP 879

MID-COURSE EXECUTION ACCURACY
SGT15841.2 SGR 615.8 SG3 250.7
RRT -.0612 RRF -.1089 RTF .9299
SGB15853.2 R23 .0521 R13 -.9299
SG115841.3 SG2 614.6 THA 179.86

ORBIT DETERMINATION ACCURACY
ST 3346.5 SR 548.0 SS 632.0
CRT -.2049 CRS .6623 CST -.8676
LSA 3393.7 MSA 617.3 SSA 25.8
EL1 3348.5 EL2 536.1 ALF 178.03

LAUNCH DATE DEC 13 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 902.201 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.355 GAL -5.07 AZL 88.34 HCA 264.84 SMA 192.38 ECC .24976 INC 1.6612 V1 30.254
RP 206.97 LAP -1.65 LOP 345.86 VP 24.344 GAP -13.81 AZP 90.15 TAL 334.21 TAP 239.05 RCA 144.33 APO 240.43 V2 26.462
RC 340.039 GL 13.38 GP -3.38 ZAL 131.65 ZAP 24.63 ETS 171.17 ZAE 38.18 ETE 175.55 ZAC 86.65 ETC 255.86 CLP 24.41

PLANETOCENTRIC CONIC

C3 17.328 VHL 4.163 DLA -.28 RAL 216.35 RAD 6567.7 VEL 11.778 PTH 2.08 VHP 6.841 DPA -6.07 RAP 188.49 ECC 1.2852

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 19 25	2172.20	-18.52	38.82	75.29	111.81	20 55 37	1572.2	-15.40	31.53
90.00	8 17 19	4833.26	18.95	208.84	75.41	68.55	9 37 52	4233.3	15.87	201.51
100.00	21 40 38	1910.22	-19.50	19.12	74.86	113.11	22 12 28	1310.2	-16.21	11.88
100.00	9 38 47	4570.47	19.93	189.09	74.98	67.25	10 54 57	3970.5	16.68	181.80
110.00	22 48 35	1697.52	-22.14	1.66	73.55	116.74	23 16 53	1097.5	-18.37	354.56
110.00	10 47 19	4355.93	22.58	171.50	73.69	63.62	11 59 55	3755.9	18.85	164.35

DIFFERENTIAL CORRECTIONS
TDE -.8900 TRA 7.8245 TC-14.0128 BAU 3.2466
RDE .4000 RRA .1456 RC3 .2383 FAU .02916
FDE -.5769 FRA 1.6496 FC3-1.4569 BSP 56668
BDE .9757 BRA 7.8259 BC314.0148 FSP 818

MID-COURSE EXECUTION ACCURACY
SGT15924.5 SGR 618.6 SG3 232.8
RRT -.0843 RRF -.1336 RTF .9225
SGB15936.5 R23 .0559 R13 -.9226
SG115924.6 SG2 616.4 THA 179.81

ORBIT DETERMINATION ACCURACY
ST 3473.1 SR 553.8 SS 618.8
CRT -.2507 CRS .6837 CST -.8764
LSA 3518.6 MSA 609.1 SSA 25.1
EL1 3475.9 EL2 535.7 ALF 177.66

LAUNCH DATE DEC 13 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 906.440 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.364	GAL	-5.32	AZL	88.36	HCA	266.10	SMA	192.54	ECC	.25182	INC	1.6396	V1	30.254
RP	207.04	LAP	-1.64	LOP	347.13	VP	24.346	GAP	-13.94	AZP	90.11	TAL	333.08	TAP	239.18	RCA	144.05	APO	241.02	V2	26.453
RC	340.800	GL	12.91	GP	-3.32	ZAL	133.19	ZAP	24.28	ETS	171.15	ZAE	37.52	ETE	175.52	ZAC	86.90	ETC	255.84	CLP	24.06

PLANETOCENTRIC CONIC

C3	18.107	VHL	4.255	DLA	-1.20	RAL	217.59	RAD	6567.7	VEL	11.811	PTH	2.09	VHP	6.939	DPA	-6.40	RAP	189.36	ECC	1.2980

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 31 15	2153.69	-18.05	37.66	77.03	112.20	21 7 8	1553.7	-14.88	30.42
90.00	8 15 24	4872.21	19.90	211.30	77.55	69.43	9 36 36	4272.2	16.92	203.89
100.00	21 52 2	1893.10	-19.04	18.06	76.58	113.49	22 23 35	1293.1	-15.70	10.86
100.00	9 37 18	4608.03	20.90	191.45	77.14	68.13	10 54 6	4008.0	17.75	184.08
110.00	22 58 59	1683.49	-21.71	.80	75.24	117.08	23 27 3	1083.5	-17.90	353.74
110.00	10 46 49	4390.41	23.60	173.66	75.86	64.52	12 0 0	3790.4	19.98	166.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.0258	TRA	8.1796	TC	-13.5469	BAU	3.2798	SGT	16005.7	SGR	621.3	SG3	215.4	ST	3598.6	SR	559.5	SS	603.3		
RDE	.4134	RRA	.1385	RC3	.2391	FAU	.02537	RRT	-.1066	RRF	-.1579	RTF	.9138	CRT	-.2911	CRS	.7042	CST	-.8828		
FDE	-.5765	FRA	1.5832	FC3	-1.2130	BSP	56921	SGB	16017.7	R23	.0606	R13	-.9138	LSA	3642.0	MSA	601.5	SSA	24.4		
BDE	1.1060	BRA	8.1808	BC	313.5490	FSP	757	SG1	16005.8	SG2	617.8	THA	179.76	EL1	3602.3	EL2	534.7	ALF	177.35		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 6 1966

HELIOCENTRIC CONIC DISTANCE 910.664 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.372	GAL	-5.58	AZL	88.38	HCA	267.37	SMA	192.69	ECC	.25398	INC	1.6181	V1	30.254
RP	207.13	LAP	-1.62	LOP	348.39	VP	24.347	GAP	-14.09	AZP	90.07	TAL	331.93	TAP	239.29	RCA	143.75	APO	241.63	V2	26.444
RC	341.558	GL	12.44	GP	-3.27	ZAL	134.71	ZAP	23.94	ETS	171.13	ZAE	36.88	ETE	175.49	ZAC	87.16	ETC	255.83	CLP	23.73

PLANETOCENTRIC CONIC

C3	18.943	VHL	4.352	DLA	-2.11	RAL	218.81	RAD	6567.8	VEL	11.846	PTH	2.10	VHP	7.038	DPA	-6.74	RAP	190.23	ECC	1.3118

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 42 50	2136.26	-17.59	36.58	78.78	112.55	21 18 26	1536.3	-14.39	29.38
90.00	8 13 35	4910.82	20.80	213.77	79.73	70.34	9 35 25	4310.8	17.93	206.27
100.00	22 3 12	1877.03	-18.60	17.07	78.32	113.83	22 34 29	1277.0	-15.23	9.90
100.00	9 35 54	4645.20	21.83	193.83	79.32	69.06	10 53 19	4045.3	18.79	186.36
110.00	23 9 11	1670.44	-21.30	.01	76.95	117.39	23 37 2	1070.4	-17.46	352.99
110.00	10 46 24	4424.64	24.59	175.83	78.07	65.47	12 0 8	3824.6	21.07	168.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.1612	TRA	8.5444	TC	-13.0851	BAU	3.3143	SGT	16086.2	SGR	624.1	SG3	198.6	ST	3722.3	SR	565.1	SS	585.5		
RDE	.4274	RRA	.1308	RC3	.2387	FAU	.02167	RRT	-.1282	RRF	-.1813	RTF	.9034	CRT	-.3269	CRS	.7235	CST	-.8875		
FDE	-.5730	FRA	1.5129	FC3	-.9903	BSP	57147	SGB	16098.3	R23	.0658	R13	-.9034	LSA	3763.5	MSA	594.4	SSA	23.7		
BDE	1.2373	BRA	8.5454	BC	313.0873	FSP	699	SG1	16086.4	SG2	618.9	THA	179.71	EL1	3727.0	EL2	533.4	ALF	177.10		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 8 1966

HELIOCENTRIC CONIC DISTANCE 914.873 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.381	GAL	-5.84	AZL	88.40	HCA	268.63	SMA	192.85	ECC	.25622	INC	1.5966	V1	30.254
RP	207.22	LAP	-1.60	LOP	349.66	VP	24.346	GAP	-14.23	AZP	90.04	TAL	330.77	TAP	239.40	RCA	143.44	APO	242.26	V2	26.433
RC	342.314	GL	11.99	GP	-3.22	ZAL	136.19	ZAP	23.61	ETS	171.12	ZAE	36.24	ETE	175.46	ZAC	87.41	ETC	255.83	CLP	23.41

PLANETOCENTRIC CONIC

C3	19.840	VHL	4.454	DLA	-2.98	RAL	220.02	RAD	6567.8	VEL	11.884	PTH	2.11	VHP	7.138	DPA	-7.08	RAP	191.11	ECC	1.3265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 54 11	2119.90	-17.16	35.57	80.55	112.87	21 29 31	1519.9	-13.92	28.40
90.00	8 11 51	4949.08	21.66	216.25	81.94	71.30	9 34 20	4349.1	18.90	208.66
100.00	22 14 8	1862.00	-18.19	16.14	80.08	114.14	22 45 10	1262.0	-14.77	9.01
100.00	9 34 35	4682.21	22.71	196.22	81.54	70.02	10 52 37	4082.2	19.78	188.65
110.00	23 19 11	1658.36	-20.92	359.28	78.67	117.67	23 46 50	1058.4	-17.05	352.29
110.00	10 46 1	4458.61	25.53	178.02	80.30	66.46	12 0 20	3858.6	22.12	170.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.2950	TRA	8.9179	TC	-12.6273	BAU	3.3499	SGT	16163.6	SGR	626.9	SG3	182.4	ST	3842.4	SR	570.5	SS	565.6		
RDE	.4419	RRA	.1228	RC3	.2375	FAU	.01803	RRT	-.1491	RRF	-.2038	RTF	.8905	CRT	-.3584	CRS	.7421	CST	-.8903		
FDE	-.5668	FRA	1.4384	FC3	-.7866	BSP	57367	SGB	16175.8	R23	.0717	R13	-.8905	LSA	3881.2	MSA	587.9	SSA	23.1		
BDE	1.3683	BRA	8.9187	BC	312.6296	FSP	641	SG1	16163.9	SG2	619.8	THA	179.67	EL1	3848.0	EL2	531.8	ALF	176.89		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 10 1966

HELIOCENTRIC CONIC DISTANCE 919.065 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.389	GAL	-6.11	AZL	88.42	HCA	269.89	SMA	193.01	ECC	.25857	INC	1.5752	V1	30.254
RP	207.32	LAP	-1.58	LOP	350.92	VP	24.345	GAP	-14.38	AZP	90.00	TAL	329.60	TAP	239.49	RCA	143.10	APO	242.91	V2	26.421
RC	343.066	GL	11.54	GP	-3.17	ZAL	137.65	ZAP	23.29	ETS	171.10	ZAE	35.61	ETE	175.43	ZAC	87.67	ETC	255.82	CLP	23.09

PLANETOCENTRIC CONIC

C3	20.801	VHL	4.561	DLA	-3.84	RAL	221.21	RAD	6567.8	VEL	11.924	PTH	2.12	VHP	7.241	DPA	-7.43	RAP	191.99	ECC	1.3423

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 5 19	2104.58	-16.76	34.63	82.34	113.17	21 40 24	1504.6	-13.48	27.49
90.00	8 10 12	4986.98	22.46	218.73	84.17	72.29	9 33 19	4387.0	19.83	211.05
100.00	22 24 52	1847.98	-17.79	15.29	81.86	114.42	22 55 40	1248.0	-14.35	8.19
100.00	9 33 21	4718.81	23.54	198.63	83.78	71.03	10 52 0	4118.8	20.73	190.95
110.00	23 28 59	1647.23	-20.57	358.61	80.41	117.93	23 56 26	1047.2	-16.67	351.65
110.00	10 45 43	4492.32	26.43	180.22	82.58	67.49	12 0 35	3892.3	23.14	172.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.4275	TRA	9.3002	TC	-12.1763	BAU	3.3867	SGT	16238.7	SGR	629.6	SG3	166.7	ST	3958.3	SR	575.7	SS	543.7		
RDE	.4570	RRA	.1143	RC3	.2355	FAU	.01446	RRT	-.1692	RRF	-.2256	RTF	.8745	CRT	-.3862	CRS	.7601	CST	-.8914		
FDE	-.5579	FRA	1.3594	FC3	-.6020	BSP	57552	SGB	16250.9	R23	.0785	R13	-.8745	LSA	3994.5	MSA	581.9	SSA	22.5		
BDE	1.4989	BRA	9.3009	BC	312.1786	FSP	584	SG1	16239.1	SG2	620.5	THA	179.62	EL1	3964.7	EL2	530.2	ALF	176.73		

LAUNCH DATE DEC 13 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 12 1966

HELIOCENTRIC CONIC DISTANCE 923.240 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.397 GAL -6.38 AZL 88.45 HCA 271.15 SMA 193.17 ECC .26101 INC 1.5537 V1 30.254
RP 207.43 LAP -1.55 LOP 352.18 VP 24.343 GAP -14.54 AZP 89.97 TAL 328.42 TAP 239.57 RCA 142.75 APO 243.59 V2 26.408
RC 343.815 GL 11.11 GP -3.12 ZAL 139.08 ZAP 22.98 ETS 171.08 ZAE 34.99 ETE 175.39 ZAC 87.92 ETC 255.82 CLP 22.78

PLANETOCENTRIC CONIC

C3 21.829 VHL 4.672 DLA -4.67 RAL 222.38 RAD 6567.9 VEL 11.967 PTH 2.13 VHP 7.346 DPA -7.78 RAP 192.89 ECC 1.3593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 16 13	2090.27	-16.37	33.76	84.14	113.43	21 51 4	1490.3	-13.06	26.65
90.00	8 8 39	5024.52	23.22	221.23	86.43	73.32	9 32 23	4424.5	20.71	213.45
100.00	22 35 22	1834.95	-17.43	14.49	83.64	114.68	23 5 57	1234.9	-13.95	7.42
100.00	9 32 11	4755.07	24.32	201.04	86.05	72.06	10 51 26	4155.1	21.64	193.26
110.00	23 38 35	1637.04	-20.24	358.00	82.17	118.15	24 5 52	1037.0	-16.32	351.07
110.00	10 45 28	4525.74	27.28	182.45	84.88	68.55	12 0 53	3925.7	24.12	174.71

DIFFERENTIAL CORRECTIONS
TDE-1.5601 TRA 9.6916 TC-11.7351 BAU 3.4254
RDE .4724 RRA .1053 RC3 .2327 FAU .01097
FDE -.5468 FRA 1.2765 FC3 -.4349 BSP 57684
BDE 1.6301 BRA 9.6922 BC311.7374 FSP 527

MID-COURSE EXECUTION ACCURACY
SGT16312.6 SGR 632.3 SG3 151.7
RRT -.1888 RRF -.2462 RTF .8545
SGB16324.8 R23 .0862 R13 -.8545
SG116313.0 SG2 620.9 THA 179.58

ORBIT DETERMINATION ACCURACY
ST 4070.2 SR 580.7 SS 520.2
CRT -.4110 CRS .7779 CST -.8910
LSA 4103.8 MSA 576.3 SSA 22.0
EL1 4077.3 EL2 528.5 ALF 176.59

LAUNCH DATE DEC 13 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 14 1966

HELIOCENTRIC CONIC DISTANCE 927.395 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.406 GAL -6.66 AZL 88.47 HCA 272.41 SMA 193.33 ECC .26356 INC 1.5323 V1 30.254
RP 207.54 LAP -1.53 LOP 353.44 VP 24.340 GAP -14.70 AZP 89.94 TAL 327.23 TAP 239.64 RCA 142.37 APO 244.28 V2 26.395
RC 344.561 GL 10.68 GP -3.08 ZAL 140.48 ZAP 22.68 ETS 171.07 ZAE 34.37 ETE 175.35 ZAC 88.18 ETC 255.82 CLP 22.48

PLANETOCENTRIC CONIC

C3 22.929 VHL 4.788 DLA -5.47 RAL 223.54 RAD 6567.9 VEL 12.013 PTH 2.14 VHP 7.452 DPA -8.13 RAP 193.79 ECC 1.3774

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 26 55	2076.94	-16.01	32.95	85.95	113.67	22 1 31	1476.9	-12.67	25.86
90.00	8 7 10	5061.69	23.92	223.72	88.71	74.38	9 31 32	4461.7	21.55	215.86
100.00	22 45 40	1822.88	-17.08	13.76	85.44	114.91	23 16 3	1222.9	-13.58	6.72
100.00	9 31 6	4790.98	25.05	203.45	88.35	73.14	10 50 57	4191.0	22.51	195.58
110.00	23 47 59	1627.76	-19.94	357.44	83.93	118.36	24 15 7	1027.8	-16.00	350.54
110.00	10 45 16	4558.87	28.08	184.69	87.21	69.66	12 1 15	3958.9	25.06	176.83

DIFFERENTIAL CORRECTIONS
TDE-1.6891 TRA10.0937 TC-11.3010 BAU 3.4649
RDE .4884 RRA .0960 RC3 .2294 FAU .00752
FDE -.5331 FRA 1.1892 FC3 -.2841 BSP 57833
BDE 1.7583 BRA10.0942 BC311.3033 FSP 472

MID-COURSE EXECUTION ACCURACY
SGT16383.7 SGR 634.9 SG3 137.3
RRT -.2076 RRF -.2653 RTF .8289
SGB16396.0 R23 .0951 R13 -.8290
SG116384.2 SG2 621.0 THA 179.54

ORBIT DETERMINATION ACCURACY
ST 4176.0 SR 585.4 SS 494.9
CRT -.4325 CRS .7955 CST -.8887
LSA 4207.1 MSA 571.4 SSA 21.5
EL1 4183.8 EL2 526.9 ALF 176.47

LAUNCH DATE DEC 13 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 16 1966

HELIOCENTRIC CONIC DISTANCE 931.530 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.414 GAL -6.95 AZL 88.49 HCA 273.67 SMA 193.49 ECC .26621 INC 1.5109 V1 30.254
RP 207.67 LAP -1.51 LOP 354.70 VP 24.336 GAP -14.87 AZP 89.90 TAL 326.03 TAP 239.70 RCA 141.98 APO 245.00 V2 26.380
RC 345.302 GL 10.26 GP -3.03 ZAL 141.85 ZAP 22.39 ETS 171.05 ZAE 33.77 ETE 175.31 ZAC 88.43 ETC 255.83 CLP 22.19

PLANETOCENTRIC CONIC

C3 24.104 VHL 4.910 DLA -6.25 RAL 224.67 RAD 6568.0 VEL 12.062 PTH 2.16 VHP 7.561 DPA -8.49 RAP 194.70 ECC 1.3967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 37 23	2064.57	-15.67	32.20	87.77	113.89	22 11 47	1464.6	-12.31	25.14
90.00	8 5 46	5098.48	24.57	226.22	91.01	75.47	9 30 44	4498.5	22.34	218.27
100.00	22 55 45	1811.75	-16.76	13.09	87.25	115.12	23 25 57	1211.7	-13.24	6.07
100.00	9 30 4	4826.54	25.73	205.88	90.66	74.24	10 50 31	4226.5	23.32	197.91
110.00	0 1 8	1619.36	-19.67	356.94	85.71	118.54	0 28 7	1019.4	-15.70	350.07
110.00	10 45 7	4591.70	28.84	186.95	89.56	70.80	12 1 39	3991.7	25.95	178.96

DIFFERENTIAL CORRECTIONS
TDE-1.8179 TRA10.5052 TC-10.8781 BAU 3.5063
RDE .5048 RRA .0861 RC3 .2255 FAU .00415
FDE -.5170 FRA 1.0976 FC3 -.1490 BSP 57944
BDE 1.8866 BRA10.5055 BC310.8804 FSP 419

MID-COURSE EXECUTION ACCURACY
SGT16452.8 SGR 637.4 SG3 123.6
RRT -.2258 RRF -.2825 RTF .7961
SGB16465.2 R23 .1052 R13 -.7961
SG116453.5 SG2 620.9 THA 179.50

ORBIT DETERMINATION ACCURACY
ST 4277.0 SR 589.9 SS 468.1
CRT -.4517 CRS .8132 CST -.8848
LSA 4305.6 MSA 566.8 SSA 21.0
EL1 4285.4 EL2 525.3 ALF 176.38

LAUNCH DATE DEC 13 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 18 1966

HELIOCENTRIC CONIC DISTANCE 935.643 EARTH TO MARS

RL 147.26 LAL .00 LOL 81.03 VL 33.423 GAL -7.24 AZL 88.51 HCA 274.92 SMA 193.65 ECC .26898 INC 1.4895 V1 30.254
RP 207.80 LAP -1.48 LOP 355.95 VP 24.330 GAP -15.04 AZP 89.87 TAL 324.82 TAP 239.74 RCA 141.56 APO 245.73 V2 26.364
RC 346.039 GL 9.85 GP -2.99 ZAL 143.19 ZAP 22.11 ETS 171.03 ZAE 33.17 ETE 175.27 ZAC 88.68 ETC 255.84 CLP 21.91

PLANETOCENTRIC CONIC

C3 25.360 VHL 5.036 DLA -7.01 RAL 225.79 RAD 6568.0 VEL 12.113 PTH 2.17 VHP 7.672 DPA -8.85 RAP 195.62 ECC 1.4174

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 39	2053.13	-15.35	31.51	89.61	114.09	22 21 52	1453.1	-11.97	24.47
90.00	8 4 26	5134.90	25.17	228.72	93.33	76.59	9 30 1	4534.9	23.08	220.68
100.00	23 5 38	1801.52	-16.46	12.48	89.08	115.31	23 35 40	1201.5	-12.92	5.48
100.00	9 29 7	4861.74	26.36	208.30	93.00	75.37	10 50 9	4261.7	24.09	200.24
110.00	0 10 10	1611.83	-19.42	356.50	87.49	118.70	0 37 1	1011.8	-15.44	349.64
110.00	10 45 1	4624.21	29.55	189.21	91.94	71.97	12 2 5	4024.2	26.80	181.10

DIFFERENTIAL CORRECTIONS
TDE-1.9439 TRA10.9271 TC-10.4665 BAU 3.5493
RDE .5216 RRA .0758 RC3 .2211 FAU .00082
FDE -.4989 FRA 1.0018 FC3 -.0280 BSP 58036
BDE 2.0126 BRA10.9273 BC310.4688 FSP 366

MID-COURSE EXECUTION ACCURACY
SGT16520.1 SGR 639.8 SG3 110.7
RRT -.2433 RRF -.2968 RTF .7529
SGB16532.4 R23 .1169 R13 -.7529
SG116520.8 SG2 620.6 THA 179.46

ORBIT DETERMINATION ACCURACY
ST 4371.8 SR 594.1 SS 440.1
CRT -.4685 CRS .8312 CST -.8785
LSA 4398.0 MSA 562.6 SSA 20.5
EL1 4380.7 EL2 523.8 ALF 176.30

LAUNCH DATE DEC 13 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 20 1966

HELIOCENTRIC CONIC DISTANCE 939.733 EARTH TO MARS

RL	147.26	LAL	.00	LOL	81.03	VL	33.431	GAL	-7.54	AZL	88.53	HCA	276.18	SMA	193.81	ECC	.27187	INC	1.4680	V1	30.254
RP	207.94	LAP	-1.46	LOP	357.21	VP	24.324	GAP	-15.22	AZP	89.84	TAL	323.59	TAP	239.77	RCA	141.12	APO	246.50	V2	26.348
RC	346.771	GL	9.46	GP	-2.95	ZAL	144.50	ZAP	21.83	ETS	171.01	ZAE	32.59	ETE	175.22	ZAC	88.94	ETC	255.86	CLP	21.64

PLANETOCENTRIC CONIC

C3	26.699	VHL	5.167	DLA	-7.74	RAL	226.89	RAD	6568.1	VEL	12.169	PTH	2.18	VHP	7.785	DPA	-9.21	RAP	196.54	ECC	1.4394

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 42	2042.57	-15.06	30.87	91.45	114.27	22 31 45	1442.6	-11.66	23.85
90.00	8 3 10	5170.94	25.72	231.22	95.66	77.72	9 29 21	4570.9	23.77	223.09
100.00	23 15 20	1792.16	-16.19	11.92	90.90	115.48	23 45 12	1192.2	-12.63	4.94
100.00	9 28 14	4896.57	26.94	210.73	95.35	76.52	10 49 50	4296.6	24.82	202.57
110.00	0 19 0	1605.10	-19.20	356.10	89.28	118.84	0 45 45	1005.1	-15.21	349.26
110.00	10 44 59	4656.39	30.20	191.49	94.34	73.17	12 2 35	4056.4	27.60	183.26

DIFFERENTIAL CORRECTIONS

TDE	-2.0695	TRA	11.3581	TC	-10.0671	BAU	3.5942
RDE	.5388	RRA	.0651	RC3	.2164	FAU	-.00246
FDE	-.4789	FRA	.9017	FC3	.0799	BSP	58065
BDE	2.1385	BRA	11.3583	BC3	10.0694	FSP	315

MID-COURSE EXECUTION ACCURACY

SGT	16584.5	SGR	642.1	SG3	98.8		
RRT	-.2602	RRF	-.3069	RTF	.6954		
SGB	16597.0	R23	.1302	R13	-.6954		
SG1	16585.4	SG2	620.0	THA	179.42		

ORBIT DETERMINATION ACCURACY

ST	4461.2	SR	597.9	SS	411.1		
CRT	-.4835	CRS	.8500	CST	-.8698		
LSA	4485.2	MSA	558.7	SSA	20.1		
EL1	4470.7	EL2	522.3	ALF	176.24		

LAUNCH DATE DEC 14 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 361.039 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	35.493	GAL	.63	AZL	88.83	HCA	110.97	SMA	244.46	ECC	.39780	INC	1.1723	V1	30.257
RP	243.99	LAP	1.09	LOP	193.02	VP	23.345	GAP	23.44	AZP	90.42	TAL	2.21	TAP	113.19	RCA	147.21	APO	341.71	V2	22.486
RC	134.631	GL	7.86	GP	2.14	ZAL	83.91	ZAP	174.09	ETS	157.46	ZAE	152.15	ETE	2.14	ZAC	91.42	ETC	255.95	CLP	174.49

PLANETOCENTRIC CONIC

C3	28.162	VHL	5.307	DLA	12.80	RAL	170.14	RAD	6568.1	VEL	12.229	PTH	2.20	VHP	10.724	DPA	.10	RAP	188.28	ECC	1.4635

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 38	2707.01	-27.69	75.07	42.12	96.16	16 14 45	2107.0	-26.55	66.59
90.00	6 50 34	4533.03	10.57	190.78	35.34	63.58	8 6 7	3933.0	6.94	183.99
100.00	16 57 36	2423.34	-29.05	54.02	41.94	97.37	17 37 59	1823.3	-27.73	45.47
100.00	8 5 18	4291.94	11.79	172.42	34.71	62.33	9 16 50	3691.9	7.99	165.69
110.00	18 20 45	2163.16	-32.66	33.59	41.27	100.72	18 56 48	1563.2	-30.83	24.85
110.00	8 58 38	4124.88	14.97	157.91	32.87	58.90	10 7 23	3524.9	10.74	151.36

DIFFERENTIAL CORRECTIONS

TDE	.3763	TRA	-1.1705	TC3	1.1016	BAU	.4148
RDE	-.5467	RRA	-.2344	RC3	-.0094	FAU	.06032
FDE	.0352	FRA	.3891	FC3	-1.8542	BSP	5705
BDE	.6636	BRA	1.1937	BC3	1.1016	FSP	465

MID-COURSE EXECUTION ACCURACY

SGT	1792.1	SGR	644.8	SG3	174.1		
RRT	.0735	RRF	-.0883	RTF	-.7876		
SGB	1904.6	R23	-.0219	R13	-.7878		
SG1	1792.8	SG2	642.8	THA	1.74		

ORBIT DETERMINATION ACCURACY

ST	563.4	SR	595.3	SS	136.3		
CRT	-.6246	CRS	.3709	CST	.4450		
LSA	739.1	MSA	377.3	SSA	42.7		
EL1	739.1	EL2	354.4	ALF	132.48		

LAUNCH DATE DEC 14 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 363.130 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	35.366	GAL	.78	AZL	88.85	HCA	111.88	SMA	240.46	ECC	.38786	INC	1.1539	V1	30.257
RP	243.75	LAP	1.07	LOP	193.93	VP	23.174	GAP	22.81	AZP	90.43	TAL	2.79	TAP	114.67	RCA	147.20	APO	333.73	V2	22.510
RC	136.814	GL	7.89	GP	2.20	ZAL	82.77	ZAP	173.53	ETS	158.79	ZAE	152.13	ETE	2.40	ZAC	91.56	ETC	255.94	CLP	173.91

PLANETOCENTRIC CONIC

C3	26.928	VHL	5.189	DLA	13.27	RAL	169.07	RAD	6568.1	VEL	12.178	PTH	2.19	VHP	10.459	DPA	.01	RAP	188.61	ECC	1.4432

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 18	2712.07	-27.73	75.43	40.42	95.98	16 6 30	2112.1	-26.61	66.95
90.00	6 50 24	4505.66	9.74	189.20	33.61	63.28	8 5 30	3905.7	6.07	182.44
100.00	16 49 34	2427.41	-29.09	54.32	40.24	97.22	17 30 1	1827.4	-27.78	45.76
100.00	8 4 49	4265.56	10.95	170.91	32.97	62.01	9 15 55	3665.6	7.12	164.22
110.00	18 13 23	2165.15	-32.68	33.74	39.58	100.63	18 49 28	1565.1	-30.87	24.99
110.00	8 57 29	4100.58	14.11	156.55	31.12	58.54	10 5 50	3500.6	9.85	150.05

DIFFERENTIAL CORRECTIONS

TDE	.3554	TRA	-1.1408	TC3	1.1841	BAU	.4263
RDE	-.5336	RRA	-.2268	RC3	-.0057	FAU	.06238
FDE	.0515	FRA	.3722	FC3	-2.0055	BSP	5860
BDE	.6411	BRA	1.1631	BC3	1.1841	FSP	495

MID-COURSE EXECUTION ACCURACY

SGT	1827.3	SGR	642.9	SG3	183.6		
RRT	.0805	RRF	-.0951	RTF	-.7939		
SGB	1937.1	R23	-.0223	R13	-.7942		
SG1	1828.1	SG2	640.5	THA	1.85		

ORBIT DETERMINATION ACCURACY

ST	553.3	SR	594.2	SS	137.6		
CRT	-.6122	CRS	.4784	CST	.3462		
LSA	729.7	MSA	379.0	SSA	44.4		
EL1	729.5	EL2	356.3	ALF	131.67		

LAUNCH DATE DEC 14 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 365.356 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	35.244	GAL	.92	AZL	88.86	HCA	112.80	SMA	236.78	ECC	.37843	INC	1.1352	V1	30.257
RP	243.50	LAP	1.05	LOP	194.85	VP	23.012	GAP	22.18	AZP	90.44	TAL	3.37	TAP	116.16	RCA	147.18	APO	326.39	V2	22.535
RC	139.022	GL	7.90	GP	2.27	ZAL	81.61	ZAP	172.96	ETS	159.90	ZAE	152.14	ETE	2.67	ZAC	91.69	ETC	255.93	CLP	173.33

PLANETOCENTRIC CONIC

C3	25.795	VHL	5.079	DLA	13.74	RAL	167.98	RAD	6568.0	VEL	12.131	PTH	2.17	VHP	10.201	DPA	-.07	RAP	188.94	ECC	1.4245

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 12 51	2717.63	-27.77	75.84	38.73	95.78	15 58 9	2117.6	-26.68	67.34
90.00	6 50 9	4478.81	8.91	187.66	31.89	63.01	8 4 48	3878.8	5.22	180.93
100.00	16 41 26	2431.96	-29.12	54.65	38.55	97.05	17 21 58	1832.0	-27.84	46.08
100.00	8 4 15	4239.71	10.12	169.44	31.25	61.72	9 14 55	3639.7	6.26	162.78
110.00	18 5 55	2167.59	-32.71	33.93	37.91	100.52	18 42 3	1567.6	-30.91	25.17
110.00	8 56 15	4076.85	13.26	155.23	29.40	58.20	10 4 12	3476.8	8.96	148.77

DIFFERENTIAL CORRECTIONS

TDE	.3349	TRA	-1.1100	TC3	1.2697	BAU	.4379
RDE	-.5212	RRA	-.2194	RC3	-.0013	FAU	.06457
FDE	.0691	FRA	.3538	FC3	-2.1670	BSP	6025
BDE	.6195	BRA	1.1315	BC3	1.2697	FSP	526

MID-COURSE EXECUTION ACCURACY

SGT	1862.3	SGR	640.8	SG3	193.6		
RRT	.0877	RRF	-.1028	RTF	-.8003		
SGB	1969.5	R23	-.0234	R13	-.8006		
SG1	1863.3	SG2	638.0	THA	1.96		

ORBIT DETERMINATION ACCURACY

ST	542.0	SR	592.9	SS	141.1
CRT	-.5992	CRS	.5823	CST	.2391
LSA	720.2	MSA	380.1	SSA	46.2
EL1	719.3	EL2	357.7	ALF	130.74

LAUNCH DATE DEC 14 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 367.702 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	35.128	GAL	1.07	AZL	88.88	HCA	113.71	SMA	233.38	ECC	.36948	INC	1.1163	V1	30.257
RP	243.25	LAP	1.02	LOP	195.76	VP	22.859	GAP	21.55	AZP	90.45	TAL	3.95	TAP	117.67	RCA	147.15	APO	319.61	V2	22.560
RC	141.251	GL	7.90	GP	2.34	ZAL	80.44	ZAP	172.38	ETS	160.85	ZAE	152.20	ETE	2.95	ZAC	91.83	ETC	255.92	CLP	172.74

PLANETOCENTRIC CONIC

C3	24.757	VHL	4.976	DLA	14.20	RAL	166.87	RAD	6568.0	VEL	12.089	PTH	2.16	VHP	9.950	DPA	-.14	RAP	189.26	ECC	1.4074

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 4 20	2723.63	-27.81	76.27	37.05	95.57	15 49 44	2123.6	-26.75	67.76
90.00	6 49 49	4452.54	8.10	186.16	30.20	62.77	8 4 2	3852.5	4.38	179.45
100.00	16 33 14	2436.93	-29.17	55.01	36.88	96.86	17 13 51	1836.9	-27.91	46.44
100.00	8 3 36	4214.47	9.30	168.02	29.55	61.46	9 13 51	3614.5	5.42	161.38
110.00	17 58 24	2170.44	-32.75	34.14	36.25	100.40	18 34 34	1570.4	-30.97	25.38
110.00	8 54 56	4053.73	12.43	153.96	27.69	57.90	10 2 29	3453.7	8.10	147.54

DIFFERENTIAL CORRECTIONS

TDE	.3149	TRA	-1.0780	TC3	1.3581	BAU	.4495
RDE	-.5094	RRA	-.2122	RC3	.0037	FAU	.06687
FDE	.0877	FRA	.3325	FC3	-2.3383	BSP	6156
BDE	.5989	BRA	1.0987	BC3	1.3581	FSP	559

MID-COURSE EXECUTION ACCURACY

SGT	1896.8	SGR	638.5	SG3	204.1		
RRT	.0949	RRF	-.1109	RTF	-.8065		
SGB	2001.4	R23	-.0248	R13	-.8069		
SG1	1897.9	SG2	635.2	THA	2.06		

ORBIT DETERMINATION ACCURACY

ST	529.8	SR	591.5	SS	146.6
CRT	-.5861	CRS	.6757	CST	.1300
LSA	710.8	MSA	380.1	SSA	48.1
EL1	708.6	EL2	358.3	ALF	129.67

LAUNCH DATE DEC 14 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 370.159 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	35.017	GAL	1.21	AZL	88.90	HCA	114.63	SMA	230.24	ECC	.36099	INC	1.0970	V1	30.257
RP	243.00	LAP	1.00	LOP	196.68	VP	22.713	GAP	20.93	AZP	90.46	TAL	4.55	TAP	119.18	RCA	147.12	APO	313.35	V2	22.585
RC	143.499	GL	7.90	GP	2.41	ZAL	79.26	ZAP	171.79	ETS	161.66	ZAE	152.30	ETE	3.24	ZAC	91.97	ETC	255.91	CLP	172.14

PLANETOCENTRIC CONIC

C3	23.805	VHL	4.879	DLA	14.66	RAL	165.75	RAD	6568.0	VEL	12.049	PTH	2.15	VHP	9.706	DPA	-.21	RAP	189.58	ECC	1.3918

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 55 45	2730.01	-27.85	76.73	35.39	95.34	15 41 15	2130.0	-26.82	68.22
90.00	6 49 24	4426.91	7.30	184.71	28.53	62.56	8 3 11	3826.9	3.56	178.02
100.00	16 24 59	2442.28	-29.21	55.41	35.23	96.66	17 5 41	1842.3	-27.98	46.82
100.00	8 2 52	4189.88	8.50	166.63	27.88	61.23	9 12 42	3589.9	4.60	160.02
110.00	17 50 50	2173.65	-32.79	34.39	34.61	100.26	18 27 3	1573.6	-31.02	25.61
110.00	8 53 30	4031.27	11.62	152.73	26.01	57.62	10 0 42	3431.3	7.26	146.35

DIFFERENTIAL CORRECTIONS

TDE	.2940	TRA	-1.0469	TC3	1.4478	BAU	.4608
RDE	-.4983	RRA	-.2050	RC3	.0094	FAU	.06928
FDE	.1072	FRA	.3098	FC3	-2.5196	BSP	6301
BDE	.5786	BRA	1.0668	BC3	1.4478	FSP	595

MID-COURSE EXECUTION ACCURACY

SGT	1931.3	SGR	636.0	SG3	215.2		
RRT	.1036	RRF	-.1199	RTF	-.8125		
SGB	2033.3	R23	-.0257	R13	-.8129		
SG1	1932.6	SG2	632.1	THA	2.19		

ORBIT DETERMINATION ACCURACY

ST	516.0	SR	589.9	SS	154.7
CRT	-.5700	CRS	.7549	CST	.0279
LSA	701.0	MSA	379.9	SSA	50.2
EL1	696.7	EL2	359.0	ALF	128.38

LAUNCH DATE DEC 14 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 372.715 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	34.912	GAL	1.34	AZL	88.92	HCA	115.55	SMA	227.32	ECC	.35294	INC	1.0775	V1	30.257
RP	242.74	LAP	.97	LOP	197.60	VP	22.576	GAP	20.31	AZP	90.46	TAL	5.14	TAP	120.69	RCA	147.09	APO	307.55	V2	22.611
RC	145.763	GL	7.88	GP	2.48	ZAL	78.07	ZAP	171.18	ETS	162.36	ZAE	152.44	ETE	3.54	ZAC	92.11	ETC	255.90	CLP	171.54

PLANETOCENTRIC CONIC

C3	22.932	VHL	4.789	DLA	15.10	RAL	164.60	RAD	6567.9	VEL	12.013	PTH	2.14	VHP	9.468	DPA	-.27	RAP	189.90	ECC	1.3774

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 47 9	2736.72	-27.89	77.22	33.75	95.10	15 32 46	2136.7	-26.89	68.70
90.00	6 48 54	4401.98	6.51	183.29	26.89	62.38	8 2 16	3802.0	2.76	176.62
100.00	16 16 42	2447.94	-29.25	55.82	33.59	96.45	16 57 30	1847.9	-28.05	47.22
100.00	8 2 2	4166.00	7.72	165.29	26.24	61.03	9 11 28	3566.0	3.79	158.70
110.00	17 43 14	2177.16	-32.83	34.65	32.98	100.11	18 19 31	1577.2	-31.09	25.86
110.00	8 51 59	4009.54	10.82	151.55	24.36	57.38	9 58 49	3409.5	6.44	145.19

DIFFERENTIAL CORRECTIONS

TDE	.2743	TRA	-1.0148	TC3	1.5391	BAU	.4719
RDE	-.4878	RRA	-.1980	RC3	.0159	FAU	.07181
FDE	.1277	FRA	.2844	FC3	-2.7109	BSP	6434
BDE	.5596	BRA	1.0339	BC3	1.5391	FSP	632

MID-COURSE EXECUTION ACCURACY

SGT	1965.2	SGR	633.3	SG3	226.8		
RRT	.1121	RRF	-.1294	RTF	-.8182		
SGB	2064.7	R23	-.0274	R13	-.8186		
SG1	1966.6	SG2	628.8	THA	2.30		

ORBIT DETERMINATION ACCURACY

ST	502.0	SR	588.2	SS	164.8
CRT	-.5545	CRS	.8184	CST	-.0674
LSA	692.3	MSA	378.3	SSA	52.3
EL1	685.1	EL2	358.7	ALF	126.99

LAUNCH DATE DEC 14 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 375.363 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	34.811	GAL	1.47	AZL	88.94	HCA	116.47	SMA	224.61	ECC	.34530	INC	1.0575
RP	242.47	LAP	.95	LOP	198.52	VP	22.446	GAP	19.70	AZP	90.47	TAL	5.75	TAP	122.22	RCA	147.06	APO	302.17
RC	148.041	GL	7.85	GP	2.56	ZAL	76.87	ZAP	170.57	ETS	162.97	ZAE	152.62	ETE	3.86	ZAC	92.25	ETC	255.89

V1	30.257	V2	22.638	CLP	170.92														

PLANETOCENTRIC CONIC

C3	22.134	VHL	4.705	DLA	15.53	RAL	163.45	RAD	6567.9	VEL	11.980	PTH	2.14	VHP	9.237	DPA	-.32	RAP	190.20
ECC	1.3643																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 38 33	2743.68	-27.93	77.72	32.12	94.85	15 24 16	2143.7	-26.97	69.19
90.00	6 48 18	4377.81	5.75	181.93	25.27	62.22	8 1 15	3777.8	1.98	175.27
100.00	16 8 25	2453.84	-29.30	56.25	31.97	96.22	16 49 19	1853.8	-28.13	47.65
100.00	8 1 6	4142.88	6.95	164.00	24.61	60.85	9 10 9	3542.9	3.01	157.43
110.00	17 35 39	2180.92	-32.87	34.94	31.38	99.95	18 11 59	1580.9	-31.15	26.14
110.00	8 50 22	3988.56	10.05	150.42	22.73	57.15	9 56 51	3388.6	5.65	144.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2554	TRA	-.9815	TC3	1.6325	BAU	.4831	SGT	1998.9	SGR	630.4	SG3	239.0	ST	487.2	SR	586.4	SS	176.6
RDE	-.4778	RRA	-.1911	RC3	.0231	FAU	.07449	RRT	.1207	RRF	-.1394	RTF	-.8239	CRT	-.5389	CRS	.8668	CST	-.1526
FDE	.1487	FRA	.2557	FC3	-2.9135	BSP	6573	SGB	2095.9	R23	-.0294	R13	-.8243	LSA	684.5	MSA	375.3	SSA	54.7
BDE	.5418	BRA	.9999	BC3	1.6327	FSP	672	SG1	2000.5	SG2	625.3	THA	2.42	EL1	673.4	EL2	357.4	ALF	125.46

LAUNCH DATE DEC 14 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 378.093 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	34.714	GAL	1.60	AZL	88.96	HCA	117.39	SMA	222.10	ECC	.33805	INC	1.0372
RP	242.20	LAP	.92	LOP	199.44	VP	22.324	GAP	19.09	AZP	90.48	TAL	6.35	TAP	123.75	RCA	147.02	APO	297.18
RC	150.330	GL	7.80	GP	2.64	ZAL	75.68	ZAP	169.94	ETS	163.50	ZAE	152.85	ETE	4.20	ZAC	92.40	ETC	255.88

V1	30.257	V2	22.664	CLP	170.29														

PLANETOCENTRIC CONIC

C3	21.403	VHL	4.626	DLA	15.95	RAL	162.28	RAD	6567.9	VEL	11.949	PTH	2.13	VHP	9.012	DPA	-.37	RAP	190.51
ECC	1.3522																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 29 58	2750.83	-27.97	78.24	30.52	94.59	15 15 48	2150.8	-27.04	69.70
90.00	6 47 35	4354.45	5.00	180.62	23.68	62.09	8 0 9	3754.4	1.23	173.97
100.00	16 0 10	2459.93	-29.34	56.70	30.38	95.99	16 41 10	1859.9	-28.20	48.08
100.00	8 0 4	4120.57	6.21	162.76	23.02	60.70	9 8 44	3520.6	2.26	156.20
110.00	17 28 4	2184.88	-32.92	35.24	29.80	99.78	18 4 29	1584.9	-31.22	26.42
110.00	8 48 39	3968.39	9.30	149.33	21.13	56.96	9 54 47	3368.4	4.89	143.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2356	TRA	-.9491	TC3	1.7256	BAU	.4938	SGT	2032.0	SGR	627.4	SG3	251.9	ST	471.1	SR	584.4	SS	191.1
RDE	-.4684	RRA	-.1843	RC3	.0313	FAU	.07729	RRT	.1311	RRF	-.1508	RTF	-.8292	CRT	-.5197	CRS	.9028	CST	-.2236
FDE	.1715	FRA	.2255	FC3	-3.1264	BSP	6693	SGB	2126.6	R23	-.0312	R13	-.8297	LSA	677.1	MSA	371.8	SSA	57.1
BDE	.5243	BRA	.9668	BC3	1.7259	FSP	712	SG1	2033.8	SG2	621.5	THA	2.56	EL1	660.9	EL2	355.9	ALF	123.65

LAUNCH DATE DEC 14 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 380.900 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	34.622	GAL	1.73	AZL	88.98	HCA	118.32	SMA	219.75	ECC	.33117	INC	1.0166
RP	241.93	LAP	.89	LOP	200.37	VP	22.209	GAP	18.48	AZP	90.48	TAL	6.96	TAP	125.28	RCA	146.98	APO	292.53
RC	152.629	GL	7.75	GP	2.72	ZAL	74.48	ZAP	169.31	ETS	163.97	ZAE	153.10	ETE	4.55	ZAC	92.54	ETC	255.87

V1	30.257	V2	22.692	CLP	169.66														

PLANETOCENTRIC CONIC

C3	20.735	VHL	4.554	DLA	16.36	RAL	161.11	RAD	6567.8	VEL	11.921	PTH	2.12	VHP	8.792	DPA	-.42	RAP	190.80
ECC	1.3412																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 21 26	2758.09	-28.01	78.77	28.94	94.33	15 7 24	2158.1	-27.12	70.22
90.00	6 46 46	4331.95	4.29	179.35	22.12	61.98	7 58 58	3732.0	.50	172.71
100.00	15 51 57	2466.14	-29.38	57.16	28.80	95.75	16 33 4	1866.1	-28.28	48.53
100.00	7 58 55	4099.13	5.49	161.57	21.45	60.57	9 7 14	3499.1	1.53	155.03
110.00	17 20 33	2188.97	-32.97	35.55	28.24	99.60	17 57 2	1589.0	-31.29	26.72
110.00	8 46 49	3949.06	8.58	148.30	19.56	56.78	9 52 38	3349.1	4.15	142.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2160	TRA	-.9160	TC3	1.8200	BAU	.5046	SGT	2065.0	SGR	624.3	SG3	265.5	ST	454.1	SR	582.4	SS	207.3
RDE	-.4595	RRA	-.1775	RC3	.0403	FAU	.08027	RRT	.1422	RRF	-.1630	RTF	-.8344	CRT	-.4989	CRS	.9279	CST	-.2831
FDE	.1953	FRA	.1916	FC3	-3.3515	BSP	6834	SGB	2157.3	R23	-.0330	R13	-.8350	LSA	670.9	MSA	367.0	SSA	59.8
BDE	.5078	BRA	.9331	BC3	1.8204	FSP	757	SG1	2067.1	SG2	617.4	THA	2.70	EL1	648.4	EL2	353.5	ALF	121.63

LAUNCH DATE DEC 14 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 383.778 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	34.534	GAL	1.85	AZL	89.00	HCA	119.24	SMA	217.56	ECC	.32465	INC	.9955
RP	241.65	LAP	.87	LOP	201.29	VP	22.100	GAP	17.88	AZP	90.49	TAL	7.58	TAP	126.82	RCA	146.93	APO	288.19
RC	154.936	GL	7.68	GP	2.81	ZAL	73.28	ZAP	168.66	ETS	164.38	ZAE	153.40	ETE	4.93	ZAC	92.69	ETC	255.86

V1	30.257	V2	22.720	CLP	169.01														

PLANETOCENTRIC CONIC

C3	20.125	VHL	4.486	DLA	16.75	RAL	159.93	RAD	6567.8	VEL	11.896	PTH	2.11	VHP	8.578	DPA	-.45	RAP	191.09
ECC	1.3312																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 12 57	2765.43	-28.05	79.30	27.38	94.07	14 59 3	2165.4	-27.19	70.74
90.00	6 45 49	4310.34	3.59	178.14	20.58	61.89	7 57 40	3710.3	-.19	171.51
100.00	15 43 49	2472.43	-29.43	57.62	27.25	95.51	16 25 1	1872.4	-28.35	48.98
100.00	7 57 39	4078.56	4.81	160.43	19.91	60.46	9 5 38	3478.6	.84	153.90
110.00	17 13 4	2193.17	-33.01	35.86	26.70	99.42	17 49 37	1593.2	-31.36	27.03
110.00	8 44 53	3930.59	7.89	147.31	18.01	56.63	9 50 24	3330.6	3.45	141.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2094	TRA	-.8719	TC3	1.9352	BAU	.5208	SGT	2106.8	SGR	621.4	SG3	279.4	ST	442.7	SR	580.3	SS	225.9
RDE	-.4512	RRA	-.1709	RC3	.0500	FAU	.08330	RRT	.1443	RRF	-.1765	RTF	-.8439	CRT	-.5069	CRS	.9445	CST	-.3597
FDE	.2210	FRA	.1572	FC3	-3.5833	BSP	6679	SGB	2196.6	R23	-.0439	R13	-.8446	LSA	673.4	MSA	355.7	SSA	62.3
BDE	.4975	BRA	.8885	BC3	1.9359	FSP	806	SG1	2108.9	SG2	614.3	THA	2.66	EL1	643.8	EL2	344.0	ALF	120.80

LAUNCH DATE DEC 14 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 386.719 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	34.451	GAL	1.97	AZL	89.03	HCA	120.17	SMA	215.52	ECC	.31847	INC	.9740
RP	241.36	LAP	.84	LOP	202.22	VP	21.998	GAP	17.29	AZP	90.49	TAL	8.19	TAP	128.36	RCA	146.88	APO	284.16
RC	157.250	GL	7.60	GP	2.91	ZAL	72.10	ZAP	168.00	ETS	164.74	ZAE	153.73	ETE	5.32	ZAC	92.84	ETC	255.86

V1	30.257	V2	22.748	CLP	168.35														

PLANETOCENTRIC CONIC

C3	19.568	VHL	4.424	DLA	17.12	RAL	158.76	RAD	6567.8	VEL	11.872	PTH	2.11	VHP	8.370	DPA	-.48	RAP	191.38

ECC	1.3220																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 38	2772.67	-28.08	79.83	25.85	93.80	14 50 50	2172.7	-27.26	71.26
90.00	6 44 46	4289.75	2.93	176.99	19.08	61.82	7 56 16	3689.7	-.86	170.36
100.00	15 35 48	2478.64	-29.47	58.08	25.72	95.28	16 17 7	1878.6	-28.42	49.43
100.00	7 56 16	4059.01	4.15	159.35	18.41	60.37	9 3 55	3459.0	.17	152.82
110.00	17 5 43	2197.34	-33.06	36.18	25.19	99.23	17 42 20	1597.3	-31.43	27.33
110.00	8 42 51	3913.07	7.23	146.38	16.50	56.50	9 48 4	3313.1	2.78	140.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1846	TRA	-.8445	TC3	2.0160	BAU	.5276	SGT	2132.6	SGR	618.1	SG3	294.6	ST	421.8	SR	578.0
RDE	-.4432	RRA	-.1642	RC3	.0612	FAU	.08662	RRT	.1622	RRF	-.1904	RTF	-.8461	CRT	-.4687	CRS	.9538
FDE	.2456	FRA	.1164	FC3	-3.8325	BSP	6951	SGB	2220.4	R23	-.0415	R13	-.8468	LSA	666.1	MSA	351.4
BDE	.4801	BRA	.8603	BC3	2.0169	FSP	854	SG1	2135.2	SG2	609.1	THA	2.93	EL1	628.0	EL2	342.9

SS	243.9	CST	-.3821	SSA	65.4	ALF	117.83										

LAUNCH DATE DEC 14 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 389.720 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	34.371	GAL	2.09	AZL	89.05	HCA	121.11	SMA	213.61	ECC	.31261	INC	.9520
RP	241.08	LAP	.82	LOP	203.16	VP	21.903	GAP	16.70	AZP	90.49	TAL	8.79	TAP	129.90	RCA	146.83	APO	280.39
RC	159.568	GL	7.51	GP	3.00	ZAL	70.92	ZAP	167.32	ETS	165.06	ZAE	154.10	ETE	5.75	ZAC	92.99	ETC	255.85

V1	30.257	V2	22.777	CLP	167.68														

PLANETOCENTRIC CONIC

C3	19.060	VHL	4.366	DLA	17.47	RAL	157.58	RAD	6567.8	VEL	11.851	PTH	2.10	VHP	8.167	DPA	-.50	RAP	191.66

ECC	1.3137																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 56 26	2779.81	-28.11	80.35	24.34	93.55	14 42 46	2179.8	-27.32	71.77
90.00	6 43 34	4270.17	2.30	175.90	17.60	61.77	7 54 45	3670.2	-1.49	169.27
100.00	15 27 55	2484.76	-29.50	58.53	24.22	95.04	16 9 20	1884.8	-28.49	49.87
100.00	7 54 46	4040.45	3.52	158.33	16.93	60.30	9 2 6	3440.4	-.46	151.81
110.00	16 58 28	2201.48	-33.10	36.50	23.70	99.05	17 35 9	1601.5	-31.50	27.64
110.00	8 40 43	3896.49	6.61	145.50	15.02	56.39	9 45 39	3296.5	2.15	139.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1634	TRA	-.8156	TC3	2.1004	BAU	.5355	SGT	2160.7	SGR	614.8	SG3	310.4	ST	402.9	SR	575.5
RDE	-.4357	RRA	-.1575	RC3	.0733	FAU	.09009	RRT	.1790	RRF	-.2056	RTF	-.8491	CRT	-.4341	CRS	.9584
FDE	.2713	FRA	.0738	FC3	-4.0923	BSP	7157	SGB	2246.5	R23	-.0414	R13	-.8498	LSA	662.5	MSA	345.3
BDE	.4653	BRA	.8307	BC3	2.1016	FSP	905	SG1	2163.7	SG2	604.0	THA	3.16	EL1	614.9	EL2	339.7

SS	263.2	CST	-.4006	SSA	68.5	ALF	115.01										

LAUNCH DATE DEC 14 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 392.777 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	34.294	GAL	2.20	AZL	89.07	HCA	122.04	SMA	211.82	ECC	.30705	INC	.9294
RP	240.79	LAP	.79	LOP	204.09	VP	21.813	GAP	16.11	AZP	90.49	TAL	9.40	TAP	131.44	RCA	146.78	APO	276.86
RC	161.890	GL	7.41	GP	3.11	ZAL	69.76	ZAP	166.63	ETS	165.34	ZAE	154.50	ETE	6.21	ZAC	93.15	ETC	255.84

V1	30.257	V2	22.806	CLP	166.99														

PLANETOCENTRIC CONIC

C3	18.597	VHL	4.312	DLA	17.80	RAL	156.41	RAD	6567.8	VEL	11.831	PTH	2.10	VHP	7.969	DPA	-.51	RAP	191.92

ECC	1.3061																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 48 24	2786.76	-28.14	80.86	22.87	93.29	14 34 50	2186.8	-27.39	72.27
90.00	6 42 15	4251.63	1.71	174.86	16.16	61.73	7 53 7	3651.6	-2.09	168.23
100.00	15 20 12	2490.73	-29.54	58.97	22.75	94.81	16 1 42	1890.7	-28.56	50.30
100.00	7 53 8	4022.91	2.93	157.37	15.48	60.24	9 0 11	3422.9	-1.05	150.84
110.00	16 51 21	2205.52	-33.15	36.80	22.25	98.88	17 28 7	1605.5	-31.57	27.93
110.00	8 38 28	3880.88	6.02	144.68	13.56	56.29	9 43 9	3280.9	1.55	138.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1450	TRA	-.7836	TC3	2.1860	BAU	.5439	SGT	2188.0	SGR	611.6	SG3	326.9	ST	384.6	SR	572.9
RDE	-.4286	RRA	-.1508	RC3	.0864	FAU	.09371	RRT	.1949	RRF	-.2219	RTF	-.8527	CRT	-.4034	CRS	.9595
FDE	.2978	FRA	.0271	FC3	-4.3626	BSP	7297	SGB	2271.9	R23	-.0431	R13	-.8535	LSA	661.6	MSA	337.0
BDE	.4525	BRA	.7980	BC3	2.1877	FSP	958	SG1	2191.5	SG2	598.9	THA	3.37	EL1	603.9	EL2	333.9

SS	283.4	CST	-.4177	SSA	71.7	ALF	112.30										

LAUNCH DATE DEC 14 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 395.884 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	34.221	GAL	2.32	AZL	89.09	HCA	122.98	SMA	210.15	ECC	.30179	INC	.9065
RP	240.49	LAP	.76	LOP	205.03	VP	21.730	GAP	15.53	AZP	90.49	TAL	10.01	TAP	132.98	RCA	146.73	APO	273.57
RC	164.213	GL	7.29	GP	3.21	ZAL	68.61	ZAP	165.93	ETS	165.60	ZAE	154.93	ETE	6.70	ZAC	93.31	ETC	255.84

V1	30.257	V2	22.836	CLP	166.29														

PLANETOCENTRIC CONIC

C3	18.175	VHL	4.263	DLA	18.12	RAL	155.24	RAD	6567.7	VEL	11.813	PTH	2.09	VHP	7.776	DPA	-.51	RAP	192.19

ECC	1.2991																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 40 33	2793.46	-28.17	81.35	21.42	93.05	14 27 7	2193.5	-27.45	72.76
90.00	6 40 47	4234.20	1.14	173.89	14.75	61.70	7 51 21	3634.2	-2.65	167.26
100.00	15 12 39	2496.47	-29.57	59.39	21.31	94.59	15 54 15	1896.5	-28.62	50.72
100.00	7 51 22	4006.43	2.37	156.46	14.06	60.19	8 58 9	3406.4	-1.61	149.94
110.00	16 44 24	2209.41	-33.19	37.10	20.82	98.71	17 21 13	1609.4	-31.63	28.22
110.00	8 36 7	3866.25	5.47	143.91	12.14	56.20	9 40 33	3266.2	.99	137.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1285	TRA	-.7516	TC3	2.2722	BAU	.5527	SGT	2216.5	SGR	608.5	SG3	344.4	ST	367.2	SR	570.2
RDE	-.4219	RRA	-.1441	RC3	.1007	FAU	.09754	RRT	.2113	RRF	-.2396	RTF	-.8565	CRT	-.3737	CRS	.9581
FDE	.3249	FRA	-.0224	FC3	-4.6461	BSP	7440	SGB	2298.5	R23	-.0457	R13	-.8573	LSA	662.8	MSA	328.1
BDE	.4410	BRA	.7653	BC3	2.2744	FSP	1017	SG1	2220.5	SG2	593.7	THA	3.58	EL1	594.3	EL2	326.8

SS	304.1	CST	-.4302	SSA	74.9	ALF	109.71										

LAUNCH DATE DEC 14 1964 FLIGHT TIME 168.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 399.039 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	34.152	GAL	2.42	AZL	89.12	HCA	123.91	SMA	208.57	ECC	.29680	INC	.8829	V1	30.257
RP	240.19	LAP	.73	LOP	205.96	VP	21.652	GAP	14.96	AZP	90.49	TAL	10.61	TAP	134.52	RCA	146.67	APO	270.48	V2	22.866
RC	166.536	GL	7.16	GP	3.33	ZAL	67.47	ZAP	165.21	ETS	165.82	ZAE	155.40	ETE	7.23	ZAC	93.47	ETC	255.83	CLP	165.58

PLANETOCENTRIC CONIC

C3	17.792	VHL	4.218	DLA	18.41	RAL	154.08	RAD	6567.7	VEL	11.797	PTH	2.09	VHP	7.588	DPA	-.50	RAP	192.44	ECC	1.2928

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 32 56	2799.82	-28.19	81.81	20.00	92.82	14 19 36	2199.8	-27.50	73.21
90.00	6 39 10	4217.91	.62	172.98	13.36	61.69	7 49 28	3617.9	-3.17	166.35
100.00	15 5 19	2501.91	-29.60	59.80	19.89	94.38	15 47 1	1901.9	-28.68	51.11
100.00	7 49 28	3991.05	1.85	155.62	12.68	60.16	8 55 59	3391.0	-2.13	149.10
110.00	16 37 37	2213.09	-33.22	37.38	19.41	98.54	17 14 31	1613.1	-31.69	28.49
110.00	8 33 39	3852.63	4.95	143.19	10.75	56.13	9 37 51	3252.6	.47	136.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1128	TRA	-.7191	TC3	2.3565	BAU	.5612	SGT	2243.9	SGR	605.6	SG3	362.7	ST	349.9	SR	567.5	SS	325.5
RDE	-.4155	RRA	-.1374	RC3	.1162	FAU	.10156	RRT	.2287	RRF	-.2587	RTF	-.8601	CRT	-.3429	CRS	.9547	CST	-.4380
FDE	.3529	FRA	-.0760	FC3	-4.9416	BSP	7547	SGB	2324.2	R23	-.0488	R13	-.8611	LSA	665.4	MSA	318.7	SSA	78.2
BDE	.4305	BRA	.7321	BC3	2.3594	FSP	1076	SG1	2248.5	SG2	588.4	THA	3.79	EL1	585.7	EL2	318.4	ALF	107.15

LAUNCH DATE DEC 14 1964 FLIGHT TIME 170.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 402.238 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	34.085	GAL	2.53	AZL	89.14	HCA	124.86	SMA	207.10	ECC	.29208	INC	.8588	V1	30.257
RP	239.88	LAP	.70	LOP	206.90	VP	21.579	GAP	14.39	AZP	90.49	TAL	11.21	TAP	136.06	RCA	146.61	APO	267.59	V2	22.897
RC	168.857	GL	7.02	GP	3.44	ZAL	66.35	ZAP	164.48	ETS	166.01	ZAE	155.90	ETE	7.80	ZAC	93.63	ETC	255.82	CLP	164.86

PLANETOCENTRIC CONIC

C3	17.444	VHL	4.177	DLA	18.67	RAL	152.93	RAD	6567.7	VEL	11.782	PTH	2.08	VHP	7.405	DPA	-.48	RAP	192.68	ECC	1.2871

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 25 33	2805.77	-28.21	82.25	18.61	92.60	14 12 19	2205.8	-27.55	73.64
90.00	6 37 24	4202.78	.13	172.14	12.01	61.68	7 47 26	3602.8	-3.66	165.50
100.00	14 58 12	2506.99	-29.62	60.17	18.51	94.19	15 39 59	1907.0	-28.73	51.48
100.00	7 47 25	3976.79	1.37	154.83	11.32	60.14	8 53 42	3376.8	-2.61	148.31
110.00	16 31 3	2216.51	-33.26	37.64	18.04	98.39	17 7 59	1616.5	-31.74	28.74
110.00	8 31 4	3840.03	4.47	142.53	9.39	56.08	9 35 4	3240.0	-.01	136.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0975	TRA	-.6868	TC3	2.4369	BAU	.5691	SGT	2269.5	SGR	603.0	SG3	381.9	ST	332.6	SR	564.6	SS	347.5
RDE	-.4095	RRA	-.1306	RC3	.1329	FAU	.10576	RRT	.2476	RRF	-.2793	RTF	-.8636	CRT	-.3090	CRS	.9501	CST	-.4392
FDE	.3818	FRA	-.1335	FC3	-5.2491	BSP	7654	SGB	2348.2	R23	-.0520	R13	-.8647	LSA	669.3	MSA	309.2	SSA	81.5
BDE	.4209	BRA	.6991	BC3	2.4405	FSP	1140	SG1	2274.7	SG2	582.9	THA	4.03	EL1	577.8	EL2	309.1	ALF	104.57

LAUNCH DATE DEC 14 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 405.479 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	34.022	GAL	2.63	AZL	89.17	HCA	125.80	SMA	205.71	ECC	.28760	INC	.8340	V1	30.257
RP	239.58	LAP	.68	LOP	207.85	VP	21.512	GAP	13.83	AZP	90.49	TAL	11.80	TAP	137.60	RCA	146.55	APO	264.88	V2	22.928
RC	171.174	GL	6.87	GP	3.57	ZAL	65.26	ZAP	163.73	ETS	166.19	ZAE	156.43	ETE	8.43	ZAC	93.79	ETC	255.82	CLP	164.11

PLANETOCENTRIC CONIC

C3	17.127	VHL	4.139	DLA	18.91	RAL	151.80	RAD	6567.7	VEL	11.769	PTH	2.08	VHP	7.226	DPA	-.45	RAP	192.92	ECC	1.2819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 18 27	2811.24	-28.22	82.65	17.25	92.40	14 5 18	2211.2	-27.59	74.04
90.00	6 35 28	4188.84	-.32	171.36	10.69	61.68	7 45 17	3588.8	-4.10	164.72
100.00	14 51 21	2511.64	-29.65	60.52	17.15	94.01	15 33 13	1911.6	-28.78	51.82
100.00	7 45 14	3963.68	.92	154.11	10.00	60.12	8 51 18	3363.7	-3.06	147.59
110.00	16 24 41	2219.62	-33.29	37.88	16.70	98.25	17 1 41	1619.6	-31.79	28.97
110.00	8 28 24	3828.46	4.03	141.92	8.06	56.03	9 32 12	3228.5	-.45	135.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0836	TRA	-.6546	TC3	2.5140	BAU	.5767	SGT	2293.7	SGR	600.6	SG3	402.1	ST	316.1	SR	561.6	SS	369.4
RDE	-.4037	RRA	-.1237	RC3	.1509	FAU	.11018	RRT	.2675	RRF	-.3013	RTF	-.8669	CRT	-.2753	CRS	.9445	CST	-.4376
FDE	.4109	FRA	-.1951	FC3	-5.5692	BSP	7757	SGB	2371.0	R23	-.0557	R13	-.8681	LSA	674.2	MSA	299.9	SSA	84.7
BDE	.4123	BRA	.6662	BC3	2.5185	FSP	1208	SG1	2299.7	SG2	577.2	THA	4.28	EL1	570.9	EL2	298.9	ALF	102.20

LAUNCH DATE DEC 14 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 408.758 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.962	GAL	2.72	AZL	89.19	HCA	126.74	SMA	204.41	ECC	.28336	INC	.8087	V1	30.257
RP	239.26	LAP	.65	LOP	208.79	VP	21.450	GAP	13.28	AZP	90.48	TAL	12.38	TAP	139.13	RCA	146.49	APO	262.33	V2	22.959
RC	173.485	GL	6.70	GP	3.70	ZAL	64.18	ZAP	162.96	ETS	166.34	ZAE	157.00	ETE	9.11	ZAC	93.96	ETC	255.81	CLP	163.36

PLANETOCENTRIC CONIC

C3	16.841	VHL	4.104	DLA	19.13	RAL	150.68	RAD	6567.7	VEL	11.757	PTH	2.08	VHP	7.052	DPA	-.41	RAP	193.14	ECC	1.2772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 11 37	2816.19	-28.24	83.01	15.92	92.22	13 58 33	2216.2	-27.63	74.39
90.00	6 33 22	4176.12	-.73	170.65	9.41	61.69	7 42 58	3576.1	-4.51	164.01
100.00	14 44 46	2515.83	-29.67	60.82	15.83	93.84	15 26 42	1915.8	-28.82	52.12
100.00	7 42 54	3951.72	.52	153.46	8.71	60.11	8 48 46	3351.7	-3.46	146.93
110.00	16 18 33	2222.39	-33.32	38.09	15.38	98.13	16 55 36	1622.4	-31.83	29.18
110.00	8 25 36	3817.92	3.63	141.37	6.77	55.99	9 29 14	3217.9	-.86	135.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0747	TRA	-.6196	TC3	2.5968	BAU	.5859	SGT	2322.0	SGR	598.7	SG3	423.3	ST	300.7	SR	558.4	SS	390.9
RDE	-.3982	RRA	-.1167	RC3	.1703	FAU	.11484	RRT	.2862	RRF	-.3247	RTF	-.8711	CRT	-.2590	CRS	.9381	CST	-.4483
FDE	.4398	FRA	-.2606	FC3	-5.9034	BSP	7766	SGB	2398.0	R23	-.0618	R13	-.8725	LSA	680.8	MSA	289.4	SSA	88.0
BDE	.4052	BRA	.6305	BC3	2.6024	FSP	1279	SG1	2328.8	SG2	572.0	THA	4.49	EL1	565.8	EL2	286.7	ALF	100.72

LAUNCH DATE DEC 14 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 412.073 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.904 GAL 2.82 AZL 89.22 HCA 127.69 SMA 203.19 ECC .27935 INC .7826 V1 30.257
RP 238.95 LAP .62 LOP 209.74 VP 21.393 GAP 12.73 AZP 90.48 TAL 12.96 TAP 140.65 RCA 146.43 APO 259.95 V2 22.991
RC 175.790 GL 6.52 GP 3.84 ZAL 63.14 ZAP 162.18 ETS 166.48 ZAE 157.59 ETE 9.86 ZAC 94.13 ETC 255.81 CLP 162.58

PLANETOCENTRIC CONIC

C3 16.581 VHL 4.072 DLA 19.33 RAL 149.59 RAD 6567.7 VEL 11.746 PTH 2.07 VHP 6.883 DPA -.35 RAP 193.36 ECC 1.2729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 5 8	2820.51	-28.25	83.32	14.62	92.06	13 52 8	2220.5	-27.66	74.70
90.00	6 31 6	4164.67	-1.10	170.01	8.15	61.70	7 40 31	3564.7	-4.88	163.36
100.00	14 38 29	2519.46	-29.68	61.09	14.54	93.70	15 20 28	1919.5	-28.85	52.39
100.00	7 40 26	3940.95	.15	152.87	7.45	60.11	8 46 7	3341.0	-3.82	146.34
110.00	16 12 41	2224.73	-33.34	38.27	14.10	98.03	16 49 46	1624.7	-31.87	29.35
110.00	8 22 43	3808.44	3.27	140.87	5.51	55.95	9 26 11	3208.4	-1.22	134.67

DIFFERENTIAL CORRECTIONS
TDE .0584 TRA -.5923 TC3 2.6577 BAU .5907
RDE -.3930 RRA -.1095 RC3 .1912 FAU .11972
FDE .4705 FRA -.3308 FC3-6.2507 BSP 7951
BDE .3973 BRA .6023 BC3 2.6646 FSP 1355

MID-COURSE EXECUTION ACCURACY
SGT 2339.1 SGR 597.3 SG3 445.6
RRT .3119 RRF -.3500 RTF -.8728
SGB 2414.2 R23 -.0641 R13 -.8743
SG1 2347.0 SG2 565.6 THA 4.84

ORBIT DETERMINATION ACCURACY
ST 284.9 SR 555.2 SS 413.5
CRT -.2031 CRS .9314 CST -.4223
LSA 687.0 MSA 283.1 SSA 90.6
EL1 559.2 EL2 276.9 ALF 97.90

LAUNCH DATE DEC 14 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 415.423 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.849 GAL 2.91 AZL 89.24 HCA 128.64 SMA 202.03 ECC .27555 INC .7557 V1 30.257
RP 238.63 LAP .59 LOP 210.69 VP 21.341 GAP 12.19 AZP 90.47 TAL 13.53 TAP 142.17 RCA 146.36 APO 257.71 V2 23.024
RC 178.086 GL 6.33 GP 3.98 ZAL 62.11 ZAP 161.38 ETS 166.60 ZAE 158.21 ETE 10.69 ZAC 94.31 ETC 255.80 CLP 161.79

PLANETOCENTRIC CONIC

C3 16.346 VHL 4.043 DLA 19.50 RAL 148.51 RAD 6567.7 VEL 11.736 PTH 2.07 VHP 6.717 DPA -.29 RAP 193.56 ECC 1.2690

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 58 57	2824.18	-28.26	83.59	13.36	91.93	13 46 2	2224.2	-27.69	74.97
90.00	6 28 39	4154.47	-1.43	169.44	6.93	61.72	7 37 54	3554.5	-5.20	162.79
100.00	14 32 30	2522.51	-29.70	61.32	13.28	93.58	15 14 33	1922.5	-28.88	52.61
100.00	7 37 48	3931.36	-.17	152.34	6.23	60.11	8 43 19	3331.4	-4.15	145.81
110.00	16 7 4	2226.65	-33.36	38.42	12.85	97.94	16 44 11	1626.7	-31.90	29.49
110.00	8 19 43	3799.99	2.95	140.43	4.28	55.93	9 23 3	3200.0	-1.54	134.23

DIFFERENTIAL CORRECTIONS
TDE .0478 TRA -.5619 TC3 2.7225 BAU .5968
RDE -.3880 RRA -.1022 RC3 .2136 FAU .12485
FDE .4995 FRA -.4057 FC3-6.6126 BSP 8034
BDE .3909 BRA .5711 BC3 2.7309 FSP 1433

MID-COURSE EXECUTION ACCURACY
SGT 2358.9 SGR 596.4 SG3 469.0
RRT .3360 RRF -.3765 RTF -.8753
SGB 2433.1 R23 -.0689 R13 -.8770
SG1 2367.9 SG2 559.6 THA 5.14

ORBIT DETERMINATION ACCURACY
ST 270.5 SR 551.8 SS 434.4
CRT -.1689 CRS .9239 CST -.4134
LSA 693.9 MSA 275.8 SSA 93.3
EL1 554.2 EL2 265.4 ALF 96.15

LAUNCH DATE DEC 14 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 418.804 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.796 GAL 3.00 AZL 89.27 HCA 129.60 SMA 200.95 ECC .27196 INC .7280 V1 30.257
RP 238.31 LAP .56 LOP 211.64 VP 21.293 GAP 11.66 AZP 90.46 TAL 14.08 TAP 143.68 RCA 146.30 APO 255.60 V2 23.056
RC 180.373 GL 6.13 GP 4.13 ZAL 61.12 ZAP 160.55 ETS 166.70 ZAE 158.86 ETE 11.60 ZAC 94.49 ETC 255.80 CLP 160.98

PLANETOCENTRIC CONIC

C3 16.133 VHL 4.017 DLA 19.64 RAL 147.45 RAD 6567.6 VEL 11.727 PTH 2.07 VHP 6.556 DPA -.21 RAP 193.76 ECC 1.2655

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 53 8	2827.14	-28.26	83.81	12.13	91.82	13 40 15	2227.1	-27.71	75.18
90.00	6 26 2	4145.54	-1.72	168.94	5.74	61.73	7 35 8	3545.5	-5.49	162.29
100.00	14 26 51	2524.94	-29.71	61.50	12.05	93.49	15 8 56	1924.9	-28.91	52.79
100.00	7 35 1	3922.97	-.46	151.88	5.03	60.11	8 40 23	3323.0	-4.43	145.35
110.00	16 1 44	2228.10	-33.37	38.53	11.62	97.88	16 38 52	1628.1	-31.92	29.60
110.00	8 16 37	3792.58	2.67	140.04	3.08	55.91	9 19 50	3192.6	-1.83	133.84

DIFFERENTIAL CORRECTIONS
TDE .0389 TRA -.5305 TC3 2.7861 BAU .6031
RDE -.3831 RRA -.0946 RC3 .2376 FAU .13025
FDE .5290 FRA -.4864 FC3-6.9894 BSP 8084
BDE .3851 BRA .5388 BC3 2.7962 FSP 1516

MID-COURSE EXECUTION ACCURACY
SGT 2378.7 SGR 596.4 SG3 493.6
RRT .3609 RRF -.4047 RTF -.8781
SGB 2452.3 R23 -.0746 R13 -.8800
SG1 2388.9 SG2 553.8 THA 5.47

ORBIT DETERMINATION ACCURACY
ST 256.3 SR 548.2 SS 455.5
CRT -.1394 CRS .9161 CST -.4068
LSA 701.7 MSA 268.8 SSA 95.8
EL1 549.7 EL2 253.1 ALF 94.73

LAUNCH DATE DEC 14 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 422.217 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.746 GAL 3.08 AZL 89.30 HCA 130.55 SMA 199.93 ECC .26856 INC .6996 V1 30.257
RP 237.98 LAP .53 LOP 212.60 VP 21.249 GAP 11.13 AZP 90.45 TAL 14.64 TAP 145.19 RCA 146.23 APO 253.62 V2 23.089
RC 182.651 GL 5.91 GP 4.29 ZAL 60.14 ZAP 159.71 ETS 166.79 ZAE 159.54 ETE 12.61 ZAC 94.68 ETC 255.79 CLP 160.15

PLANETOCENTRIC CONIC

C3 15.942 VHL 3.993 DLA 19.76 RAL 146.41 RAD 6567.6 VEL 11.719 PTH 2.06 VHP 6.399 DPA -.11 RAP 193.94 ECC 1.2624

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 47 39	2829.39	-28.27	83.97	10.93	91.74	13 34 49	2229.4	-27.73	75.35
90.00	6 23 14	4137.86	-1.97	168.51	4.57	61.75	7 32 12	3537.9	-5.73	161.86
100.00	14 21 31	2526.74	-29.71	61.63	10.85	93.42	15 3 37	1926.7	-28.92	52.92
100.00	7 32 4	3915.74	-.70	151.48	3.87	60.12	8 37 20	3315.7	-4.67	144.95
110.00	15 56 39	2229.07	-33.38	38.60	10.43	97.84	16 33 48	1629.1	-31.94	29.67
110.00	8 13 25	3786.18	2.42	139.71	1.92	55.89	9 16 31	3186.2	-2.07	133.51

DIFFERENTIAL CORRECTIONS
TDE .0441 TRA -.4868 TC3 2.8758 BAU .6155
RDE -.3784 RRA -.0866 RC3 .2635 FAU .13605
FDE .5552 FRA -.5760 FC3-7.3880 BSP 7826
BDE .3809 BRA .4944 BC3 2.8879 FSP 1597

MID-COURSE EXECUTION ACCURACY
SGT 2414.3 SGR 597.1 SG3 519.9
RRT .3794 RRF -.4336 RTF -.8842
SGB 2487.0 R23 -.0862 R13 -.8864
SG1 2425.5 SG2 549.9 THA 5.65

ORBIT DETERMINATION ACCURACY
ST 241.5 SR 544.5 SS 474.2
CRT -.1909 CRS .9065 CST -.4678
LSA 709.9 MSA 256.3 SSA 99.8
EL1 546.9 EL2 236.0 ALF 95.95

LAUNCH DATE DEC 14 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 425.655 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.699	GAL	3.16	AZL	89.33	HCA	131.51	SMA	198.96	ECC	.26534	INC	.6700	V1	30.257
RP	237.65	LAP	.50	LOP	213.56	VP	21.210	GAP	10.61	AZP	90.44	TAL	15.17	TAP	146.68	RCA	146.17	APO	251.76	V2	23.123
RC	184.919	GL	5.69	GP	4.46	ZAL	59.21	ZAP	158.85	ETS	166.86	ZAE	160.24	ETE	13.74	ZAC	94.87	ETC	255.79	CLP	159.30

PLANETOCENTRIC CONIC

C3	15.768	VHL	3.971	DLA	19.85	RAL	145.40	RAD	6567.6	VEL	11.711	PTH	2.06	VHP	6.247	DPA	-.00	RAP	194.11	ECC	1.2595

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 42 36	2830.74	-28.27	84.07	9.77	91.69	13 29 47	2230.7	-27.74	75.44
90.00	6 20 15	4131.53	-2.17	168.16	3.45	61.76	7 29 7	3531.5	-5.93	161.50
100.00	14 16 34	2527.74	-29.72	61.71	9.69	93.38	14 58 42	1927.7	-28.93	52.99
100.00	7 28 59	3909.77	-.90	151.16	2.74	60.12	8 34 8	3309.8	-4.87	144.62
110.00	15 51 55	2229.43	-33.38	38.63	9.27	97.82	16 29 4	1629.4	-31.94	29.70
110.00	8 10 7	3780.85	2.22	139.43	.79	55.88	9 13 8	3180.8	-2.27	133.23

DIFFERENTIAL CORRECTIONS

TDE	.0209	TRA	-.4735	TC3	2.8877	BAU	.6118
RDE	-.3740	RRA	-.0787	RC3	.2908	FAU	.14180
FDE	.5887	FRA	-.6628	FC3	-7.7856	BSP	8253
BDE	.3745	BRA	.4799	BC3	2.9023	FSP	1696

MID-COURSE EXECUTION ACCURACY

SGT	2405.8	SGR	599.2	SG3	546.4		
RRT	.4170	RRF	-.4655	RTF	-.8819		
SGB	2479.4	R23	-.0859	R13	-.8842		
SG1	2419.5	SG2	541.6	THA	6.24		

ORBIT DETERMINATION ACCURACY

ST	230.5	SR	540.8	SS	497.3
CRT	-.0632	CRS	.9002	CST	-.3733
LSA	718.1	MSA	259.7	SSA	99.1
EL1	541.1	EL2	229.9	ALF	91.88

LAUNCH DATE DEC 14 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 429.122 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.653	GAL	3.24	AZL	89.36	HCA	132.47	SMA	198.05	ECC	.26230	INC	.6396	V1	30.257
RP	237.31	LAP	.47	LOP	214.52	VP	21.175	GAP	10.09	AZP	90.43	TAL	15.70	TAP	148.17	RCA	146.10	APO	250.00	V2	23.157
RC	187.176	GL	5.45	GP	4.64	ZAL	58.30	ZAP	157.97	ETS	166.93	ZAE	160.96	ETE	15.01	ZAC	95.06	ETC	255.78	CLP	158.44

PLANETOCENTRIC CONIC

C3	15.612	VHL	3.951	DLA	19.92	RAL	144.42	RAD	6567.6	VEL	11.705	PTH	2.06	VHP	6.098	DPA	.12	RAP	194.27	ECC	1.2569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 37 54	2831.31	-28.27	84.11	8.63	91.67	13 25 6	2231.3	-27.74	75.49
90.00	6 17 5	4126.46	-2.33	167.88	2.35	61.77	7 25 52	3526.5	-6.09	161.21
100.00	14 11 57	2528.05	-29.72	61.73	8.56	93.37	14 54 5	1928.0	-28.94	53.01
100.00	7 25 44	3904.96	-1.07	150.89	1.64	60.12	8 30 48	3305.0	-5.03	144.35
110.00	15 47 27	2229.26	-33.38	38.62	8.14	97.83	16 24 37	1629.3	-31.94	29.68
110.00	8 6 43	3776.51	2.05	139.21	359.69	55.87	9 9 39	3176.5	-2.44	133.00

DIFFERENTIAL CORRECTIONS

TDE	.0149	TRA	-.4454	TC3	2.9334	BAU	.6159
RDE	-.3695	RRA	-.0702	RC3	.3203	FAU	.14803
FDE	.6171	FRA	-.7595	FC3	-8.2086	BSP	8305
BDE	.3698	BRA	.4509	BC3	2.9508	FSP	1793

MID-COURSE EXECUTION ACCURACY

SGT	2417.8	SGR	602.5	SG3	574.7		
RRT	.4459	RRF	-.4977	RTF	-.8837		
SGB	2491.7	R23	-.0930	R13	-.8864		
SG1	2433.5	SG2	535.8	THA	6.67		

ORBIT DETERMINATION ACCURACY

ST	218.6	SR	536.9	SS	516.8
CRT	-.0370	CRS	.8916	CST	-.3649
LSA	726.2	MSA	256.3	SSA	100.2
EL1	537.0	EL2	218.4	ALF	91.04

LAUNCH DATE DEC 14 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 432.614 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.610	GAL	3.32	AZL	89.39	HCA	133.43	SMA	197.20	ECC	.25942	INC	.6081	V1	30.257
RP	236.98	LAP	.44	LOP	215.48	VP	21.144	GAP	9.59	AZP	90.42	TAL	16.21	TAP	149.65	RCA	146.04	APO	248.36	V2	23.191
RC	189.421	GL	5.20	GP	4.83	ZAL	57.42	ZAP	157.06	ETS	166.98	ZAE	161.70	ETE	16.43	ZAC	95.26	ETC	255.78	CLP	157.55

PLANETOCENTRIC CONIC

C3	15.471	VHL	3.933	DLA	19.96	RAL	143.46	RAD	6567.6	VEL	11.699	PTH	2.06	VHP	5.953	DPA	.26	RAP	194.41	ECC	1.2546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 33 36	2831.00	-28.27	84.09	7.53	91.68	13 20 48	2231.0	-27.74	75.46
90.00	6 13 44	4122.68	-2.46	167.67	1.28	61.78	7 22 27	3522.7	-6.21	161.00
100.00	14 7 42	2527.58	-29.72	61.69	7.46	93.39	14 49 50	1927.6	-28.93	52.98
100.00	7 22 19	3901.33	-1.19	150.69	.57	60.13	8 27 20	3301.3	-5.16	144.15
110.00	15 43 18	2228.50	-33.37	38.56	7.04	97.86	16 20 27	1628.5	-31.93	29.63
110.00	8 3 13	3773.18	1.93	139.03	358.63	55.86	9 6 6	3173.2	-2.57	132.83

DIFFERENTIAL CORRECTIONS

TDE	.0102	TRA	-.4180	TC3	2.9728	BAU	.6192
RDE	-.3652	RRA	-.0614	RC3	.3517	FAU	.15452
FDE	.6447	FRA	-.8624	FC3	-8.6465	BSP	8339
BDE	.3653	BRA	.4225	BC3	2.9935	FSP	1894

MID-COURSE EXECUTION ACCURACY

SGT	2426.7	SGR	607.1	SG3	604.4		
RRT	.4757	RRF	-.5308	RTF	-.8852		
SGB	2501.5	R23	-.1007	R13	-.8883		
SG1	2444.7	SG2	530.1	THA	7.12		

ORBIT DETERMINATION ACCURACY

ST	207.1	SR	532.8	SS	535.6
CRT	-.0158	CRS	.8828	CST	-.3594
LSA	734.2	MSA	253.8	SSA	100.9
EL1	532.8	EL2	207.1	ALF	90.42

LAUNCH DATE DEC 14 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 436.131 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.569	GAL	3.39	AZL	89.42	HCA	134.40	SMA	196.39	ECC	.25671	INC	.5758	V1	30.257
RP	236.64	LAP	.41	LOP	216.45	VP	21.117	GAP	9.09	AZP	90.40	TAL	16.71	TAP	151.11	RCA	145.98	APO	246.80	V2	23.226
RC	191.655	GL	4.93	GP	5.03	ZAL	56.57	ZAP	156.13	ETS	167.03	ZAE	162.46	ETE	18.05	ZAC	95.47	ETC	255.77	CLP	156.63

PLANETOCENTRIC CONIC

C3	15.344	VHL	3.917	DLA	19.98	RAL	142.53	RAD	6567.6	VEL	11.693	PTH	2.06	VHP	5.812	DPA	.42	RAP	194.54	ECC	1.2525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 29 43	2829.81	-28.27	84.00	6.46	91.72	13 16 52	2229.8	-27.73	75.38
90.00	6 10 11	4120.17	-2.54	167.53	.24	61.79	7 18 51	3520.2	-6.29	160.86
100.00	14 3 49	2526.32	-29.71	61.60	6.39	93.44	14 45 56	1926.3	-28.92	52.89
100.00	7 18 45	3898.89	-1.27	150.56	359.54	60.13	8 23 44	3298.9	-5.24	144.02
110.00	15 39 27	2227.13	-33.36	38.45	5.96	97.92	16 16 35	1627.1	-31.91	29.53
110.00	7 59 37	3770.85	1.84	138.91	357.59	55.86	9 2 28	3170.8	-2.66	132.71

DIFFERENTIAL CORRECTIONS

TDE	.0086	TRA	-.3889	TC3	3.0140	BAU	.6233
RDE	-.3609	RRA	-.0522	RC3	.3856	FAU	.16140
FDE	.6715	FRA	-.9725	FC3	-9.1060	BSP	8313
BDE	.3610	BRA	.3924	BC3	3.0386	FSP	1999

MID-COURSE EXECUTION ACCURACY

SGT	2437.7	SGR	613.6	SG3	635.8		
RRT	.5053	RRF	-.5649	RTF	-.8873		
SGB	2513.7	R23	-.1097	R13	-.8908		
SG1	2458.3	SG2	525.1	THA	7.60		

ORBIT DETERMINATION ACCURACY

ST	195.3	SR	528.6	SS	553.9
CRT	-.0153	CRS	.8737	CST	-.3697
LSA	742.3	MSA	250.9	SSA	101.6
EL1	528.6	EL2	195.3	ALF	90.37

LAUNCH DATE DEC 14 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 439.671 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.529	GAL	3.46	AZL	89.46	HCA	135.37	SMA	195.63	ECC	.25413	INC	.5420	V1	30.257
RP	236.29	LAP	.38	LOP	217.42	VP	21.093	GAP	8.60	AZP	90.39	TAL	17.20	TAP	152.57	RCA	145.91	APO	245.34	V2	23.261
RC	193.877	GL	4.65	GP	5.24	ZAL	55.75	ZAP	155.17	ETS	167.06	ZAE	163.24	ETE	19.89	ZAC	95.68	ETC	255.77	CLP	155.70

PLANETOCENTRIC CONIC

C3	15.230	VHL	3.903	DLA	19.97	RAL	141.62	RAD	6567.6	VEL	11.688	PTH	2.06	VHP	5.675	DPA	.60	RAP	194.66	ECC	1.2507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 26 12	2827.71	-28.26	83.85	5.42	91.80	13 13 20	2227.7	-27.72	75.23
90.00	6 6 27	4118.92	-2.58	167.46	359.23	61.79	7 15 6	3518.9	-6.33	160.79
100.00	14 0 19	2524.26	-29.70	61.45	5.35	93.52	14 42 23	1924.3	-28.90	52.74
100.00	7 15 2	3897.60	-1.32	150.49	358.53	60.13	8 20 0	3297.6	-5.28	143.95
110.00	15 35 55	2225.14	-33.34	38.30	4.92	98.01	16 13 0	1625.1	-31.88	29.38
110.00	7 55 55	3769.49	1.78	138.84	356.59	55.86	8 58 44	3169.5	-2.71	132.63

DIFFERENTIAL CORRECTIONS

TDE	.0171	TRA	-.3529	TC3	3.0706	BAU	.6311
RDE	-.3564	RRA	-.0422	RC3	.4223	FAU	.16880
FDE	.6910	FRA	-1.0941	FC3	-9.5953	BSP	8070
BDE	.3569	BRA	.3554	BC3	3.0995	FSP	2097

MID-COURSE EXECUTION ACCURACY

SGT	2459.4	SGR	622.0	SG3	669.5		
RRT	.5316	RRF	-.5990	RTF	-.8911		
SGB	2536.8	R23	-.1215	R13	-.8951		
SG1	2482.5	SG2	521.9	THA	8.01		

ORBIT DETERMINATION ACCURACY

ST	182.1	SR	523.8	SS	568.1
CRT	-.0960	CRS	.8617	CST	-.4461
LSA	747.8	MSA	245.6	SSA	103.5
EL1	524.1	EL2	181.1	ALF	92.17

LAUNCH DATE DEC 14 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 443.231 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.492	GAL	3.53	AZL	89.49	HCA	136.34	SMA	194.91	ECC	.25171	INC	.5071	V1	30.257
RP	235.94	LAP	.35	LOP	218.39	VP	21.073	GAP	8.11	AZP	90.37	TAL	17.67	TAP	154.01	RCA	145.85	APO	243.97	V2	23.297
RC	196.086	GL	4.36	GP	5.46	ZAL	54.96	ZAP	154.19	ETS	167.09	ZAE	164.02	ETE	21.99	ZAC	95.90	ETC	255.76	CLP	154.74

PLANETOCENTRIC CONIC

C3	15.127	VHL	3.889	DLA	19.93	RAL	140.74	RAD	6567.6	VEL	11.684	PTH	2.05	VHP	5.542	DPA	.80	RAP	194.76	ECC	1.2490

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 23 9	2824.58	-28.26	83.62	4.42	91.91	13 10 14	2224.6	-27.69	75.00
90.00	6 2 32	4118.99	-2.57	167.46	358.25	61.79	7 11 11	3519.0	-6.33	160.79
100.00	13 57 13	2521.28	-29.69	61.23	4.34	93.63	14 39 14	1921.3	-28.87	52.52
100.00	7 11 10	3897.51	-1.32	150.48	357.55	60.13	8 16 7	3297.5	-5.28	143.94
110.00	15 32 44	2222.43	-33.32	38.09	3.90	98.13	16 9 46	1622.4	-31.84	29.18
110.00	7 52 8	3769.13	1.77	138.82	355.62	55.86	8 54 57	3169.1	-2.72	132.62

DIFFERENTIAL CORRECTIONS

TDE	.0004	TRA	-.3443	TC3	3.0525	BAU	.6243
RDE	-.3526	RRA	-.0324	RC3	.4599	FAU	.17588
FDE	.7245	FRA	-1.2071	FC	-10.0658	BSP	8446
BDE	.3526	BRA	.3458	BC3	3.0869	FSP	2233

MID-COURSE EXECUTION ACCURACY

SGT	2434.9	SGR	632.8	SG3	702.0		
RRT	.5688	RRF	-.6340	RTF	-.8880		
SGB	2515.8	R23	-.1278	R13	-.8926		
SG1	2462.6	SG2	514.6	THA	8.80		

ORBIT DETERMINATION ACCURACY

ST	176.8	SR	519.8	SS	589.6
CRT	.0314	CRS	.8566	CST	-.3481
LSA	758.6	MSA	252.1	SSA	100.3
EL1	519.9	EL2	176.7	ALF	89.31

LAUNCH DATE DEC 14 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 446.814 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.457	GAL	3.59	AZL	89.53	HCA	137.32	SMA	194.23	ECC	.24941	INC	.4703	V1	30.257
RP	235.59	LAP	.32	LOP	219.36	VP	21.056	GAP	7.63	AZP	90.35	TAL	18.13	TAP	155.45	RCA	145.79	APO	242.67	V2	23.333
RC	198.280	GL	4.06	GP	5.70	ZAL	54.21	ZAP	153.19	ETS	167.11	ZAE	164.81	ETE	24.41	ZAC	96.13	ETC	255.75	CLP	153.76

PLANETOCENTRIC CONIC

C3	15.034	VHL	3.877	DLA	19.87	RAL	139.90	RAD	6567.6	VEL	11.680	PTH	2.05	VHP	5.412	DPA	1.02	RAP	194.85	ECC	1.2474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 20 30	2820.53	-28.25	83.32	3.44	92.06	13 7 30	2220.5	-27.66	74.71
90.00	5 58 26	4120.28	-2.53	167.53	357.30	61.79	7 7 6	3520.3	-6.29	160.86
100.00	13 54 28	2517.48	-29.67	60.95	3.35	93.78	14 36 26	1917.5	-28.83	52.24
100.00	7 7 8	3898.56	-1.28	150.54	356.61	60.13	8 12 7	3298.6	-5.25	144.00
110.00	15 29 51	2219.08	-33.28	37.84	2.91	98.28	16 6 50	1619.1	-31.78	28.93
110.00	7 48 15	3769.73	1.79	138.85	354.68	55.86	8 51 5	3169.7	-2.70	132.65

DIFFERENTIAL CORRECTIONS

TDE	.0001	TRA	-.3218	TC3	3.0660	BAU	.6244
RDE	-.3484	RRA	-.0215	RC3	.5011	FAU	.18365
FDE	.7467	FRA	-1.3365	FC	-10.5756	BSP	8444
BDE	.3484	BRA	.3226	BC3	3.1067	FSP	2353

MID-COURSE EXECUTION ACCURACY

SGT	2430.8	SGR	645.9	SG3	737.6		
RRT	.5993	RRF	-.6681	RTF	-.8884		
SGB	2515.2	R23	-.1387	R13	-.8937		
SG1	2462.9	SG2	510.3	THA	9.46		

ORBIT DETERMINATION ACCURACY

ST	167.6	SR	515.1	SS	605.2
CRT	.0266	CRS	.8469	CST	-.3603
LSA	765.4	MSA	252.8	SSA	99.6
EL1	515.1	EL2	167.6	ALF	89.44

LAUNCH DATE DEC 14 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 450.416 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.423	GAL	3.65	AZL	89.57	HCA	138.30	SMA	193.59	ECC	.24724	INC	.4327	V1	30.257
RP	235.24	LAP	.29	LOP	220.34	VP	21.042	GAP	7.17	AZP	90.32	TAL	18.57	TAP	156.87	RCA	145.73	APO	241.45	V2	23.369
RC	200.460	GL	3.74	GP	5.95	ZAL	53.49	ZAP	152.15	ETS	167.12	ZAE	165.60	ETE	27.21	ZAC	96.37	ETC	255.75	CLP	152.75

PLANETOCENTRIC CONIC

C3	14.951	VHL	3.867	DLA	19.78	RAL	139.08	RAD	6567.6	VEL	11.676	PTH	2.05	VHP	5.286	DPA	1.26	RAP	194.93	ECC	1.2460

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 18 15	2815.50	-28.24	82.96	2.48	92.25	13 5 10	2215.5	-27.63	74.34
90.00	5 54 8	4122.82	-2.45	167.67	356.37	61.78	7 2 51	3522.8	-6.21	161.01
100.00	13 52 7	2512.79	-29.65	60.60	2.40	93.96	14 34 0	1912.8	-28.79	51.90
100.00	7 2 57	3900.75	-1.21	150.66	355.68	60.13	8 7 58	3300.8	-5.18	144.12
110.00	15 27 18	2215.02	-33.24	37.53	1.94	98.46	16 4 13	1615.0	-31.72	28.63
110.00	7 44 16	3771.29	1.85	138.93	353.77	55.86	8 47 7	3171.3	-2.64	132.73

DIFFERENTIAL CORRECTIONS

TDE	.0015	TRA	-.3007	TC3	3.0748	BAU	.6242
RDE	-.3442	RRA	-.0101	RC3	.5452	FAU	.19175
FDE	.7672	FRA	-1.4718	FC	-11.1036	BSP	8432
BDE	.3442	BRA	.3009	BC3	3.1227	FSP	2482

MID-COURSE EXECUTION ACCURACY

SGT	2424.5	SGR	661.9	SG3	774.7		
RRT	.6287	RRF	-.7015	RTF	-.8886		
SGB	2513.2	R23	-.1507	R13	-.8948		
SG1	2461.5	SG2	506.9	THA	10.18		

ORBIT DETERMINATION ACCURACY

ST	159.0	SR	510.1	SS	619.9
CRT	.0054	CRS	.8372	CST	-.3844
LSA	771.8	MSA	253.7	SSA	98.7
EL1	510.1	EL2	159.0	ALF	89.89

LAUNCH DATE DEC 14 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 454.038 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.391	GAL	3.71	AZL	89.61	HCA	139.28	SMA	192.98	ECC	.24520	INC	.3932	V1	30.257
RP	234.89	LAP	.26	LOP	221.32	VP	21.032	GAP	6.70	AZP	90.30	TAL	19.00	TAP	158.28	RCA	145.67	APO	240.30	V2	23.405
RC	202.623	GL	3.40	GP	6.22	ZAL	52.79	ZAP	151.09	ETS	167.12	ZAE	166.38	ETE	30.46	ZAC	96.61	ETC	255.74	CLP	151.71

PLANETOCENTRIC CONIC

C3	14.875	VHL	3.857	DLA	19.66	RAL	138.28	RAD	6567.6	VEL	11.673	PTH	2.05	VHP	5.164	DPA	1.52	RAP	194.98	ECC	1.2448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 16 24	2809.48	-28.22	82.52	1.56	92.47	13 3 14	2209.5	-27.58	73.91
90.00	5 49 39	4126.59	-2.33	167.89	355.48	61.77	6 58 26	3526.6	-6.09	161.22
100.00	13 50 8	2507.22	-29.63	60.19	1.46	94.18	14 31 55	1907.2	-28.73	51.50
100.00	6 58 36	3904.08	-1.10	150.84	354.79	60.13	8 3 40	3304.1	-5.06	144.30
110.00	15 25 3	2210.27	-33.20	37.16	.99	98.67	16 1 53	1610.3	-31.64	28.28
110.00	7 40 11	3773.79	1.95	139.06	352.89	55.87	8 43 4	3173.8	-2.54	132.86

DIFFERENTIAL CORRECTIONS

TDE	.0098	TRA	-.2745	TC3	3.0945	BAU	.6266
RDE	-.3396	RRA	.0024	RC3	.5933	FAU	.20048
FDE	.7809	FRA	-1.6209	FC	-11.6677	BSP	8263
BDE	.3398	BRA	.2745	BC3	3.1509	FSP	2606

MID-COURSE EXECUTION ACCURACY

SGT	2426.0	SGR	681.2	SG3	814.6		
RRT	.6556	RRF	-.7340	RTF	-.8901		
SGB	2519.8	R23	-.1640	R13	-.8973		
SG1	2468.6	SG2	505.5	THA	10.89		

ORBIT DETERMINATION ACCURACY

ST	149.1	SR	504.7	SS	632.1
CRT	-.0867	CRS	.8249	CST	-.4605
LSA	776.3	MSA	253.3	SSA	98.5
EL1	504.9	EL2	148.4	ALF	91.61

LAUNCH DATE DEC 14 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 457.677 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.360	GAL	3.76	AZL	89.65	HCA	140.26	SMA	192.42	ECC	.24326	INC	.3518	V1	30.257
RP	234.53	LAP	.22	LOP	222.31	VP	21.025	GAP	6.25	AZP	90.27	TAL	19.41	TAP	159.67	RCA	145.61	APO	239.22	V2	23.442
RC	204.770	GL	3.05	GP	6.50	ZAL	52.14	ZAP	150.00	ETS	167.12	ZAE	167.12	ETE	34.23	ZAC	96.87	ETC	255.73	CLP	150.64

PLANETOCENTRIC CONIC

C3	14.807	VHL	3.848	DLA	19.51	RAL	137.52	RAD	6567.6	VEL	11.670	PTH	2.05	VHP	5.045	DPA	1.81	RAP	195.03	ECC	1.2437

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 14 59	2802.40	-28.20	82.00	.66	92.72	13 1 42	2202.4	-27.52	73.40
90.00	5 44 59	4131.61	-2.17	168.17	354.61	61.76	6 53 50	3531.6	-5.93	161.50
100.00	13 48 33	2500.68	-29.59	59.71	.56	94.43	14 30 14	1900.7	-28.66	51.02
100.00	6 54 6	3908.55	-.95	151.09	353.93	60.12	7 59 15	3308.6	-4.91	144.55
110.00	15 23 9	2204.73	-33.14	36.74	.07	98.91	15 59 54	1604.7	-31.55	27.88
110.00	7 36 0	3777.27	2.08	139.24	352.04	55.87	8 38 57	3177.3	-2.41	133.04

DIFFERENTIAL CORRECTIONS

TDE	.0055	TRA	-.2644	TC3	3.0679	BAU	.6205
RDE	-.3355	RRA	.0150	RC3	.6430	FAU	.20896
FDE	.8028	FRA	-1.7645	FC	-12.2176	BSP	8411
BDE	.3356	BRA	.2648	BC3	3.1346	FSP	2759

MID-COURSE EXECUTION ACCURACY

SGT	2397.7	SGR	703.6	SG3	853.6		
RRT	.6842	RRF	-.7648	RTF	-.8876		
SGB	2498.8	R23	-.1774	R13	-.8961		
SG1	2447.7	SG2	502.6	THA	11.86		

ORBIT DETERMINATION ACCURACY

ST	144.2	SR	499.9	SS	647.7
CRT	-.0549	CRS	.8177	CST	-.4419
LSA	784.1	MSA	257.0	SSA	96.3
EL1	500.0	EL2	143.9	ALF	90.99

LAUNCH DATE DEC 14 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 461.335 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.331	GAL	3.81	AZL	89.69	HCA	141.25	SMA	191.88	ECC	.24144	INC	.3088	V1	30.257
RP	234.17	LAP	.19	LOP	223.29	VP	21.020	GAP	5.80	AZP	90.24	TAL	19.81	TAP	161.05	RCA	145.55	APO	238.20	V2	23.479
RC	206.900	GL	2.68	GP	6.80	ZAL	51.51	ZAP	148.87	ETS	167.12	ZAE	167.83	ETE	38.63	ZAC	97.14	ETC	255.73	CLP	149.55

PLANETOCENTRIC CONIC

C3	14.745	VHL	3.840	DLA	19.34	RAL	136.78	RAD	6567.6	VEL	11.667	PTH	2.05	VHP	4.930	DPA	2.13	RAP	195.05	ECC	1.2427

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 13 59	2794.30	-28.17	81.41	359.78	93.02	13 0 33	2194.3	-27.45	72.82
90.00	5 40 7	4137.84	-1.97	168.51	353.76	61.75	6 49 5	3537.8	-5.73	161.85
100.00	13 47 21	2493.23	-29.55	59.15	359.67	94.72	14 28 54	1893.2	-28.59	50.48
100.00	6 49 26	3914.15	-.76	151.40	353.09	60.12	7 54 40	3314.2	-4.73	144.86
110.00	15 21 34	2198.45	-33.07	36.26	359.17	99.19	15 58 12	1598.5	-31.45	27.42
110.00	7 31 43	3781.69	2.25	139.48	351.21	55.88	8 34 44	3181.7	-2.24	133.27

DIFFERENTIAL CORRECTIONS

TDE	.0103	TRA	-.2480	TC3	3.0547	BAU	.6177
RDE	-.3310	RRA	.0289	RC3	.6972	FAU	.21810
FDE	.8143	FRA	-1.9236	FC	-12.8049	BSP	8371
BDE	.3311	BRA	.2497	BC3	3.1333	FSP	2905

MID-COURSE EXECUTION ACCURACY

SGT	2378.6	SGR	729.9	SG3	895.6		
RRT	.7089	RRF	-.7938	RTF	-.8866		
SGB	2488.1	R23	-.1924	R13	-.8966		
SG1	2436.8	SG2	502.5	THA	12.83		

ORBIT DETERMINATION ACCURACY

ST	138.0	SR	494.3	SS	659.4
CRT	-.1189	CRS	.8068	CST	-.4933
LSA	788.7	MSA	259.0	SSA	95.0
EL1	494.6	EL2	136.9	ALF	92.06

LAUNCH DATE DEC 14 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 465.010 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.304	GAL	3.86	AZL	89.74	HCA	142.24	SMA	191.37	ECC	.23971	INC	.2637	V1	30.257
RP	233.80	LAP	.16	LOP	224.28	VP	21.019	GAP	5.36	AZP	90.21	TAL	20.19	TAP	162.42	RCA	145.50	APO	237.24	V2	23.517
RC	209.011	GL	2.29	GP	7.11	ZAL	50.91	ZAP	147.72	ETS	167.11	ZAE	168.47	ETE	43.74	ZAC	97.42	ETC	255.72	CLP	148.43

PLANETOCENTRIC CONIC

C3	14.690	VHL	3.833	DLA	19.13	RAL	136.08	RAD	6567.6	VEL	11.665	PTH	2.05	VHP	4.819	DPA	2.47	RAP	195.07	ECC	1.2418

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 13 23	2785.15	-28.13	80.74	358.92	93.35	12 59 48	2185.2	-27.37	72.16
90.00	5 35 4	4145.30	-1.73	168.93	352.94	61.73	6 44 9	3545.3	-5.49	162.27
100.00	13 46 31	2484.80	-29.50	58.53	358.81	95.04	14 27 56	1884.8	-28.49	49.87
100.00	6 44 36	3920.89	-.53	151.77	352.28	60.11	7 49 57	3320.9	-4.50	145.23
110.00	15 20 18	2191.38	-32.99	35.73	358.29	99.50	15 56 50	1591.4	-31.33	26.90
110.00	7 27 19	3787.07	2.46	139.76	350.41	55.89	8 30 26	3187.1	-2.04	133.55

DIFFERENTIAL CORRECTIONS

TDE	.0161	TRA	-.2336	TC3	3.0353	BAU	.6143
RDE	-.3263	RRA	.0437	RC3	.7554	FAU	.22756
FDE	.8229	FRA	-2.0890	FC	-13.4115	BSP	8310
BDE	.3267	BRA	.2377	BC3	3.1278	FSP	3058

MID-COURSE EXECUTION ACCURACY

SGT	2356.0	SGR	760.3	SG3	939.0		
RRT	.7313	RRF	-.8207	RTF	-.8852		
SGB	2475.6	R23	-.2083	R13	-.8971		
SG1	2423.7	SG2	504.0	THA	13.89		

ORBIT DETERMINATION ACCURACY

ST	133.2	SR	488.5	SS	670.3
CRT	-.1976	CRS	.7959	CST	-.5508
LSA	793.0	MSA	260.9	SSA	93.7
EL1	489.3	EL2	130.4	ALF	93.32

LAUNCH DATE DEC 14 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 468.701 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.278	GAL	3.91	AZL	89.78	HCA	143.23	SMA	190.89	ECC	.23808	INC	.2165	V1	30.257
RP	233.44	LAP	.13	LOP	225.28	VP	21.020	GAP	4.93	AZP	90.17	TAL	20.55	TAP	163.78	RCA	145.44	APO	236.34	V2	23.555
RC	211.104	GL	1.88	GP	7.45	ZAL	50.35	ZAP	146.53	ETS	167.09	ZAE	169.02	ETE	49.62	ZAC	97.71	ETC	255.71	CLP	147.27

PLANETOCENTRIC CONIC

C3	14.639	VHL	3.826	DLA	18.90	RAL	135.39	RAD	6567.6	VEL	11.663	PTH	2.05	VHP	4.711	DPA	2.84	RAP	195.06	ECC	1.2409

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 13 11	2774.93	-28.09	80.00	358.09	93.72	12 59 26	2174.9	-27.28	71.42
90.00	5 29 49	4153.99	-1.45	169.42	352.15	61.72	6 39 3	3554.0	-5.22	162.76
100.00	13 46 5	2475.39	-29.45	57.84	357.96	95.40	14 27 20	1875.4	-28.39	49.20
100.00	6 39 37	3928.76	-.26	152.20	351.49	60.11	7 45 5	3328.8	-4.24	145.67
110.00	15 19 22	2183.49	-32.90	35.13	357.42	99.84	15 55 46	1583.5	-31.20	26.32
110.00	7 22 48	3793.43	2.70	140.09	349.64	55.91	8 26 1	3193.4	-1.79	133.88

DIFFERENTIAL CORRECTIONS

TDE	.0222	TRA	-.2221	TC3	3.0049	BAU	.6095
RDE	-.3214	RRA	.0596	RC3	.8177	FAU	.23733
FDE	.8278	FRA	-2.2620	FC	-14.0354	BSP	8265
BDE	.3222	BRA	.2300	BC3	3.1142	FSP	3218

MID-COURSE EXECUTION ACCURACY

SGT	2326.3	SGR	795.0	SG3	984.0		
RRT	.7514	RRF	-.8454	RTF	-.8830		
SGB	2458.4	R23	-.2251	R13	-.8973		
SG1	2405.5	SG2	507.4	THA	15.09		

ORBIT DETERMINATION ACCURACY

ST	130.3	SR	482.5	SS	680.5
CRT	-.2811	CRS	.7849	CST	-.6070
LSA	796.9	MSA	263.2	SSA	92.2
EL1	484.0	EL2	124.7	ALF	94.65

LAUNCH DATE DEC 14 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 472.407 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.253	GAL	3.95	AZL	89.83	HCA	144.23	SMA	190.44	ECC	.23655	INC	.1662	V1	30.257
RP	233.07	LAP	.10	LOP	226.27	VP	21.023	GAP	4.50	AZP	90.14	TAL	20.89	TAP	165.12	RCA	145.39	APO	235.49	V2	23.593
RC	213.179	GL	1.45	GP	7.81	ZAL	49.82	ZAP	145.30	ETS	167.08	ZAE	169.44	ETE	56.29	ZAC	98.02	ETC	255.70	CLP	146.09

PLANETOCENTRIC CONIC

C3	14.593	VHL	3.820	DLA	18.63	RAL	134.74	RAD	6567.6	VEL	11.661	PTH	2.05	VHP	4.607	DPA	3.25	RAP	195.04	ECC	1.2402

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 13 24	2763.60	-28.04	79.17	357.27	94.13	12 59 28	2163.6	-27.17	70.61
90.00	5 24 22	4163.92	-1.13	169.97	351.38	61.70	6 33 46	3563.9	-4.90	163.32
100.00	13 46 1	2464.96	-29.38	57.07	357.14	95.80	14 27 6	1865.0	-28.26	48.44
100.00	6 34 26	3937.79	.05	152.69	350.72	60.11	7 40 4	3337.8	-3.93	146.17
110.00	15 18 46	2174.75	-32.80	34.47	356.57	100.22	15 55 1	1574.7	-31.04	25.69
110.00	7 18 10	3800.77	2.98	140.47	348.89	55.93	8 21 31	3200.8	-1.51	134.27

DIFFERENTIAL CORRECTIONS

TDE	.0304	TRA	-.2122	TC3	2.9676	BAU	.6041
RDE	-.3161	RRA	.0767	RC3	.8847	FAU	.24743
FDE	.8245	FRA	-2.4442	FC	-14.6791	BSP	8197
BDE	.3175	BRA	.2256	BC3	3.0967	FSP	3383

MID-COURSE EXECUTION ACCURACY

SGT	2292.5	SGR	834.5	SG3	1030.6		
RRT	.7685	RRF	-.8677	RTF	-.8803		
SGB	2439.6	R23	-.2425	R13	-.8975		
SG1	2385.0	SG2	513.2	THA	16.41		

ORBIT DETERMINATION ACCURACY

ST	129.8	SR	475.9	SS	688.3
CRT	-.3871	CRS	.7722	CST	-.6702
LSA	798.8	MSA	265.9	SSA	90.7
EL1	478.7	EL2	119.0	ALF	96.43

LAUNCH DATE DEC 14 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 476.130 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.230	GAL	3.99	AZL	89.89	HCA	145.23	SMA	190.02	ECC	.23509	INC	.1141	V1	30.257
RP	232.70	LAP	.07	LOP	227.27	VP	21.029	GAP	4.09	AZP	90.09	TAL	21.22	TAP	166.45	RCA	145.35	APO	234.69	V2	23.631
RC	215.236	GL	.99	GP	8.19	ZAL	49.32	ZAP	144.05	ETS	167.06	ZAE	169.72	ETE	63.67	ZAC	98.35	ETC	255.69	CLP	144.87

PLANETOCENTRIC CONIC

C3	14.551	VHL	3.815	DLA	18.33	RAL	134.11	RAD	6567.6	VEL	11.659	PTH	2.05	VHP	4.507	DPA	3.69	RAP	195.00	ECC	1.2395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 14 2	2751.15	-27.97	78.27	356.47	94.58	12 59 53	2151.1	-27.04	69.72
90.00	5 18 42	4175.10	-.77	170.59	350.63	61.69	6 28 17	3575.1	-4.54	163.95
100.00	13 46 20	2453.48	-29.29	56.23	356.33	96.24	14 27 14	1853.5	-28.12	47.62
100.00	6 29 5	3948.00	.39	153.25	349.98	60.11	7 34 53	3348.0	-3.59	146.73
110.00	15 18 30	2165.12	-32.68	33.74	355.74	100.63	15 54 35	1565.1	-30.87	24.99
110.00	7 13 24	3809.12	3.30	140.91	348.17	55.96	8 16 54	3209.1	-1.19	134.70

DIFFERENTIAL CORRECTIONS

TDE	.0393	TRA	-.2045	TC3	2.9232	BAU	.5983
RDE	-.3105	RRA	.0951	RC3	.9567	FAU	.25786
FDE	.8171	FRA	-2.6334	FC	-15.3419	BSP	8111
BDE	.3130	BRA	.2255	BC3	3.0758	FSP	3552

MID-COURSE EXECUTION ACCURACY

SGT	2254.3	SGR	879.1	SG3	1078.7		
RRT	.7829	RRF	-.8876	RTF	-.8770		
SGB	2419.6	R23	-.2600	R13	-.8977		
SG1	2362.7	SG2	521.8	THA	17.88		

ORBIT DETERMINATION ACCURACY

ST	131.9	SR	469.0	SS	695.7
CRT	-.4926	CRS	.7595	CST	-.7231
LSA	800.8	MSA	268.7	SSA	89.1
EL1	473.8	EL2	113.6	ALF	98.37

LAUNCH DATE DEC 14 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 479.867 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.207	GAL	4.03	AZL	89.94	HCA	146.23	SMA	189.62	ECC	.23373	INC	.0598	V1	30.257
RP	232.32	LAP	.03	LOP	228.27	VP	21.038	GAP	3.67	AZP	90.05	TAL	21.53	TAP	167.76	RCA	145.30	APO	233.94	V2	23.670
RC	217.275	GL	.51	GP	8.60	ZAL	48.85	ZAP	142.75	ETS	167.04	ZAE	169.80	ETE	71.58	ZAC	98.69	ETC	255.68	CLP	143.62

PLANETOCENTRIC CONIC

C3	14.513	VHL	3.810	DLA	18.00	RAL	133.50	RAD	6567.6	VEL	11.658	PTH	2.05	VHP	4.410	DPA	4.16	RAP	194.94	ECC	1.2388

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 15 4	2737.53	-27.90	77.28	355.68	95.07	13 0 41	2137.5	-26.90	68.75
90.00	5 12 50	4187.55	-.36	171.29	349.90	61.69	6 22 38	3587.6	-4.15	164.65
100.00	13 47 3	2440.91	-29.20	55.31	355.53	96.71	14 27 43	1840.9	-27.96	46.72
100.00	6 23 32	3959.41	.78	153.88	349.27	60.12	7 29 32	3359.4	-3.20	147.36
110.00	15 18 34	2154.57	-32.55	32.95	354.92	101.08	15 54 28	1554.6	-30.68	24.23
110.00	7 8 30	3818.51	3.66	141.40	347.47	55.99	8 12 9	3218.5	-.83	135.19

DIFFERENTIAL CORRECTIONS

TDE	.0483	TRA	-.1999	TC3	2.8674	BAU	.5914
RDE	-.3046	RRA	.1148	RC3	1.0337	FAU	.26849
FDE	.8049	FRA	-2.8296	FC	-16.0164	BSP	8031
BDE	.3084	BRA	.2305	BC3	3.0481	FSP	3730

MID-COURSE EXECUTION ACCURACY

SGT	2208.7	SGR	929.1	SG3	1127.9		
RRT	.7944	RRF	-.9052	RTF	-.8726		
SGB	2396.1	R23	-.2775	R13	-.8979		
SG1	2336.0	SG2	533.6	THA	19.54		

ORBIT DETERMINATION ACCURACY

ST	136.2	SR	461.9	SS	702.8
CRT	-.5860	CRS	.7469	CST	-.7609
LSA	802.7	MSA	271.7	SSA	87.4
EL1	469.2	EL2	108.7	ALF	100.37

LAUNCH DATE DEC 14 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 483.618 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.186	GAL	4.07	AZL	90.00	HCA	147.23	SMA	189.24	ECC	.23243	INC	.0000	V1	30.257
RP	231.95	LAP	.00	LOP	229.28	VP	21.049	GAP	3.27	AZP	90.00	TAL	21.82	TAP	169.06	RCA	145.26	APO	233.23	V2	23.709
RC	219.295	GL	.01	GP	9.04	ZAL	48.42	ZAP	141.42	ETS	167.01	ZAE	169.67	ETE	79.74	ZAC	99.05	ETC	255.67	CLP	142.33

PLANETOCENTRIC CONIC

C3	14.478	VHL	3.805	DLA	17.63	RAL	132.92	RAD	6567.6	VEL	11.656	PTH	2.05	VHP	4.317	DPA	4.67	RAP	194.87	ECC	1.2383

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 16 30	2722.70	-27.80	76.20	354.91	95.60	13 1 53	2122.7	-26.73	67.70
90.00	5 6 44	4201.32	.08	172.05	349.20	61.68	6 16 46	3601.3	-3.70	165.42
100.00	13 48 8	2427.21	-29.08	54.30	354.74	97.23	14 28 35	1827.2	-27.78	45.74
100.00	6 17 47	3972.05	1.21	154.57	348.57	60.13	7 23 59	3372.0	-2.77	148.05
110.00	15 18 58	2143.04	-32.39	32.09	354.11	101.57	15 54 41	1543.0	-30.46	23.40
110.00	7 3 27	3828.98	4.05	141.95	346.80	56.03	8 7 16	3229.0	-.43	135.74

DIFFERENTIAL CORRECTIONS

TDE	.0600	TRA	-.1969	TC3	2.8061	BAU	.5846
RDE	-.2979	RRA	.1363	RC3	1.1170	FAU	.27949
FDE	.7801	FRA	-3.0355	FC	-16.7122	BSP	7924
BDE	.3038	BRA	.2394	BC3	3.0203	FSP	3909

MID-COURSE EXECUTION ACCURACY

SGT	2159.9	SGR	985.0	SG3	1178.8		
RRT	.8028	RRF	-.9206	RTF	-.8675		
SGB	2373.9	R23	-.2941	R13	-.8986		
SG1	2309.5	SG2	549.3	THA	21.37		

ORBIT DETERMINATION ACCURACY

ST	144.8	SR	453.8	SS	707.3
CRT	-.6832	CRS	.7315	CST	-.7863
LSA	802.5	MSA	275.7	SSA	85.5
EL1	465.1	EL2	103.2	ALF	102.94

LAUNCH DATE DEC 14 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 487.384 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.167	GAL	4.10	AZL	90.06	HCA	148.24	SMA	188.89	ECC	.23121	INC	.0581	V1	30.257
RP	231.57	LAP	-.03	LOP	230.29	VP	21.062	GAP	2.88	AZP	89.95	TAL	22.10	TAP	170.34	RCA	145.21	APO	232.56	V2	23.748
RC	221.297	GL	-.53	GP	9.50	ZAL	48.01	ZAP	140.05	ETS	166.99	ZAE	169.32	ETE	87.78	ZAC	99.44	ETC	255.66	CLP	141.01

PLANETOCENTRIC CONIC

C3	14.447	VHL	3.801	DLA	17.22	RAL	132.36	RAD	6567.6	VEL	11.655	PTH	2.05	VHP	4.228	DPA	5.22	RAP	194.78	ECC	1.2378

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 18 22	2706.63	-27.69	75.04	354.14	96.18	13 3 28	2106.6	-26.55	66.56
90.00	5 0 24	4216.44	.57	172.90	348.52	61.69	6 10 41	3616.4	-3.22	166.27
100.00	13 49 37	2412.32	-28.95	53.22	353.97	97.78	14 29 50	1812.3	-27.57	44.69
100.00	6 11 50	3985.98	1.68	155.34	347.90	60.15	7 18 16	3386.0	-2.30	148.82
110.00	15 19 42	2130.49	-32.22	31.15	353.30	102.10	15 55 13	1530.5	-30.21	22.51
110.00	6 58 14	3840.57	4.49	142.56	346.15	56.08	8 2 15	3240.6	.01	136.34

DIFFERENTIAL CORRECTIONS

TDE	.0719	TRA	-.1968	TC3	2.7344	BAU	.5773
RDE	-.2905	RRA	.1596	RC3	1.2066	FAU	.29072
FDE	.7469	FRA	-3.2491	FC	-17.4210	BSP	7819
BDE	.2992	BRA	.2534	BC3	2.9888	FSP	4092

MID-COURSE EXECUTION ACCURACY

SGT	2104.5	SGR	1047.2	SG3	1230.8		
RRT	.8082	RRF	-.9339	RTF	-.8610		
SGB	2350.6	R23	-.3092	R13	-.8995		
SG1	2280.7	SG2	569.1	THA	23.45		

ORBIT DETERMINATION ACCURACY

ST	155.9	SR	445.2	SS	711.4
CRT	-.7601	CRS	.7154	CST	-.7923
LSA	801.8	MSA	280.4	SSA	83.4
EL1	461.5	EL2	97.7	ALF	105.62

LAUNCH DATE DEC 14 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 491.163 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.148	GAL	4.13	AZL	90.13	HCA	149.25	SMA	188.56	ECC	.23006	INC	.1245	V1	30.257
RP	231.20	LAP	-.06	LOP	231.30	VP	21.077	GAP	2.49	AZP	89.89	TAL	22.36	TAP	171.61	RCA	145.18	APO	231.93	V2	23.788
RC	223.281	GL	-1.10	GP	10.00	ZAL	47.64	ZAP	138.64	ETS	166.97	ZAE	168.74	ETE	95.38	ZAC	99.85	ETC	255.65	CLP	139.65

PLANETOCENTRIC CONIC

C3	14.419	VHL	3.797	DLA	16.77	RAL	131.82	RAD	6567.6	VEL	11.654	PTH	2.05	VHP	4.143	DPA	5.81	RAP	194.68	ECC	1.2373

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 20 38	2689.24	-27.56	73.79	353.39	96.79	13 5 28	2089.2	-26.33	65.33
90.00	4 53 49	4232.97	1.10	173.82	347.86	61.70	6 4 22	3633.0	-2.69	167.19
100.00	13 51 31	2396.20	-28.80	52.04	353.20	98.38	14 31 27	1796.2	-27.34	43.54
100.00	6 5 38	4001.25	2.20	156.18	347.25	60.18	7 12 19	3401.2	-1.79	149.66
110.00	15 20 48	2116.86	-32.02	30.13	352.51	102.67	15 56 4	1516.9	-29.94	21.54
110.00	6 52 50	3853.35	4.98	143.23	345.52	56.14	7 57 4	3253.4	.50	137.01

DIFFERENTIAL CORRECTIONS

TDE	.0840	TRA	-.2000	TC3	2.6524	BAU	.5696
RDE	-.2825	RRA	.1847	RC3	1.3027	FAU	.30205
FDE	.7060	FRA	-3.4687	FC	-18.1350	BSP	7722
BDE	.2947	BRA	.2722	BC3	2.9550	FSP	4283

MID-COURSE EXECUTION ACCURACY

SGT	2042.8	SGR	1115.9	SG3	1283.6		
RRT	.8103	RRF	-.9453	RTF	-.8530		
SGB	2327.7	R23	-.3224	R13	-.9010		
SG1	2250.8	SG2	593.4	THA	25.80		

ORBIT DETERMINATION ACCURACY

ST	169.3	SR	436.1	SS	715.4
CRT	-.8193	CRS	.6993	CST	-.7835
LSA	801.5	MSA	285.7	SSA	81.1
EL1	458.6	EL2	92.3	ALF	108.42

LAUNCH DATE DEC 14 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 494.955 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.130	GAL	4.15	AZL	90.20	HCA	150.27	SMA	188.24	ECC	.22898	INC	.1967	V1	30.257
RP	230.82	LAP	-.10	LOP	232.32	VP	21.094	GAP	2.11	AZP	89.83	TAL	22.60	TAP	172.87	RCA	145.14	APO	231.35	V2	23.827
RC	225.247	GL	-1.71	GP	10.53	ZAL	47.31	ZAP	137.19	ETS	166.95	ZAE	167.95	ETE	102.31	ZAC	100.28	ETC	255.63	CLP	138.26

PLANETOCENTRIC CONIC

C3	14.395	VHL	3.794	DLA	16.27	RAL	131.30	RAD	6567.6	VEL	11.652	PTH	2.05	VHP	4.062	DPA	6.45	RAP	194.56	ECC	1.2369

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 23 21	2670.47	-27.40	72.43	352.64	97.45	13 7 51	2070.5	-26.08	64.01
90.00	4 46 57	4250.98	1.68	174.82	347.22	61.73	5 57 48	3651.0	-2.11	168.20
100.00	13 53 48	2378.76	-28.62	50.78	352.44	99.03	14 33 27	1778.8	-27.07	42.32
100.00	5 59 11	4017.93	2.76	157.09	346.62	60.22	7 6 9	3417.9	-1.22	150.57
110.00	15 22 14	2102.07	-31.79	29.04	351.71	103.28	15 57 16	1502.1	-29.64	20.49
110.00	6 47 14	3867.38	5.51	143.97	344.91	56.21	7 51 42	3267.4	1.04	137.74

DIFFERENTIAL CORRECTIONS

TDE	.0974	TRA	-.2061	TC3	2.5619	BAU	.5624
RDE	-.2734	RRA	.2118	RC3	1.4062	FAU	.31354
FDE	.6526	FRA	-3.6932	FC	-18.8570	BSP	7612
BDE	.2903	BRA	.2955	BC3	2.9225	FSP	4474

MID-COURSE EXECUTION ACCURACY

SGT	1976.3	SGR	1191.7	SG3	1337.0		
RRT	.8091	RRF	-.9550	RTF	-.8432		
SGB	2307.8	R23	-.3323	R13	-.9033		
SG1	2222.2	SG2	622.8	THA	28.44		

ORBIT DETERMINATION ACCURACY

ST	185.7	SR	426.0	SS	718.6
CRT	-.8668	CRS	.6819	CST	-.7610
LSA	800.5	MSA	292.3	SSA	78.4
EL1	456.7	EL2	86.4	ALF	111.51

LAUNCH DATE DEC 14 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 498.760 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.114 GAL 4.18 AZL 90.27 HCA 151.29 SMA 187.95 ECC .22795 INC .2712 V1 30.257
RP 230.43 LAP -.13 LOP 233.34 VP 21.113 GAP 1.73 AZP 89.76 TAL 22.82 TAP 174.11 RCA 145.11 APO 230.79 V2 23.867
RC 227.193 GL -2.37 GP 11.10 ZAL 47.01 ZAP 135.70 ETS 166.93 ZAE 166.95 ETE 108.46 ZAC 100.75 ETC 255.62 CLP 136.83

PLANETOCENTRIC CONIC

C3 14.374 VHL 3.791 DLA 15.73 RAL 130.79 RAD 6567.6 VEL 11.652 PTH 2.05 VHP 3.984 DPA 7.14 RAP 194.43 ECC 1.2366

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 26 30	2650.24	-27.21	70.98	351.89	98.15	13 10 40	2050.2	-25.80	62.60
90.00	4 39 48	4270.57	2.32	175.92	346.60	61.77	5 50 59	3670.6	-1.48	169.29
100.00	13 56 31	2359.93	-28.41	49.42	351.68	99.71	14 35 51	1759.9	-26.77	41.00
100.00	5 52 28	4036.12	3.38	158.09	346.01	60.28	6 59 44	3436.1	-.60	151.57
110.00	15 24 3	2086.05	-31.53	27.86	350.92	103.93	15 58 49	1486.1	-29.30	19.37
110.00	6 41 25	3882.76	6.09	144.78	344.33	56.30	7 46 8	3282.8	1.62	138.54

DIFFERENTIAL CORRECTIONS
TDE .1115 TRA -.2150 TC3 2.4606 BAU .5556
RDE -.2630 RRA .2415 RC3 1.5177 FAU .32512
FDE .5842 FRA-3.9268 FC-19.5821 BSP 7524
BDE .2857 BRA .3233 BC3 2.8910 FSP 4670

MID-COURSE EXECUTION ACCURACY
SGT 1903.5 SGR 1275.2 SG3 1391.2
RRT .8042 RRF -.9632 RTF -.8311
SGB 2291.2 R23 -.3381 R13 -.9069
SG1 2194.9 SG2 657.3 THA 31.45

ORBIT DETERMINATION ACCURACY
ST 204.4 SR 414.9 SS 722.0
CRT -.9029 CRS .6628 CST -.7257
LSA 799.4 MSA 300.8 SSA 75.3
EL1 455.5 EL2 80.0 ALF 114.80

LAUNCH DATE DEC 14 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 502.578 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.098 GAL 4.20 AZL 90.35 HCA 152.31 SMA 187.68 ECC .22698 INC .3506 V1 30.257
RP 230.05 LAP -.16 LOP 234.36 VP 21.134 GAP 1.37 AZP 89.69 TAL 23.02 TAP 175.33 RCA 145.08 APO 230.27 V2 23.907
RC 229.120 GL -3.06 GP 11.71 ZAL 46.74 ZAP 134.16 ETS 166.92 ZAE 165.78 ETE 113.80 ZAC 101.25 ETC 255.61 CLP 135.36

PLANETOCENTRIC CONIC

C3 14.357 VHL 3.789 DLA 15.13 RAL 130.31 RAD 6567.6 VEL 11.651 PTH 2.05 VHP 3.911 DPA 7.88 RAP 194.29 ECC 1.2363

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 30 5	2628.46	-26.99	69.43	351.14	98.91	13 13 54	2028.5	-25.48	61.08
90.00	4 32 19	4291.84	3.00	177.11	346.00	61.83	5 43 51	3691.8	-.79	170.48
100.00	13 59 39	2339.61	-28.17	47.96	350.92	100.45	14 38 39	1739.6	-26.44	39.58
100.00	5 45 26	4055.91	4.04	159.18	345.42	60.36	6 53 2	3455.9	.07	152.65
110.00	15 26 14	2068.71	-31.24	26.59	350.13	104.63	16 0 43	1468.7	-28.92	18.16
110.00	6 35 21	3899.58	6.73	145.67	343.77	56.41	7 40 20	3299.6	2.27	139.42

DIFFERENTIAL CORRECTIONS
TDE .1257 TRA -.2271 TC3 2.3490 BAU .5496
RDE -.2511 RRA .2739 RC3 1.6379 FAU .33676
FDE .5008 FRA-4.1672 FC-20.3066 BSP 7440
BDE .2808 BRA .3558 BC3 2.8636 FSP 4859

MID-COURSE EXECUTION ACCURACY
SGT 1825.2 SGR 1367.1 SG3 1445.7
RRT .7954 RRF -.9700 RTF -.8162
SGB 2280.4 R23 -.3384 R13 -.9120
SG1 2171.5 SG2 696.5 THA 34.89

ORBIT DETERMINATION ACCURACY
ST 224.4 SR 402.7 SS 726.5
CRT -.9286 CRS .6432 CST -.6805
LSA 799.0 MSA 311.1 SSA 71.7
EL1 455.1 EL2 73.7 ALF 118.17

LAUNCH DATE DEC 14 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 506.408 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.083 GAL 4.22 AZL 90.44 HCA 153.34 SMA 187.42 ECC .22607 INC .4376 V1 30.257
RP 229.67 LAP -.20 LOP 235.38 VP 21.157 GAP 1.01 AZP 89.61 TAL 23.21 TAP 176.55 RCA 145.05 APO 229.79 V2 23.948
RC 231.027 GL -3.81 GP 12.37 ZAL 46.51 ZAP 132.59 ETS 166.91 ZAE 164.45 ETE 118.38 ZAC 101.78 ETC 255.59 CLP 133.85

PLANETOCENTRIC CONIC

C3 14.344 VHL 3.787 DLA 14.47 RAL 129.83 RAD 6567.6 VEL 11.650 PTH 2.05 VHP 3.842 DPA 8.67 RAP 194.14 ECC 1.2361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 34 10	2605.00	-26.73	67.76	350.40	99.70	13 17 34	2005.0	-25.12	59.46
90.00	4 24 29	4314.91	3.74	178.40	345.43	61.91	5 36 24	3714.9	-.05	171.76
100.00	14 3 15	2317.69	-27.89	46.39	350.16	101.23	14 41 53	1717.7	-26.05	38.06
100.00	5 38 5	4077.45	4.77	160.37	344.86	60.46	6 46 2	3477.5	.80	153.84
110.00	15 28 49	2049.93	-30.91	25.23	349.34	105.38	16 2 59	1449.9	-28.49	16.87
110.00	6 29 0	3917.97	7.42	146.64	343.23	56.54	7 34 18	3318.0	2.97	140.38

DIFFERENTIAL CORRECTIONS
TDE .1393 TRA -.2438 TC3 2.2243 BAU .5446
RDE -.2380 RRA .3086 RC3 1.7658 FAU .34800
FDE .4074 FRA-4.4044 FC-21.0028 BSP 7404
BDE .2758 BRA .3933 BC3 2.8400 FSP 5062

MID-COURSE EXECUTION ACCURACY
SGT 1740.2 SGR 1466.7 SG3 1498.6
RRT .7812 RRF -.9756 RTF -.7969
SGB 2275.9 R23 -.3327 R13 -.9188
SG1 2152.1 SG2 740.3 THA 38.80

ORBIT DETERMINATION ACCURACY
ST 245.0 SR 390.1 SS 732.6
CRT -.9457 CRS .6270 CST -.6320
LSA 800.3 MSA 322.1 SSA 68.0
EL1 455.6 EL2 68.2 ALF 121.50

LAUNCH DATE DEC 14 1964 FLIGHT TIME 230.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 510.250 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.070 GAL 4.24 AZL 90.53 HCA 154.37 SMA 187.18 ECC .22521 INC .5300 V1 30.257
RP 229.28 LAP -.23 LOP 236.41 VP 21.181 GAP .66 AZP 89.52 TAL 23.38 TAP 177.75 RCA 145.02 APO 229.33 V2 23.988
RC 232.913 GL -4.62 GP 13.08 ZAL 46.32 ZAP 130.97 ETS 166.91 ZAE 162.98 ETE 122.30 ZAC 102.36 ETC 255.57 CLP 132.31

PLANETOCENTRIC CONIC

C3 14.338 VHL 3.786 DLA 13.76 RAL 129.37 RAD 6567.6 VEL 11.650 PTH 2.05 VHP 3.778 DPA 9.53 RAP 193.98 ECC 1.2360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 38 43	2579.74	-26.43	65.97	349.65	100.55	13 21 43	1979.7	-24.71	57.73
90.00	4 16 16	4339.95	4.54	179.80	344.87	62.02	5 28 36	3740.0	.76	173.16
100.00	14 7 18	2294.04	-27.56	44.70	349.39	102.06	14 45 32	1694.0	-25.62	36.44
100.00	5 30 21	4100.89	5.55	161.67	344.32	60.58	6 38 42	3500.9	1.59	155.12
110.00	15 31 49	2029.61	-30.54	23.77	348.54	106.17	16 5 39	1429.6	-28.02	15.48
110.00	6 22 20	3938.08	8.17	147.71	342.71	56.69	7 27 58	3338.1	3.73	141.44

DIFFERENTIAL CORRECTIONS
TDE .1545 TRA -.2631 TC3 2.0909 BAU .5421
RDE -.2221 RRA .3471 RC3 1.9045 FAU .35927
FDE .2878 FRA-4.6516 FC-21.6938 BSP 7374
BDE .2705 BRA .4356 BC3 2.8283 FSP 5249

MID-COURSE EXECUTION ACCURACY
SGT 1652.3 SGR 1576.6 SG3 1551.8
RRT .7615 RRF -.9803 RTF -.7731
SGB 2283.8 R23 -.3187 R13 -.9280
SG1 2143.6 SG2 787.7 THA 43.24

ORBIT DETERMINATION ACCURACY
ST 268.4 SR 375.6 SS 741.4
CRT -.9567 CRS .6099 CST -.5672
LSA 803.1 MSA 337.3 SSA 63.5
EL1 457.2 EL2 64.2 ALF 125.15

LAUNCH DATE DEC 14 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 514.104 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.057	GAL	4.25	AZL	90.63	HCA	155.40	SMA	186.95	ECC	.22440	INC	.6302
RP	228.89	LAP	-.26	LOP	237.44	VP	21.207	GAP	.31	AZP	89.43	TAL	23.53	TAP	178.93	RCA	145.00	APO	228.90
RC	234.778	GL	-5.50	GP	13.84	ZAL	46.17	ZAP	129.31	ETS	166.92	ZAE	161.38	ETE	125.62	ZAC	102.98	ETC	255.55

V1	30.257	V2	24.029	CLP	130.73														

PLANETOCENTRIC CONIC

C3	14.337	VHL	3.786	DLA	12.97	RAL	128.92	RAD	6567.6	VEL	11.650	PTH	2.05	VHP	3.718	DPA	10.44	RAP	193.81

ECC	1.2360																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 43 48	2552.52	-26.08	64.06	348.89	101.45	13 26 20	1952.5	-24.24	55.87
90.00	4 7 36	4367.16	5.41	181.33	344.34	62.16	5 20 23	3767.2	1.64	174.68
100.00	14 11 52	2268.50	-27.19	42.90	348.62	102.93	14 49 40	1668.5	-25.13	34.70
100.00	5 22 13	4126.41	6.40	163.09	343.80	60.74	6 30 59	3526.4	2.46	156.52
110.00	15 35 15	2007.59	-30.11	22.20	347.73	107.01	16 8 42	1407.6	-27.49	13.99
110.00	6 15 19	3960.08	8.99	148.89	342.22	56.88	7 21 19	3360.1	4.57	142.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1684	TRA	-.2867	TC3	1.9442	BAU	.5420	SGT	1559.2	SGR	1696.3	SG3	1603.5	ST	291.1	SR	360.6	SS	754.8
RDE	-.2037	RRA	.3892	RC3	2.0531	FAU	.37014	RRT	.7341	RRF	-.9842	RTF	-.7422	CRT	-.9593	CRS	.5990	CST	-.4976
FDE	.1501	FRA	-4.9001	FC-22.3505		BSP	7410	SGB	2304.0	R23	-.2957	R13	-.9392	LSA	810.0	MSA	353.5	SSA	58.8
BDE	.2643	BRA	.4834	BC3	2.8276	FSP	5437	SG1	2146.8	SG2	836.6	THA	48.28	EL1	458.9	EL2	64.6	ALF	128.66

LAUNCH DATE DEC 14 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 517.970 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.045	GAL	4.26	AZL	90.74	HCA	156.43	SMA	186.74	ECC	.22363	INC	.7391
RP	228.51	LAP	-.30	LOP	238.48	VP	21.235	GAP	-.03	AZP	89.32	TAL	23.67	TAP	180.10	RCA	144.98	APO	228.51
RC	236.623	GL	-6.44	GP	14.67	ZAL	46.06	ZAP	127.60	ETS	166.94	ZAE	159.67	ETE	128.45	ZAC	103.66	ETC	255.53

V1	30.257	V2	24.070	CLP	129.10														

PLANETOCENTRIC CONIC

C3	14.346	VHL	3.788	DLA	12.10	RAL	128.48	RAD	6567.6	VEL	11.650	PTH	2.05	VHP	3.664	DPA	11.43	RAP	193.65

ECC	1.2361																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 49 25	2523.20	-25.66	62.01	348.13	102.40	13 31 28	1923.2	-23.70	53.89
90.00	3 58 26	4396.75	6.35	183.00	343.84	62.35	5 11 42	3796.7	2.59	176.33
100.00	14 16 56	2240.94	-26.75	40.97	347.85	103.86	14 54 17	1640.9	-24.58	32.84
100.00	5 13 36	4154.23	7.33	164.64	343.30	60.94	6 22 50	3554.2	3.40	158.05
110.00	15 39 7	1983.75	-29.62	20.51	346.92	107.90	16 12 11	1383.8	-26.89	12.39
110.00	6 7 53	3984.19	9.89	150.18	341.75	57.11	7 14 18	3384.2	5.48	143.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1917	TRA	-.3045	TC3	1.8152	BAU	.5502	SGT	1482.1	SGR	1834.3	SG3	1660.5	ST	325.3	SR	342.3	SS	779.4
RDE	-.1789	RRA	.4383	RC3	2.2213	FAU	.38209	RRT	.7046	RRF	-.9874	RTF	-.7113	CRT	-.9445	CRS	.5906	CST	-.3734
FDE	-.0438	FRA	-5.1814	FC-23.0586		BSP	7303	SGB	2358.2	R23	-.2617	R13	-.9524	LSA	824.3	MSA	385.1	SSA	52.1
BDE	.2622	BRA	.5337	BC3	2.8686	FSP	5545	SG1	2187.1	SG2	882.0	THA	53.48	EL1	465.6	EL2	78.6	ALF	133.45

LAUNCH DATE DEC 14 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 521.848 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.034	GAL	4.27	AZL	90.86	HCA	157.47	SMA	186.55	ECC	.22291	INC	.8574
RP	228.12	LAP	-.33	LOP	239.52	VP	21.264	GAP	-.36	AZP	89.21	TAL	23.79	TAP	181.26	RCA	144.97	APO	228.13
RC	238.446	GL	-7.47	GP	15.56	ZAL	46.00	ZAP	125.86	ETS	166.97	ZAE	157.84	ETE	130.85	ZAC	104.39	ETC	255.50

V1	30.257	V2	24.111	CLP	127.45														

PLANETOCENTRIC CONIC

C3	14.364	VHL	3.790	DLA	11.15	RAL	128.04	RAD	6567.6	VEL	11.651	PTH	2.05	VHP	3.614	DPA	12.49	RAP	193.48

ECC	1.2364																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 55 38	2491.47	-25.18	59.81	347.36	103.40	13 37 10	1891.5	-23.09	51.76
90.00	3 48 42	4429.03	7.36	184.83	343.36	62.58	5 2 31	3829.0	3.63	178.13
100.00	14 22 35	2211.07	-26.25	38.89	347.06	104.85	14 59 26	1611.1	-23.95	30.84
100.00	5 4 27	4184.66	8.33	166.34	342.84	61.19	6 14 11	3584.7	4.42	159.73
110.00	15 43 31	1957.82	-29.06	18.70	346.10	108.84	16 16 8	1357.8	-26.22	10.67
110.00	6 0 0	4010.67	10.86	151.61	341.31	57.39	7 6 51	3410.7	6.49	145.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2003	TRA	-.3401	TC3	1.6349	BAU	.5560	SGT	1379.1	SGR	1975.4	SG3	1705.6	ST	343.2	SR	329.1	SS	806.7
RDE	-.1543	RRA	.4883	RC3	2.3900	FAU	.39145	RRT	.6534	RRF	-.9900	RTF	-.6570	CRT	-.9216	CRS	.6090	CST	-.3093
FDE	-.2180	FRA	-5.4198	FC-23.5940		BSP	7542	SGB	2409.2	R23	-.2218	R13	-.9649	LSA	846.1	MSA	398.3	SSA	47.8
BDE	.2528	BRA	.5951	BC3	2.8957	FSP	5734	SG1	2223.5	SG2	927.6	THA	59.66	EL1	466.1	EL2	94.0	ALF	136.30

LAUNCH DATE DEC 14 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 525.736 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.023	GAL	4.28	AZL	90.99	HCA	158.51	SMA	186.37	ECC	.22223	INC	.9874
RP	227.73	LAP	-.36	LOP	240.56	VP	21.294	GAP	-.69	AZP	89.08	TAL	23.89	TAP	182.40	RCA	144.95	APO	227.78
RC	240.248	GL	-8.60	GP	16.52	ZAL	46.00	ZAP	124.07	ETS	167.01	ZAE	155.92	ETE	132.89	ZAC	105.19	ETC	255.47

V1	30.257	V2	24.152	CLP	125.75														

PLANETOCENTRIC CONIC

C3	14.395	VHL	3.794	DLA	10.09	RAL	127.60	RAD	6567.6	VEL	11.652	PTH	2.05	VHP	3.571	DPA	13.63	RAP	193.33

ECC	1.2369																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 2 30	2457.13	-24.62	57.45	346.58	104.45	13 43 27	1857.1	-22.39	49.49
90.00	3 38 20	4464.33	8.46	186.84	342.92	62.88	4 52 44	3864.3	4.76	180.11
100.00	14 28 50	2178.68	-25.66	36.66	346.26	105.88	15 5 9	1578.7	-23.24	28.70
100.00	4 54 41	4218.01	9.42	168.22	342.41	61.50	6 4 59	3618.0	5.54	161.57
110.00	15 48 26	1929.63	-28.43	16.75	345.26	109.83	16 20 35	1329.6	-25.46	8.83
110.00	5 51 35	4039.82	11.93	153.20	340.91	57.73	6 58 55	3439.8	7.58	146.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2092	TRA	-.3785	TC3	1.4471	BAU	.5675	SGT	1281.7	SGR	2128.9	SG3	1746.8	ST	362.2	SR	318.6	SS	843.4
RDE	-.1249	RRA	.5434	RC3	2.5697	FAU	.39992	RRT	.5855	RRF	-.9920	RTF	-.5868	CRT	-.8769	CRS	.6465	CST	-.2371
FDE	-.4201	FRA	-5.6553	FC-24.0525		BSP	7839	SGB	2484.9	R23	-.1755	R13	-.9764	LSA	878.6	MSA	412.7	SSA	43.1
BDE	.2436	BRA	.6622	BC3	2.9491	FSP	5910	SG1	2289.4	SG2	966.1	THA	66.06	EL1	467.6	EL2	118.6	ALF	139.18

LAUNCH DATE DEC 14 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 529.634 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.013	GAL	4.28	AZL	91.13	HCA	159.56	SMA	186.20	ECC	.22158	INC	1.1306	V1	30.257
RP	227.34	LAP	-.39	LOP	241.61	VP	21.326	GAP	-1.00	AZP	88.94	TAL	23.97	TAP	183.53	RCA	144.94	APO	227.46	V2	24.193
RC	242.030	GL	-9.84	GP	17.57	ZAL	46.06	ZAP	122.24	ETS	167.07	ZAE	153.89	ETE	134.62	ZAC	106.06	ETC	255.43	CLP	124.02

PLANETOCENTRIC CONIC

C3	14.443	VHL	3.800	DLA	8.92	RAL	127.16	RAD	6567.6	VEL	11.655	PTH	2.05	VHP	3.533	DPA	14.86	RAP	193.18	ECC	1.2377

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 10 5	2419.86	-23.96	54.92	345.79	105.56	13 50 25	1819.9	-21.60	47.05
90.00	3 27 14	4503.06	9.66	189.05	342.52	63.25	4 42 17	3903.1	5.99	182.29
100.00	14 35 46	2143.48	-24.98	34.26	345.46	106.97	15 11 30	1543.5	-22.42	26.40
100.00	4 44 13	4254.72	10.60	170.29	342.02	61.89	5 55 8	3654.7	6.76	163.61
110.00	15 53 56	1898.90	-27.70	14.65	344.42	110.88	16 25 35	1298.9	-24.61	6.85
110.00	5 42 33	4072.02	13.09	154.97	340.55	58.14	6 50 25	3472.0	8.79	148.52

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.2169	TRA -.4213	TC3 1.2494	BAU	.5851	SGT 1192.5	SGR 2296.0	SG3 1783.2	ST 380.7	SR 314.2	SS 891.5
RDE	-.0896	RRA .6041	RC3 2.7608	FAU	.40733	RRT .4952	RRF -.9937	RTF -.4945	CRT -.8004	CRS .7054	CST -.1642
FDE	-.6515	FRA-5.8829	FC-24.4166	BSP	8229	SGB 2587.2	R23 -.1274	R13 -.9855	LSA 925.0	MSA 425.8	SSA 38.5
BDE	.2347	BRA .7365	BC3 3.0304	FSP	6071	SG1 2387.7	SG2 996.3	THA 72.42	EL1 469.4	EL2 152.8	ALF 141.79

LAUNCH DATE DEC 14 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 533.544 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.004	GAL	4.28	AZL	91.29	HCA	160.61	SMA	186.05	ECC	.22098	INC	1.2885	V1	30.257
RP	226.95	LAP	-.43	LOP	242.66	VP	21.359	GAP	-1.31	AZP	88.78	TAL	24.03	TAP	184.64	RCA	144.94	APO	227.16	V2	24.235
RC	243.792	GL	-11.20	GP	18.71	ZAL	46.18	ZAP	120.36	ETS	167.15	ZAE	151.77	ETE	136.09	ZAC	107.02	ETC	255.39	CLP	122.26

PLANETOCENTRIC CONIC

C3	14.512	VHL	3.810	DLA	7.63	RAL	126.71	RAD	6567.6	VEL	11.658	PTH	2.05	VHP	3.502	DPA	16.18	RAP	193.06	ECC	1.2388

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 18 26	2379.31	-23.20	52.19	344.99	106.71	13 58 5	1779.3	-20.69	44.42
90.00	3 15 16	4545.75	10.96	191.52	342.16	63.73	4 31 2	3945.8	7.34	184.71
100.00	14 43 27	2105.12	-24.20	31.69	344.65	108.11	15 18 32	1505.1	-21.50	23.93
100.00	4 32 56	4295.17	11.89	172.61	341.67	62.37	5 44 31	3695.2	8.10	165.87
110.00	16 0 4	1865.33	-26.87	12.40	343.57	111.98	16 31 10	1265.3	-23.64	4.72
110.00	5 32 48	4107.73	14.37	156.95	340.24	58.64	6 41 16	3507.7	10.11	150.43

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.2225	TRA -.4681	TC3 1.0426	BAU	.6100	SGT 1116.9	SGR 2480.9	SG3 1816.1	ST 397.4	SR 321.3	SS 956.3
RDE	-.0462	RRA .6729	RC3 2.9662	FAU	.41387	RRT .3777	RRF -.9950	RTF -.3756	CRT -.6805	CRS .7822	CST -.0918
FDE	-.9227	FRA-6.1133	FC-24.6896	BSP	8687	SGB 2720.7	R23 -.0819	R13 -.9916	LSA 992.1	MSA 436.2	SSA 33.9
BDE	.2272	BRA .8197	BC3 3.1441	FSP	6187	SG1 2523.6	SG2 1016.6	THA 78.45	EL1 470.8	EL2 198.7	ALF 143.73

LAUNCH DATE DEC 14 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 537.464 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.996	GAL	4.28	AZL	91.47	HCA	161.66	SMA	185.90	ECC	.22040	INC	1.4649	V1	30.257
RP	226.56	LAP	-.46	LOP	243.71	VP	21.394	GAP	-1.62	AZP	88.61	TAL	24.08	TAP	185.75	RCA	144.93	APO	226.88	V2	24.277
RC	245.534	GL	-12.71	GP	19.95	ZAL	46.39	ZAP	118.45	ETS	167.25	ZAE	149.55	ETE	137.34	ZAC	108.07	ETC	255.33	CLP	120.45

PLANETOCENTRIC CONIC

C3	14.611	VHL	3.822	DLA	6.19	RAL	126.24	RAD	6567.6	VEL	11.662	PTH	2.05	VHP	3.479	DPA	17.61	RAP	192.97	ECC	1.2405

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 27 40	2335.04	-22.30	49.26	344.18	107.92	14 6 35	1735.0	-19.64	41.59
90.00	3 2 17	4593.03	12.37	194.28	341.86	64.32	4 18 50	3993.0	8.81	187.40
100.00	14 51 57	2063.19	-23.28	28.91	343.82	109.30	15 26 21	1463.2	-20.44	21.27
100.00	4 20 42	4340.10	13.30	175.21	341.39	62.98	5 33 2	3740.1	9.57	168.40
110.00	16 6 56	1828.56	-25.91	9.97	342.70	113.12	16 37 24	1228.6	-22.55	2.43
110.00	5 22 13	4147.50	15.76	159.18	339.98	59.27	6 31 20	3547.5	11.57	152.59

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.2255	TRA -.5197	TC3 .8260	BAU	.6419	SGT 1061.6	SGR 2681.0	SG3 1840.7	ST 412.2	SR 346.8	SS 1036.1
RDE	.0060	RRA .7492	RC3 3.1805	FAU	.41856	RRT .2295	RRF -.9961	RTF -.2262	CRT -.5264	CRS .8599	CST -.0293
FDE	-1.2246	FRA-6.3277	FC-24.8014	BSP	9264	SGB 2883.6	R23 -.0429	R13 -.9952	LSA 1079.8	MSA 443.6	SSA 29.5
BDE	.2256	BRA .9118	BC3 3.2860	FSP	6285	SG1 2694.0	SG2 1028.3	THA 83.92	EL1 473.6	EL2 256.6	ALF 144.13

LAUNCH DATE DEC 14 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 541.395 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.989	GAL	4.28	AZL	91.66	HCA	162.72	SMA	185.77	ECC	.21986	INC	1.6628	V1	30.257
RP	226.17	LAP	-.49	LOP	244.77	VP	21.429	GAP	-1.92	AZP	88.41	TAL	24.12	TAP	186.84	RCA	144.93	APO	226.62	V2	24.318
RC	247.256	GL	-14.39	GP	21.32	ZAL	46.69	ZAP	116.50	ETS	167.38	ZAE	147.24	ETE	138.40	ZAC	109.23	ETC	255.27	CLP	118.62

PLANETOCENTRIC CONIC

C3	14.747	VHL	3.840	DLA	4.58	RAL	125.75	RAD	6567.6	VEL	11.668	PTH	2.05	VHP	3.464	DPA	19.15	RAP	192.91	ECC	1.2427

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 37 55	2286.50	-21.25	46.09	343.38	109.17	14 16 2	1686.5	-18.44	38.54
90.00	2 48 8	4645.69	13.90	197.38	341.64	65.08	4 5 33	4045.7	10.42	190.43
100.00	15 1 25	2017.19	-22.21	25.91	343.00	110.53	15 35 2	1417.2	-19.22	18.39
100.00	4 7 19	4390.23	14.83	178.14	341.18	63.74	5 20 29	3790.2	11.18	171.25
110.00	16 14 36	1788.15	-24.80	7.36	341.84	114.32	16 44 24	1188.2	-21.31	359.95
110.00	5 10 38	4192.03	17.29	161.73	339.81	60.04	6 20 30	3592.0	13.18	155.03

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.2255	TRA -.5761	TC3 .6033	BAU	.6817	SGT 1035.1	SGR 2900.4	SG3 1857.3	ST 424.7	SR 397.1	SS 1134.4
RDE	.0700	RRA .8352	RC3 3.4050	FAU	.42147	RRT .0562	RRF -.9969	RTF -.0523	CRT -.3604	CRS .9220	CST .0218
FDE	-1.5646	FRA-6.5287	FC-24.7437	BSP	9945	SGB 3079.6	R23 -.0119	R13 -.9969	LSA 1193.0	MSA 448.4	SSA 25.4
BDE	.2361	BRA 1.0146	BC3 3.4580	FSP	6343	SG1 2901.1	SG2 1033.3	THA 88.68	EL1 480.5	EL2 327.4	ALF 140.27

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LAUNCH DATE  DEC 14 1964                          FLIGHT TIME 248.00                                ARRIVAL DATE  AUG 19 1965

  HELIOCENTRIC CONIC                                  DISTANCE 545.335                                   EARTH  TO  MARS
   RL  147.25 LAL     .00 LOL  82.05 VL  32.982 GAL   4.27 AZL  91.89 HCA 163.78 SMA 185.65 ECC .21936 INC 1.8864 V1  30.257
   RP  225.78 LAP    -.53 LOP 245.83 VP  21.466 GAP  -2.21 AZP  88.19 TAL  24.13 TAP 187.91 RCA 144.93 APO 226.38 V2  24.360
   RC 248.959 GL   -16.27 GP   22.82 ZAL  47.10 ZAP 114.52 ETS 167.55 ZAE 144.82 ETE 139.29 ZAC 110.51 ETC 255.19 CLP 116.76
  PLANETOCENTRIC CONIC
   C3  14.933 VHL   3.864 DLA   2.78 RAL 125.22 RAD 6567.6 VEL 11.676 PTH   2.05 VHP   3.458 DPA  20.82 RAP 192.91 ECC 1.2458
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00     13 49 20   2233.04     -20.01     42.65     342.58     110.46    14 26 33    1633.0     -17.05      35.23
      90.00      2 32 32   4704.74      15.56    200.92     341.51      66.04     3 50 57    4104.7      12.19     193.86
     100.00     15 11 58   1966.49     -20.97     22.66     342.19     111.81    15 44 45    1366.5     -17.82      15.27
     100.00      3 52 35   4446.52      16.49    181.49     341.07      64.71     5  6 41    3846.5      12.95     174.49
     110.00     16 23 12   1743.58     -23.52      4.53     340.98     115.55    16 52 15    1143.6     -19.89     357.27
     110.00      4 57 51   4242.19      18.97    164.65     339.74      61.02     6  8 33    3642.2      14.96     157.82
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE   .2193 TRA -.6395 TC3   .3699 BAU   .7290     SGT 1043.4 SGR 3137.1 SG3 1861.5          ST    432.4 SR    475.9 SS  1247.1
   RDE   .1469 RRA  .9312 RC3 3.6329 FAU .42171       RRT -.1340 RRF -.9976 RTF   .1383         CRT -.2263 CRS   .9609 CST   .0476
   FDE-1.9304 FRA-6.7006 FC-24.4494 BSP  10776        SGB 3306.1 R23  .0117 R13 -.9975          LSA 1329.1 MSA   449.1 SSA    21.7
   BDE   .2640 BRA 1.1296 BC3 3.6517 FSP   6379       SG1 3140.6 SG2 1032.9 THA  92.86           EL1   507.2 EL2   395.1 ALF 123.50

LAUNCH DATE  DEC 14 1964                          FLIGHT TIME 250.00                                ARRIVAL DATE  AUG 21 1965

  HELIOCENTRIC CONIC                                  DISTANCE 549.287                                   EARTH  TO  MARS
   RL  147.25 LAL     .00 LOL  82.05 VL  32.975 GAL   4.27 AZL  92.14 HCA 164.84 SMA 185.55 ECC .21888 INC 2.1407 V1  30.257
   RP  225.38 LAP    -.56 LOP 246.90 VP  21.504 GAP  -2.50 AZP  87.93 TAL  24.14 TAP 188.98 RCA 144.93 APO 226.16 V2  24.402
   RC 250.643 GL   -18.38 GP   24.47 ZAL  47.64 ZAP 112.50 ETS 167.75 ZAE 142.31 ETE 140.04 ZAC 111.94 ETC 255.09 CLP 114.86
  PLANETOCENTRIC CONIC
   C3  15.187 VHL   3.897 DLA    .75 RAL 124.66 RAD 6567.6 VEL 11.686 PTH   2.06 VHP   3.465 DPA  22.64 RAP 192.98 ECC 1.2499
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00     14  2  8   2173.85     -18.56     38.92     341.81     111.78    14 38 22    1573.9     -15.44      31.63
      90.00      2 15 12   4771.48      17.36    204.99     341.52      67.27     3 34 43    4171.5      14.14     197.80
     100.00     15 23 50   1910.35     -19.51     19.13     341.40     113.11    15 55 40    1310.4     -16.21      11.88
     100.00      3 36 12   4510.21      18.30    185.35     341.09      65.95     4 51 22    3910.2      14.90     178.21
     110.00     16 32 52   1694.24     -22.04      1.46     340.14     116.82    17  1  7    1094.2     -18.26     354.37
     110.00      4 43 38   4299.09      20.81    168.03     339.80      62.25     5 55 17    3699.1      16.94     161.05
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE   .2086 TRA -.7079 TC3   .1374 BAU   .7870     SGT 1090.3 SGR 3407.0 SG3 1859.5          ST    437.7 SR    592.7 SS  1388.8
   RDE   .2459 RRA 1.0448 RC3 3.8740 FAU .42046       RRT -.3136 RRF -.9981 RTF   .3178         CRT -.1263 CRS   .9824 CST   .0581
   FDE-2.3576 FRA-6.8744 FC-23.9691 BSP  11618        SGB 3577.2 R23  .0281 R13 -.9978          LSA 1506.6 MSA   448.8 SSA    18.3
   BDE   .3224 BRA 1.2620 BC3 3.8764 FSP   6306       SG1 3425.8 SG2 1029.7 THA  96.30           EL1   598.1 EL2   430.2 ALF 101.15

LAUNCH DATE  DEC 14 1964                          FLIGHT TIME 252.00                                ARRIVAL DATE  AUG 23 1965

  HELIOCENTRIC CONIC                                  DISTANCE 553.128                                   EARTH  TO  MARS
   RL  147.25 LAL     .00 LOL  82.05 VL  32.970 GAL   4.24 AZL  92.43 HCA 165.91 SMA 185.45 ECC .21834 INC 2.4339 V1  30.257
   RP  224.99 LAP    -.59 LOP 247.97 VP  21.542 GAP  -2.75 AZP  87.64 TAL  24.04 TAP 189.95 RCA 144.96 APO 225.94 V2  24.444
   RC 252.307 GL   -20.78 GP   26.27 ZAL  48.44 ZAP 110.59 ETS 167.92 ZAE 139.80 ETE 140.51 ZAC 113.54 ETC 254.95 CLP 113.10
  PLANETOCENTRIC CONIC
   C3  15.490 VHL   3.936 DLA  -1.60 RAL 124.12 RAD 6567.6 VEL 11.699 PTH   2.06 VHP   3.487 DPA  24.53 RAP 193.26 ECC 1.2549
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00     14 17 23   2105.60     -16.78     34.70     341.12     113.15    14 52 28    1505.6     -13.51      27.55
      90.00      1 55 40   4848.62      19.33    209.80     341.76      68.89     3 16 29    4248.6      16.28     202.45
     100.00     15 37 59   1845.61     -17.73     15.14     340.69     114.47    16  8 44    1245.6     -14.28       8.05
     100.00      3 17 45   4583.85      20.28    189.93     341.35      67.56     4 34  9    3983.9      17.07     182.61
     110.00     16 44 31   1637.32     -20.25    358.01     339.37     118.15    17 11 48    1037.3     -16.33     351.09
     110.00      4 27 42   4364.91      22.85    172.06     340.10      63.85     5 40 27    3764.9      19.15     164.88
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE  -.1739 TRA-1.1629 TC3-1.0986 BAU   .6442     SGT 1918.4 SGR 2512.5 SG3 1234.2          ST    568.3 SR    347.8 SS   578.8
   RDE  -.1029 RRA  .7009 RC3 2.9104 FAU .29195       RRT -.7618 RRF -.9969 RTF   .7930         CRT -.6044 CRS   .8641 CST  -.9184
   FDE  -.1078 FRA-4.2922 FC-16.3173 BSP  24940       SGB 3161.1 R23  .1888 R13 -.9803          LSA   839.8 MSA   269.5 SSA    31.3
   BDE   .2021 BRA 1.3578 BC3 3.1108 FSP   11867      SG1 2982.8 SG2 1046.8 THA 125.14          EL1   615.1 EL2   256.0 ALF 155.11

LAUNCH DATE  DEC 14 1964                          FLIGHT TIME 254.00                                ARRIVAL DATE  AUG 25 1965

  HELIOCENTRIC CONIC                                  DISTANCE 557.216                                   EARTH  TO  MARS
   RL  147.25 LAL     .00 LOL  82.05 VL  32.964 GAL   4.24 AZL  92.78 HCA 166.98 SMA 185.36 ECC .21800 INC 2.7760 V1  30.257
   RP  224.60 LAP    -.63 LOP 249.04 VP  21.582 GAP  -3.05 AZP  87.30 TAL  24.09 TAP 191.07 RCA 144.95 APO 225.77 V2  24.486
   RC 253.951 GL   -23.45 GP   28.32 ZAL  49.24 ZAP 108.39 ETS 168.29 ZAE 136.94 ETE 141.17 ZAC 115.32 ETC 254.79 CLP 111.00
  PLANETOCENTRIC CONIC
   C3  16.009 VHL   4.001 DLA  -4.15 RAL 123.32 RAD 6567.6 VEL 11.721 PTH   2.07 VHP   3.522 DPA  26.77 RAP 193.42 ECC 1.2635
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00     14 33 13   2033.76     -14.81     30.35     340.44     114.41    15  7  7    1433.8     -11.39      23.34
      90.00      1 33 30   4935.38      21.35    215.36     342.11      70.95     2 55 45    4335.4      18.56     207.80
     100.00     15 52 37   1777.64     -15.76     11.05     339.98     115.73    16 22 15    1177.6     -12.17       4.10
     100.00      2 56 47   4666.74      22.35    195.22     341.73      69.61     4 14 33    4066.7      19.37     187.69
     110.00     16 56 24   1577.94     -18.30    354.51     338.60     119.39    17 22 42     977.9     -14.25     347.74
     110.00      4  9 29   4439.20      25.00    176.76     340.55      65.89     5 23 28    3839.2      21.52     169.33
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE   .1558 TRA -.8748 TC3 -.3453 BAU   .9224     SGT 1305.3 SGR 3985.7 SG3 1788.3          ST    438.0 SR    924.7 SS  1686.0
   RDE   .5062 RRA 1.3110 RC3 4.2959 FAU .40377       RRT -.6059 RRF -.9989 RTF   .6097         CRT -.1282 CRS   .9966 CST  -.0479
   FDE-3.2202 FRA-7.0274 FC-21.8357 BSP  13991        SGB 4194.0 R23  .0473 R13 -.9978          LSA 1921.9 MSA   441.8 SSA    13.0
   BDE   .5297 BRA 1.5761 BC3 4.3097 FSP   6160       SG1 4068.8 SG2 1017.2 THA 101.98          EL1   926.8 EL2   433.3 ALF  94.45
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LAUNCH DATE DEC 14 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 561.195 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.960	GAL	4.23	AZL	93.18	HCA	168.05	SMA	185.28	ECC	.21760	INC	3.1789
RP	224.21	LAP	-.66	LOP	250.12	VP	21.623	GAP	-3.32	AZP	86.89	TAL	24.04	TAP	192.10	RCA	144.96	APO	225.60
RC	255.576	GL	-26.52	GP	30.57	ZAL	50.38	ZAP	106.30	ETS	168.65	ZAE	134.08	ETE	141.59	ZAC	117.32	ETC	254.58

V1	30.257	V2	24.527	CLP	109.03														

PLANETOCENTRIC CONIC

C3	16.670	VHL	4.083	DLA	-7.11	RAL	122.51	RAD	6567.7	VEL	11.750	PTH	2.07	VHP	3.580	DPA	29.12	RAP	193.85
ECC	1.2743																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 31	1949.68	-12.39	25.36	339.95	115.67	15 25 1	1349.7	-8.83	18.49
90.00	1 7 43	5037.95	23.48	222.13	342.85	73.70	2 31 41	4438.0	21.02	214.32
100.00	16 10 28	1698.24	-13.36	6.38	339.45	116.99	16 38 46	1098.2	-9.64	359.57
100.00	2 32 28	4764.62	24.52	201.68	342.50	72.35	3 51 53	4164.6	21.87	193.88
110.00	17 10 56	1508.91	-15.95	350.54	337.98	120.64	17 36 5	908.9	-11.77	343.93
110.00	3 48 29	4526.72	27.30	182.52	341.40	68.59	5 3 56	3926.7	24.15	174.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1147	TRA	-.9706	TC3	-.5672	BAU	1.0072	SGT	1457.5	SGR	4331.3	SG3	1729.8	ST	442.4	SR	1165.6
RDE	.6946	RRA	1.4843	RC3	4.4834	FAU	.39047	RRT	-.7001	RRF	-.9991	RTF	.7035	CRT	-.2015	CRS	.9986
FDE	-3.7065	FRA	-7.0566	FC	-20.2785	BSP	15220	SGB	4569.9	R23	.0509	R13	-.9979	LSA	2198.1	MSA	439.0
BDE	.7040	BRA	1.7735	BC3	4.5192	FSP	5908	SG1	4456.6	SG2	1011.4	THA	103.99	EL1	1169.6	EL2	431.8

SS	1862.8	CST	-.1509	SSA	10.7	ALF	95.06										

LAUNCH DATE DEC 14 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 565.183 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.956	GAL	4.21	AZL	93.66	HCA	169.13	SMA	185.21	ECC	.21723	INC	3.6617
RP	223.82	LAP	-.69	LOP	251.20	VP	21.664	GAP	-3.58	AZP	86.40	TAL	23.98	TAP	193.11	RCA	144.98	APO	225.44
RC	257.180	GL	-30.02	GP	33.09	ZAL	51.81	ZAP	104.21	ETS	169.09	ZAE	131.08	ETE	141.93	ZAC	119.57	ETC	254.31

V1	30.257	V2	24.569	CLP	107.04														

PLANETOCENTRIC CONIC

C3	17.603	VHL	4.196	DLA	-10.49	RAL	121.56	RAD	6567.7	VEL	11.789	PTH	2.08	VHP	3.667	DPA	31.70	RAP	194.47
ECC	1.2897																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 31	1852.85	-9.47	19.75	339.69	116.81	15 46 23	1252.8	-5.80	12.99
90.00	0 37 8	5159.91	25.56	230.45	344.02	77.37	2 3 8	4559.9	23.56	222.35
100.00	16 31 38	1607.23	-10.49	1.15	339.15	118.15	16 58 25	1007.2	-6.65	354.47
100.00	2 3 42	4880.73	26.68	209.62	343.72	76.00	3 25 3	4280.7	24.49	201.51
110.00	17 28 2	1430.64	-13.19	346.16	337.56	121.83	17 51 53	830.6	-8.88	339.70
110.00	3 23 47	4630.11	29.67	189.63	342.76	72.19	4 40 57	4030.1	26.95	181.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0567	TRA	-1.0808	TC3	-.7745	BAU	1.1025	SGT	1637.5	SGR	4708.2	SG3	1646.6	ST	457.3	SR	1460.5
RDE	.9330	RRA	1.6904	RC3	4.6205	FAU	.37194	RRT	-.7711	RRF	-.9993	RTF	.7741	CRT	-.3306	CRS	.9995
FDE	-4.1846	FRA	-7.0157	FC	-18.2928	BSP	16556	SGB	4984.8	R23	.0522	R13	-.9980	LSA	2511.8	MSA	435.7
BDE	.9347	BRA	2.0064	BC3	4.6849	FSP	5576	SG1	4882.4	SG2	1005.4	THA	105.70	EL1	1469.0	EL2	429.1

SS	2038.8	CST	-.3001	SSA	8.8	ALF	96.47										

LAUNCH DATE DEC 14 1964 FLIGHT TIME 260.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 569.180 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.952	GAL	4.20	AZL	94.25	HCA	170.21	SMA	185.15	ECC	.21688	INC	4.2521
RP	223.44	LAP	-.72	LOP	252.28	VP	21.706	GAP	-3.83	AZP	85.81	TAL	23.91	TAP	194.12	RCA	144.99	APO	225.30
RC	258.763	GL	-34.05	GP	35.91	ZAL	53.59	ZAP	102.12	ETS	169.62	ZAE	127.94	ETE	142.21	ZAC	122.12	ETC	253.95

V1	30.257	V2	24.611	CLP	105.02														

PLANETOCENTRIC CONIC

C3	18.945	VHL	4.353	DLA	-14.36	RAL	120.42	RAD	6567.8	VEL	11.846	PTH	2.10	VHP	3.791	DPA	34.53	RAP	195.36
ECC	1.3118																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 43 54	1738.66	-5.90	13.25	339.83	117.75	16 12 52	1138.7	-2.14	6.59
90.00	23 55 41	5308.48	27.34	240.96	345.74	82.34	25 24 10	4708.5	26.00	232.55
100.00	16 57 35	1500.94	-7.02	355.17	339.22	119.13	17 22 35	900.9	-3.08	348.59
100.00	1 28 37	5021.44	28.60	219.63	345.53	80.92	2 52 19	4421.4	27.05	211.17
110.00	17 48 40	1340.90	-9.91	341.27	337.47	122.88	18 11 1	740.9	-5.51	334.94
110.00	2 54 1	4754.24	31.92	198.60	344.78	77.05	4 13 15	4154.2	29.81	190.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0182	TRA	-1.2057	TC3	-.9482	BAU	1.2060	SGT	1834.6	SGR	5102.4	SG3	1530.4	ST	492.7	SR	1808.8
RDE	1.2334	RRA	1.9331	RC3	4.6661	FAU	.34647	RRT	-.8220	RRF	-.9995	RTF	.8247	CRT	-.4816	CRS	.9998
FDE	-4.6091	FRA	-6.8634	FC	-15.8322	BSP	18125	SGB	5422.2	R23	.0521	R13	-.9981	LSA	2852.0	MSA	434.0
BDE	1.2335	BRA	2.2782	BC3	4.7615	FSP	5186	SG1	5329.2	SG2	1000.3	THA	107.09	EL1	1825.2	EL2	427.9

SS	2192.7	CST	-.4641	SSA	7.2	ALF	97.91										

LAUNCH DATE DEC 14 1964 FLIGHT TIME 262.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 573.183 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.949	GAL	4.18	AZL	94.99	HCA	171.29	SMA	185.10	ECC	.21655	INC	4.9903
RP	223.05	LAP	-.75	LOP	253.37	VP	21.749	GAP	-4.08	AZP	85.07	TAL	23.82	TAP	195.11	RCA	145.01	APO	225.18
RC	260.326	GL	-38.66	GP	39.07	ZAL	55.80	ZAP	100.05	ETS	170.26	ZAE	124.66	ETE	142.46	ZAC	124.98	ETC	253.48

V1	30.257	V2	24.653	CLP	103.00														

PLANETOCENTRIC CONIC

C3	20.934	VHL	4.575	DLA	-18.77	RAL	119.00	RAD	6567.9	VEL	11.930	PTH	2.12	VHP	3.969	DPA	37.62	RAP	196.57
ECC	1.3445																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 21 10	1597.72	-1.39	5.36	340.69	118.29	16 47 48	997.7	2.41	358.73
90.00	23 7 9	5496.91	28.30	254.64	348.04	89.12	24 38 46	4896.9	27.88	246.00
100.00	17 31 5	1372.08	-2.70	348.04	339.96	119.78	17 53 58	772.1	1.28	341.52
100.00	0 43 51	5197.78	29.81	232.59	347.99	87.63	2 10 28	4597.8	29.16	223.84
110.00	18 14 32	1235.96	-5.99	335.68	337.92	123.72	18 35 8	636.0	-1.52	329.45
110.00	2 16 53	4906.66	33.66	210.13	347.65	83.67	3 38 40	4306.7	32.42	201.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1134	TRA	-1.3494	TC3	-1.0714	BAU	1.3190	SGT	2041.2	SGR	5514.0	SG3	1380.0	ST	554.7	SR	2211.8
RDE	1.6162	RRA	2.2261	RC3	4.5896	FAU	.31389	RRT	-.8582	RRF	-.9996	RTF	.8607	CRT	-.6227	CRS	.9999
FDE	-4.9364	FRA	-6.5832	FC	-12.9809	BSP	19949	SGB	5879.6	R23	.0508	R13	-.9983	LSA	3212.8	MSA	434.0
BDE	1.6202	BRA	2.6031	BC3	4.7130	FSP	4718	SG1	5794.5	SG2	996.9	THA	108.18	EL1	2239.7	EL2	428.6

SS	2304.4	CST	-.6135	SSA	5.8	ALF	99.22										

LAUNCH DATE DEC 14 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 577.194 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.946	GAL	4.15	AZL	95.94	HCA	172.37	SMA	185.05	ECC	.21625	INC	5.9381	V1	30.257
RP	222.66	LAP	-.79	LOP	254.46	VP	21.792	GAP	-4.33	AZP	84.11	TAL	23.72	TAP	196.09	RCA	145.03	APO	225.07	V2	24.695
RC	261.869	GL	-43.95	GP	42.60	ZAL	58.51	ZAP	98.04	ETS	171.02	ZAE	121.21	ETE	142.71	ZAC	128.19	ETC	252.84	CLP	100.95

PLANETOCENTRIC CONIC

C3	23.993	VHL	4.898	DLA	-23.81	RAL	117.21	RAD	6568.0	VEL	12.057	PTH	2.16	VHP	4.224	DPA	40.99	RAP	198.23	ECC	1.3949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 17 14	1401.85	4.92	354.41	342.98	117.92	17 40 35	801.9	8.62	347.68
90.00	21 56 47	5758.94	27.10	273.67	350.53	98.55	23 32 46	5158.9	28.00	265.12
100.00	18 19 17	1201.54	3.08	338.68	341.97	119.75	18 39 18	601.5	7.02	332.10
100.00	23 37 25	5434.49	29.18	250.12	350.85	96.81	25 7 59	4834.5	29.81	241.37
110.00	18 49 10	1107.82	-1.11	328.96	339.36	124.17	19 7 38	507.8	3.38	322.76
110.00	1 27 57	5100.97	34.10	225.26	351.32	92.59	2 52 58	4501.0	34.08	216.02

DIFFERENTIAL CORRECTIONS

TDE	-.2420	TRA	-1.5276	TC3	-1.1439	BAU	1.4552	SGT	2269.4	SGR	5987.6
RDE	2.1317	RRA	2.6105	RC3	4.3899	FAU	.27633	RRT	-.8863	RRF	-.9997
FDE	-5.1560	FRA	-6.2006	FC3	-9.9705	BSP	21489	SGB	6403.3	R23	.0485
BDE	2.1454	BRA	3.0246	BC3	4.5365	FSP	4054	SG1	6325.5	SG2	994.8

MID-COURSE EXECUTION ACCURACY

SG3	1205.3	RTF	.8887	R13	-.9985
THA	109.06				

ORBIT DETERMINATION ACCURACY

ST	651.6	SR	2690.1	SS	2368.3
CRT	-.7399	CRS	1.0000	CST	-.7356
LSA	3616.6	MSA	435.8	SSA	4.7
EL1	2734.1	EL2	431.3	ALF	100.42

LAUNCH DATE DEC 14 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 581.209 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.944	GAL	4.13	AZL	97.20	HCA	173.46	SMA	185.01	ECC	.21597	INC	7.2027	V1	30.257
RP	222.28	LAP	-.82	LOP	255.55	VP	21.836	GAP	-4.57	AZP	82.84	TAL	23.61	TAP	197.06	RCA	145.06	APO	224.97	V2	24.737
RC	263.392	GL	-49.98	GP	46.51	ZAL	61.76	ZAP	96.11	ETS	171.93	ZAE	117.63	ETE	142.99	ZAC	131.76	ETC	251.98	CLP	98.89

PLANETOCENTRIC CONIC

C3	28.940	VHL	5.380	DLA	-29.49	RAL	114.85	RAD	6568.2	VEL	12.260	PTH	2.21	VHP	4.598	DPA	44.60	RAP	200.46	ECC	1.4763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.41	18 17 1	1210.72	18.01	346.96	349.73	113.75	18 37 12	610.7	21.07	339.54
98.59	20 38 9	754.90	18.03	313.50	349.73	113.74	20 50 44	154.9	21.08	306.07
100.00	20 7 40	852.52	14.41	318.96	347.96	116.48	20 21 52	252.5	17.85	311.86
100.00	21 30 11	5876.38	21.71	280.67	351.35	111.06	23 8 8	5276.4	24.38	272.89
110.00	19 43 1	930.15	5.66	319.67	342.82	123.77	19 58 31	330.2	10.06	313.34
110.00	0 15 15	5371.51	31.33	245.82	354.78	104.42	1 44 46	4771.5	33.00	236.99

DIFFERENTIAL CORRECTIONS

TDE	-.4016	TRA	-1.7478	TC3	-1.1392	BAU	1.6100	SGT	2501.7	SGR	6473.9
RDE	2.8050	RRA	3.1062	RC3	4.0022	FAU	.23138	RRT	-.9066	RRF	-.9997
FDE	-5.1206	FRA	-5.6290	FC3	-6.9217	BSP	23167	SGB	6940.5	R23	.0456
BDE	2.8336	BRA	3.5642	BC3	4.1612	FSP	3308	SG1	6868.8	SG2	994.9

MID-COURSE EXECUTION ACCURACY

SG3	995.1	RTF	.9090	R13	-.9987
THA	109.74				

ORBIT DETERMINATION ACCURACY

ST	772.0	SR	3200.3	SS	2318.6
CRT	-.8153	CRS	1.0000	CST	-.8138
LSA	4002.3	MSA	441.9	SSA	3.8
EL1	3262.8	EL2	438.5	ALF	101.33

LAUNCH DATE DEC 14 1964 FLIGHT TIME 268.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 585.226 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.942	GAL	4.11	AZL	98.97	HCA	174.54	SMA	184.98	ECC	.21571	INC	8.9733	V1	30.257
RP	221.89	LAP	-.85	LOP	256.65	VP	21.881	GAP	-4.80	AZP	81.07	TAL	23.49	TAP	198.03	RCA	145.08	APO	224.89	V2	24.779
RC	264.895	GL	-56.81	GP	50.76	ZAL	65.59	ZAP	94.31	ETS	173.01	ZAE	113.96	ETE	143.37	ZAC	135.64	ETC	250.83	CLP	96.82

PLANETOCENTRIC CONIC

C3	37.511	VHL	6.125	DLA	-35.81	RAL	111.59	RAD	6568.5	VEL	12.605	PTH	2.29	VHP	5.167	DPA	48.39	RAP	203.43	ECC	1.6173

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.09	16 28 12	1574.83	19.34	15.46	352.46	120.75	16 54 26	974.8	23.28	8.40
112.91	22 0 59	5809.47	19.36	274.35	352.47	120.74	23 37 48	5209.5	23.29	267.29
67.09	16 28 12	1574.83	19.34	15.46	352.46	120.75	16 54 26	974.8	23.28	8.40
112.91	22 0 59	5809.47	19.36	274.35	352.47	120.74	23 37 48	5209.5	23.29	267.29
67.09	16 28 12	1574.83	19.34	15.46	352.46	120.75	16 54 26	974.8	23.28	8.40
112.91	22 0 59	5809.47	19.36	274.35	352.47	120.74	23 37 48	5209.5	23.29	267.29

DIFFERENTIAL CORRECTIONS

TDE	-.5934	TRA	-2.0352	TC3	-1.0537	BAU	1.7990	SGT	2736.1	SGR	6972.2
RDE	3.6940	RRA	3.7810	RC3	3.4292	FAU	.18064	RRT	-.9216	RRF	-.9997
FDE	-4.7183	FRA	-4.8393	FC3	-4.1691	BSP	24750	SGB	7489.9	R23	.0423
BDE	3.7414	BRA	4.2940	BC3	3.5874	FSP	2472	SG1	7423.2	SG2	997.6

MID-COURSE EXECUTION ACCURACY

SG3	756.8	RTF	.9241	R13	-.9988
THA	110.26				

ORBIT DETERMINATION ACCURACY

ST	897.7	SR	3697.4	SS	2108.8
CRT	-.8572	CRS	1.0000	CST	-.8575
LSA	4326.3	MSA	454.7	SSA	3.1
EL1	3777.8	EL2	452.5	ALF	101.93

LAUNCH DATE DEC 14 1964 FLIGHT TIME 292.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 634.721 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.950	GAL	3.54	AZL	81.47	HCA	188.18	SMA	185.12	ECC	.21330	INC	8.5335	V1	30.257
RP	217.44	LAP	-1.21	LOP	270.14	VP	22.445	GAP	-7.15	AZP	98.45	TAL	20.35	TAP	208.53	RCA	145.63	APO	224.60	V2	25.268
RC	281.529	GL	57.05	GP	-40.77	ZAL	67.71	ZAP	79.86	ETS	170.03	ZAE	104.18	ETE	190.59	ZAC	45.23	ETC	252.47	CLP	76.55

PLANETOCENTRIC CONIC

C3	33.818	VHL	5.815	DLA	70.19	RAL	169.76	RAD	6568.3	VEL	12.457	PTH	2.25	VHP	4.184	DPA	-30.29	RAP	150.65	ECC	1.5566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
11.83	9 29 5	4315.37	-51.99	242.17	125.56	17.04	10 41 0	3715.4	-59.56	237.97
11.83	1 35 22	4813.52	-18.99	250.05	16.77	11.00	2 55 35	4213.5	-26.83	248.76
21.83	6 55 55	4467.12	-38.85	233.83	79.45	24.86	8 10 22	3867.1	-46.02	229.41
21.83	4 49 6	4623.59	-29.07	238.27	52.76	22.00	6 6 9	4023.6	-36.44	234.98
22.64	5 54 16	4543.18	-33.83	235.31	65.80	24.08	7 10 0	3943.2	-41.06	231.41
157.36	16 22 56	2788.76	-33.82	85.03	65.79	24.08	17 9 24	2188.8	-41.05	81.13

DIFFERENTIAL CORRECTIONS

TDE	5.6081	TRA	.0402	TC3	-2.8885	BAU	1.8694	SGT	6467.6	SGR	5520.2
RDE	4.2042	RRA	.4178	RC3	-2.9585	FAU	.29457	RRT	.9688	RRF	.9993
FDE	9.9007	FRA	1.0061	FC3	-7.5411	BSP	28467	SGB	8503.1	R23	.1652
BDE	7.0090	BRA	.4197	BC3	4.1348	FSP	4136	SG1	8438.3	SG2	1048.4

MID-COURSE EXECUTION ACCURACY

SG3	1161.2	RTF	.9630	R13	.9857
THA	40.34				

ORBIT DETERMINATION ACCURACY

ST	5526.4	SR	4159.5	SS	3542.2
CRT	.9967	CRS	-1.0000	CST	-.9965
LSA	7764.5	MSA	320.6	SSA	5.1
EL1	6911.6	EL2	271.2	ALF	36.94

LAUNCH DATE DEC 14 1964 FLIGHT TIME 294.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 638.868 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.953	GAL	3.48	AZL	82.34	HCA	189.32	SMA	185.16	ECC	.21322	INC	7.6635	V1	30.257
RP	217.09	LAP	-1.24	LOP	271.29	VP	22.493	GAP	-7.32	AZP	97.56	TAL	20.03	TAP	209.35	RCA	145.68	APO	224.64	V2	25.307
RC	282.801	GL	53.93	GP	-37.31	ZAL	66.38	ZAP	77.96	ETS	169.62	ZAE	103.25	ETE	188.51	ZAC	48.43	ETC	253.48	CLP	74.79

PLANETOCENTRIC CONIC

C3	29.448	VHL	5.427	DLA	67.39	RAL	165.35	RAD	6568.2	VEL	12.281	PTH	2.21	VHP	3.968	DPA	-26.98	RAP	151.97	ECC	1.4846

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
25.89	5 43 46	4498.96	-35.21	230.61	58.28	28.06	6 58 45	3899.0	-42.17	225.96
154.11	15 58 16	2763.41	-35.20	83.80	58.26	28.06	16 44 19	2163.4	-42.16	79.15
25.89	5 43 46	4498.96	-35.21	230.61	58.28	28.06	6 58 45	3899.0	-42.17	225.96
154.11	15 58 16	2763.41	-35.20	83.80	58.26	28.06	16 44 19	2163.4	-42.16	79.15
25.89	5 43 46	4498.96	-35.21	230.61	58.28	28.06	6 58 45	3899.0	-42.17	225.96
154.11	15 58 16	2763.41	-35.20	83.80	58.26	28.06	16 44 19	2163.4	-42.16	79.15

DIFFERENTIAL CORRECTIONS

TDE	5.2837	TRA	-.1113	TC3	-3.4038	BAU	1.8020
RDE	3.5860	RRA	.2845	RC3	-3.0603	FAU	.32582
FDE	10.3459	FRA	.8281	FC3	-9.5788	BSP	28209
BDE	6.3857	BRA	.3054	BC3	4.5772	FSP	4682

MID-COURSE EXECUTION ACCURACY

SGT	6697.9	SGR	5096.8	SG3	1317.6		
RRT	.9711	RRF	.9992	RTF	.9658		
SGB	8416.6	R23	.1714	R13	.9846		
SG1	8360.1	SG2	973.8	THA	37.05		

ORBIT DETERMINATION ACCURACY

ST	5580.6	SR	3794.8	SS	3753.6
CRT	.9969	CRS	-1.0000	CST	-.9969
LSA	7716.2	MSA	304.2	SSA	5.8
EL1	6744.1	EL2	246.3	ALF	34.19

LAUNCH DATE DEC 14 1964 FLIGHT TIME 296.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 643.027 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.956	GAL	3.42	AZL	83.02	HCA	190.47	SMA	185.21	ECC	.21315	INC	6.9800	V1	30.257
RP	216.74	LAP	-1.27	LOP	272.44	VP	22.541	GAP	-7.48	AZP	96.86	TAL	19.69	TAP	210.16	RCA	145.73	APO	224.69	V2	25.346
RC	284.057	GL	51.21	GP	-34.23	ZAL	65.33	ZAP	76.08	ETS	169.32	ZAE	102.12	ETE	186.70	ZAC	51.28	ETC	254.25	CLP	73.09

PLANETOCENTRIC CONIC

C3	26.306	VHL	5.129	DLA	64.86	RAL	162.40	RAD	6568.1	VEL	12.152	PTH	2.18	VHP	3.818	DPA	-24.03	RAP	153.03	ECC	1.4329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
28.86	5 38 42	4460.83	-36.06	226.19	52.43	31.71	6 53 3	3860.8	-42.74	220.89
151.14	15 39 47	2745.31	-36.05	82.66	52.41	31.70	16 25 32	2145.3	-42.73	77.36
28.86	5 38 42	4460.83	-36.06	226.19	52.43	31.71	6 53 3	3860.8	-42.74	220.89
151.14	15 39 47	2745.31	-36.05	82.66	52.41	31.70	16 25 32	2145.3	-42.73	77.36
28.86	5 38 42	4460.83	-36.06	226.19	52.43	31.71	6 53 3	3860.8	-42.74	220.89
151.14	15 39 47	2745.31	-36.05	82.66	52.41	31.70	16 25 32	2145.3	-42.73	77.36

DIFFERENTIAL CORRECTIONS

TDE	5.0196	TRA	-.2292	TC3	-3.9169	BAU	1.7563
RDE	3.0701	RRA	.1942	RC3	-3.0980	FAU	.34994
FDE	10.4598	FRA	.6529	FC	-11.5167	BSP	28159
BDE	5.8840	BRA	.3004	BC3	4.9940	FSP	5118

MID-COURSE EXECUTION ACCURACY

SGT	6924.6	SGR	4703.4	SG3	1443.3		
RRT	.9731	RRF	.9990	RTF	.9678		
SGB	8370.9	R23	.1774	R13	.9833		
SG1	8322.1	SG2	902.0	THA	33.91		

ORBIT DETERMINATION ACCURACY

ST	5611.6	SR	3434.3	SS	3860.2
CRT	.9970	CRS	-1.0000	CST	-.9971
LSA	7622.4	MSA	292.2	SSA	6.7
EL1	6575.3	EL2	225.7	ALF	31.43

LAUNCH DATE DEC 14 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 647.196 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.959	GAL	3.36	AZL	83.57	HCA	191.62	SMA	185.26	ECC	.21309	INC	6.4284	V1	30.257
RP	216.39	LAP	-1.29	LOP	273.60	VP	22.589	GAP	-7.64	AZP	96.30	TAL	19.34	TAP	210.96	RCA	145.79	APO	224.74	V2	25.385
RC	285.296	GL	48.83	GP	-31.51	ZAL	64.51	ZAP	74.25	ETS	169.12	ZAE	100.83	ETE	185.14	ZAC	53.82	ETC	254.86	CLP	71.43

PLANETOCENTRIC CONIC

C3	23.950	VHL	4.894	DLA	62.57	RAL	160.37	RAD	6568.0	VEL	12.055	PTH	2.15	VHP	3.714	DPA	-21.39	RAP	153.90	ECC	1.3942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
31.56	5 36 58	4427.33	-36.55	222.09	47.76	34.99	6 50 45	3827.3	-42.94	216.25
148.44	15 25 19	2732.59	-36.54	81.66	47.74	34.99	16 10 51	2132.6	-42.93	75.82
31.56	5 36 58	4427.33	-36.55	222.09	47.76	34.99	6 50 45	3827.3	-42.94	216.25
148.44	15 25 19	2732.59	-36.54	81.66	47.74	34.99	16 10 51	2132.6	-42.93	75.82
31.56	5 36 58	4427.33	-36.55	222.09	47.76	34.99	6 50 45	3827.3	-42.94	216.25
148.44	15 25 19	2732.59	-36.54	81.66	47.74	34.99	16 10 51	2132.6	-42.93	75.82

DIFFERENTIAL CORRECTIONS

TDE	4.8020	TRA	-.3275	TC3	-4.4345	BAU	1.7308
RDE	2.6447	RRA	.1320	RC3	-3.0909	FAU	.36824
FDE	10.3530	FRA	.4905	FC	-13.3109	BSP	28138
BDE	5.4821	BRA	.3531	BC3	5.4055	FSP	5437

MID-COURSE EXECUTION ACCURACY

SGT	7151.1	SGR	4342.0	SG3	1541.2		
RRT	.9746	RRF	.9988	RTF	.9693		
SGB	8366.1	R23	.1829	R13	.9821		
SG1	8324.2	SG2	836.2	THA	30.96		

ORBIT DETERMINATION ACCURACY

ST	5629.0	SR	3099.3	SS	3893.7
CRT	.9970	CRS	-1.0000	CST	-.9971
LSA	7508.1	MSA	284.2	SSA	7.5
EL1	6422.4	EL2	209.2	ALF	28.80

LAUNCH DATE DEC 14 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 651.375 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.962	GAL	3.30	AZL	84.03	HCA	192.78	SMA	185.32	ECC	.21304	INC	5.9738	V1	30.257
RP	216.05	LAP	-1.32	LOP	274.75	VP	22.637	GAP	-7.80	AZP	95.83	TAL	18.97	TAP	211.75	RCA	145.84	APO	224.80	V2	25.423
RC	286.520	GL	46.73	GP	-29.09	ZAL	63.89	ZAP	72.47	ETS	168.99	ZAE	99.44	ETE	183.81	ZAC	56.07	ETC	255.34	CLP	69.83

PLANETOCENTRIC CONIC

C3	22.124	VHL	4.704	DLA	60.50	RAL	158.95	RAD	6567.9	VEL	11.979	PTH	2.14	VHP	3.643	DPA	-19.03	RAP	154.62	ECC	1.3641

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.02	5 37 20	4397.43	-36.77	218.32	43.95	37.94	6 50 37	3797.4	-42.90	212.03
145.98	15 13 38	2723.84	-36.76	80.83	43.94	37.93	15 59 2	2123.8	-42.89	74.54
34.02	5 37 20	4397.43	-36.77	218.32	43.95	37.94	6 50 37	3797.4	-42.90	212.03
145.98	15 13 38	2723.84	-36.76	80.83	43.94	37.93	15 59 2	2123.8	-42.89	74.54
34.02	5 37 20	4397.43	-36.77	218.32	43.95	37.94	6 50 37	3797.4	-42.90	212.03
145.98	15 13 38	2723.84	-36.76	80.83	43.94	37.93	15 59 2	2123.8	-42.89	74.54

DIFFERENTIAL CORRECTIONS

TDE	4.6280	TRA	-.4047	TC3	-4.9443	BAU	1.7175
RDE	2.2968	RRA	.0920	RC3	-3.0451	FAU	.38089
FDE	10.1125	FRA	.3599	FC	-14.9049	BSP	28332
BDE	5.1666	BRA	.4150	BC3	5.8068	FSP	5680

MID-COURSE EXECUTION ACCURACY

SGT	7376.8	SGR	4010.7	SG3	1614.4		
RRT	.9758	RRF	.9986	RTF	.9705		
SGB	8396.6	R23	.1873	R13	.9810		
SG1	8360.8	SG2	774.4	THA	28.21		

ORBIT DETERMINATION ACCURACY

ST	5647.3	SR	2800.0	SS	3880.8
CRT	.9970	CRS	-1.0000	CST	-.9972
LSA	7396.9	MSA	278.3	SSA	8.4
EL1	6300.3	EL2	195.1	ALF	26.33

LAUNCH DATE DEC 14 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 655.563 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.966	GAL	3.23	AZL	84.41	HCA	193.94	SMA	185.38	ECC	.21300	INC	5.5922
RP	215.71	LAP	-1.34	LOP	275.92	VP	22.685	GAP	-7.95	AZP	95.43	TAL	18.59	TAP	212.53	RCA	145.90	APO	224.87
RC	287.729	GL	44.87	GP	-26.94	ZAL	63.45	ZAP	70.74	ETS	168.91	ZAE	97.98	ETE	182.66	ZAC	58.08	ETC	255.73

V1	30.257	V2	25.461	CLP	68.28														

PLANETOCENTRIC CONIC

C3	20.666	VHL	4.546	DLA	58.62	RAL	157.98	RAD	6567.8	VEL	11.918	PTH	2.12	VHP	3.596	DPA	-16.93	RAP	155.23
ECC	1.3401																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.27	5 39 11	4370.29	-36.81	214.85	40.83	40.57	6 52 1	3770.3	-42.68	208.19
143.73	15 3 59	2718.16	-36.79	80.14	40.81	40.57	15 49 17	2118.2	-42.67	73.49
36.27	5 39 11	4370.29	-36.81	214.85	40.83	40.57	6 52 1	3770.3	-42.68	208.19
143.73	15 3 59	2718.16	-36.79	80.14	40.81	40.57	15 49 17	2118.2	-42.67	73.49
36.27	5 39 11	4370.29	-36.81	214.85	40.83	40.57	6 52 1	3770.3	-42.68	208.19
143.73	15 3 59	2718.16	-36.79	80.14	40.81	40.57	15 49 17	2118.2	-42.67	73.49

DIFFERENTIAL CORRECTIONS

TDE	4.4816	TRA	-.4708	TC3	-5.4570	BAU	1.7176
RDE	2.0091	RRA	.0647	RC3	-2.9780	FAU	.38959
FDE	9.7810	FRA	.2493	FC	-16.3206	BSP	28520
BDE	4.9114	BRA	.4752	BC3	6.2166	FSP	5830

MID-COURSE EXECUTION ACCURACY

SGT	7603.9	SGR	3710.5	SG3	1667.6		
RRT	.9768	RRF	.9982	RTF	.9714		
SGB	8460.9	R23	.1905	R13	.9800		
SG1	8430.4	SG2	717.4	THA	25.68		

ORBIT DETERMINATION ACCURACY

ST	5660.8	SR	2534.0	SS	3833.2		
CRT	.9969	CRS	-1.0000	CST	-.9971		
LSA	7285.9	MSA	273.8	SSA	9.4		
EL1	6199.3	EL2	183.0	ALF	24.07		

LAUNCH DATE DEC 14 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 659.760 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.970	GAL	3.17	AZL	84.73	HCA	195.10	SMA	185.45	ECC	.21297	INC	5.2674
RP	215.38	LAP	-1.37	LOP	277.09	VP	22.732	GAP	-8.09	AZP	95.09	TAL	18.19	TAP	213.29	RCA	145.95	APO	224.94
RC	288.924	GL	43.22	GP	-25.02	ZAL	63.15	ZAP	69.06	ETS	168.87	ZAE	96.48	ETE	181.69	ZAC	59.88	ETC	256.05

V1	30.257	V2	25.498	CLP	66.77		

PLANETOCENTRIC CONIC

C3	19.474	VHL	4.413	DLA	56.90	RAL	157.32	RAD	6567.8	VEL	11.868	PTH	2.11	VHP	3.567	DPA	-15.06	RAP	155.76
ECC	1.3205																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.34	5 42 2	4345.38	-36.72	211.65	38.25	42.94	6 54 28	3745.4	-42.36	204.70
141.66	14 55 54	2714.77	-36.71	79.60	38.23	42.93	15 41 9	2114.8	-42.34	72.65
38.34	5 42 2	4345.38	-36.72	211.65	38.25	42.94	6 54 28	3745.4	-42.36	204.70
141.66	14 55 54	2714.77	-36.71	79.60	38.23	42.93	15 41 9	2114.8	-42.34	72.65
38.34	5 42 2	4345.38	-36.72	211.65	38.25	42.94	6 54 28	3745.4	-42.36	204.70
141.66	14 55 54	2714.77	-36.71	79.60	38.23	42.93	15 41 9	2114.8	-42.34	72.65

DIFFERENTIAL CORRECTIONS

TDE	4.3627	TRA	-.5211	TC3	-5.9597	BAU	1.7244
RDE	1.7714	RRA	.0496	RC3	-2.8899	FAU	.39418
FDE	9.4034	FRA	.1762	FC	-17.5231	BSP	28880
BDE	4.7086	BRA	.5234	BC3	6.6234	FSP	5934

MID-COURSE EXECUTION ACCURACY

SGT	7828.6	SGR	3436.4	SG3	1702.8		
RRT	.9775	RRF	.9978	RTF	.9721		
SGB	8549.6	R23	.1925	R13	.9792		
SG1	8523.6	SG2	665.5	THA	23.37		

ORBIT DETERMINATION ACCURACY

ST	5678.6	SR	2301.5	SS	3765.7		
CRT	.9967	CRS	-1.0000	CST	-.9971		
LSA	7186.8	MSA	270.7	SSA	10.4		
EL1	6124.8	EL2	172.7	ALF	22.01		

LAUNCH DATE DEC 14 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 663.964 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.974	GAL	3.09	AZL	85.01	HCA	196.27	SMA	185.52	ECC	.21295	INC	4.9873
RP	215.05	LAP	-1.40	LOP	278.26	VP	22.780	GAP	-8.24	AZP	94.79	TAL	17.78	TAP	214.05	RCA	146.01	APO	225.02
RC	290.105	GL	41.75	GP	-23.31	ZAL	62.98	ZAP	67.44	ETS	168.87	ZAE	94.95	ETE	180.85	ZAC	61.49	ETC	256.31

V1	30.257	V2	25.535	CLP	65.31		

PLANETOCENTRIC CONIC

C3	18.480	VHL	4.299	DLA	55.33	RAL	156.92	RAD	6567.7	VEL	11.826	PTH	2.09	VHP	3.552	DPA	-13.39	RAP	156.23
ECC	1.3041																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.25	5 45 40	4322.25	-36.54	208.69	36.10	45.07	6 57 43	3722.3	-41.95	201.50
139.75	14 49 3	2713.18	-36.53	79.19	36.09	45.06	15 34 16	2113.2	-41.94	71.99
40.25	5 45 40	4322.25	-36.54	208.69	36.10	45.07	6 57 43	3722.3	-41.95	201.50
139.75	14 49 3	2713.18	-36.53	79.19	36.09	45.06	15 34 16	2113.2	-41.94	71.99
40.25	5 45 40	4322.25	-36.54	208.69	36.10	45.07	6 57 43	3722.3	-41.95	201.50
139.75	14 49 3	2713.18	-36.53	79.19	36.09	45.06	15 34 16	2113.2	-41.94	71.99

DIFFERENTIAL CORRECTIONS

TDE	4.2712	TRA	-.5525	TC3	-6.4418	BAU	1.7331
RDE	1.5781	RRA	.0474	RC3	-2.7777	FAU	.39399
FDE	9.0311	FRA	.1668	FC	-18.4579	BSP	29542
BDE	4.5534	BRA	.5545	BC3	7.0152	FSP	6061

MID-COURSE EXECUTION ACCURACY

SGT	8047.3	SGR	3184.3	SG3	1721.2		
RRT	.9778	RRF	.9972	RTF	.9725		
SGB	8654.4	R23	.1936	R13	.9783		
SG1	8632.0	SG2	621.5	THA	21.27		

ORBIT DETERMINATION ACCURACY

ST	5708.5	SR	2104.9	SS	3697.0		
CRT	.9965	CRS	-1.0000	CST	-.9969		
LSA	7114.1	MSA	272.4	SSA	11.2		
EL1	6081.9	EL2	165.9	ALF	20.19		

LAUNCH DATE DEC 14 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 668.178 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.978	GAL	3.02	AZL	85.26	HCA	197.44	SMA	185.59	ECC	.21295	INC	4.7431
RP	214.72	LAP	-1.42	LOP	279.43	VP	22.827	GAP	-8.38	AZP	94.53	TAL	17.36	TAP	214.80	RCA	146.07	APO	225.11
RC	291.272	GL	40.42	GP	-21.77	ZAL	62.93	ZAP	65.87	ETS	168.89	ZAE	93.41	ETE	180.13	ZAC	62.93	ETC	256.53

V1	30.257	V2	25.572	CLP	63.89		

PLANETOCENTRIC CONIC

C3	17.635	VHL	4.199	DLA	53.89	RAL	156.71	RAD	6567.7	VEL	11.791	PTH	2.08	VHP	3.548	DPA	-11.89	RAP	156.65
ECC	1.2902																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.03	5 49 54	4300.53	-36.30	205.94	34.32	46.99	7 1 35	3700.5	-41.51	198.55
137.97	14 43 9	2713.06	-36.29	78.88	34.31	46.99	15 28 23	2113.1	-41.50	71.49
42.03	5 49 54	4300.53	-36.30	205.94	34.32	46.99	7 1 35	3700.5	-41.51	198.55
137.97	14 43 9	2713.06	-36.29	78.88	34.31	46.99	15 28 23	2113.1	-41.50	71.49
42.03	5 49 54	4300.53	-36.30	205.94	34.32	46.99	7 1 35	3700.5	-41.51	198.55
137.97	14 43 9	2713.06	-36.29	78.88	34.31	46.99	15 28 23	2113.1	-41.50	71.49

DIFFERENTIAL CORRECTIONS

TDE	4.1828	TRA	-.5851	TC3	-6.9401	BAU	1.7537
RDE	1.4084	RRA	.0416	RC3	-2.6773	FAU	.39388
FDE	8.5982	FRA	.1267	FC	-19.3368	BSP	29951
BDE	4.4136	BRA	.5865	BC3	7.4386	FSP	6044

MID-COURSE EXECUTION ACCURACY

SGT	8269.2	SGR	2959.4	SG3	1731.2		
RRT	.9784	RRF	.9965	RTF	.9730		
SGB	8782.8	R23	.1927	R13	.9778		
SG1	8763.8	SG2	577.4	THA	19.38		

ORBIT DETERMINATION ACCURACY

ST	5724.2	SR	1923.0	SS	3599.1		
CRT	.9963	CRS	-1.0000	CST	-.9969		
LSA	7024.6	MSA	268.5	SSA	12.3		
EL1	6036.5	EL2	156.9	ALF	18.52		

LAUNCH DATE DEC 14 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 672.401 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.982	GAL	2.95	AZL	85.47	HCA	198.62	SMA	185.67	ECC	.21295	INC	4.5281
RP	214.40	LAP	-1.44	LOP	280.61	VP	22.874	GAP	-8.51	AZP	94.29	TAL	16.92	TAP	215.53	RCA	146.13	APO	225.20
RC	292.426	GL	39.23	GP	-20.39	ZAL	62.97	ZAP	64.36	ETS	168.93	ZAE	91.87	ETE	179.51	ZAC	64.24	ETC	256.71

V1 30.257 V2 25.608 CLP 62.50

PLANETOCENTRIC CONIC

C3	16.905	VHL	4.112	DLA	52.55	RAL	156.66	RAD	6567.7	VEL	11.760	PTH	2.08	VHP	3.552	DPA	-10.54	RAP	157.03

ECC 1.2782

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.69	5 54 38	4279.91	-36.01	203.36	32.84	48.75	7 5 58	3679.9	-41.03	195.81
136.31	14 38 3	2714.16	-36.00	78.68	32.83	48.73	15 23 17	2114.2	-41.02	71.13
43.69	5 54 38	4279.91	-36.01	203.36	32.84	48.75	7 5 58	3679.9	-41.03	195.81
136.31	14 38 3	2714.16	-36.00	78.68	32.83	48.73	15 23 17	2114.2	-41.02	71.13
43.69	5 54 38	4279.91	-36.01	203.36	32.84	48.75	7 5 58	3679.9	-41.03	195.81
136.31	14 38 3	2714.16	-36.00	78.68	32.83	48.73	15 23 17	2114.2	-41.02	71.13

DIFFERENTIAL CORRECTIONS

TDE	4.1043	TRA	-.6100	TC3	-7.4382	BAU	1.7788
RDE	1.2644	RRA	.0401	RC3	-2.5723	FAU	.39167
FDE	8.1626	FRA	.1103	FC	-20.0581	BSP	30361
BDE	4.2946	BRA	.6114	BC3	7.8704	FSP	5989

MID-COURSE EXECUTION ACCURACY

SGT	8489.9	SGR	2754.4	SG3	1731.2		
RRT	.9787	RRF	.9957	RTF	.9734		
SGB	8925.5	R23	.1907	R13	.9773		
SG1	8909.2	SG2	539.1	THA	17.68		

ORBIT DETERMINATION ACCURACY

ST	5737.6	SR	1763.3	SS	3494.5		
CRT	.9961	CRS	-.9999	CST	-.9968		
LSA	6940.5	MSA	266.1	SSA	13.4		
EL1	6000.6	EL2	149.7	ALF	17.03		

LAUNCH DATE DEC 14 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 676.631 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.987	GAL	2.87	AZL	85.66	HCA	199.80	SMA	185.74	ECC	.21297	INC	4.3373
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.920	GAP	-8.65	AZP	94.08	TAL	16.46	TAP	216.26	RCA	146.19	APO	225.30
RC	293.566	GL	38.15	GP	-19.14	ZAL	63.11	ZAP	62.89	ETS	168.99	ZAE	90.34	ETE	178.98	ZAC	65.43	ETC	256.87

V1 30.257 V2 25.644 CLP 61.16

PLANETOCENTRIC CONIC

C3	16.287	VHL	4.033	DLA	51.30	RAL	156.75	RAD	6567.7	VEL	11.732	PTH	2.07	VHP	3.564	DPA	-9.34	RAP	157.40

ECC 1.2677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.26	5 59 46	4260.23	-35.69	200.94	31.62	50.35	7 10 46	3660.2	-40.53	193.25
134.74	14 33 37	2716.20	-35.68	78.56	31.61	50.33	15 18 53	2116.2	-40.52	70.88
45.26	5 59 46	4260.23	-35.69	200.94	31.62	50.35	7 10 46	3660.2	-40.53	193.25
134.74	14 33 37	2716.20	-35.68	78.56	31.61	50.33	15 18 53	2116.2	-40.52	70.88
45.26	5 59 46	4260.23	-35.69	200.94	31.62	50.35	7 10 46	3660.2	-40.53	193.25
134.74	14 33 37	2716.20	-35.68	78.56	31.61	50.33	15 18 53	2116.2	-40.52	70.88

DIFFERENTIAL CORRECTIONS

TDE	4.0385	TRA	-.6230	TC3	-7.9255	BAU	1.8048
RDE	1.1429	RRA	.0431	RC3	-2.4626	FAU	.38738
FDE	7.7427	FRA	.1239	FC	-20.6171	BSP	30926
BDE	4.1971	BRA	.6245	BC3	8.2992	FSP	5942

MID-COURSE EXECUTION ACCURACY

SGT	8705.7	SGR	2567.4	SG3	1722.9		
RRT	.9787	RRF	.9946	RTF	.9737		
SGB	9076.3	R23	.1874	R13	.9768		
SG1	9062.2	SG2	506.0	THA	16.15		

ORBIT DETERMINATION ACCURACY

ST	5756.0	SR	1624.9	SS	3390.7		
CRT	.9958	CRS	-.9999	CST	-.9966		
LSA	6870.1	MSA	264.9	SSA	14.4		
EL1	5979.3	EL2	143.6	ALF	15.71		

LAUNCH DATE DEC 14 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 680.869 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.992	GAL	2.79	AZL	85.83	HCA	200.98	SMA	185.83	ECC	.21301	INC	4.1666
RP	213.77	LAP	-1.49	LOP	282.97	VP	22.967	GAP	-8.78	AZP	93.89	TAL	16.00	TAP	216.98	RCA	146.24	APO	225.41
RC	294.693	GL	37.17	GP	-18.00	ZAL	63.33	ZAP	61.47	ETS	169.05	ZAE	88.82	ETE	178.53	ZAC	66.51	ETC	256.99

V1 30.257 V2 25.679 CLP 59.86

PLANETOCENTRIC CONIC

C3	15.701	VHL	3.962	DLA	50.13	RAL	156.95	RAD	6567.6	VEL	11.708	PTH	2.06	VHP	3.582	DPA	-8.25	RAP	157.75

ECC 1.2584

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.74	6 5 15	4241.28	-35.35	198.64	30.62	51.82	7 15 56	3641.3	-40.03	190.85
133.26	14 29 44	2719.07	-35.34	78.52	30.61	51.81	15 15 4	2119.1	-40.02	70.73
46.74	6 5 15	4241.28	-35.35	198.64	30.62	51.82	7 15 56	3641.3	-40.03	190.85
133.26	14 29 44	2719.07	-35.34	78.52	30.61	51.81	15 15 4	2119.1	-40.02	70.73
46.74	6 5 15	4241.28	-35.35	198.64	30.62	51.82	7 15 56	3641.3	-40.03	190.85
133.26	14 29 44	2719.07	-35.34	78.52	30.61	51.81	15 15 4	2119.1	-40.02	70.73

DIFFERENTIAL CORRECTIONS

TDE	3.9788	TRA	-.6292	TC3	-8.4109	BAU	1.8333
RDE	1.0380	RRA	.0475	RC3	-2.3532	FAU	.38182
FDE	7.3280	FRA	.1503	FC	-21.0525	BSP	31480
BDE	4.1120	BRA	.6310	BC3	8.7339	FSP	5861

MID-COURSE EXECUTION ACCURACY

SGT	8918.7	SGR	2396.3	SG3	1707.9		
RRT	.9786	RRF	.9934	RTF	.9739		
SGB	9235.0	R23	.1829	R13	.9764		
SG1	9222.7	SG2	477.2	THA	14.77		

ORBIT DETERMINATION ACCURACY

ST	5772.3	SR	1502.4	SS	3282.9		
CRT	.9955	CRS	-.9999	CST	-.9964		
LSA	6803.3	MSA	263.9	SSA	15.5		
EL1	5963.0	EL2	138.3	ALF	14.53		

LAUNCH DATE DEC 14 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 685.115 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	32.997	GAL	2.71	AZL	85.99	HCA	202.17	SMA	185.91	ECC	.21305	INC	4.0131
RP	213.46	LAP	-1.51	LOP	284.16	VP	23.013	GAP	-8.90	AZP	93.72	TAL	15.52	TAP	217.68	RCA	146.30	APO	225.52
RC	295.805	GL	36.28	GP	-16.97	ZAL	63.63	ZAP	60.10	ETS	169.13	ZAE	87.32	ETE	178.13	ZAC	67.50	ETC	257.10

V1 30.257 V2 25.714 CLP 58.59

PLANETOCENTRIC CONIC

C3	15.195	VHL	3.898	DLA	49.02	RAL	157.25	RAD	6567.6	VEL	11.687	PTH	2.06	VHP	3.605	DPA	-7.28	RAP	158.09

ECC 1.2501

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.15	6 11 4	4222.87	-35.00	196.45	29.81	53.18	7 21 27	3622.9	-39.51	188.57
131.85	14 26 19	2722.72	-34.98	78.55	29.80	53.17	15 11 42	2122.7	-39.50	70.67
48.15	6 11 4	4222.87	-35.00	196.45	29.81	53.18	7 21 27	3622.9	-39.51	188.57
131.85	14 26 19	2722.72	-34.98	78.55	29.80	53.17	15 11 42	2122.7	-39.50	70.67
48.15	6 11 4	4222.87	-35.00	196.45	29.81	53.18	7 21 27	3622.9	-39.51	188.57
131.85	14 26 19	2722.72	-34.98	78.55	29.80	53.17	15 11 42	2122.7	-39.50	70.67

DIFFERENTIAL CORRECTIONS

TDE	3.9273	TRA	-.6254	TC3	-8.8857	BAU	1.8617
RDE	.9482	RRA	.0540	RC3	-2.2425	FAU	.37477
FDE	6.9316	FRA	.1961	FC	-21.3522	BSP	32128
BDE	4.0402	BRA	.6277	BC3	9.1643	FSP	5779

MID-COURSE EXECUTION ACCURACY

SGT	9125.6	SGR	2239.2	SG3	1686.7		
RRT	.9782	RRF	.9919	RTF	.9740		
SGB	9396.3	R23	.1770	R13	.9761		
SG1	9385.4	SG2	452.6	THA	13.53		

ORBIT DETERMINATION ACCURACY

ST	5791.6	SR	1395.2	SS	3177.0		
CRT	.9951	CRS	-.9998	CST	-.9963		
LSA	6746.3	MSA	263.5	SSA	16.5		
EL1	5955.8	EL2	133.7	ALF	13.49		

LAUNCH DATE DEC 14 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 689.368 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.002	GAL	2.62	AZL	86.13	HCA	203.36	SMA	186.00	ECC	.21311	INC	3.8739	V1	30.257
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.058	GAP	-9.03	AZP	93.56	TAL	15.03	TAP	218.38	RCA	146.36	APO	225.64	V2	25.748
RC	296.904	GL	35.46	GP	-16.03	ZAL	64.00	ZAP	58.78	ETS	169.21	ZAE	85.85	ETE	177.80	ZAC	68.42	ETC	257.19	CLP	57.36

PLANETOCENTRIC CONIC

C3	14.738	VHL	3.839	DLA	47.97	RAL	157.64	RAD	6567.6	VEL	11.667	PTH	2.05	VHP	3.632	DPA	-6.40	RAP	158.43	ECC	1.2426

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.51	6 17 10	4204.92	-34.62	194.35	29.17	54.45	7 27 15	3604.9	-39.00	186.39
130.49	14 23 19	2727.01	-34.62	78.65	29.16	54.44	15 8 46	2127.0	-38.99	70.69
49.51	6 17 10	4204.92	-34.62	194.35	29.17	54.45	7 27 15	3604.9	-39.00	186.39
130.49	14 23 19	2727.01	-34.62	78.65	29.16	54.44	15 8 46	2127.0	-38.99	70.69
49.51	6 17 10	4204.92	-34.62	194.35	29.17	54.45	7 27 15	3604.9	-39.00	186.39
130.49	14 23 19	2727.01	-34.62	78.65	29.16	54.44	15 8 46	2127.0	-38.99	70.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.8770	TRA	-.6167	TC3	-9.3654	BAU	1.8927	SGT	9331.6	SGR	2096.1	SG3	1662.0	ST	5804.9	SR	1299.7	SS	3069.2
RDE	.8698	RRA	.0612	RC3	-2.1361	FAU	.36721	RRT	.9774	RRF	.9901	RTF	.9740	CRT	.9947	CRS	-.9998	CST	-.9960
FDE	6.5448	FRA	.2517	FC	-21.5701	BSP	32722	SGB	9564.1	R23	.1702	R13	.9758	LSA	6688.5	MSA	264.0	SSA	17.5
BDE	3.9733	BRA	.6197	BC3	9.6060	FSP	5677	SG1	9554.3	SG2	433.0	THA	12.41	EL1	5947.2	EL2	129.9	ALF	12.56

LAUNCH DATE DEC 14 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 693.628 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.007	GAL	2.54	AZL	86.25	HCA	204.55	SMA	186.09	ECC	.21318	INC	3.7473	V1	30.257
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.103	GAP	-9.15	AZP	93.41	TAL	14.52	TAP	219.07	RCA	146.42	APO	225.76	V2	25.782
RC	297.989	GL	34.71	GP	-15.17	ZAL	64.43	ZAP	57.49	ETS	169.29	ZAE	84.40	ETE	177.50	ZAC	69.26	ETC	257.26	CLP	56.16

PLANETOCENTRIC CONIC

C3	14.322	VHL	3.784	DLA	46.97	RAL	158.10	RAD	6567.6	VEL	11.649	PTH	2.05	VHP	3.662	DPA	-5.61	RAP	158.77	ECC	1.2357

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.81	6 23 35	4187.19	-34.25	192.32	28.67	55.63	7 33 23	3587.2	-38.48	184.30
129.19	14 20 36	2732.03	-34.23	78.81	28.66	55.62	15 6 8	2132.0	-38.47	70.79
50.81	6 23 35	4187.19	-34.25	192.32	28.67	55.63	7 33 23	3587.2	-38.48	184.30
129.19	14 20 36	2732.03	-34.23	78.81	28.66	55.62	15 6 8	2132.0	-38.47	70.79
50.81	6 23 35	4187.19	-34.25	192.32	28.67	55.63	7 33 23	3587.2	-38.48	184.30
129.19	14 20 36	2732.03	-34.23	78.81	28.66	55.62	15 6 8	2132.0	-38.47	70.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.8303	TRA	-.6008	TC3	-9.8412	BAU	1.9241	SGT	9533.5	SGR	1965.0	SG3	1633.8	ST	5817.0	SR	1215.0	SS	2962.2
RDE	.8014	RRA	.0688	RC3	-2.0322	FAU	.35899	RRT	.9763	RRF	.9879	RTF	.9741	CRT	.9943	CRS	-.9998	CST	-.9957
FDE	6.1731	FRA	.3151	FC	-21.6998	BSP	33347	SGB	9733.9	R23	.1622	R13	.9755	LSA	6634.6	MSA	264.4	SSA	18.5
BDE	3.9132	BRA	.6047	BC3	10.0488	FSP	5564	SG1	9725.0	SG2	416.8	THA	11.40	EL1	5941.2	EL2	126.4	ALF	11.74

LAUNCH DATE DEC 14 1964 FLIGHT TIME 322.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 697.895 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.012	GAL	2.45	AZL	86.37	HCA	205.75	SMA	186.18	ECC	.21327	INC	3.6313	V1	30.257
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.148	GAP	-9.26	AZP	93.27	TAL	14.00	TAP	219.75	RCA	146.48	APO	225.89	V2	25.815
RC	299.061	GL	34.02	GP	-14.39	ZAL	64.92	ZAP	56.25	ETS	169.38	ZAE	82.97	ETE	177.25	ZAC	70.03	ETC	257.32	CLP	55.00

PLANETOCENTRIC CONIC

C3	13.941	VHL	3.734	DLA	46.02	RAL	158.64	RAD	6567.5	VEL	11.633	PTH	2.04	VHP	3.696	DPA	-4.90	RAP	159.11	ECC	1.2294

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.08	6 30 16	4169.73	-33.85	190.35	28.30	56.75	7 39 46	3569.7	-37.95	182.28
127.92	14 18 12	2737.60	-33.85	79.02	28.29	56.74	15 3 49	2137.6	-37.95	70.95
52.08	6 30 16	4169.73	-33.85	190.35	28.30	56.75	7 39 46	3569.7	-37.95	182.28
127.92	14 18 12	2737.60	-33.85	79.02	28.29	56.74	15 3 49	2137.6	-37.95	70.95
52.08	6 30 16	4169.73	-33.85	190.35	28.30	56.75	7 39 46	3569.7	-37.95	182.28
127.92	14 18 12	2737.60	-33.85	79.02	28.29	56.74	15 3 49	2137.6	-37.95	70.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.7858	TRA	-.5780	TC	-10.3158	BAU	1.9560	SGT	9732.5	SGR	1844.9	SG3	1603.2	ST	5826.6	SR	1139.5	SS	2855.2
RDE	.7413	RRA	.0767	RC3	-1.9318	FAU	.35035	RRT	.9749	RRF	.9854	RTF	.9740	CRT	.9939	CRS	-.9997	CST	-.9954
FDE	5.8149	FRA	.3855	FC	-21.7571	BSP	33980	SGB	9905.8	R23	.1533	R13	.9752	LSA	6582.5	MSA	265.0	SSA	19.5
BDE	3.8577	BRA	.5831	BC3	10.4951	FSP	5447	SG1	9897.6	SG2	404.0	THA	10.49	EL1	5935.7	EL2	123.3	ALF	11.00

LAUNCH DATE DEC 14 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 702.170 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.018	GAL	2.36	AZL	86.48	HCA	206.95	SMA	186.28	ECC	.21337	INC	3.5248	V1	30.257
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.192	GAP	-9.38	AZP	93.14	TAL	13.46	TAP	220.41	RCA	146.53	APO	226.03	V2	25.847
RC	300.120	GL	33.38	GP	-13.66	ZAL	65.48	ZAP	55.05	ETS	169.46	ZAE	81.57	ETE	177.03	ZAC	70.76	ETC	257.36	CLP	53.87

PLANETOCENTRIC CONIC

C3	13.590	VHL	3.686	DLA	45.09	RAL	159.24	RAD	6567.5	VEL	11.618	PTH	2.04	VHP	3.733	DPA	-4.26	RAP	159.46	ECC	1.2236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.32	6 37 17	4152.25	-33.46	188.42	28.05	57.80	7 46 29	3552.3	-37.43	180.30
126.68	14 15 59	2743.90	-33.45	79.30	28.04	57.79	15 1 43	2143.9	-37.42	71.19
53.32	6 37 17	4152.25	-33.46	188.42	28.05	57.80	7 46 29	3552.3	-37.43	180.30
126.68	14 15 59	2743.90	-33.45	79.30	28.04	57.79	15 1 43	2143.9	-37.42	71.19
53.32	6 37 17	4152.25	-33.46	188.42	28.05	57.80	7 46 29	3552.3	-37.43	180.30
126.68	14 15 59	2743.90	-33.45	79.30	28.04	57.79	15 1 43	2143.9	-37.42	71.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.7421	TRA	-.5497	TC	-10.7875	BAU	1.9880	SGT	9927.2	SGR	1734.2	SG3	1570.1	ST	5832.4	SR	1071.9	SS	2748.4
RDE	.6882	RRA	.0844	RC3	-1.8342	FAU	.34127	RRT	.9731	RRF	.9823	RTF	.9740	CRT	.9935	CRS	-.9997	CST	-.9951
FDE	5.4702	FRA	.4586	FC	-21.7410	BSP	34598	SGB	10077.5	R23	.1434	R13	.9750	LSA	6530.5	MSA	265.6	SSA	20.5
BDE	3.8049	BRA	.5561	BC3	10.9423	FSP	5318	SG1	10069.8	SG2	394.2	THA	9.66	EL1	5928.8	EL2	120.3	ALF	10.35

LAUNCH DATE DEC 14 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 706.451 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.024	GAL	2.26	AZL	86.57	HCA	208.15	SMA	186.38	ECC	.21349	INC	3.4264	V1	30.257
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.236	GAP	-9.49	AZP	93.02	TAL	12.92	TAP	221.07	RCA	146.59	APO	226.17	V2	25.879
RC	301.167	GL	32.79	GP	-12.99	ZAL	66.09	ZAP	53.89	ETS	169.55	ZAE	80.19	ETE	176.84	ZAC	71.43	ETC	257.40	CLP	52.78

PLANETOCENTRIC CONIC

C3	13.264	VHL	3.642	DLA	44.19	RAL	159.90	RAD	6567.5	VEL	11.604	PTH	2.03	VHP	3.772	DPA	-3.69	RAP	159.82	ECC	1.2183

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.53	6 44 34	4134.78	-33.05	186.52	27.91	58.80	7 53 29	3534.8	-36.90	178.37
125.47	14 13 58	2750.83	-33.04	79.63	27.90	58.79	14 59 49	2150.8	-36.90	71.49
54.53	6 44 34	4134.78	-33.05	186.52	27.91	58.80	7 53 29	3534.8	-36.90	178.37
125.47	14 13 58	2750.83	-33.04	79.63	27.90	58.79	14 59 49	2150.8	-36.90	71.49
54.53	6 44 34	4134.78	-33.05	186.52	27.91	58.80	7 53 29	3534.8	-36.90	178.37
125.47	14 13 58	2750.83	-33.04	79.63	27.90	58.79	14 59 49	2150.8	-36.90	71.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.6997	TRA	-.5138	TC-11.2568	BAU	2.0198	SGT10118.2	SGR	1632.5	SG3	1535.3	ST	5835.4	SR	1011.7	SS	2643.8
RDE	.6414	RRA	.0927	RC3-1.7394	FAU	.33186	RRT	.9707	RRF	.9788	RTF	.9739	CRT	.9930	CRS	-.9996	CST -.9947
FDE	5.1422	FRA	.5408	FC-21.6603	BSP	35242	SGB10249.1	R23	.1334	R13	.9747	LSA	6480.2	MSA	267.1	SSA	21.4
BDE	3.7549	BRA	.5220	BC311.3904	FSP	5192	SG110241.7	SG2	387.8	THA	8.91	EL1	5921.3	EL2	117.8	ALF	9.77

LAUNCH DATE DEC 14 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 710.738 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.030	GAL	2.17	AZL	86.66	HCA	209.36	SMA	186.48	ECC	.21362	INC	3.3352	V1	30.257
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.279	GAP	-9.60	AZP	92.91	TAL	12.36	TAP	221.72	RCA	146.65	APO	226.32	V2	25.911
RC	302.203	GL	32.23	GP	-12.38	ZAL	66.75	ZAP	52.76	ETS	169.64	ZAE	78.84	ETE	176.68	ZAC	72.07	ETC	257.42	CLP	51.71

PLANETOCENTRIC CONIC

C3	12.962	VHL	3.600	DLA	43.32	RAL	160.62	RAD	6567.5	VEL	11.591	PTH	2.03	VHP	3.814	DPA	-3.17	RAP	160.20	ECC	1.2133

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.74	6 52 11	4117.12	-32.63	184.63	27.86	59.76	8 0 49	3517.1	-36.37	176.46
124.26	14 12 3	2758.52	-32.62	80.03	27.85	59.75	14 58 2	2158.5	-36.36	71.86
55.74	6 52 11	4117.12	-32.63	184.63	27.86	59.76	8 0 49	3517.1	-36.37	176.46
124.26	14 12 3	2758.52	-32.62	80.03	27.85	59.75	14 58 2	2158.5	-36.36	71.86
55.74	6 52 11	4117.12	-32.63	184.63	27.86	59.76	8 0 49	3517.1	-36.37	176.46
124.26	14 12 3	2758.52	-32.62	80.03	27.85	59.75	14 58 2	2158.5	-36.36	71.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.6568	TRA	-.4726	TC-11.7260	BAU	2.0519	SGT10306.5	SGR	1539.3	SG3	1500.0	ST	5833.4	SR	957.6	SS	2540.0
RDE	.5998	RRA	.1004	RC3-1.6491	FAU	.32248	RRT	.9678	RRF	.9747	RTF	.9739	CRT	.9925	CRS	-.9996	CST -.9942
FDE	4.8276	FRA	.6213	FC-21.5392	BSP	35871	SGB10420.8	R23	.1228	R13	.9745	LSA	6428.4	MSA	268.2	SSA	22.4
BDE	3.7057	BRA	.4832	BC311.8414	FSP	5059	SG110413.8	SG2	383.5	THA	8.24	EL1	5910.3	EL2	115.2	ALF	9.26

LAUNCH DATE DEC 14 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 715.032 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.036	GAL	2.07	AZL	86.75	HCA	210.57	SMA	186.59	ECC	.21377	INC	3.2504	V1	30.257
RP	211.47	LAP	-1.65	LOP	292.57	VP	23.322	GAP	-9.71	AZP	92.80	TAL	11.78	TAP	222.35	RCA	146.70	APO	226.47	V2	25.941
RC	303.228	GL	31.72	GP	-11.81	ZAL	67.47	ZAP	51.66	ETS	169.72	ZAE	77.52	ETE	176.54	ZAC	72.66	ETC	257.44	CLP	50.68

PLANETOCENTRIC CONIC

C3	12.679	VHL	3.561	DLA	42.46	RAL	161.39	RAD	6567.5	VEL	11.579	PTH	2.02	VHP	3.858	DPA	-2.72	RAP	160.58	ECC	1.2087

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.93	7 0 8	4099.23	-32.21	182.76	27.90	60.68	8 8 27	3499.2	-35.84	174.57
123.07	14 10 15	2766.97	-32.20	80.49	27.89	60.67	14 56 22	2167.0	-35.83	72.30
56.93	7 0 8	4099.23	-32.21	182.76	27.90	60.68	8 8 27	3499.2	-35.84	174.57
123.07	14 10 15	2766.97	-32.20	80.49	27.89	60.67	14 56 22	2167.0	-35.83	72.30
56.93	7 0 8	4099.23	-32.21	182.76	27.90	60.68	8 8 27	3499.2	-35.84	174.57
123.07	14 10 15	2766.97	-32.20	80.49	27.89	60.67	14 56 22	2167.0	-35.83	72.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.6124	TRA	-.4261	TC-12.1931	BAU	2.0837	SGT10490.5	SGR	1452.7	SG3	1462.9	ST	5825.0	SR	908.5	SS	2435.6
RDE	.5625	RRA	.1080	RC3-1.5608	FAU	.31280	RRT	.9642	RRF	.9699	RTF	.9737	CRT	.9921	CRS	-.9996	CST -.9937
FDE	4.5233	FRA	.7038	FC-21.3576	BSP	36485	SGB10590.6	R23	.1123	R13	.9743	LSA	6373.0	MSA	269.7	SSA	23.3
BDE	3.6559	BRA	.4395	BC312.2926	FSP	4925	SG110583.8	SG2	381.7	THA	7.62	EL1	5894.3	EL2	112.8	ALF	8.80

LAUNCH DATE DEC 14 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 719.333 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.042	GAL	1.97	AZL	86.83	HCA	211.78	SMA	186.69	ECC	.21393	INC	3.1713	V1	30.257
RP	211.20	LAP	-1.67	LOP	293.79	VP	23.364	GAP	-9.81	AZP	92.70	TAL	11.20	TAP	222.98	RCA	146.75	APO	226.63	V2	25.971
RC	304.242	GL	31.23	GP	-11.28	ZAL	68.24	ZAP	50.60	ETS	169.81	ZAE	76.22	ETE	176.41	ZAC	73.22	ETC	257.45	CLP	49.67

PLANETOCENTRIC CONIC

C3	12.416	VHL	3.524	DLA	41.62	RAL	162.21	RAD	6567.5	VEL	11.567	PTH	2.02	VHP	3.903	DPA	-2.31	RAP	160.97	ECC	1.2043

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.12	7 8 26	4080.96	-31.77	180.87	28.03	61.56	8 16 27	3481.0	-35.29	172.67
121.88	14 8 28	2776.27	-31.76	81.02	28.02	61.55	14 54 44	2176.3	-35.28	72.82
58.12	7 8 26	4080.96	-31.77	180.87	28.03	61.56	8 16 27	3481.0	-35.29	172.67
121.88	14 8 28	2776.27	-31.76	81.02	28.02	61.55	14 54 44	2176.3	-35.28	72.82
58.12	7 8 26	4080.96	-31.77	180.87	28.03	61.56	8 16 27	3481.0	-35.29	172.67
121.88	14 8 28	2776.27	-31.76	81.02	28.02	61.55	14 54 44	2176.3	-35.28	72.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.5681	TRA	-.3719	TC-12.6580	BAU	2.1153	SGT10671.9	SGR	1373.6	SG3	1426.1	ST	5813.2	SR	864.5	SS	2333.7
RDE	.5293	RRA	.1157	RC3-1.4766	FAU	.30325	RRT	.9600	RRF	.9644	RTF	.9736	CRT	.9916	CRS	-.9995	CST -.9931
FDE	4.2348	FRA	.7906	FC-21.1455	BSP	37095	SGB10760.0	R23	.1022	R13	.9740	LSA	6317.6	MSA	271.8	SSA	24.2
BDE	3.6072	BRA	.3895	BC312.7439	FSP	4788	SG110753.2	SG2	381.9	THA	7.05	EL1	5876.1	EL2	110.5	ALF	8.39

LAUNCH DATE DEC 14 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 723.639 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.048	GAL	1.86	AZL	86.90	HCA	213.00	SMA	186.80	ECC	.21412	INC	3.0972	V1	30.257
RP	210.95	LAP	-1.69	LOP	295.01	VP	23.405	GAP	-9.91	AZP	92.60	TAL	10.60	TAP	223.59	RCA	146.80	APO	226.80	V2	26.001
RC	305.247	GL	30.77	GP	-10.78	ZAL	69.05	ZAP	49.58	ETS	169.89	ZAE	74.95	ETE	176.31	ZAC	73.75	ETC	257.45	CLP	48.69

PLANETOCENTRIC CONIC

C3	12.169	VHL	3.488	DLA	40.79	RAL	163.07	RAD	6567.5	VEL	11.557	PTH	2.02	VHP	3.951	DPA	-1.95	RAP	161.38	ECC	1.2003

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.32	7 17 8	4062.18	-31.32	178.97	28.22	62.42	8 24 50	3462.2	-34.74	170.76
120.68	14 6 41	2786.53	-31.31	81.63	28.22	62.40	14 53 7	2186.5	-34.73	73.41
59.32	7 17 8	4062.18	-31.32	178.97	28.22	62.42	8 24 50	3462.2	-34.74	170.76
120.68	14 6 41	2786.53	-31.31	81.63	28.22	62.40	14 53 7	2186.5	-34.73	73.41
59.32	7 17 8	4062.18	-31.32	178.97	28.22	62.42	8 24 50	3462.2	-34.74	170.76
120.68	14 6 41	2786.53	-31.31	81.63	28.22	62.40	14 53 7	2186.5	-34.73	73.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.5212	TRA	-.3137	TC-13.1215	BAU	2.1467	SGT10849.8	SGR	1300.3	SG3	1388.6	ST	5793.5	SR	824.4	SS	2231.0
RDE	.4993	RRA	.1226	RC3-1.3952	FAU	.29370	RRT	.9550	RRF	.9580	RTF	.9735	CRT	.9912	CRS	-.9995	CST	-.9924
FDE	3.9555	FRA	.8711	FC-20.8944	BSP	37695	SGB10927.4	R23	.0918	R13	.9738	LSA	6256.8	MSA	273.1	SSA	25.1
BDE	3.5564	BRA	.3368	BC313.1955	FSP	4649	SG110920.7	SG2	383.2	THA	6.54	EL1	5850.9	EL2	108.0	ALF	8.03

LAUNCH DATE DEC 14 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 727.948 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.054	GAL	1.76	AZL	86.97	HCA	214.22	SMA	186.91	ECC	.21431	INC	3.0276	V1	30.257
RP	210.70	LAP	-1.70	LOP	296.23	VP	23.446	GAP	-10.01	AZP	92.50	TAL	9.98	TAP	224.20	RCA	146.85	APO	226.97	V2	26.029
RC	306.243	GL	30.34	GP	-10.33	ZAL	69.92	ZAP	48.58	ETS	169.97	ZAE	73.71	ETE	176.22	ZAC	74.25	ETC	257.45	CLP	47.74

PLANETOCENTRIC CONIC

C3	11.938	VHL	3.455	DLA	39.96	RAL	163.98	RAD	6567.5	VEL	11.547	PTH	2.02	VHP	4.000	DPA	-1.63	RAP	161.81	ECC	1.1965

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.54	7 26 15	4042.75	-30.86	177.04	28.50	63.25	8 33 38	3442.7	-34.18	168.82
119.46	14 4 50	2797.86	-30.85	82.32	28.49	63.23	14 51 28	2197.9	-34.17	74.10
60.54	7 26 15	4042.75	-30.86	177.04	28.50	63.25	8 33 38	3442.7	-34.18	168.82
119.46	14 4 50	2797.86	-30.85	82.32	28.49	63.23	14 51 28	2197.9	-34.17	74.10
60.54	7 26 15	4042.75	-30.86	177.04	28.50	63.25	8 33 38	3442.7	-34.18	168.82
119.46	14 4 50	2797.86	-30.85	82.32	28.49	63.23	14 51 28	2197.9	-34.17	74.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.4922	TRA	-.2293	TC-13.5201	BAU	2.1678	SGT11003.0	SGR	1231.7	SG3	1345.8	ST	5799.7	SR	793.4	SS	2153.0
RDE	.4753	RRA	.1327	RC3-1.3051	FAU	.28203	RRT	.9480	RRF	.9507	RTF	.9731	CRT	.9909	CRS	-.9994	CST	-.9914
FDE	3.7281	FRA	.9974	FC-20.4536	BSP	38743	SGB11071.8	R23	.0849	R13	.9734	LSA	6230.8	MSA	279.6	SSA	25.5
BDE	3.5243	BRA	.2649	BC313.5830	FSP	4592	SG111064.9	SG2	389.8	THA	6.07	EL1	5852.8	EL2	106.0	ALF	7.72

LAUNCH DATE DEC 14 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 732.267 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.061	GAL	1.65	AZL	87.04	HCA	215.44	SMA	187.02	ECC	.21453	INC	2.9622	V1	30.257
RP	210.46	LAP	-1.72	LOP	297.45	VP	23.486	GAP	-10.11	AZP	92.41	TAL	9.35	TAP	224.79	RCA	146.90	APO	227.15	V2	26.057
RC	307.229	GL	29.92	GP	-9.90	ZAL	70.84	ZAP	47.61	ETS	170.04	ZAE	72.48	ETE	176.14	ZAC	74.73	ETC	257.43	CLP	46.82

PLANETOCENTRIC CONIC

C3	11.721	VHL	3.424	DLA	39.13	RAL	164.93	RAD	6567.4	VEL	11.537	PTH	2.01	VHP	4.050	DPA	-1.36	RAP	162.24	ECC	1.1929

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.78	7 35 49	4022.52	-30.39	175.07	28.84	64.05	8 42 51	3422.5	-33.60	166.84
118.22	14 2 51	2810.42	-30.38	83.10	28.83	64.04	14 49 42	2210.4	-33.59	74.88
61.78	7 35 49	4022.52	-30.39	175.07	28.84	64.05	8 42 51	3422.5	-33.60	166.84
118.22	14 2 51	2810.42	-30.38	83.10	28.83	64.04	14 49 42	2210.4	-33.59	74.88
61.78	7 35 49	4022.52	-30.39	175.07	28.84	64.05	8 42 51	3422.5	-33.60	166.84
118.22	14 2 51	2810.42	-30.38	83.10	28.83	64.04	14 49 42	2210.4	-33.59	74.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.4354	TRA	-.1651	TC-13.9982	BAU	2.2021	SGT11182.7	SGR	1170.3	SG3	1310.5	ST	5757.4	SR	758.6	SS	2045.0
RDE	.4499	RRA	.1381	RC3-1.2340	FAU	.27349	RRT	.9415	RRF	.9424	RTF	.9730	CRT	.9905	CRS	-.9993	CST	-.9905
FDE	3.4591	FRA	1.0628	FC-20.1998	BSP	39166	SGB11243.7	R23	.0748	R13	.9732	LSA	6150.3	MSA	280.1	SSA	26.6
BDE	3.4647	BRA	.2153	BC314.0525	FSP	4423	SG111236.9	SG2	392.5	THA	5.63	EL1	5806.2	EL2	103.2	ALF	7.44

LAUNCH DATE DEC 14 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 736.591 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.067	GAL	1.54	AZL	87.10	HCA	216.66	SMA	187.14	ECC	.21477	INC	2.9003	V1	30.257
RP	210.22	LAP	-1.73	LOP	298.68	VP	23.526	GAP	-10.21	AZP	92.33	TAL	8.71	TAP	225.38	RCA	146.95	APO	227.33	V2	26.085
RC	308.206	GL	29.53	GP	-9.50	ZAL	71.80	ZAP	46.67	ETS	170.12	ZAE	71.29	ETE	176.07	ZAC	75.18	ETC	257.42	CLP	45.92

PLANETOCENTRIC CONIC

C3	11.519	VHL	3.394	DLA	38.31	RAL	165.93	RAD	6567.4	VEL	11.529	PTH	2.01	VHP	4.102	DPA	-1.12	RAP	162.70	ECC	1.1896

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.04	7 45 54	4001.29	-29.90	173.03	29.24	64.84	8 52 35	3401.3	-33.02	164.81
116.96	14 0 41	2824.37	-29.89	83.99	29.23	64.83	14 47 46	2224.4	-33.01	75.77
63.04	7 45 54	4001.29	-29.90	173.03	29.24	64.84	8 52 35	3401.3	-33.02	164.81
116.96	14 0 41	2824.37	-29.89	83.99	29.23	64.83	14 47 46	2224.4	-33.01	75.77
63.04	7 45 54	4001.29	-29.90	173.03	29.24	64.84	8 52 35	3401.3	-33.02	164.81
116.96	14 0 41	2824.37	-29.89	83.99	29.23	64.83	14 47 46	2224.4	-33.01	75.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.3771	TRA	-.0933	TC-14.4675	BAU	2.2352	SGT11357.1	SGR	1113.2	SG3	1274.5	ST	5709.0	SR	727.5	SS	1940.5
RDE	.4272	RRA	.1437	RC3-1.1634	FAU	.26471	RRT	.9337	RRF	.9330	RTF	.9728	CRT	.9903	CRS	-.9991	CST	-.9893
FDE	3.2054	FRA	1.1337	FC-19.8951	BSP	39626	SGB11411.5	R23	.0658	R13	.9730	LSA	6066.8	MSA	281.7	SSA	27.5
BDE	3.4040	BRA	.1713	BC314.5142	FSP	4271	SG111404.6	SG2	397.0	THA	5.24	EL1	5754.2	EL2	100.5	ALF	7.19

LAUNCH DATE DEC 14 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 740.920 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.074 GAL 1.42 AZL 87.16 HCA 217.89 SMA 187.25 ECC .21503 INC 2.8418 V1 30.257
RP 209.99 LAP -1.75 LOP 299.90 VP 23.564 GAP -10.30 AZP 92.24 TAL 8.06 TAP 225.95 RCA 146.99 APO 227.52 V2 26.111
RC 309.174 GL 29.14 GP -9.13 ZAL 72.81 ZAP 45.76 ETS 170.19 ZAE 70.11 ETE 176.01 ZAC 75.62 ETC 257.40 CLP 45.04

PLANETOCENTRIC CONIC

C3 11.330 VHL 3.366 DLA 37.48 RAL 166.96 RAD 6567.4 VEL 11.520 PTH 2.01 VHP 4.155 DPA -.91 RAP 163.16 ECC 1.1865

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.35	7 56 33	3978.85	-29.39	170.92	29.71	65.61	9 2 52	3378.9	-32.41	162.70
115.65	13 58 16	2839.95	-29.38	85.00	29.70	65.60	14 45 36	2239.9	-32.41	76.78
64.35	7 56 33	3978.85	-29.39	170.92	29.71	65.61	9 2 52	3378.9	-32.41	162.70
115.65	13 58 16	2839.95	-29.38	85.00	29.70	65.60	14 45 36	2239.9	-32.41	76.78
64.35	7 56 33	3978.85	-29.39	170.92	29.71	65.61	9 2 52	3378.9	-32.41	162.70
115.65	13 58 16	2839.95	-29.38	85.00	29.70	65.60	14 45 36	2239.9	-32.41	76.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.3192 TRA -.0131 TC-14.9246 BAU 2.2667 SGT11526.9 SGR 1060.6 SG3 1238.4 ST 5657.9 SR 699.7 SS 1839.8
RDE .4069 RRA .1493 RC3-1.0941 FAU .25587 RRT .9247 RRF .9224 RTF .9727 CRT .9901 CRS -.9989 CST -.9879
FDE 2.9671 FRA 1.2061 FC-19.5508 BSP 40128 SGB11575.6 R23 .0573 R13 .9729 LSA 5983.7 MSA 283.7 SSA 28.5
BDE 3.3440 BRA .1499 BC314.9647 FSP 4124 SG111568.6 SG2 402.3 THA 4.87 EL1 5700.1 EL2 97.5 ALF 6.98

LAUNCH DATE DEC 14 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 745.253 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.081 GAL 1.31 AZL 87.21 HCA 219.12 SMA 187.37 ECC .21531 INC 2.7864 V1 30.257
RP 209.77 LAP -1.76 LOP 301.14 VP 23.602 GAP -10.39 AZP 92.16 TAL 7.39 TAP 226.52 RCA 147.03 APO 227.72 V2 26.137
RC 310.132 GL 28.78 GP -8.78 ZAL 73.87 ZAP 44.87 ETS 170.26 ZAE 68.96 ETE 175.96 ZAC 76.04 ETC 257.37 CLP 44.19

PLANETOCENTRIC CONIC

C3 11.154 VHL 3.340 DLA 36.65 RAL 168.03 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 4.209 DPA -.74 RAP 163.65 ECC 1.1836

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.70	8 7 51	3954.92	-28.86	168.71	30.23	66.37	9 13 46	3354.9	-31.80	160.50
114.30	13 55 29	2857.41	-28.85	86.15	30.23	66.35	14 43 7	2257.4	-31.79	77.94
65.70	8 7 51	3954.92	-28.86	168.71	30.23	66.37	9 13 46	3354.9	-31.80	160.50
114.30	13 55 29	2857.41	-28.85	86.15	30.23	66.35	14 43 7	2257.4	-31.79	77.94
65.70	8 7 51	3954.92	-28.86	168.71	30.23	66.37	9 13 46	3354.9	-31.80	160.50
114.30	13 55 29	2857.41	-28.85	86.15	30.23	66.35	14 43 7	2257.4	-31.79	77.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.2590 TRA .0741 TC-15.3692 BAU 2.2970 SGT11690.7 SGR 1011.7 SG3 1201.7 ST 5599.6 SR 674.4 SS 1740.2
RDE .3886 RRA .1548 RC3-1.0259 FAU .24694 RRT .9144 RRF .9103 RTF .9725 CRT .9900 CRS -.9984 CST -.9863
FDE 2.7389 FRA 1.2781 FC-19.1665 BSP 40663 SGB11734.4 R23 .0495 R13 .9727 LSA 5895.5 MSA 286.1 SSA 29.3
BDE 3.2821 BRA .1716 BC315.4034 FSP 3987 SG111727.3 SG2 408.4 THA 4.53 EL1 5639.3 EL2 94.3 ALF 6.80

LAUNCH DATE DEC 14 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 749.591 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.088 GAL 1.19 AZL 87.27 HCA 220.36 SMA 187.49 ECC .21561 INC 2.7336 V1 30.257
RP 209.55 LAP -1.77 LOP 302.37 VP 23.640 GAP -10.48 AZP 92.08 TAL 6.71 TAP 227.07 RCA 147.07 APO 227.92 V2 26.162
RC 311.080 GL 28.42 GP -8.45 ZAL 74.97 ZAP 44.01 ETS 170.32 ZAE 67.82 ETE 175.92 ZAC 76.44 ETC 257.34 CLP 43.36

PLANETOCENTRIC CONIC

C3 10.991 VHL 3.315 DLA 35.81 RAL 169.13 RAD 6567.4 VEL 11.506 PTH 2.00 VHP 4.265 DPA -.60 RAP 164.14 ECC 1.1809

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.11	8 19 54	3929.17	-28.32	166.38	30.81	67.11	9 25 24	3329.2	-31.16	158.18
112.89	13 52 15	2877.10	-28.31	87.46	30.81	67.10	14 40 12	2277.1	-31.15	79.26
67.11	8 19 54	3929.17	-28.32	166.38	30.81	67.11	9 25 24	3329.2	-31.16	158.18
112.89	13 52 15	2877.10	-28.31	87.46	30.81	67.10	14 40 12	2277.1	-31.15	79.26
67.11	8 19 54	3929.17	-28.32	166.38	30.81	67.11	9 25 24	3329.2	-31.16	158.18
112.89	13 52 15	2877.10	-28.31	87.46	30.81	67.10	14 40 12	2277.1	-31.15	79.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.1959 TRA .1670 TC-15.8047 BAU 2.3266 SGT11851.1 SGR 966.8 SG3 1165.2 ST 5533.2 SR 651.7 SS 1644.6
RDE .3723 RRA .1601 RC3 -.9591 FAU .23804 RRT .9024 RRF .8969 RTF .9723 CRT .9901 CRS -.9978 CST -.9843
FDE 2.5246 FRA 1.3498 FC-18.7502 BSP 41177 SGB11890.5 R23 .0428 R13 .9725 LSA 5801.8 MSA 289.1 SSA 30.2
BDE 3.2175 BRA .2314 BC315.8337 FSP 3854 SG111883.2 SG2 415.5 THA 4.22 EL1 5570.7 EL2 91.0 ALF 6.65

LAUNCH DATE DEC 14 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 753.934 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.095 GAL 1.07 AZL 87.32 HCA 221.59 SMA 187.61 ECC .21594 INC 2.6835 V1 30.257
RP 209.34 LAP -1.78 LOP 303.61 VP 23.676 GAP -10.57 AZP 92.01 TAL 6.02 TAP 227.61 RCA 147.10 APO 228.13 V2 26.186
RC 312.019 GL 28.07 GP -8.14 ZAL 76.12 ZAP 43.18 ETS 170.39 ZAE 66.71 ETE 175.88 ZAC 76.83 ETC 257.31 CLP 42.55

PLANETOCENTRIC CONIC

C3 10.840 VHL 3.292 DLA 34.95 RAL 170.27 RAD 6567.4 VEL 11.499 PTH 2.00 VHP 4.321 DPA -.49 RAP 164.65 ECC 1.1784

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.59	8 32 49	3901.21	-27.75	163.90	31.45	67.84	9 37 51	3301.2	-30.50	155.71
111.41	13 48 25	2899.41	-27.75	88.96	31.45	67.83	14 36 44	2299.4	-30.50	80.78
68.59	8 32 49	3901.21	-27.75	163.90	31.45	67.84	9 37 51	3301.2	-30.50	155.71
111.41	13 48 25	2899.41	-27.75	88.96	31.45	67.83	14 36 44	2299.4	-30.50	80.78
68.59	8 32 49	3901.21	-27.75	163.90	31.45	67.84	9 37 51	3301.2	-30.50	155.71
111.41	13 48 25	2899.41	-27.75	88.96	31.45	67.83	14 36 44	2299.4	-30.50	80.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.1325 TRA .2678 TC-16.2245 BAU 2.3549 SGT12007.6 SGR 925.7 SG3 1129.0 ST 5463.3 SR 631.6 SS 1553.1
RDE .3577 RRA .1652 RC3 -.8937 FAU .22921 RRT .8889 RRF .8820 RTF .9722 CRT .9903 CRS -.9969 CST -.9819
FDE 2.3240 FRA 1.4201 FC-18.3055 BSP 41730 SGB12043.2 R23 .0366 R13 .9723 LSA 5707.2 MSA 292.3 SSA 30.9
BDE 3.1529 BRA .3146 BC316.2491 FSP 3728 SG112035.8 SG2 423.1 THA 3.92 EL1 5499.0 EL2 87.2 ALF 6.53

LAUNCH DATE DEC 14 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 758.280 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.102	GAL	.94	AZL	87.36	HCA	222.83	SMA	187.74	ECC	.21628	INC	2.6355	V1	30.257
RP	209.14	LAP	-1.79	LOP	304.84	VP	23.712	GAP	-10.66	AZP	91.93	TAL	5.31	TAP	228.14	RCA	147.13	APO	228.34	V2	26.209
RC	312.950	GL	27.72	GP	-7.86	ZAL	77.32	ZAP	42.36	ETS	170.44	ZAE	65.62	ETE	175.85	ZAC	77.20	ETC	257.27	CLP	41.76

PLANETOCENTRIC CONIC

C3	10.703	VHL	3.271	DLA	34.09	RAL	171.44	RAD	6567.4	VEL	11.493	PTH	2.00	VHP	4.379	DPA	-.40	RAP	165.18	ECC	1.1761		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.17	8 46 49	3870.33	-27.17	161.21	32.14	68.57	9 51 19	3270.3	-29.83	153.04
109.83	13 43 46	2925.06	-27.16	90.71	32.14	68.55	14 32 32	2325.1	-29.82	82.54
70.17	8 46 49	3870.33	-27.17	161.21	32.14	68.57	9 51 19	3270.3	-29.83	153.04
109.83	13 43 46	2925.06	-27.16	90.71	32.14	68.55	14 32 32	2325.1	-29.82	82.54
110.00	14 3 51	2863.88	-28.61	86.55	32.75	70.45	14 51 35	2263.9	-31.01	78.17
110.00	13 25 55	2979.51	-25.73	94.30	31.48	66.68	14 15 34	2379.5	-28.66	86.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.0637	TRA	.3743	TC-16.6439	BAU	2.3844	SGT12165.9	SGR	888.4	SG3	1094.8	ST	5381.0	SR	612.7	SS	1460.0
RDE	.3443	RRA	.1699	RC3 -.8323	FAU	.22100	RRT .8743	RRF	.8657	RTF	.9721	CRT	.9906	CRS	-.9954	CST	-.9790
FDE	2.1271	FRA	1.4861	FC-17.8771	BSP	42246	SGB12198.3	R23	.0303	R13	.9721	LSA	5601.2	MSA	295.7	SSA	31.8
BDE	3.0830	BRA	.4110	BC316.6647	FSP	3599	SG112190.7	SG2	430.3	THA	3.66	EL1	5415.1	EL2	83.1	ALF	6.44

LAUNCH DATE DEC 14 1964 FLIGHT TIME 352.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 762.631 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.109	GAL	.82	AZL	87.41	HCA	224.07	SMA	187.86	ECC	.21665	INC	2.5897	V1	30.257		
RP	208.94	LAP	-1.80	LOP	306.09	VP	23.747	GAP	-10.75	AZP	91.86	TAL	4.59	TAP	228.66	RCA	147.16	APO	228.56	V2	26.232		
RC	313.871	GL	27.38	GP	-7.58	ZAL	78.56	ZAP	41.57	ETS	170.50	ZAE	64.55	ETE	175.82	ZAC	77.57	ETC	257.23	CLP	41.00		

PLANETOCENTRIC CONIC

C3	10.577	VHL	3.252	DLA	33.21	RAL	172.64	RAD	6567.4	VEL	11.488	PTH	2.00	VHP	4.438	DPA	-.34	RAP	165.72	ECC	1.1741		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.87	9 2 4	3835.87	-26.56	158.27	32.89	69.28	10 6 0	3235.9	-29.13	150.12
108.13	13 38 7	2954.74	-26.55	92.75	32.88	69.27	14 27 21	2354.7	-29.12	84.60
71.87	9 2 4	3835.87	-26.56	158.27	32.89	69.28	10 6 0	3235.9	-29.13	150.12
108.13	13 38 7	2954.74	-26.55	92.75	32.88	69.27	14 27 21	2354.7	-29.12	84.60
110.00	14 51 9	2730.61	-31.28	77.09	34.60	75.46	15 36 40	2130.6	-32.96	68.27
110.00	12 48 12	3107.99	-22.02	102.43	30.69	63.17	13 40 0	2508.0	-25.43	94.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.9922	TRA	.4861	TC-17.0366	BAU	2.4116	SGT12314.0	SGR	853.1	SG3	1058.8	ST	5290.7	SR	595.6	SS	1368.8
RDE	.3321	RRA	.1742	RC3 -.7701	FAU	.21243	RRT .8577	RRF	.8473	RTF	.9719	CRT	.9912	CRS	-.9933	CST	-.9755
FDE	1.9395	FRA	1.5463	FC-17.3874	BSP	42782	SGB12343.5	R23	.0246	R13	.9720	LSA	5489.0	MSA	299.0	SSA	32.5
BDE	3.0105	BRA	.5164	BC317.0540	FSP	3476	SG112335.7	SG2	437.9	THA	3.40	EL1	5323.6	EL2	78.5	ALF	6.37

LAUNCH DATE DEC 14 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 766.985 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.116	GAL	.69	AZL	87.45	HCA	225.31	SMA	187.99	ECC	.21705	INC	2.5458	V1	30.257		
RP	208.76	LAP	-1.81	LOP	307.33	VP	23.781	GAP	-10.84	AZP	91.79	TAL	3.86	TAP	229.17	RCA	147.19	APO	228.79	V2	26.254		
RC	314.784	GL	27.04	GP	-7.33	ZAL	79.84	ZAP	40.80	ETS	170.55	ZAE	63.50	ETE	175.80	ZAC	77.92	ETC	257.19	CLP	40.25		

PLANETOCENTRIC CONIC

C3	10.465	VHL	3.235	DLA	32.32	RAL	173.87	RAD	6567.4	VEL	11.483	PTH	2.00	VHP	4.498	DPA	-.30	RAP	166.27	ECC	1.1722		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.72	9 18 57	3796.65	-25.93	155.00	33.68	69.99	10 22 13	3196.7	-28.41	146.87
106.28	13 31 4	2989.63	-25.92	95.17	33.68	69.98	14 20 53	2389.6	-28.41	87.04
73.72	9 18 57	3796.65	-25.93	155.00	33.68	69.99	10 22 13	3196.7	-28.41	146.87
106.28	13 31 4	2989.63	-25.92	95.17	33.68	69.98	14 20 53	2389.6	-28.41	87.04
110.00	15 19 36	2654.45	-32.45	71.46	35.78	78.60	16 3 50	2054.4	-33.68	62.44
110.00	12 29 35	3179.83	-19.75	106.77	30.66	61.51	13 22 35	2579.8	-23.39	99.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.9156	TRA	.6063	TC-17.4204	BAU	2.4392	SGT12462.4	SGR	821.5	SG3	1024.3	ST	5189.1	SR	579.9	SS	1279.6
RDE	.3211	RRA	.1787	RC3 -.7102	FAU	.20419	RRT .8392	RRF	.8274	RTF	.9716	CRT	.9918	CRS	-.9900	CST	-.9708
FDE	1.7593	FRA	1.6110	FC-16.8923	BSP	43317	SGB12489.5	R23	.0202	R13	.9717	LSA	5367.2	MSA	304.1	SSA	33.3
BDE	2.9333	BRA	.6320	BC317.4348	FSP	3362	SG112481.5	SG2	446.1	THA	3.17	EL1	5220.9	EL2	73.6	ALF	6.33

LAUNCH DATE DEC 14 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 771.342 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.123	GAL	.56	AZL	87.50	HCA	226.56	SMA	188.12	ECC	.21747	INC	2.5037	V1	30.257		
RP	208.58	LAP	-1.82	LOP	308.58	VP	23.814	GAP	-10.92	AZP	91.72	TAL	3.11	TAP	229.67	RCA	147.21	APO	229.03	V2	26.274		
RC	315.690	GL	26.71	GP	-7.09	ZAL	81.17	ZAP	40.05	ETS	170.60	ZAE	62.47	ETE	175.78	ZAC	78.26	ETC	257.14	CLP	39.52		

PLANETOCENTRIC CONIC

C3	10.365	VHL	3.220	DLA	31.42	RAL	175.13	RAD	6567.4	VEL	11.478	PTH	2.00	VHP	4.559	DPA	-.29	RAP	166.84	ECC	1.1706		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.79	9 38 3	3750.68	-25.27	151.25	34.53	70.69	10 40 34	3150.7	-27.67	143.14
104.21	13 22 0	3031.75	-25.26	98.11	34.52	70.68	14 12 32	2431.7	-27.66	90.00
75.79	9 38 3	3750.68	-25.27	151.25	34.53	70.69	10 40 34	3150.7	-27.67	143.14
104.21	13 22 0	3031.75	-25.26	98.11	34.52	70.68	14 12 32	2431.7	-27.66	90.00
110.00	15 43 4	2593.29	-33.18	66.84	36.79	81.25	16 26 18	1993.3	-34.03	57.70
110.00	12 16 9	3237.14	-17.85	110.13	30.90	60.35	13 10 6	2637.1	-21.66	103.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.8415	TRA	.7347	TC-17.7761	BAU	2.4650	SGT12606.9	SGR	793.5	SG3	990.6	ST	5089.3	SR	566.8	SS	1200.3
RDE	.3119	RRA	.1829	RC3 -.6517	FAU	.19606	RRT .8191	RRF	.8062	RTF	.9715	CRT	.9927	CRS	-.9856	CST	-.9655
FDE	1.5984	FRA	1.6733	FC-16.3754	BSP	43897	SGB12631.8	R23	.0163	R13	.9715	LSA	5250.3	MSA	309.2	SSA	33.9
BDE	2.8586	BRA	.7571	BC317.7881	FSP	3248	SG112623.7	SG2	454.5	THA	2.96	EL1	5120.3	EL2	68.2	ALF	6.31

LAUNCH DATE DEC 14 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 775.704 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.131 GAL .42 AZL 87.54 HCA 227.80 SMA 188.25 ECC .21792 INC 2.4632 V1 30.257
RP 208.40 LAP -1.82 LOP 309.82 VP 23.846 GAP -11.01 AZP 91.65 TAL 2.35 TAP 230.16 RCA 147.22 APO 229.27 V2 26.294
RC 316.588 GL 26.37 GP -6.86 ZAL 82.54 ZAP 39.32 ETS 170.65 ZAE 61.45 ETE 175.76 ZAC 78.60 ETC 257.10 CLP 38.82

PLANETOCENTRIC CONIC

C3 10.279 VHL 3.206 DLA 30.49 RAL 176.42 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 4.620 DPA -.30 RAP 167.42 ECC 1.1692

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.19	10 0 22	3694.70	-24.59	146.78	35.42	71.39	11 1 57	3094.7	-26.91	138.69
101.81	13 9 56	3084.37	-24.58	101.81	35.42	71.37	14 1 21	2484.4	-26.90	93.72
78.19	10 0 22	3694.70	-24.59	146.78	35.42	71.39	11 1 57	3094.7	-26.91	138.69
101.81	13 9 56	3084.37	-24.58	101.81	35.42	71.37	14 1 21	2484.4	-26.90	93.72
110.00	16 3 59	2539.96	-33.65	62.75	37.72	83.62	16 46 19	1940.0	-34.17	53.55
110.00	12 5 30	3287.11	-16.14	113.00	31.30	59.45	13 0 17	2687.1	-20.08	106.08

DIFFERENTIAL CORRECTIONS
TDE 2.7529 TRA .8608 TC-18.1407 BAU 2.4944
RDE .3025 RRA .1860 RC3 -.5970 FAU .18861
FDE 1.4251 FRA 1.7179 FC-15.8845 BSP 44316
BDE 2.7694 BRA .8807 BC318.1505 FSP 3124

MID-COURSE EXECUTION ACCURACY
SGT12755.4 SGR 766.5 SG3 957.9
RRT .7979 RRF .7825 RTF .9714
SGB12778.4 R23 .0107 R13 .9714
SG112770.1 SG2 461.6 THA 2.75

ORBIT DETERMINATION ACCURACY
ST 4960.9 SR 553.0 SS 1109.3
CRT .9935 CRS -.9788 CST -.9581
LSA 5103.6 MSA 313.8 SSA 34.8
EL1 4991.2 EL2 62.4 ALF 6.32

LAUNCH DATE DEC 14 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 780.067 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.138 GAL .28 AZL 87.58 HCA 229.05 SMA 188.38 ECC .21840 INC 2.4242 V1 30.257
RP 208.24 LAP -1.83 LOP 311.07 VP 23.877 GAP -11.09 AZP 91.59 TAL 1.58 TAP 230.63 RCA 147.24 APO 229.52 V2 26.314
RC 317.480 GL 26.02 GP -6.64 ZAL 83.95 ZAP 38.61 ETS 170.69 ZAE 60.46 ETE 175.75 ZAC 78.92 ETC 257.05 CLP 38.12

PLANETOCENTRIC CONIC

C3 10.207 VHL 3.195 DLA 29.55 RAL 177.73 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 4.683 DPA -.32 RAP 168.02 ECC 1.1680

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.19	10 28 15	3621.02	-23.89	141.04	36.36	72.07	11 28 36	3021.0	-26.12	132.98
98.81	12 52 30	3155.22	-23.88	106.83	36.36	72.06	13 45 5	2555.2	-26.11	98.76
100.00	13 39 51	3003.71	-26.49	96.42	37.19	75.61	14 29 55	2403.7	-28.20	88.04
100.00	12 23 35	3247.76	-21.33	112.70	35.37	68.55	13 17 43	2647.8	-24.06	104.96
110.00	16 23 17	2491.57	-33.96	59.01	38.61	85.82	17 4 49	1891.6	-34.16	49.77
110.00	11 56 39	3332.67	-14.55	115.57	31.84	58.72	12 52 12	2732.7	-18.59	108.78

DIFFERENTIAL CORRECTIONS
TDE 2.6657 TRA .9995 TC-18.4623 BAU 2.5204
RDE .2948 RRA .1895 RC3 -.5416 FAU .18085
FDE 1.2711 FRA 1.7711 FC-15.3393 BSP 44792
BDE 2.6819 BRA 1.0173 BC318.4702 FSP 3008

MID-COURSE EXECUTION ACCURACY
SGT12894.4 SGR 742.9 SG3 924.9
RRT .7741 RRF .7574 RTF .9711
SGB12915.8 R23 .0074 R13 .9711
SG112907.2 SG2 469.8 THA 2.56

ORBIT DETERMINATION ACCURACY
ST 4833.3 SR 541.6 SS 1030.2
CRT .9945 CRS -.9692 CST -.9490
LSA 4961.0 MSA 320.4 SSA 35.5
EL1 4863.2 EL2 56.2 ALF 6.36

LAUNCH DATE DEC 14 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 784.433 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.145 GAL .14 AZL 87.61 HCA 230.30 SMA 188.51 ECC .21891 INC 2.3866 V1 30.257
RP 208.08 LAP -1.84 LOP 312.33 VP 23.908 GAP -11.17 AZP 91.52 TAL .79 TAP 231.10 RCA 147.24 APO 229.78 V2 26.332
RC 318.367 GL 25.67 GP -6.44 ZAL 85.41 ZAP 37.92 ETS 170.73 ZAE 59.48 ETE 175.74 ZAC 79.24 ETC 257.00 CLP 37.45

PLANETOCENTRIC CONIC

C3 10.149 VHL 3.186 DLA 28.59 RAL 179.06 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 4.747 DPA -.37 RAP 168.62 ECC 1.1670

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.91	11 11 37	3497.35	-23.16	131.68	37.35	72.76	12 9 54	2897.3	-25.30	123.64
94.09	12 19 46	3276.60	-23.15	115.51	37.35	72.75	13 14 23	2676.6	-25.29	107.48
100.00	14 21 8	2885.98	-28.21	88.10	38.73	79.67	15 9 14	2286.0	-29.34	79.48
100.00	11 52 56	3363.20	-18.29	119.92	35.39	65.93	12 48 59	2763.2	-21.38	112.49
110.00	16 41 29	2446.64	-34.13	55.51	39.48	87.88	17 22 15	1846.6	-34.04	46.26
110.00	11 49 5	3375.31	-13.03	117.94	32.49	58.11	12 45 20	2775.3	-17.15	111.25

DIFFERENTIAL CORRECTIONS
TDE 2.5761 TRA 1.1450 TC-18.7680 BAU 2.5474
RDE .2884 RRA .1926 RC3 -.4889 FAU .17352
FDE 1.1308 FRA 1.8192 FC-14.8021 BSP 45344
BDE 2.5922 BRA 1.1611 BC318.7743 FSP 2912

MID-COURSE EXECUTION ACCURACY
SGT13036.8 SGR 722.2 SG3 893.6
RRT .7491 RRF .7313 RTF .9711
SGB13056.8 R23 .0044 R13 .9711
SG113048.1 SG2 478.1 THA 2.38

ORBIT DETERMINATION ACCURACY
ST 4699.9 SR 532.0 SS 958.8
CRT .9956 CRS -.9565 CST -.9383
LSA 4814.9 MSA 326.7 SSA 36.1
EL1 4729.7 EL2 49.7 ALF 6.43

LAUNCH DATE DEC 14 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 788.785 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.153 GAL -.00 AZL 87.65 HCA 231.56 SMA 188.64 ECC .21945 INC 2.3503 V1 30.257
RP 207.93 LAP -1.84 LOP 313.58 VP 23.937 GAP -11.26 AZP 91.46 TAL 359.99 TAP 231.55 RCA 147.25 APO 230.04 V2 26.349
RC 319.247 GL 25.32 GP -6.24 ZAL 86.90 ZAP 37.25 ETS 170.77 ZAE 58.51 ETE 175.73 ZAC 79.55 ETC 256.95 CLP 36.79

PLANETOCENTRIC CONIC

C3 10.105 VHL 3.179 DLA 27.61 RAL 180.41 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 4.812 DPA -.44 RAP 169.24 ECC 1.1663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 46 46	3204.82	-26.03	111.08	39.39	78.43	13 40 11	2604.8	-27.36	102.67
90.00	10 55 25	3567.41	-18.87	135.18	37.09	68.49	11 54 52	2967.4	-21.63	127.60
100.00	14 50 20	2806.50	-29.04	82.34	39.96	82.59	15 37 7	2206.5	-29.76	73.61
100.00	11 34 32	3440.97	-16.07	124.63	35.81	64.45	12 31 53	2841.0	-19.37	117.39
110.00	16 58 51	2404.29	-34.18	52.20	40.35	89.84	17 38 56	1804.3	-33.83	42.97
110.00	11 42 30	3415.93	-11.56	120.16	33.24	57.60	12 39 26	2815.9	-15.75	113.57

DIFFERENTIAL CORRECTIONS
TDE 2.4110 TRA 1.2909 TC-18.4923 BAU 2.4987
RDE .2674 RRA .1953 RC3 -.3186 FAU .13918
FDE .7018 FRA 1.8604 FC-11.9234 BSP 49485
BDE 2.4257 BRA 1.3056 BC318.4951 FSP 3987

MID-COURSE EXECUTION ACCURACY
SGT12806.5 SGR 656.5 SG3 740.1
RRT .6564 RRF .6486 RTF .9531
SGB12823.3 R23 .0293 R13 .9531
SG112813.8 SG2 495.0 THA 1.93

ORBIT DETERMINATION ACCURACY
ST 4430.3 SR 496.5 SS 712.9
CRT .9957 CRS -.8766 CST -.8518
LSA 4499.3 MSA 370.6 SSA 36.7
EL1 4457.8 EL2 45.5 ALF 6.37

LAUNCH DATE DEC 14 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 793.170 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.161 GAL -.15 AZL 87.68 HCA 232.81 SMA 188.78 ECC .22003 INC 2.3152 V1 30.257
RP 207.79 LAP -1.84 LOP 314.83 VP 23.966 GAP -11.34 AZP 91.40 TAL 359.18 TAP 231.99 RCA 147.24 APO 230.32 V2 26.366
RC 320.122 GL 24.96 GP -6.06 ZAL 88.43 ZAP 36.59 ETS 170.80 ZAE 57.56 ETE 175.72 ZAC 79.86 ETC 256.89 CLP 36.15

PLANETOCENTRIC CONIC

C3 10.077 VHL 3.174 DLA 26.61 RAL 181.79 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 4.877 DPA -.52 RAP 169.88 ECC 1.1658

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 22 49	3102.99	-27.21	103.87	40.78	81.86	14 14 32	2503.0	-28.06	95.30
90.00	10 30 19	3668.12	-16.24	141.41	37.44	66.48	11 31 27	3068.1	-19.29	134.05
100.00	15 15 7	2740.99	-29.52	77.53	41.08	85.08	16 0 48	2141.0	-29.89	68.74
100.00	11 20 42	3505.36	-14.14	128.43	36.42	63.39	12 19 8	2905.4	-17.60	121.35
110.00	17 15 36	2363.97	-34.15	49.05	41.24	91.70	17 55 0	1764.0	-33.53	39.86
110.00	11 36 42	3455.13	-10.12	122.29	34.07	57.17	12 34 17	2855.1	-14.37	115.77

DIFFERENTIAL CORRECTIONS
TDE 2.3909 TRA 1.4516 TC-19.2691 BAU 2.5965
RDE .2789 RRA .1977 RC3 -.3831 FAU .15825
FDE .8867 FRA 1.8996 FC-13.5956 BSP 46411
BDE 2.4071 BRA 1.4650 BC319.2729 FSP 2738

MID-COURSE EXECUTION ACCURACY
SGT13299.4 SGR 686.9 SG3 827.7
RRT .6916 RRF .6741 RTF .9712
SGB13317.1 R23 .0021 R13 .9712
SG113307.9 SG2 495.8 THA 2.05

ORBIT DETERMINATION ACCURACY
ST 4419.2 SR 517.4 SS 837.7
CRT .9971 CRS -.9189 CST -.9121
LSA 4514.8 MSA 338.5 SSA 37.4
EL1 4449.2 EL2 39.2 ALF 6.66

LAUNCH DATE DEC 14 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 797.542 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.168 GAL -.30 AZL 87.72 HCA 234.07 SMA 188.92 ECC .22063 INC 2.2812 V1 30.257
RP 207.66 LAP -1.85 LOP 316.09 VP 23.993 GAP -11.42 AZP 91.34 TAL 358.35 TAP 232.42 RCA 147.23 APO 230.60 V2 26.381
RC 320.992 GL 24.59 GP -5.89 ZAL 89.99 ZAP 35.95 ETS 170.83 ZAE 56.63 ETE 175.71 ZAC 80.16 ETC 256.84 CLP 35.53

PLANETOCENTRIC CONIC

C3 10.065 VHL 3.172 DLA 25.59 RAL 183.18 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 4.944 DPA -.62 RAP 170.52 ECC 1.1656

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 50 56	3026.61	-27.83	98.36	42.01	84.55	14 41 23	2426.6	-28.29	89.73
90.00	10 13 16	3744.01	-14.12	145.97	38.05	65.20	11 15 40	3144.0	-17.35	138.78
100.00	15 37 25	2683.30	-29.78	73.26	42.17	87.31	16 22 9	2083.3	-29.84	64.46
100.00	11 9 28	3562.54	-12.37	131.76	37.17	62.57	12 8 51	2962.5	-15.95	124.79
110.00	17 31 51	2325.30	-34.03	46.04	42.13	93.48	18 10 36	1725.3	-33.17	36.90
110.00	11 31 32	3493.31	-8.70	124.34	34.99	56.81	12 29 46	2893.3	-13.01	117.89

DIFFERENTIAL CORRECTIONS
TDE 2.2822 TRA 1.6172 TC-19.5026 BAU 2.6246
RDE .2734 RRA .2002 RC3 -.3368 FAU .15184
FDE .7363 FRA 1.9424 FC-13.0608 BSP 46836
BDE 2.2985 BRA 1.6295 BC319.5055 FSP 2615

MID-COURSE EXECUTION ACCURACY
SGT13438.7 SGR 671.0 SG3 799.2
RRT .6629 RRF .6423 RTF .9703
SGB13455.5 R23 -.0024 R13 .9703
SG113446.1 SG2 502.1 THA 1.90

ORBIT DETERMINATION ACCURACY
ST 4250.9 SR 508.3 SS 763.1
CRT .9972 CRS -.8794 CST -.8831
LSA 4334.1 MSA 353.6 SSA 37.9
EL1 4281.1 EL2 37.9 ALF 6.80

LAUNCH DATE DEC 14 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 801.914 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.176 GAL -.45 AZL 87.75 HCA 235.32 SMA 189.05 ECC .22127 INC 2.2482 V1 30.257
RP 207.54 LAP -1.85 LOP 317.35 VP 24.020 GAP -11.51 AZP 91.28 TAL 357.51 TAP 232.84 RCA 147.22 APO 230.89 V2 26.396
RC 321.856 GL 24.21 GP -5.72 ZAL 91.59 ZAP 35.32 ETS 170.86 ZAE 55.71 ETE 175.70 ZAC 80.46 ETC 256.79 CLP 34.92

PLANETOCENTRIC CONIC

C3 10.069 VHL 3.173 DLA 24.55 RAL 184.58 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 5.011 DPA -.73 RAP 171.17 ECC 1.1657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 15 26	2961.84	-28.16	93.65	43.17	86.89	15 4 48	2361.8	-28.29	84.99
90.00	9 59 59	3808.92	-12.24	149.81	38.82	64.26	11 3 28	3208.9	-15.60	142.74
100.00	15 58 7	2630.78	-29.89	69.36	43.23	89.36	16 41 58	2030.8	-29.66	60.56
100.00	10 59 59	3615.22	-10.90	134.78	38.03	61.92	12 0 14	3015.2	-14.37	127.91
110.00	17 47 41	2288.01	-33.83	43.14	43.05	95.19	18 25 49	1688.0	-32.75	34.07
110.00	11 26 54	3530.76	-7.30	126.33	35.98	56.51	12 25 45	2930.8	-11.66	119.94

DIFFERENTIAL CORRECTIONS
TDE 2.1753 TRA 1.7861 TC-19.6791 BAU 2.6492
RDE .2701 RRA .2019 RC3 -.2891 FAU .14489
FDE .6179 FRA 1.9720 FC-12.4582 BSP 47283
BDE 2.1920 BRA 1.7975 BC319.6812 FSP 2508

MID-COURSE EXECUTION ACCURACY
SGT13563.5 SGR 657.4 SG3 768.3
RRT .6312 RRF .6097 RTF .9700
SGB13579.5 R23 -.0045 R13 .9700
SG113569.9 SG2 509.6 THA 1.75

ORBIT DETERMINATION ACCURACY
ST 4086.6 SR 502.3 SS 708.9
CRT .9965 CRS -.8350 CST -.8550
LSA 4161.9 MSA 364.3 SSA 38.4
EL1 4117.2 EL2 41.8 ALF 6.98

LAUNCH DATE DEC 14 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 806.287 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.184 GAL -.61 AZL 87.78 HCA 236.58 SMA 189.19 ECC .22195 INC 2.2161 V1 30.257
RP 207.42 LAP -1.85 LOP 318.61 VP 24.046 GAP -11.59 AZP 91.22 TAL 356.66 TAP 233.25 RCA 147.20 APO 231.18 V2 26.409
RC 322.714 GL 23.83 GP -5.57 ZAL 93.22 ZAP 34.72 ETS 170.89 ZAE 54.81 ETE 175.69 ZAC 80.75 ETC 256.73 CLP 34.32

PLANETOCENTRIC CONIC

C3 10.090 VHL 3.176 DLA 23.50 RAL 186.00 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 5.080 DPA -.86 RAP 171.84 ECC 1.1660

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 37 46	2904.10	-28.30	89.43	44.31	89.00	15 26 10	2304.1	-28.14	80.77
90.00	9 48 57	3867.50	-10.48	153.21	39.71	63.54	10 53 25	3267.5	-13.95	146.26
100.00	16 17 40	2581.99	-29.87	65.73	44.30	91.27	17 0 42	1982.0	-29.37	56.96
100.00	10 51 44	3664.85	-9.09	137.59	38.98	61.40	11 52 49	3064.8	-12.84	130.81
110.00	18 3 10	2251.92	-33.58	40.36	43.99	96.82	18 40 42	1651.9	-32.27	31.37
110.00	11 22 44	3567.68	-5.91	128.28	37.04	56.27	12 22 11	2967.7	-10.30	121.95

DIFFERENTIAL CORRECTIONS
TDE 2.0644 TRA 1.9630 TC-19.8254 BAU 2.6744
RDE .2672 RRA .2034 RC3 -.2438 FAU .13827
FDE .4999 FRA 1.9981 FC-11.8641 BSP 47772
BDE 2.0816 BRA 1.9735 BC319.8269 FSP 2419

MID-COURSE EXECUTION ACCURACY
SGT13689.4 SGR 645.2 SG3 738.5
RRT .5989 RRF .5755 RTF .9696
SGB13704.6 R23 -.0075 R13 .9696
SG113694.9 SG2 516.5 THA 1.62

ORBIT DETERMINATION ACCURACY
ST 3918.0 SR 496.7 SS 659.0
CRT .9945 CRS -.7739 CST -.8175
LSA 3985.9 MSA 378.1 SSA 38.8
EL1 3949.0 EL2 51.4 ALF 7.19

LAUNCH DATE DEC 14 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 810.660 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.191 GAL -.77 AZL 87.82 HCA 237.84 SMA 189.33 ECC .22267 INC 2.1850 V1 30.257
RP 207.31 LAP -1.85 LOP 319.87 VP 24.070 GAP -11.67 AZP 91.16 TAL 355.80 TAP 233.64 RCA 147.17 APO 231.49 V2 26.422
RC 323.566 GL 23.43 GP -5.42 ZAL 94.88 ZAP 34.12 ETS 170.91 ZAE 53.92 ETE 175.69 ZAC 81.04 ETC 256.68 CLP 33.74

PLANETOCENTRIC CONIC

C3 10.129 VHL 3.183 DLA 22.43 RAL 187.42 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 5.149 DPA -1.00 RAP 172.52 ECC 1.1667

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 58 36	2851.18	-28.30	85.56	45.44	90.94	15 46 7	2251.2	-27.87	76.92
90.00	9 39 31	3921.96	-8.81	156.35	40.70	62.98	10 44 53	3322.0	-12.37	149.47
100.00	16 36 20	2536.07	-29.75	62.32	45.38	93.06	17 18 36	1936.1	-29.01	53.60
100.00	10 44 28	3712.31	-7.54	140.25	40.02	60.99	11 46 20	3112.3	-11.35	133.54
110.00	18 18 21	2216.89	-33.26	37.67	44.97	98.38	18 55 18	1616.9	-31.75	28.77
110.00	11 18 56	3604.25	-4.52	130.21	38.16	56.08	12 19 1	3004.2	-8.95	123.91

DIFFERENTIAL CORRECTIONS
TDE 1.9518 TRA 2.1461 TC-19.9382 BAU 2.7000
RDE .2654 RRA .2045 RC3 -.2010 FAU .13198
FDE .3940 FRA 2.0202 FC-11.2810 BSP 48231
BDE 1.9698 BRA 2.1558 BC319.9392 FSP 2323

MID-COURSE EXECUTION ACCURACY
SGT13815.8 SGR 635.1 SG3 710.1
RRT .5661 RRF .5412 RTF .9693
SGB13830.4 R23 -.0102 R13 .9693
SG113820.5 SG2 523.3 THA 1.49

ORBIT DETERMINATION ACCURACY
ST 3750.3 SR 492.6 SS 620.1
CRT .9908 CRS -.7002 CST -.7756
LSA 3812.7 MSA 392.7 SSA 39.0
EL1 3782.0 EL2 66.0 ALF 7.42

LAUNCH DATE DEC 14 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 815.033 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.199 GAL -.93 AZL 87.85 HCA 239.11 SMA 189.47 ECC .22342 INC 2.1547 V1 30.257
RP 207.21 LAP -1.85 LOP 321.13 VP 24.094 GAP -11.76 AZP 91.11 TAL 354.92 TAP 234.02 RCA 147.14 APO 231.80 V2 26.434
RC 324.413 GL 23.02 GP -5.28 ZAL 96.56 ZAP 33.54 ETS 170.93 ZAE 53.04 ETE 175.68 ZAC 81.33 ETC 256.63 CLP 33.17

PLANETOCENTRIC CONIC

C3 10.186 VHL 3.192 DLA 21.35 RAL 188.86 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 5.220 DPA -1.16 RAP 173.21 ECC 1.1676

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 21	2801.87	-28.19	81.96	46.58	92.74	16 5 3	2201.9	-27.52	73.36
90.00	9 31 14	3973.55	-7.21	159.28	41.78	62.54	10 37 28	3373.6	-10.83	152.48
100.00	16 54 18	2492.48	-29.55	59.10	46.48	94.74	17 35 50	1892.5	-28.58	50.43
100.00	10 37 58	3758.17	-6.01	142.80	41.13	60.66	11 40 36	3158.2	-9.88	136.15
110.00	18 33 16	2182.85	-32.90	35.08	45.98	99.87	19 9 39	1582.8	-31.18	26.28
110.00	11 15 29	3640.57	-3.14	132.11	39.35	55.94	12 16 10	3040.6	-7.59	125.85

DIFFERENTIAL CORRECTIONS
TDE 1.8370 TRA 2.3385 TC-20.0042 BAU 2.7243
RDE .2646 RRA .2054 RC3 -.1592 FAU .12566
FDE .2981 FRA 2.0404 FC-10.6795 BSP 48705
BDE 1.8559 BRA 2.3475 BC320.0048 FSP 2231

MID-COURSE EXECUTION ACCURACY
SGT13937.0 SGR 626.6 SG3 681.5
RRT .5323 RRF .5065 RTF .9691
SGB13951.1 R23 -.0118 R13 .9691
SG113941.0 SG2 530.3 THA 1.37

ORBIT DETERMINATION ACCURACY
ST 3584.7 SR 489.7 SS 591.5
CRT .9846 CRS -.6150 CST -.7314
LSA 3643.0 MSA 408.7 SSA 39.2
EL1 3617.0 EL2 84.8 ALF 7.66

LAUNCH DATE DEC 14 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 819.405 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.207 GAL -1.09 AZL 87.87 HCA 240.37 SMA 189.61 ECC .22422 INC 2.1251 V1 30.257
RP 207.12 LAP -1.85 LOP 322.40 VP 24.117 GAP -11.84 AZP 91.05 TAL 354.02 TAP 234.39 RCA 147.10 APO 232.13 V2 26.444
RC 325.253 GL 22.60 GP -5.14 ZAL 98.27 ZAP 32.98 ETS 170.95 ZAE 52.18 ETE 175.68 ZAC 81.61 ETC 256.57 CLP 32.62

PLANETOCENTRIC CONIC

C3 10.264 VHL 3.204 DLA 20.25 RAL 190.31 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 5.291 DPA -1.33 RAP 173.91 ECC 1.1689

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 37 14	2755.40	-28.00	78.58	47.74	94.43	16 23 9	2155.4	-27.09	70.03
90.00	9 23 52	4023.05	-5.64	162.08	42.94	62.21	10 30 55	3423.1	-9.32	155.33
100.00	17 11 41	2450.85	-29.27	56.03	47.60	96.33	17 52 32	1850.9	-28.09	47.43
100.00	10 32 6	3802.84	-4.52	145.28	42.32	60.42	11 35 29	3202.8	-8.42	138.67
110.00	18 47 56	2149.72	-32.48	32.59	47.02	101.29	19 23 46	1549.7	-30.58	23.88
110.00	11 12 21	3676.74	-1.76	134.00	40.61	55.86	12 13 37	3076.7	-6.23	127.77

DIFFERENTIAL CORRECTIONS
TDE 1.7171 TRA 2.5357 TC-20.0367 BAU 2.7494
RDE .2644 RRA .2059 RC3 -.1196 FAU .11956
FDE .2045 FRA 2.0568 FC-10.0845 BSP 49145
BDE 1.7374 BRA 2.5441 BC320.0371 FSP 2140

MID-COURSE EXECUTION ACCURACY
SGT14057.6 SGR 619.3 SG3 653.8
RRT .4978 RRF .4710 RTF .9686
SGB14071.3 R23 -.0136 R13 .9686
SG114061.0 SG2 537.0 THA 1.26

ORBIT DETERMINATION ACCURACY
ST 3417.9 SR 487.3 SS 570.0
CRT .9749 CRS -.5133 CST -.6812
LSA 3472.7 MSA 428.0 SSA 39.3
EL1 3450.8 EL2 107.4 ALF 7.92

LAUNCH DATE DEC 14 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 823.777 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.215 GAL -1.26 AZL 87.90 HCA 241.63 SMA 189.76 ECC .22506 INC 2.0962 V1 30.257
RP 207.04 LAP -1.84 LOP 323.66 VP 24.138 GAP -11.93 AZP 91.00 TAL 353.12 TAP 234.75 RCA 147.05 APO 232.46 V2 26.454
RC 326.088 GL 22.17 GP -5.01 ZAL 100.00 ZAP 32.43 ETS 170.96 ZAE 51.32 ETE 175.67 ZAC 81.89 ETC 256.52 CLP 32.08

PLANETOCENTRIC CONIC

C3 10.362 VHL 3.219 DLA 19.14 RAL 191.76 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 5.363 DPA -1.51 RAP 174.62 ECC 1.1705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 55 26	2711.29	-27.72	75.38	48.91	96.01	16 40 37	2111.3	-26.60	66.89
90.00	9 17 14	4070.99	-4.12	164.77	44.17	61.96	10 25 5	3471.0	-7.83	158.07
100.00	17 28 35	2410.92	-28.94	53.11	48.75	97.84	18 8 45	1810.9	-27.55	44.59
100.00	10 26 46	3846.59	-3.04	147.69	43.58	60.25	11 30 53	3246.6	-6.98	141.11
110.00	19 2 22	2117.46	-32.03	30.18	48.10	102.64	19 37 40	1517.5	-29.95	21.58
110.00	11 9 28	3712.82	-.38	135.88	41.92	55.82	12 11 21	3112.8	-4.86	129.67

DIFFERENTIAL CORRECTIONS
TDE 1.5939 TRA 2.7408 TC-20.0272 BAU 2.7743
RDE .2649 RRA .2062 RC3 -.0820 FAU .11359
FDE .1161 FRA 2.0695 FC3-9.4903 BSP 49608
BDE 1.6158 BRA 2.7486 BC320.0273 FSP 2056

MID-COURSE EXECUTION ACCURACY
SGT14175.8 SGR 613.1 SG3 626.5
RRT .4629 RRF .4351 RTF .9680
SGB14189.0 R23 -.0154 R13 .9680
SG114178.6 SG2 543.4 THA 1.15

ORBIT DETERMINATION ACCURACY
ST 3255.6 SR 485.6 SS 556.9
CRT .9606 CRS -.4010 CST -.6311
LSA 3307.7 MSA 450.0 SSA 39.2
EL1 3288.9 EL2 133.7 ALF 8.17

LAUNCH DATE DEC 14 1964 FLIGHT TIME 382.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 828.147 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.223 GAL -1.44 AZL 87.93 HCA 242.90 SMA 189.90 ECC .22594 INC 2.0679 V1 30.257
RP 206.96 LAP -1.84 LOP 324.93 VP 24.159 GAP -12.01 AZP 90.94 TAL 352.20 TAP 235.10 RCA 146.99 APO 232.81 V2 26.463
RC 326.917 GL 21.73 GP -4.89 ZAL 101.75 ZAP 31.89 ETS 170.98 ZAE 50.49 ETE 175.66 ZAC 82.17 ETC 256.47 CLP 31.55

PLANETOCENTRIC CONIC

C3 10.481 VHL 3.237 DLA 18.02 RAL 193.21 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 5.437 DPA -1.70 RAP 175.34 ECC 1.1725

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 13 2	2669.19	-27.39	72.34	50.12	97.50	16 57 32	2069.2	-26.07	63.92
90.00	9 11 13	4117.72	-2.62	167.39	45.47	61.79	10 19 50	3517.7	-6.37	160.72
100.00	17 45 2	2372.51	-28.55	50.33	49.92	99.26	18 24 35	1772.5	-26.98	41.88
100.00	10 21 54	3889.64	-1.59	150.05	44.90	60.15	11 26 43	3289.6	-5.55	143.50
110.00	19 16 36	2086.06	-31.53	27.86	49.22	103.93	19 51 22	1486.1	-29.30	19.37
110.00	11 6 50	3748.86	1.00	137.76	43.29	55.83	12 9 18	3148.9	-3.49	131.56

DIFFERENTIAL CORRECTIONS
TDE 1.4695 TRA 2.9532 TC-19.9734 BAU 2.7988
RDE .2662 RRA .2061 RC3 -.0462 FAU .10774
FDE .0355 FRA 2.0781 FC3-8.8990 BSP 50065
BDE 1.4934 BRA 2.9604 BC319.9734 FSP 1969

MID-COURSE EXECUTION ACCURACY
SGT14290.7 SGR 608.2 SG3 599.6
RRT .4280 RRF .3993 RTF .9674
SGB14303.6 R23 -.0170 R13 .9673
SG114293.0 SG2 549.6 THA 1.05

ORBIT DETERMINATION ACCURACY
ST 3103.6 SR 484.9 SS 551.8
CRT .9403 CRS -.2866 CST -.5879
LSA 3153.7 MSA 473.7 SSA 39.0
EL1 3137.0 EL2 163.3 ALF 8.38

LAUNCH DATE DEC 14 1964 FLIGHT TIME 384.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 832.515 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.231 GAL -1.61 AZL 87.96 HCA 244.16 SMA 190.05 ECC .22687 INC 2.0404 V1 30.257
RP 206.89 LAP -1.84 LOP 326.20 VP 24.178 GAP -12.10 AZP 90.89 TAL 351.27 TAP 235.43 RCA 146.93 APO 233.16 V2 26.471
RC 327.742 GL 21.28 GP -4.77 ZAL 103.51 ZAP 31.37 ETS 170.99 ZAE 49.66 ETE 175.66 ZAC 82.44 ETC 256.42 CLP 31.04

PLANETOCENTRIC CONIC

C3 10.623 VHL 3.259 DLA 16.89 RAL 194.66 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 5.511 DPA -1.91 RAP 176.07 ECC 1.1748

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 9	2628.87	-27.00	69.46	51.35	98.89	17 13 58	2028.9	-25.49	61.11
90.00	9 5 42	4163.51	-1.14	169.95	46.84	61.70	10 15 5	3563.5	-4.91	163.30
100.00	18 1 7	2335.50	-28.12	47.66	51.14	100.59	18 40 3	1735.5	-26.37	39.30
100.00	10 17 24	3932.12	-.15	152.38	46.28	60.11	11 22 57	3332.1	-4.12	145.85
110.00	19 30 37	2055.49	-31.01	25.63	50.38	105.16	20 4 52	1455.5	-28.62	17.25
110.00	11 4 24	3784.89	2.37	139.64	44.71	55.89	12 7 29	3184.9	-2.12	133.44

DIFFERENTIAL CORRECTIONS
TDE 1.3428 TRA 3.1722 TC-19.8819 BAU 2.8237
RDE .2683 RRA .2056 RC3 -.0129 FAU .10212
FDE -.0384 FRA 2.0813 FC3-8.3224 BSP 50519
BDE 1.3693 BRA 3.1789 BC319.8819 FSP 1888

MID-COURSE EXECUTION ACCURACY
SGT14405.1 SGR 604.3 SG3 573.5
RRT .3933 RRF .3635 RTF .9668
SGB14417.8 R23 -.0188 R13 .9667
SG114407.1 SG2 555.5 THA .95

ORBIT DETERMINATION ACCURACY
ST 2963.0 SR 485.0 SS 552.6
CRT .9125 CRS -.1744 CST -.5553
LSA 3011.6 MSA 498.7 SSA 38.7
EL1 2996.0 EL2 196.2 ALF 8.53

LAUNCH DATE DEC 14 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 836.880 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.239 GAL -1.79 AZL 87.99 HCA 245.43 SMA 190.19 ECC .22784 INC 2.0134 V1 30.257
RP 206.84 LAP -1.83 LOP 327.46 VP 24.197 GAP -12.19 AZP 90.84 TAL 350.32 TAP 235.76 RCA 146.86 APO 233.52 V2 26.477
RC 328.562 GL 20.81 GP -4.66 ZAL 105.29 ZAP 30.85 ETS 171.00 ZAE 48.85 ETE 175.65 ZAC 82.72 ETC 256.37 CLP 30.53

PLANETOCENTRIC CONIC

C3 10.789 VHL 3.285 DLA 15.75 RAL 196.11 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 5.586 DPA -2.12 RAP 176.81 ECC 1.1776

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 46 49	2590.16	-26.56	66.71	52.62	100.20	17 29 59	1990.2	-24.88	58.44
90.00	9 0 37	4208.53	.31	172.46	48.26	61.68	10 10 46	3608.5	-3.47	165.82
100.00	18 16 51	2299.78	-27.64	45.11	52.38	101.86	18 55 11	1699.8	-25.73	36.83
100.00	10 13 16	3974.15	1.28	154.69	47.73	60.13	11 19 30	3374.1	-2.70	148.17
110.00	19 44 26	2025.76	-30.46	23.49	51.57	106.32	20 18 12	1425.8	-27.93	15.22
110.00	11 2 11	3820.93	3.75	141.53	46.19	56.00	12 5 52	3220.9	-.74	135.32

DIFFERENTIAL CORRECTIONS
TDE 1.2138 TRA 3.4005 TC-19.7402 BAU 2.8474
RDE .2711 RRA .2048 RC3 .0187 FAU .09649
FDE -.1078 FRA 2.0823 FC3-7.7422 BSP 50985
BDE 1.2437 BRA 3.4067 BC319.7402 FSP 1809

MID-COURSE EXECUTION ACCURACY
SGT14513.5 SGR 601.3 SG3 547.4
RRT .3586 RRF .3279 RTF .9659
SGB14525.9 R23 -.0203 R13 .9658
SG114515.1 SG2 561.2 THA .85

ORBIT DETERMINATION ACCURACY
ST 2837.7 SR 485.8 SS 558.8
CRT .8755 CRS -.0659 CST -.5340
LSA 2885.0 MSA 525.9 SSA 38.2
EL1 2869.6 EL2 232.1 ALF 8.58

LAUNCH DATE DEC 14 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 841.243 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.247 GAL -1.97 AZL 88.01 HCA 246.70 SMA 190.34 ECC .22887 INC 1.9869 V1 30.257
RP 206.79 LAP -1.82 LOP 328.73 VP 24.214 GAP -12.28 AZP 90.79 TAL 349.37 TAP 236.07 RCA 146.77 APO 233.90 V2 26.483
RC 329.378 GL 20.34 GP -4.56 ZAL 107.07 ZAP 30.35 ETS 171.00 ZAE 48.04 ETE 175.64 ZAC 82.99 ETC 256.32 CLP 30.04

PLANETOCENTRIC CONIC

C3 10.980 VHL 3.314 DLA 14.61 RAL 197.56 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 5.663 DPA -2.35 RAP 177.55 ECC 1.1807

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 4	2552.94	-26.08	64.09	53.92	101.43	17 45 37	1952.9	-24.24	55.90
90.00	8 55 56	4252.86	1.75	174.93	49.75	61.73	10 6 49	3652.9	-2.05	168.31
100.00	18 32 16	2265.30	-27.14	42.67	53.66	103.04	19 10 1	1665.3	-25.07	34.48
100.00	10 9 26	4015.80	2.69	156.98	49.23	60.22	11 16 21	3415.8	-1.29	150.45
110.00	19 58 3	1996.88	-29.89	21.44	52.81	107.41	20 31 20	1396.9	-27.22	13.27
110.00	11 0 8	3856.99	5.12	143.42	47.72	56.16	12 4 25	3257.0	.64	137.20

DIFFERENTIAL CORRECTIONS
TDE 1.0828 TRA 3.6355 TC-19.5640 BAU 2.8720
RDE .2747 RRA .2037 RC3 .0478 FAU .09111
FDE -.1702 FRA 2.0796 FC3-7.1832 BSP 51451
BDE 1.1171 BRA 3.6412 BC319.5640 FSP 1734

MID-COURSE EXECUTION ACCURACY
SGT14622.5 SGR 599.2 SG3 522.4
RRT .3245 RRF .2931 RTF .9649
SGB14634.7 R23 -.0216 R13 .9649
SG114623.8 SG2 566.7 THA .76

ORBIT DETERMINATION ACCURACY
ST 2730.3 SR 487.4 SS 568.4
CRT .8279 CRS .0321 CST -.5287
LSA 2776.3 MSA 553.1 SSA 37.6
EL1 2760.3 EL2 270.4 ALF 8.49

LAUNCH DATE DEC 14 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 845.602 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.255 GAL -2.16 AZL 88.04 HCA 247.97 SMA 190.48 ECC .22995 INC 1.9608 V1 30.257
RP 206.75 LAP -1.82 LOP 330.00 VP 24.231 GAP -12.37 AZP 90.74 TAL 348.40 TAP 236.36 RCA 146.68 APO 234.29 V2 26.488
RC 330.190 GL 19.86 GP -4.45 ZAL 108.86 ZAP 29.87 ETS 171.01 ZAE 47.25 ETE 175.63 ZAC 83.26 ETC 256.27 CLP 29.56

PLANETOCENTRIC CONIC

C3 11.198 VHL 3.346 DLA 13.47 RAL 199.01 RAD 6567.4 VEL 11.515 PTH 2.01 VHP 5.740 DPA -2.58 RAP 178.31 ECC 1.1843

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 58	2517.12	-25.57	61.59	55.25	102.59	18 0 55	1917.1	-23.59	53.48
90.00	8 51 35	4296.82	3.16	177.38	51.29	61.85	10 3 11	3696.8	-.63	170.75
100.00	18 47 22	2232.03	-26.60	40.34	54.98	104.16	19 24 34	1632.0	-24.39	32.24
100.00	10 5 52	4057.15	4.09	159.25	50.78	60.36	11 13 29	3457.1	.11	152.72
110.00	20 11 28	1968.87	-29.31	19.47	54.09	108.44	20 44 17	1368.9	-26.51	11.40
110.00	10 58 15	3893.07	6.48	145.32	49.30	56.36	12 3 8	3293.1	2.02	139.08

DIFFERENTIAL CORRECTIONS
TDE .9503 TRA 3.8771 TC-19.3475 BAU 2.8964
RDE .2790 RRA .2022 RC3 .0748 FAU .08580
FDE -.2282 FRA 2.0721 FC3-6.6336 BSP 51890
BDE .9904 BRA 3.8824 BC319.3477 FSP 1658

MID-COURSE EXECUTION ACCURACY
SGT14727.9 SGR 597.8 SG3 497.6
RRT .2906 RRF .2584 RTF .9638
SGB14740.0 R23 -.0231 R13 .9638
SG114728.9 SG2 572.0 THA .68

ORBIT DETERMINATION ACCURACY
ST 2644.3 SR 489.5 SS 580.2
CRT .7690 CRS .1221 CST -.5359
LSA 2689.0 MSA 579.9 SSA 36.9
EL1 2671.3 EL2 309.7 ALF 8.21

LAUNCH DATE DEC 14 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 849.957 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.263 GAL -2.35 AZL 88.06 HCA 249.23 SMA 190.63 ECC .23108 INC 1.9353 V1 30.257
RP 206.71 LAP -1.81 LOP 331.27 VP 24.246 GAP -12.47 AZP 90.69 TAL 347.41 TAP 236.65 RCA 146.58 APO 234.68 V2 26.492
RC 331.000 GL 19.38 GP -4.36 ZAL 110.65 ZAP 29.39 ETS 171.01 ZAE 46.47 ETE 175.62 ZAC 83.53 ETC 256.22 CLP 29.09

PLANETOCENTRIC CONIC

C3 11.443 VHL 3.383 DLA 12.34 RAL 200.45 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 5.819 DPA -2.83 RAP 179.08 ECC 1.1883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 31	2482.65	-25.04	59.20	56.62	103.67	18 15 53	1882.6	-22.91	51.18
90.00	8 47 31	4340.25	4.55	179.82	52.89	62.02	9 59 51	3740.3	.77	173.18
100.00	19 2 11	2199.92	-26.05	38.12	56.33	105.21	19 38 51	1599.9	-23.71	30.10
100.00	10 2 32	4098.21	5.46	161.52	52.39	60.57	11 10 51	3498.2	1.50	154.97
110.00	20 24 41	1941.73	-28.71	17.58	55.40	109.41	20 57 3	1341.7	-25.79	9.62
110.00	10 56 31	3929.17	7.84	147.24	50.93	56.62	12 2 0	3329.2	3.39	140.97

DIFFERENTIAL CORRECTIONS
TDE .8157 TRA 4.1265 TC-19.0949 BAU 2.9211
RDE .2840 RRA .2002 RC3 .0994 FAU .08068
FDE -.2802 FRA 2.0593 FC3-6.1039 BSP 52327
BDE .8638 BRA 4.1314 BC319.0952 FSP 1582

MID-COURSE EXECUTION ACCURACY
SGT14831.9 SGR 597.1 SG3 473.4
RRT .2574 RRF .2242 RTF .9626
SGB14843.9 R23 -.0248 R13 .9626
SG114832.7 SG2 576.9 THA .59

ORBIT DETERMINATION ACCURACY
ST 2581.9 SR 492.2 SS 592.3
CRT .6983 CRS .2017 CST -.5561
LSA 2625.5 MSA 604.0 SSA 36.1
EL1 2605.1 EL2 349.2 ALF 7.72

LAUNCH DATE DEC 14 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 854.308 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.272 GAL -2.55 AZL 88.09 HCA 250.50 SMA 190.78 ECC .23227 INC 1.9101 V1 30.257
RP 206.69 LAP -1.80 LOP 332.54 VP 24.260 GAP -12.56 AZP 90.64 TAL 346.42 TAP 236.92 RCA 146.47 APO 235.09 V2 26.494
RC 331.806 GL 18.89 GP -4.26 ZAL 112.43 ZAP 28.92 ETS 171.01 ZAE 45.70 ETE 175.61 ZAC 83.79 ETC 256.18 CLP 28.64

PLANETOCENTRIC CONIC

C3 11.716 VHL 3.423 DLA 11.20 RAL 201.88 RAD 6567.4 VEL 11.537 PTH 2.01 VHP 5.899 DPA -3.08 RAP 179.85 ECC 1.1928

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 49 44	2449.47	-24.49	56.93	58.03	104.68	18 30 34	1849.5	-22.23	48.98
90.00	8 43 44	4383.29	5.92	182.24	54.54	62.26	9 56 47	3783.3	2.16	175.58
100.00	19 16 43	2168.96	-25.48	36.00	57.72	106.19	19 52 52	1569.0	-23.02	28.06
100.00	9 59 26	4139.03	6.82	163.79	54.05	60.83	11 8 25	3539.0	2.88	157.22
110.00	20 37 43	1915.49	-28.10	15.78	56.76	110.32	21 9 38	1315.5	-25.07	7.91
110.00	10 54 55	3965.27	9.19	149.16	52.61	56.93	12 1 1	3365.3	4.77	142.86

DIFFERENTIAL CORRECTIONS
TDE .6803 TRA 4.3839 TC-18.8086 BAU 2.9462
RDE .2898 RRA .1980 RC3 .1218 FAU .07568
FDE -.3277 FRA 2.0440 FC3-5.5921 BSP 52766
BDE .7395 BRA 4.3884 BC318.8090 FSP 1510

MID-COURSE EXECUTION ACCURACY
SGT14934.9 SGR 596.9 SG3 450.0
RRT .2250 RRF .1908 RTF .9612
SGB14946.8 R23 -.0265 R13 .9612
SG114935.5 SG2 581.6 THA .52

ORBIT DETERMINATION ACCURACY
ST 2546.1 SR 495.5 SS 604.9
CRT .6173 CRS .2725 CST -.5850
LSA 2588.8 MSA 625.2 SSA 35.2
EL1 2564.8 EL2 387.0 ALF 7.01

LAUNCH DATE DEC 14 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 858.653 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.280 GAL -2.75 AZL 88.11 HCA 251.77 SMA 190.93 ECC .23351 INC 1.8854 V1 30.257
RP 206.68 LAP -1.79 LOP 333.81 VP 24.273 GAP -12.66 AZP 90.59 TAL 345.41 TAP 237.18 RCA 146.35 APO 235.52 V2 26.496
RC 332.609 GL 18.39 GP -4.17 ZAL 114.22 ZAP 28.47 ETS 171.01 ZAE 44.95 ETE 175.60 ZAC 84.06 ETC 256.14 CLP 28.19

PLANETOCENTRIC CONIC

C3 12.021 VHL 3.467 DLA 10.07 RAL 203.31 RAD 6567.5 VEL 11.550 PTH 2.02 VHP 5.980 DPA -3.34 RAP 180.64 ECC 1.1978

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 39	2417.56	-23.92	54.76	59.47	105.62	18 44 56	1817.6	-21.55	46.90
90.00	8 40 11	4425.97	7.27	184.65	56.24	62.56	9 53 56	3826.0	3.53	177.96
100.00	19 30 58	2139.15	-24.90	33.97	59.15	107.10	20 6 37	1539.1	-22.32	26.12
100.00	9 56 32	4179.62	8.16	166.06	55.76	61.14	11 6 12	3579.6	4.25	159.45
110.00	20 50 32	1890.17	-27.49	14.06	58.15	111.17	21 22 2	1290.2	-24.36	6.29
110.00	10 53 28	4001.37	10.52	151.11	54.34	57.29	12 0 9	3401.4	6.13	144.76

DIFFERENTIAL CORRECTIONS
TDE .5435 TRA 4.6492 TC-18.4906 BAU 2.9717
RDE .2962 RRA .1953 RC3 .1419 FAU .07080
FDE -.3705 FRA 2.0239 FC3-5.0993 BSP 53192
BDE .6190 BRA 4.6533 BC318.4912 FSP 1439

MID-COURSE EXECUTION ACCURACY
SGT15036.5 SGR 597.3 SG3 426.9
RRT .1933 RRF .1579 RTF .9595
SGB15048.4 R23 -.0284 R13 .9595
SG115037.0 SG2 586.0 THA .44

ORBIT DETERMINATION ACCURACY
ST 2536.7 SR 499.3 SS 616.7
CRT .5280 CRS .3352 CST -.6198
LSA 2579.0 MSA 641.8 SSA 34.3
EL1 2550.7 EL2 421.7 ALF 6.10

LAUNCH DATE DEC 14 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 862.993 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.288	GAL	-2.95	AZL	88.14	HCA	253.04	SMA	191.08	ECC	.23482	INC	1.8610	V1	30.257
RP	206.67	LAP	-1.78	LOP	335.08	VP	24.285	GAP	-12.76	AZP	90.54	TAL	344.39	TAP	237.43	RCA	146.21	APO	235.95	V2	26.497
RC	333.409	GL	17.89	GP	-4.09	ZAL	115.99	ZAP	28.03	ETS	171.01	ZAE	44.20	ETE	175.58	ZAC	84.32	ETC	256.10	CLP	27.75

PLANETOCENTRIC CONIC

C3	12.357	VHL	3.515	DLA	8.95	RAL	204.72	RAD	6567.5	VEL	11.565	PTH	2.02	VHP	6.062	DPA	-3.61	RAP	181.43	ECC	1.2034

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 15	2386.90	-23.34	52.70	60.94	106.50	18 59 2	1786.9	-20.86	44.91
90.00	8 36 50	4468.32	8.59	187.06	57.99	62.91	9 51 19	3868.3	4.89	180.34
100.00	19 44 58	2110.47	-24.31	32.04	60.61	107.95	20 20 8	1510.5	-21.63	24.27
100.00	9 53 49	4219.99	9.48	168.33	57.52	61.52	11 4 9	3620.0	5.61	161.68
110.00	21 3 9	1865.79	-26.88	12.43	59.58	111.96	21 34 15	1265.8	-23.66	4.75
110.00	10 52 7	4037.44	11.84	153.07	56.11	57.70	11 59 24	3437.4	7.49	146.67

DIFFERENTIAL CORRECTIONS

TDE	.4065	TRA	4.9219	TC-18.1394	BAU	2.9969	
RDE	.3033	RRA	.1923	RC3 .1600	FAU	.06601	
FDE	-.4079	FRA	2.0004	FC3-4.6247	BSP	53611	
BDE	.5072	BRA	4.9257	BC318.1401	FSP	1369	

MID-COURSE EXECUTION ACCURACY

SGT15133.9	SGR	598.1	SG3	404.4	
RRT .1624	RRF	.1260	RTF	.9576	
SGB15145.7	R23	-.0301	R13	.9576	
SG115134.2	SG2	590.2	THA	.37	

ORBIT DETERMINATION ACCURACY

ST	2553.7	SR	503.5	SS	626.8
CRT	.4341	CRS	.3896	CST	-.6575
LSA	2596.2	MSA	652.8	SSA	33.3
EL1	2563.3	EL2	451.9	ALF	5.05

LAUNCH DATE DEC 14 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 867.326 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.296	GAL	-3.16	AZL	88.16	HCA	254.31	SMA	191.23	ECC	.23619	INC	1.8369	V1	30.257
RP	206.67	LAP	-1.77	LOP	336.35	VP	24.296	GAP	-12.87	AZP	90.50	TAL	343.36	TAP	237.67	RCA	146.07	APO	236.40	V2	26.497
RC	334.204	GL	17.38	GP	-4.01	ZAL	117.75	ZAP	27.60	ETS	171.00	ZAE	43.46	ETE	175.57	ZAC	84.59	ETC	256.06	CLP	27.33

PLANETOCENTRIC CONIC

C3	12.728	VHL	3.568	DLA	7.84	RAL	206.12	RAD	6567.5	VEL	11.581	PTH	2.03	VHP	6.145	DPA	-3.89	RAP	182.23	ECC	1.2095

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 35	2357.47	-22.76	50.74	62.45	107.32	19 12 52	1757.5	-20.18	43.02
90.00	8 33 42	4510.36	9.88	189.47	59.79	63.33	9 48 53	3910.4	6.22	182.71
100.00	19 58 42	2082.93	-23.72	30.21	62.11	108.75	20 33 25	1482.9	-20.94	22.52
100.00	9 51 16	4260.14	10.78	170.60	59.32	61.95	11 2 16	3660.1	6.94	163.91
110.00	21 15 34	1842.36	-26.27	10.88	61.04	112.70	21 46 16	1242.4	-22.96	3.28
110.00	10 50 53	4073.46	13.14	155.05	57.93	58.16	11 58 47	3473.5	8.84	148.59

DIFFERENTIAL CORRECTIONS

TDE	.2679	TRA	5.2020	TC-17.7645	BAU	3.0229	
RDE	.3112	RRA	.1809	RC3 .1758	FAU	.06138	
FDE	-.4414	FRA	1.9725	FC3-4.1752	BSP	54010	
BDE	.4106	BRA	5.2054	BC317.7654	FSP	1300	

MID-COURSE EXECUTION ACCURACY

SGT15230.5	SGR	599.3	SG3	382.5	
RRT .1322	RRF	.0947	RTF	.9554	
SGB15242.3	R23	-.0321	R13	.9554	
SG115230.8	SG2	594.1	THA	.30	

ORBIT DETERMINATION ACCURACY

ST	2594.3	SR	508.1	SS	635.1
CRT	.3383	CRS	.4384	CST	-.6948
LSA	2637.6	MSA	658.8	SSA	32.4
EL1	2600.2	EL2	477.1	ALF	3.92

LAUNCH DATE DEC 14 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 871.653 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.305	GAL	-3.37	AZL	88.19	HCA	255.58	SMA	191.39	ECC	.23762	INC	1.8131	V1	30.257
RP	206.68	LAP	-1.76	LOP	337.62	VP	24.306	GAP	-12.97	AZP	90.45	TAL	342.31	TAP	237.89	RCA	145.91	APO	236.86	V2	26.495
RC	334.996	GL	16.87	GP	-3.93	ZAL	119.50	ZAP	27.17	ETS	171.00	ZAE	42.73	ETE	175.55	ZAC	84.85	ETC	256.02	CLP	26.91

PLANETOCENTRIC CONIC

C3	13.134	VHL	3.624	DLA	6.75	RAL	207.51	RAD	6567.5	VEL	11.598	PTH	2.03	VHP	6.230	DPA	-4.18	RAP	183.04	ECC	1.2161

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 37	2329.26	-22.18	48.88	63.98	108.07	19 26 26	1729.3	-19.50	41.23
90.00	8 30 45	4552.08	11.15	191.89	61.64	63.80	9 46 37	3952.1	7.54	185.07
100.00	20 12 10	2056.52	-23.13	28.47	63.63	109.48	20 46 27	1456.5	-20.26	20.85
100.00	9 48 52	4300.05	12.05	172.89	61.17	62.43	11 0 32	3700.0	8.26	166.15
110.00	21 27 47	1819.92	-25.67	9.41	62.54	113.38	21 58 7	1219.9	-22.29	1.89
110.00	10 49 46	4109.41	14.62	157.04	59.80	58.67	11 58 15	3509.4	10.17	150.52

DIFFERENTIAL CORRECTIONS

TDE	.1296	TRA	5.4912	TC-17.3661	BAU	3.0494	
RDE	.3197	RRA	.1851	RC3 .1897	FAU	.05683	
FDE	-.4696	FRA	1.9412	FC3-3.7464	BSP	54419	
BDE	.3450	BRA	5.4943	BC317.3672	FSP	1234	

MID-COURSE EXECUTION ACCURACY

SGT15326.5	SGR	601.0	SG3	361.2	
RRT .1030	RRF	.0645	RTF	.9528	
SGB15338.3	R23	-.0340	R13	.9528	
SG115326.6	SG2	597.8	THA	.23	

ORBIT DETERMINATION ACCURACY

ST	2657.6	SR	513.1	SS	640.8
CRT	.2448	CRS	.4806	CST	-.7302
LSA	2701.9	MSA	659.7	SSA	31.4
EL1	2660.6	EL2	496.9	ALF	2.80

LAUNCH DATE DEC 14 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 875.971 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.313	GAL	-3.59	AZL	88.21	HCA	256.85	SMA	191.54	ECC	.23912	INC	1.7896	V1	30.257
RP	206.70	LAP	-1.74	LOP	338.89	VP	24.315	GAP	-13.08	AZP	90.41	TAL	341.25	TAP	238.10	RCA	145.74	APO	237.34	V2	26.493
RC	335.784	GL	16.37	GP	-3.86	ZAL	121.23	ZAP	26.76	ETS	170.99	ZAE	42.01	ETE	175.53	ZAC	85.11	ETC	255.99	CLP	26.50

PLANETOCENTRIC CONIC

C3	13.577	VHL	3.685	DLA	5.66	RAL	208.89	RAD	6567.5	VEL	11.617	PTH	2.04	VHP	6.316	DPA	-4.47	RAP	183.85	ECC	1.2234

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 23	2302.26	-21.60	47.11	65.55	108.77	19 39 45	1702.3	-18.83	39.53
90.00	8 27 58	4593.50	12.38	194.30	63.53	64.33	9 44 31	3993.5	8.82	187.43
100.00	20 25 24	2031.25	-22.55	26.82	65.19	110.16	20 59 15	1431.3	-19.60	19.27
100.00	9 46 37	4339.73	13.28	175.18	63.07	62.97	10 58 57	3739.7	9.56	168.38
110.00	21 39 47	1798.47	-25.09	8.02	64.07	114.02	22 9 45	1198.5	-21.63	.58
110.00	10 48 44	4145.28	15.68	159.06	61.70	59.23	11 57 49	3545.3	11.49	152.47

DIFFERENTIAL CORRECTIONS

TDE	-.0093	TRA	5.7883	TC-16.9463	BAU	3.0762	
RDE	.3288	RRA	.1809	RC3 .2015	FAU	.05243	
FDE	-.4943	FRA	1.9055	FC3-3.3428	BSP	54807	
BDE	.3290	BRA	5.7912	BC316.9475	FSP	1168	

MID-COURSE EXECUTION ACCURACY

SGT15419.8	SGR	602.8	SG3	340.4	
RRT .0747	RRF	.0348	RTF	.9498	
SGB15431.5	R23	-.0364	R13	.9498	
SG115419.8	SG2	601.1	THA	.17	

ORBIT DETERMINATION ACCURACY

ST	2739.2	SR	518.3	SS	644.3
CRT	.1557	CRS	.5190	CST	-.7614
LSA	2784.6	MSA	657.3	SSA	30.5
EL1	2740.4	EL2	511.8	ALF	1.75

LAUNCH DATE DEC 14 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 880.281 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.321 GAL -3.81 AZL 88.23 HCA 258.12 SMA 191.69 ECC .24069 INC 1.7664 V1 30.257
RP 206.73 LAP -1.73 LOP 340.16 VP 24.323 GAP -13.19 AZP 90.36 TAL 340.19 TAP 238.30 RCA 145.55 APO 237.83 V2 26.490
RC 336.567 GL 15.86 GP -3.78 ZAL 122.94 ZAP 26.36 ETS 170.98 ZAE 41.30 ETE 175.52 ZAC 85.37 ETC 255.96 CLP 26.11

PLANETOCENTRIC CONIC

C3 14.060 VHL 3.750 DLA 4.60 RAL 210.25 RAD 6567.6 VEL 11.638 PTH 2.04 VHP 6.403 DPA -4.77 RAP 184.67 ECC 1.2314

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 52	2276.46	-21.02	45.44	67.16	109.42	19 52 49	1676.5	-18.18	37.92
90.00	8 25 19	4634.61	13.58	196.73	65.47	64.91	9 42 34	4034.6	10.09	189.79
100.00	20 38 22	2007.12	-21.97	25.26	66.78	110.79	21 11 49	1407.1	-18.95	17.77
100.00	9 44 30	4379.18	14.49	177.49	65.01	63.57	10 57 30	3779.2	10.83	170.62
110.00	21 51 34	1778.03	-24.51	6.71	65.62	114.60	22 21 12	1178.0	-20.99	359.34
110.00	10 47 48	4181.03	16.92	161.10	63.65	59.84	11 57 29	3581.0	12.78	154.43

DIFFERENTIAL CORRECTIONS
TDE -.1471 TRA 6.0928 TC-16.5108 BAU 3.1038
RDE .3387 RRA .1762 RC3 .2114 FAU .04811
FDE -.5139 FRA 1.8653 FC3-2.9621 BSP 55170
BDE .3693 BRA 6.0954 BC316.5122 FSP 1102

MID-COURSE EXECUTION ACCURACY
SGT15511.3 SGR 604.9 SG3 320.1
RRT .0473 RRF .0062 RTF .9464
SGB15523.1 R23 -.0387 R13 .9464
SG115511.3 SG2 604.3 THA .11

ORBIT DETERMINATION ACCURACY
ST 2835.4 SR 523.8 SS 644.5
CRT .0734 CRS .5526 CST -.7887
LSA 2881.6 MSA 651.8 SSA 29.5
EL1 2835.7 EL2 522.4 ALF .80

LAUNCH DATE DEC 14 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 884.582 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.330 GAL -4.03 AZL 88.26 HCA 259.39 SMA 191.85 ECC .24233 INC 1.7434 V1 30.257
RP 206.77 LAP -1.71 LOP 341.43 VP 24.330 GAP -13.31 AZP 90.32 TAL 339.10 TAP 238.49 RCA 145.36 APO 238.34 V2 26.485
RC 337.346 GL 15.36 GP -3.71 ZAL 124.63 ZAP 25.97 ETS 170.97 ZAE 40.60 ETE 175.49 ZAC 85.63 ETC 255.93 CLP 25.72

PLANETOCENTRIC CONIC

C3 14.584 VHL 3.819 DLA 3.55 RAL 211.59 RAD 6567.6 VEL 11.661 PTH 2.05 VHP 6.492 DPA -5.07 RAP 185.51 ECC 1.2400

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 6	2251.85	-20.46	43.86	68.78	110.02	20 5 37	1651.8	-17.54	36.39
90.00	8 22 50	4675.41	14.74	199.16	67.44	65.55	9 40 45	4075.4	11.32	192.15
100.00	20 51 6	1984.12	-21.41	23.78	68.40	111.37	21 24 10	1384.1	-18.32	16.35
100.00	9 42 31	4418.37	15.67	179.81	66.99	64.21	10 56 9	3818.4	12.07	172.86
110.00	22 3 9	1758.61	-23.96	5.47	67.21	115.14	22 32 28	1158.6	-20.37	358.17
110.00	10 46 57	4216.65	18.12	163.15	65.65	60.51	11 57 14	3616.7	14.06	156.40

DIFFERENTIAL CORRECTIONS
TDE -.2856 TRA 6.4059 TC-16.0613 BAU 3.1319
RDE .3491 RRA .1712 RC3 .2196 FAU .04388
FDE -.5304 FRA 1.8215 FC3-2.6045 BSP 55524
BDE .4511 BRA 6.4082 BC316.0628 FSP 1039

MID-COURSE EXECUTION ACCURACY
SGT15601.2 SGR 607.2 SG3 300.4
RRT .0207 RRF -.0217 RTF .9423
SGB15613.1 R23 -.0413 R13 .9423
SG115601.2 SG2 607.1 THA .05

ORBIT DETERMINATION ACCURACY
ST 2943.5 SR 529.5 SS 642.4
CRT -.0021 CRS .5833 CST -.8116
LSA 2990.1 MSA 644.9 SSA 28.7
EL1 2943.5 EL2 529.5 ALF 179.98

LAUNCH DATE DEC 14 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 888.873 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.338 GAL -4.26 AZL 88.28 HCA 260.65 SMA 192.00 ECC .24405 INC 1.7205 V1 30.257
RP 206.81 LAP -1.70 LOP 342.70 VP 24.335 GAP -13.43 AZP 90.28 TAL 338.01 TAP 238.66 RCA 145.14 APO 238.86 V2 26.480
RC 338.120 GL 14.86 GP -3.65 ZAL 126.30 ZAP 25.59 ETS 170.96 ZAE 39.91 ETE 175.47 ZAC 85.89 ETC 255.91 CLP 25.35

PLANETOCENTRIC CONIC

C3 15.153 VHL 3.893 DLA 2.52 RAL 212.92 RAD 6567.6 VEL 11.685 PTH 2.06 VHP 6.582 DPA -5.39 RAP 186.35 ECC 1.2494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 3	2228.42	-19.90	42.36	70.44	110.57	20 18 12	1628.4	-16.93	34.95
90.00	8 20 28	4715.90	15.87	201.60	69.46	66.24	9 39 4	4115.9	12.52	194.52
100.00	21 3 35	1962.26	-20.86	22.39	70.04	111.91	21 36 17	1362.3	-17.70	15.02
100.00	9 40 38	4457.30	16.81	182.14	69.02	64.91	10 54 56	3857.3	13.29	175.11
110.00	22 14 31	1740.21	-23.42	4.31	68.83	115.64	22 43 31	1140.2	-19.78	357.07
110.00	10 46 11	4252.10	19.30	165.23	67.68	61.22	11 57 3	3652.1	15.31	158.38

DIFFERENTIAL CORRECTIONS
TDE -.4242 TRA 6.7271 TC-15.6030 BAU 3.1611
RDE .3602 RRA .1657 RC3 .2261 FAU .03979
FDE -.5433 FRA 1.7732 FC3-2.2731 BSP 55853
BDE .5565 BRA 6.7291 BC315.6047 FSP 976

MID-COURSE EXECUTION ACCURACY
SGT15690.2 SGR 609.7 SG3 281.2
RRT -.0051 RRF -.0491 RTF .9376
SGB15702.0 R23 .0443 R13 -.9376
SG115690.2 SG2 609.7 THA 179.99

ORBIT DETERMINATION ACCURACY
ST 3060.0 SR 535.3 SS 637.5
CRT -.0703 CRS .6114 CST -.8306
LSA 3106.4 MSA 636.9 SSA 27.8
EL1 3060.2 EL2 533.9 ALF 179.27

LAUNCH DATE DEC 14 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 893.153 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.346 GAL -4.50 AZL 88.30 HCA 261.92 SMA 192.16 ECC .24584 INC 1.6979 V1 30.257
RP 206.87 LAP -1.68 LOP 343.96 VP 24.340 GAP -13.55 AZP 90.24 TAL 336.91 TAP 238.83 RCA 144.92 APO 239.40 V2 26.474
RC 338.890 GL 14.36 GP -3.58 ZAL 127.94 ZAP 25.22 ETS 170.95 ZAE 39.23 ETE 175.45 ZAC 86.15 ETC 255.88 CLP 24.98

PLANETOCENTRIC CONIC

C3 15.767 VHL 3.971 DLA 1.52 RAL 214.23 RAD 6567.6 VEL 11.711 PTH 2.06 VHP 6.674 DPA -5.70 RAP 187.19 ECC 1.2595

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 46	2206.17	-19.36	40.95	72.12	111.07	20 30 32	1606.2	-16.33	33.59
90.00	8 18 14	4756.07	16.96	204.05	71.51	66.98	9 37 30	4156.1	13.69	196.89
100.00	21 15 49	1941.52	-20.33	21.08	71.71	112.40	21 48 10	1341.5	-17.11	13.76
100.00	9 38 52	4495.96	17.91	184.48	71.08	65.66	10 53 48	3896.0	14.47	177.37
110.00	22 25 41	1722.83	-22.90	3.23	70.47	116.10	22 54 23	1122.8	-19.21	356.04
110.00	10 45 30	4287.41	20.44	167.33	69.76	61.99	11 56 57	3687.4	16.54	160.39

DIFFERENTIAL CORRECTIONS
TDE -.5616 TRA 7.0561 TC-15.1349 BAU 3.1907
RDE .3719 RRA .1599 RC3 .2310 FAU .03576
FDE -.5523 FRA 1.7210 FC3-1.9636 BSP 56194
BDE .6736 BRA 7.0579 BC315.1367 FSP 915

MID-COURSE EXECUTION ACCURACY
SGT15775.3 SGR 612.3 SG3 262.6
RRT -.0300 RRF -.0755 RTF .9321
SGB15787.2 R23 .0475 R13 -.9321
SG115775.3 SG2 612.0 THA 179.93

ORBIT DETERMINATION ACCURACY
ST 3181.7 SR 541.1 SS 629.7
CRT -.1309 CRS .6368 CST -.8461
LSA 3227.5 MSA 628.5 SSA 27.0
EL1 3182.5 EL2 536.3 ALF 178.69

LAUNCH DATE DEC 14 1964 FLIGHT TIME 414.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 897.421 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.355 GAL -4.74 AZL 88.32 HCA 263.19 SMA 192.31 ECC .24771 INC 1.6754 V1 30.257
RP 206.93 LAP -1.66 LOP 345.23 VP 24.343 GAP -13.68 AZP 90.20 TAL 335.79 TAP 238.98 RCA 144.67 APO 239.95 V2 26.466
RC 339.657 GL 13.87 GP -3.52 ZAL 129.56 ZAP 24.86 ETS 170.93 ZAE 38.56 ETE 175.42 ZAC 86.41 ETC 255.87 CLP 24.62

PLANETOCENTRIC CONIC

C3 16.430 VHL 4.053 DLA .54 RAL 215.53 RAD 6567.7 VEL 11.739 PTH 2.07 VHP 6.767 DPA -6.03 RAP 188.05 ECC 1.2704

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 13	2185.07	-18.84	39.62	73.83	111.54	20 42 38	1585.1	-15.75	32.31
90.00	8 16 7	4795.91	18.00	206.50	73.61	67.76	9 36 3	4195.9	14.83	199.26
100.00	21 27 48	1921.89	-19.81	19.85	73.41	112.85	21 59 50	1321.9	-16.55	12.58
100.00	9 37 13	4534.33	18.97	186.84	73.18	66.45	10 52 47	3934.3	15.62	179.64
110.00	22 36 37	1706.49	-22.41	2.22	72.13	116.51	23 5 4	1106.5	-18.67	355.08
110.00	10 44 53	4322.50	21.55	169.45	71.87	62.80	11 56 55	3722.5	17.73	162.40

DIFFERENTIAL CORRECTIONS
TDE -.6996 TRA 7.3938 TC-14.6662 BAU 3.2219
RDE .3842 RRA .1536 RC3 .2345 FAU .03186
FDE -.5585 FRA 1.6644 FC3-1.6787 BSP 56464
BDE .7981 BRA 7.3954 BC314.6681 FSP 853

MID-COURSE EXECUTION ACCURACY
SGT15861.3 SGR 614.9 SG3 244.5
RRT -.0542 RRF -.1015 RTF .9256
SGB15873.2 R23 .0514 R13 -.9256
SG115861.3 SG2 614.0 THA 179.88

ORBIT DETERMINATION ACCURACY
ST 3307.1 SR 546.9 SS 619.7
CRT -.1851 CRS .6607 CST -.8584
LSA 3351.8 MSA 620.2 SSA 26.2
EL1 3308.7 EL2 537.2 ALF 178.20

LAUNCH DATE DEC 14 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 901.677 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.363 GAL -4.98 AZL 88.35 HCA 264.45 SMA 192.47 ECC .24967 INC 1.6530 V1 30.257
RP 207.00 LAP -1.65 LOP 346.50 VP 24.346 GAP -13.81 AZP 90.16 TAL 334.66 TAP 239.11 RCA 144.42 APO 240.53 V2 26.458
RC 340.420 GL 13.39 GP -3.47 ZAL 131.15 ZAP 24.50 ETS 170.92 ZAE 37.90 ETE 175.39 ZAC 86.67 ETC 255.85 CLP 24.27

PLANETOCENTRIC CONIC

C3 17.144 VHL 4.141 DLA -.42 RAL 216.81 RAD 6567.7 VEL 11.770 PTH 2.08 VHP 6.862 DPA -6.36 RAP 188.91 ECC 1.2822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 18 25	2165.12	-18.34	38.37	75.56	111.96	20 54 30	1565.1	-15.20	31.11
90.00	8 14 6	4835.42	19.00	208.97	75.74	68.60	9 34 42	4235.4	15.92	201.65
100.00	21 39 34	1903.37	-19.32	18.69	75.12	113.26	22 11 17	1303.4	-16.01	11.47
100.00	9 35 39	4572.40	19.98	189.21	75.31	67.30	10 51 51	3972.4	16.74	181.92
110.00	22 47 22	1691.17	-21.94	1.27	73.81	116.89	23 15 33	1091.2	-18.16	354.19
110.00	10 44 20	4357.37	22.62	171.59	74.02	63.66	11 56 58	3757.4	18.90	164.44

DIFFERENTIAL CORRECTIONS
TDE -.8354 TRA 7.7407 TC-14.1936 BAU 3.2537
RDE .3970 RRA .1468 RC3 .2367 FAU .02801
FDE -.5611 FRA 1.6038 FC3-1.4146 BSP 56755
BDE .9249 BRA 7.7421 BC314.1956 FSP 793

MID-COURSE EXECUTION ACCURACY
SGT15944.6 SGR 617.7 SG3 227.0
RRT -.0775 RRF -.1265 RTF .9177
SGB15956.6 R23 .0555 R13 -.9177
SG115944.7 SG2 615.8 THA 179.83

ORBIT DETERMINATION ACCURACY
ST 3433.2 SR 552.8 SS 606.8
CRT -.2325 CRS .6826 CST -.8679
LSA 3476.4 MSA 612.2 SSA 25.4
EL1 3435.7 EL2 537.2 ALF 177.80

LAUNCH DATE DEC 14 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 905.919 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.372 GAL -5.23 AZL 88.37 HCA 265.72 SMA 192.63 ECC .25172 INC 1.6308 V1 30.257
RP 207.08 LAP -1.63 LOP 347.76 VP 24.347 GAP -13.94 AZP 90.12 TAL 333.52 TAP 239.24 RCA 144.14 APO 241.12 V2 26.449
RC 341.179 GL 12.91 GP -3.41 ZAL 132.71 ZAP 24.16 ETS 170.90 ZAE 37.24 ETE 175.36 ZAC 86.93 ETC 255.84 CLP 23.93

PLANETOCENTRIC CONIC

C3 17.913 VHL 4.232 DLA -1.36 RAL 218.07 RAD 6567.7 VEL 11.802 PTH 2.09 VHP 6.959 DPA -6.69 RAP 189.78 ECC 1.2948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 30 23	2146.29	-17.85	37.20	77.31	112.35	21 6 9	1546.3	-14.67	29.98
90.00	8 12 12	4874.58	19.95	211.45	77.90	69.48	9 33 26	4274.6	16.98	204.03
100.00	21 51 5	1885.94	-18.85	17.61	76.86	113.64	22 22 31	1285.9	-15.49	10.43
100.00	9 34 10	4610.16	20.96	191.59	77.48	68.18	10 51 0	4010.2	17.81	184.21
110.00	22 57 53	1676.86	-21.50	.40	75.52	117.24	23 25 50	1076.9	-17.68	353.36
110.00	10 43 52	4392.01	23.65	173.76	76.21	64.57	11 57 4	3792.0	20.03	166.49

DIFFERENTIAL CORRECTIONS
TDE -.9698 TRA 8.0962 TC-13.7202 BAU 3.2861
RDE .4104 RRA .1397 RC3 .2377 FAU .02426
FDE -.5605 FRA 1.5392 FC3-1.1725 BSP 57018
BDE 1.0531 BRA 8.0975 BC313.7222 FSP 735

MID-COURSE EXECUTION ACCURACY
SGT16025.0 SGR 620.4 SG3 210.0
RRT -.0999 RRF -.1506 RTF .9084
SGB16037.0 R23 .0601 R13 -.9084
SG116025.1 SG2 617.3 THA 179.78

ORBIT DETERMINATION ACCURACY
ST 3558.5 SR 558.5 SS 591.4
CRT -.2742 CRS .7031 CST -.8751
LSA 3599.8 MSA 604.6 SSA 24.7
EL1 3561.9 EL2 536.6 ALF 177.48

LAUNCH DATE DEC 14 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 7 1966

HELIOCENTRIC CONIC DISTANCE 910.146 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.380 GAL -5.49 AZL 88.39 HCA 266.98 SMA 192.79 ECC .25385 INC 1.6086 V1 30.257
RP 207.17 LAP -1.61 LOP 349.02 VP 24.348 GAP -14.08 AZP 90.08 TAL 332.37 TAP 239.35 RCA 143.85 APO 241.73 V2 26.438
RC 341.936 GL 12.44 GP -3.35 ZAL 134.25 ZAP 23.83 ETS 170.89 ZAE 36.60 ETE 175.33 ZAC 87.19 ETC 255.83 CLP 23.60

PLANETOCENTRIC CONIC

C3 18.738 VHL 4.329 DLA -2.27 RAL 219.31 RAD 6567.8 VEL 11.837 PTH 2.10 VHP 7.057 DPA -7.03 RAP 190.65 ECC 1.3084

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 42 6	2128.57	-17.39	36.11	79.07	112.70	21 17 34	1528.6	-14.17	28.92
90.00	8 10 23	4913.38	20.86	213.93	80.09	70.40	9 32 17	4313.4	18.00	206.43
100.00	22 2 23	1869.59	-18.40	16.61	78.62	113.98	22 33 33	1269.6	-15.00	9.46
100.00	9 32 47	4647.60	21.89	193.98	79.69	69.12	10 50 15	4047.6	18.85	186.50
110.00	23 8 12	1663.55	-21.08	359.59	77.24	117.55	23 35 56	1063.6	-17.23	352.59
110.00	10 43 27	4426.40	24.64	175.94	78.43	65.52	11 57 14	3826.4	21.12	168.55

DIFFERENTIAL CORRECTIONS
TDE-1.1043 TRA 8.4599 TC-13.2526 BAU 3.3204
RDE .4244 RRA .1321 RC3 .2376 FAU .02060
FDE -.5573 FRA 1.4703 FC3 -.9518 BSP 57246
BDE 1.1830 BRA 8.4610 BC313.2547 FSP 676

MID-COURSE EXECUTION ACCURACY
SGT16104.7 SGR 623.2 SG3 193.5
RRT -.1216 RRF -.1742 RTF .8971
SGB16116.7 R23 .0654 R13 -.8971
SG116104.9 SG2 618.6 THA 179.73

ORBIT DETERMINATION ACCURACY
ST 3682.0 SR 564.2 SS 573.9
CRT -.3113 CRS .7227 CST -.8803
LSA 3721.2 MSA 597.5 SSA 24.1
EL1 3686.3 EL2 535.5 ALF 177.21

LAUNCH DATE DEC 14 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 9 1966

HELIOCENTRIC CONIC DISTANCE 914.359 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.389 GAL -5.75 AZL 88.41 HCA 268.24 SMA 192.95 ECC .25608 INC 1.5865 V1 30.257
RP 207.27 LAP -1.59 LOP 350.29 VP 24.347 GAP -14.23 AZP 90.05 TAL 331.21 TAP 239.45 RCA 143.54 APO 242.35 V2 26.427
RC 342.690 GL 11.98 GP -3.30 ZAL 135.75 ZAP 23.50 ETS 170.87 ZAE 35.96 ETE 175.30 ZAC 87.44 ETC 255.82 CLP 23.28

PLANETOCENTRIC CONIC

C3 19.624 VHL 4.430 DLA -3.16 RAL 220.53 RAD 6567.8 VEL 11.875 PTH 2.11 VHP 7.157 DPA -7.37 RAP 191.54 ECC 1.3230

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 53 35	2111.93	-16.95	35.09	80.86	113.03	21 28 47	1511.9	-13.69	27.93
90.00	8 8 40	4951.83	21.72	216.43	82.32	71.37	9 31 12	4351.8	18.97	208.83
100.00	22 13 27	1854.29	-17.97	15.67	80.39	114.30	22 44 21	1254.3	-14.54	8.56
100.00	9 31 29	4684.71	22.77	196.39	81.92	70.09	10 49 34	4084.7	19.85	188.81
110.00	23 18 19	1651.24	-20.69	358.85	78.98	117.84	23 45 50	1051.2	-16.81	351.88
110.00	10 43 7	4460.53	25.58	178.14	80.69	66.51	11 57 27	3860.5	22.18	170.63

DIFFERENTIAL CORRECTIONS
TDE-1.2368 TRA 8.8339 TC-12.7877 BAU 3.3554
RDE .4388 RRA .1240 RC3 .2366 FAU .01699
FDE -.5510 FRA 1.3972 FC3 -.7495 BSP 57478
BDE 1.3124 BRA 8.8348 BC312.7899 FSP 620

MID-COURSE EXECUTION ACCURACY
SGT16182.2 SGR 626.0 SG3 177.6
RRT -.1426 RRF -.1966 RTF .8832
SGB16194.3 R23 .0712 R13 -.8832
SG116182.4 SG2 619.6 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 3802.6 SR 569.6 SS 554.1
CRT -.3438 CRS .7413 CST -.8835
LSA 3839.5 MSA 591.0 SSA 23.4
EL1 3807.8 EL2 534.2 ALF 176.99

LAUNCH DATE DEC 14 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 11 1966

HELIOCENTRIC CONIC DISTANCE 918.554 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.397 GAL -6.02 AZL 88.44 HCA 269.50 SMA 193.10 ECC .25840 INC 1.5644 V1 30.257
RP 207.37 LAP -1.56 LOP 351.55 VP 24.345 GAP -14.38 AZP 90.01 TAL 330.04 TAP 239.54 RCA 143.21 APO 243.00 V2 26.415
RC 343.441 GL 11.53 GP -3.25 ZAL 137.22 ZAP 23.18 ETS 170.86 ZAE 35.33 ETE 175.26 ZAC 87.70 ETC 255.82 CLP 22.97

PLANETOCENTRIC CONIC

C3 20.573 VHL 4.536 DLA -4.02 RAL 221.74 RAD 6567.8 VEL 11.914 PTH 2.12 VHP 7.259 DPA -7.71 RAP 192.43 ECC 1.3386

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 4 50	2096.35	-16.54	34.13	82.66	113.32	21 39 46	1496.4	-13.24	27.01
90.00	8 7 2	4989.92	22.52	218.93	84.57	72.37	9 30 12	4389.9	19.90	211.24
100.00	22 24 17	1840.03	-17.57	14.80	82.18	114.58	22 54 57	1240.0	-14.11	7.72
100.00	9 30 16	4721.48	23.60	198.80	84.18	71.10	10 48 57	4121.5	20.80	191.12
110.00	23 28 13	1639.90	-20.33	358.17	80.74	118.09	23 55 33	1039.9	-16.42	351.23
110.00	10 42 49	4494.38	26.48	180.36	82.98	67.55	11 57 44	3894.4	23.20	172.73

DIFFERENTIAL CORRECTIONS
TDE-1.3698 TRA 9.2151 TC-12.3522 BAU 3.3924
RDE .4538 RRA .1156 RC3 .2348 FAU .01347
FDE -.5426 FRA 1.3199 FC3 -.5668 BSP 57630
BDE 1.4430 BRA 9.2159 BC312.3344 FSP 564

MID-COURSE EXECUTION ACCURACY
SGT16257.9 SGR 628.8 SG3 162.3
RRT -.1630 RRF -.2183 RTF .8659
SGB16270.0 R23 .0780 R13 -.8660
SG116258.2 SG2 620.4 THA 179.64

ORBIT DETERMINATION ACCURACY
ST 3919.5 SR 574.9 SS 532.7
CRT -.3729 CRS .7597 CST -.8851
LSA 3954.0 MSA 584.9 SSA 22.8
EL1 3925.5 EL2 532.7 ALF 176.81

LAUNCH DATE DEC 14 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 13 1966

HELIOCENTRIC CONIC DISTANCE 922.732 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.406 GAL -6.29 AZL 88.46 HCA 270.76 SMA 193.26 ECC .26083 INC 1.5425 V1 30.257
RP 207.48 LAP -1.54 LOP 352.81 VP 24.343 GAP -14.53 AZP 89.98 TAL 328.86 TAP 239.62 RCA 142.86 APO 243.67 V2 26.402
RC 344.188 GL 11.09 GP -3.20 ZAL 138.67 ZAP 22.88 ETS 170.84 ZAE 34.72 ETE 175.22 ZAC 87.96 ETC 255.82 CLP 22.66

PLANETOCENTRIC CONIC

C3 21.589 VHL 4.646 DLA -4.85 RAL 222.92 RAD 6567.9 VEL 11.957 PTH 2.13 VHP 7.362 DPA -8.06 RAP 193.32 ECC 1.3553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 15 51	2081.81	-16.14	33.25	84.48	113.59	21 50 33	1481.8	-12.82	26.15
90.00	8 5 29	5027.63	23.28	221.44	86.84	73.41	9 29 17	4427.6	20.78	213.65
100.00	22 34 54	1826.77	-17.19	14.00	83.98	114.84	23 5 21	1226.8	-13.70	6.95
100.00	9 29 7	4757.90	24.38	201.22	86.47	72.15	10 48 25	4157.9	21.71	193.45
110.00	23 37 55	1629.50	-20.00	357.55	82.50	118.32	24 5 4	1029.5	-16.06	350.64
110.00	10 42 35	4527.93	27.33	182.60	85.30	68.63	11 58 3	3927.9	24.18	174.85

DIFFERENTIAL CORRECTIONS
TDE-1.4991 TRA 9.6072 TC-11.8825 BAU 3.4302
RDE .4692 RRA .1066 RC3 .2321 FAU .01001
FDE -.5314 FRA 1.2383 FC3 -.4014 BSP 57818
BDE 1.5708 BRA 9.6078 BC311.8848 FSP 509

MID-COURSE EXECUTION ACCURACY
SGT16331.2 SGR 631.5 SG3 147.6
RRT -.1826 RRF -.2387 RTF .8443
SGB16343.4 R23 .0858 R13 -.8443
SG116331.6 SG2 620.8 THA 179.59

ORBIT DETERMINATION ACCURACY
ST 4031.1 SR 580.0 SS 509.2
CRT -.3980 CRS .7776 CST -.8846
LSA 4063.2 MSA 579.4 SSA 22.3
EL1 4037.8 EL2 531.2 ALF 176.66

LAUNCH DATE DEC 14 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 15 1966

HELIOCENTRIC CONIC DISTANCE 926.890 EARTH TO MARS

RL 147.25 LAL .00 LOL 82.05 VL 33.414 GAL -6.57 AZL 88.48 HCA 272.02 SMA 193.43 ECC .26335 INC 1.5204 V1 30.257
RP 207.61 LAP -1.52 LOP 354.07 VP 24.339 GAP -14.69 AZP 89.95 TAL 327.66 TAP 239.69 RCA 142.49 APO 244.36 V2 26.387
RC 344.932 GL 10.66 GP -3.16 ZAL 140.08 ZAP 22.58 ETS 170.82 ZAE 34.11 ETE 175.18 ZAC 88.21 ETC 255.83 CLP 22.37

PLANETOCENTRIC CONIC

C3 22.676 VHL 4.762 DLA -5.66 RAL 224.09 RAD 6567.9 VEL 12.002 PTH 2.14 VHP 7.468 DPA -8.42 RAP 194.23 ECC 1.3732

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 26 39	2068.26	-15.77	32.42	86.31	113.83	22 1 7	1468.3	-12.42	25.35
90.00	8 4 1	5064.97	23.98	223.95	89.14	74.48	9 28 26	4465.0	21.62	216.07
100.00	22 45 19	1814.49	-16.84	13.26	85.80	115.07	23 15 33	1214.5	-13.32	6.23
100.00	9 28 2	4793.96	25.11	203.66	88.78	73.23	10 47 56	4194.0	22.57	195.78
110.00	23 47 25	1620.04	-19.69	356.99	84.28	118.52	24 14 25	1020.0	-15.73	350.10
110.00	10 42 25	4561.19	28.14	184.85	87.65	69.74	11 58 26	3961.2	25.12	176.98

DIFFERENTIAL CORRECTIONS
TDE-1.6285 TRA10.0080 TC-11.4432 BAU 3.4698
RDE .4851 RRA .0973 RC3 .2289 FAU .00661
FDE -.5182 FRA 1.1527 FC3 -.2524 BSP 57941
BDE 1.6992 BRA10.0085 BC311.4455 FSP 455

MID-COURSE EXECUTION ACCURACY
SGT16402.5 SGR 634.1 SG3 133.5
RRT -.2015 RRF -.2575 RTF .8168
SGB16414.8 R23 .0946 R13 -.8168
SG116403.0 SG2 621.1 THA 179.55

ORBIT DETERMINATION ACCURACY
ST 4138.2 SR 584.8 SS 484.4
CRT -.4205 CRS .7954 CST -.8826
LSA 4167.9 MSA 574.4 SSA 21.7
EL1 4145.6 EL2 529.6 ALF 176.54

LAUNCH DATE DEC 14 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 17 1966

HELIOCENTRIC CONIC DISTANCE 931.029 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.423	GAL	-6.86	AZL	88.50	HCA	273.28	SMA	193.59	ECC	.26599	INC	1.4984	V1	30.257
RP	207.74	LAP	-1.50	LOP	355.33	VP	24.335	GAP	-14.86	AZP	89.91	TAL	326.46	TAP	239.74	RCA	142.09	APO	245.08	V2	26.372
RC	345.671	GL	10.24	GP	-3.11	ZAL	141.46	ZAP	22.29	ETS	170.81	ZAE	33.50	ETE	175.14	ZAC	88.47	ETC	255.84	CLP	22.08

PLANETOCENTRIC CONIC

C3	23.838	VHL	4.882	DLA	-6.45	RAL	225.24	RAD	6568.0	VEL	12.051	PTH	2.15	VHP	7.576	DPA	-8.77	RAP	195.14	ECC	1.3923

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 37 13	2055.68	-15.42	31.66	88.15	114.05	22 11 29	1455.7	-12.05	24.62
90.00	8 2 37	5101.92	24.63	226.46	91.46	75.57	9 27 39	4501.9	22.41	218.49
100.00	22 55 30	1803.17	-16.51	12.58	87.62	115.28	23 25 33	1203.2	-12.97	5.57
100.00	9 27 2	4829.66	25.79	206.09	91.11	74.34	10 47 32	4229.7	23.39	198.11
110.00	0 0 40	1611.47	-19.41	356.48	86.07	118.71	0 27 31	1011.5	-15.43	349.62
110.00	10 42 18	4594.13	28.89	187.11	90.02	70.89	11 58 52	3994.1	26.01	179.12

DIFFERENTIAL CORRECTIONS

TDE	-1.7551	TRA	10.4183	TC	-11.0149	BAU	3.5110
RDE	.5015	RRA	.0875	RC3	.2251	FAU	.00327
FDE	-.5028	FRA	1.0624	FC3	-.1189	BSP	58035
BDE	1.8253	BRA	10.4187	BC3	11.0172	FSP	402

MID-COURSE EXECUTION ACCURACY

SGT	16471.7	SGR	636.7	SG3	120.2		
RRT	-.2198	RRF	-.2745	RTF	.7811		
SGB	16484.0	R23	.1051	R13	-.7811		
SG1	16472.3	SG2	621.1	THA	179.51		

ORBIT DETERMINATION ACCURACY

ST	4239.2	SR	589.4	SS	458.1		
CRT	-.4402	CRS	.8136	CST	-.8782		
LSA	4266.5	MSA	569.9	SSA	21.2		
EL1	4247.3	EL2	528.2	ALF	176.44		

LAUNCH DATE DEC 14 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 19 1966

HELIOCENTRIC CONIC DISTANCE 935.146 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.431	GAL	-7.15	AZL	88.52	HCA	274.53	SMA	193.75	ECC	.26873	INC	1.4764	V1	30.257
RP	207.87	LAP	-1.47	LOP	356.58	VP	24.329	GAP	-15.03	AZP	89.88	TAL	325.25	TAP	239.78	RCA	141.68	APO	245.82	V2	26.356
RC	346.405	GL	9.83	GP	-3.07	ZAL	142.82	ZAP	22.01	ETS	170.79	ZAE	32.91	ETE	175.09	ZAC	88.72	ETC	255.85	CLP	21.80

PLANETOCENTRIC CONIC

C3	25.079	VHL	5.008	DLA	-7.21	RAL	226.38	RAD	6568.0	VEL	12.102	PTH	2.17	VHP	7.686	DPA	-9.13	RAP	196.06	ECC	1.4127

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 35	2044.05	-15.10	30.97	90.00	114.24	22 21 40	1444.0	-11.70	23.94
90.00	8 1 18	5138.48	25.23	228.97	93.79	76.70	9 26 57	4538.5	23.15	220.92
100.00	23 5 29	1792.77	-16.21	11.95	89.46	115.46	23 35 22	1192.8	-12.65	4.97
100.00	9 26 6	4864.99	26.42	208.53	93.46	75.48	10 47 11	4265.0	24.16	200.46
110.00	0 9 46	1603.78	-19.16	356.02	87.87	118.87	0 36 30	1003.8	-15.16	349.19
110.00	10 42 13	4626.74	29.60	189.39	92.41	72.06	11 59 20	4026.7	26.86	181.27

DIFFERENTIAL CORRECTIONS

TDE	-1.8804	TRA	10.8386	TC	-10.5971	BAU	3.5537
RDE	.5183	RRA	.0772	RC3	.2208	FAU	-.00003
FDE	-.4852	FRA	.9684	FC3	.0010	BSP	58127
BDE	1.9505	BRA	10.8389	BC3	10.5994	FSP	350

MID-COURSE EXECUTION ACCURACY

SGT	16538.2	SGR	639.1	SG3	107.8		
RRT	-.2375	RRF	-.2879	RTF	.7342		
SGB	16550.6	R23	.1166	R13	-.7342		
SG1	16538.9	SG2	620.8	THA	179.47		

ORBIT DETERMINATION ACCURACY

ST	4334.8	SR	593.6	SS	430.5		
CRT	-.4576	CRS	.8320	CST	-.8719		
LSA	4359.8	MSA	565.6	SSA	20.8		
EL1	4343.5	EL2	526.7	ALF	176.36		

LAUNCH DATE DEC 14 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 21 1966

HELIOCENTRIC CONIC DISTANCE 939.240 EARTH TO MARS

RL	147.25	LAL	.00	LOL	82.05	VL	33.440	GAL	-7.45	AZL	88.55	HCA	275.79	SMA	193.91	ECC	.27159	INC	1.4543	V1	30.257
RP	208.02	LAP	-1.45	LOP	357.84	VP	24.323	GAP	-15.21	AZP	89.85	TAL	324.02	TAP	239.81	RCA	141.25	APO	246.58	V2	26.339
RC	347.135	GL	9.43	GP	-3.03	ZAL	144.14	ZAP	21.74	ETS	170.77	ZAE	32.33	ETE	175.05	ZAC	88.98	ETC	255.87	CLP	21.54

PLANETOCENTRIC CONIC

C3	26.403	VHL	5.138	DLA	-7.94	RAL	227.50	RAD	6568.1	VEL	12.156	PTH	2.18	VHP	7.798	DPA	-9.50	RAP	196.99	ECC	1.4345

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 45	2033.32	-14.80	30.32	91.85	114.42	22 31 38	1433.3	-11.38	23.31
90.00	8 0 3	5174.65	25.77	231.48	96.14	77.84	9 26 18	4574.6	23.84	223.34
100.00	23 15 16	1783.26	-15.93	11.39	91.30	115.63	23 44 59	1183.3	-12.35	4.42
100.00	9 25 13	4899.94	26.99	210.97	95.83	76.64	10 46 53	4299.9	24.88	202.80
110.00	0 18 42	1596.94	-18.93	355.62	89.68	119.01	0 45 19	996.9	-14.92	348.80
110.00	10 42 12	4659.03	30.25	191.68	94.83	73.27	11 59 51	4059.0	27.67	183.44

DIFFERENTIAL CORRECTIONS

TDE	-2.0028	TRA	11.2696	TC	-10.1916	BAU	3.5983
RDE	.5355	RRA	.0666	RC3	.2162	FAU	-.00329
FDE	-.4655	FRA	.8698	FC3	.1078	BSP	58179
BDE	2.0732	BRA	11.2698	BC3	10.1939	FSP	299

MID-COURSE EXECUTION ACCURACY

SGT	16603.2	SGR	641.5	SG3	96.2		
RRT	-.2544	RRF	-.2966	RTF	.6718		
SGB	16615.6	R23	.1297	R13	-.6718		
SG1	16604.0	SG2	620.3	THA	179.44		

ORBIT DETERMINATION ACCURACY

ST	4424.3	SR	597.5	SS	401.8		
CRT	-.4728	CRS	.8510	CST	-.8626		
LSA	4447.1	MSA	561.8	SSA	20.3		
EL1	4433.5	EL2	525.4	ALF	176.29		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 359.194 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	35.441	GAL	.96	AZL	88.84	HCA	110.41	SMA	242.73	ECC	.39375	INC	1.1552	V1	30.260
RP	243.87	LAP	1.08	LOP	193.48	VP	23.273	GAP	23.19	AZP	90.40	TAL	3.40	TAP	113.81	RCA	147.16	APO	338.31	V2	22.498
RC	135.719	GL	7.79	GP	2.21	ZAL	81.73	ZAP	173.83	ETS	157.70	ZAE	152.10	ETE	2.34	ZAC	91.54	ETC	255.94	CLP	174 24

PLANETOCENTRIC CONIC

C3	27.806	VHL	5.273	DLA	13.19	RAL	169.00	RAD	6568.1	VEL	12.214	PTH	2.19	VHP	10.619	DPA	.08	RAP	188.49	ECC	1.4576

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 46	2717.31	-27.77	75.81	40.92	95.80	16 3 4	2117.3	-26.67	67.32
90.00	6 45 29	4516.39	10.07	189.82	34.02	63.39	8 0 46	3916.4	6.41	183.05
100.00	16 45 59	2432.81	-29.13	54.71	40.75	97.02	17 26 32	1832.8	-27.85	46.14
100.00	7 59 58	4276.11	11.29	171.52	33.38	62.14	9 11 14	3676.1	7.47	164.81
110.00	18 9 41	2170.91	-32.75	34.18	40.10	100.38	18 45 52	1570.9	-30.97	25.41
110.00	8 52 45	4110.78	14.47	157.12	31.53	58.69	10 1 16	3510.8	10.22	150.60

DIFFERENTIAL CORRECTIONS

TDE	.3540	TRA	-1.1271	TC3	1.1331	BAU	.4212
RDE	-.5470	RRA	-.2317	RC3	-.0059	FAU	.06109
FDE	.0561	FRA	.3416	FC3	-1.9019	BSP	5662
BDE	.6515	BRA	1.1506	BC3	1.1331	FSP	474

MID-COURSE EXECUTION ACCURACY

SGT	1777.1	SGR	648.2	SG3	176.5		
RRT	.0774	RRF	-.0923	RTF	-.7860		
SGB	1891.6	R23	-.0223	R13	-.7863		
SG1	1777.9	SG2	645.9	THA	1.86		

ORBIT DETERMINATION ACCURACY

ST	540.0	SR	599.4	SS	131.1
CRT	-.6158	CRS	.5265	CST	.2834
LSA	726.8	MSA	371.2	SSA	44.3
EL1	726.4	EL2	351.1	ALF	130.19

LAUNCH DATE DEC 15 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 361.346 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	35.315	GAL	1.11	AZL	88.86	HCA	111.32	SMA	238.85	ECC	.38400	INC	1.1364	V1	30.260
RP	243.63	LAP	1.06	LOP	194.39	VP	23.105	GAP	22.55	AZP	90.41	TAL	3.99	TAP	115.31	RCA	147.13	APO	330.57	V2	22.522
RC	137.915	GL	7.80	GP	2.27	ZAL	80.56	ZAP	173.26	ETS	158.96	ZAE	152.09	ETE	2.60	ZAC	91.67	ETC	255.93	CLP	173.66

PLANETOCENTRIC CONIC

C3	26.629	VHL	5.160	DLA	13.66	RAL	167.91	RAD	6568.1	VEL	12.166	PTH	2.18	VHP	10.356	DPA	-.00	RAP	188.82	ECC	1.4382

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 18	2722.79	-27.80	76.21	39.22	95.60	15 54 41	2122.8	-26.74	67.71
90.00	6 45 13	4489.40	9.24	188.27	32.29	63.11	8 0 3	3889.4	5.56	181.52
100.00	16 37 50	2437.29	-29.17	55.04	39.05	96.85	17 18 27	1837.3	-27.91	46.46
100.00	7 59 23	4250.13	10.46	170.04	31.65	61.84	9 10 13	3650.1	6.61	163.36
110.00	18 2 12	2173.28	-32.78	34.36	38.41	100.28	18 38 25	1573.3	-31.02	25.58
110.00	8 51 30	4086.91	13.62	155.79	29.79	58.34	9 59 37	3486.9	9.34	149.31

DIFFERENTIAL CORRECTIONS

TDE	.3325	TRA	-1.0976	TC3	1.2158	BAU	.4328
RDE	-.5345	RRA	-.2242	RC3	-.0018	FAU	.06326
FDE	.0736	FRA	.3227	FC3	-2.0565	BSP	5799
BDE	.6295	BRA	1.1202	BC3	1.2158	FSP	502

MID-COURSE EXECUTION ACCURACY

SGT	1812.1	SGR	646.4	SG3	186.3		
RRT	.0852	RRF	-.0998	RTF	-.7924		
SGB	1923.9	R23	-.0226	R13	-.7928		
SG1	1813.1	SG2	643.7	THA	1.99		

ORBIT DETERMINATION ACCURACY

ST	528.5	SR	598.4	SS	135.6
CRT	-.6014	CRS	.6285	CST	.1728
LSA	717.6	MSA	372.4	SSA	46.2
EL1	716.2	EL2	352.8	ALF	129.15

LAUNCH DATE DEC 15 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 363.627 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	35.196	GAL	1.25	AZL	88.88	HCA	112.24	SMA	235.27	ECC	.37475	INC	1.1174	V1	30.260
RP	243.38	LAP	1.03	LOP	195.30	VP	22.946	GAP	21.92	AZP	90.42	TAL	4.58	TAP	116.82	RCA	147.10	APO	323.44	V2	22.547
RC	140.134	GL	7.80	GP	2.34	ZAL	79.39	ZAP	172.68	ETS	160.03	ZAE	152.13	ETE	2.88	ZAC	91.81	ETC	255.92	CLP	173.07

PLANETOCENTRIC CONIC

C3	25.551	VHL	5.055	DLA	14.13	RAL	166.79	RAD	6568.0	VEL	12.121	PTH	2.17	VHP	10.100	DPA	-.08	RAP	189.14	ECC	1.4205

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 45	2728.74	-27.84	76.64	37.53	95.39	15 46 13	2128.7	-26.80	68.13
90.00	6 44 53	4463.00	8.42	186.76	30.59	62.87	7 59 16	3863.0	4.72	180.04
100.00	16 29 35	2442.21	-29.21	55.40	37.36	96.66	17 10 18	1842.2	-27.98	46.81
100.00	7 58 43	4224.75	9.64	168.60	29.94	61.57	9 9 8	3624.8	5.77	161.95
110.00	17 54 39	2176.08	-32.82	34.57	36.74	100.16	18 30 55	1576.1	-31.07	25.78
110.00	8 50 9	4063.66	12.79	154.51	28.07	58.03	9 57 53	3463.7	8.47	148.07

DIFFERENTIAL CORRECTIONS

TDE	.3127	TRA	-1.0652	TC3	1.3015	BAU	.4446
RDE	-.5227	RRA	-.2167	RC3	.0029	FAU	.06551
FDE	.0914	FRA	.3007	FC3	-2.2196	BSP	5965
BDE	.6091	BRA	1.0870	BC3	1.3015	FSP	536

MID-COURSE EXECUTION ACCURACY

SGT	1845.8	SGR	644.4	SG3	196.4		
RRT	.0919	RRF	-.1073	RTF	-.7990		
SGB	1955.0	R23	-.0238	R13	-.7994		
SG1	1846.9	SG2	641.3	THA	2.09		

ORBIT DETERMINATION ACCURACY

ST	516.5	SR	597.3	SS	141.8
CRT	-.5887	CRS	.7154	CST	.0632
LSA	709.3	MSA	371.8	SSA	48.1
EL1	706.3	EL2	353.0	ALF	128.04

LAUNCH DATE DEC 15 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 366.025 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	35.081	GAL	1.39	AZL	88.90	HCA	113.15	SMA	231.96	ECC	.36598	INC	1.0980	V1	30.260
RP	243.12	LAP	1.01	LOP	196.22	VP	22.795	GAP	21.30	AZP	90.43	TAL	5.18	TAP	118.33	RCA	147.07	APO	316.86	V2	22.572
RC	142.373	GL	7.79	GP	2.41	ZAL	78.20	ZAP	172.10	ETS	160.94	ZAE	152.22	ETE	3.16	ZAC	91.95	ETC	255.91	CLP	172.47

PLANETOCENTRIC CONIC

C3	24.563	VHL	4.956	DLA	14.58	RAL	165.66	RAD	6568.0	VEL	12.081	PTH	2.16	VHP	9.851	DPA	-.15	RAP	189.46	ECC	1.4043

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 8	2735.08	-27.88	77.10	35.86	95.16	15 37 43	2135.1	-26.87	68.58
90.00	6 44 27	4437.24	7.62	185.29	28.90	62.65	7 58 24	3837.2	3.89	178.59
100.00	16 21 18	2447.52	-29.25	55.79	35.70	96.46	17 2 6	1847.5	-28.05	47.19
100.00	7 57 58	4200.03	8.83	167.20	28.25	61.33	9 7 58	3600.0	4.94	160.58
110.00	17 47 3	2179.24	-32.85	34.81	35.09	100.02	18 23 22	1579.2	-31.12	26.01
110.00	8 48 43	4041.07	11.97	153.27	26.37	57.74	9 56 4	3441.1	7.63	146.87

DIFFERENTIAL CORRECTIONS

TDE	.2923	TRA	-1.0344	TC3	1.3890	BAU	.4561
RDE	-.5115	RRA	-.2095	RC3	.0084	FAU	.06788
FDE	.1109	FRA	.2774	FC3	-2.3923	BSP	6093
BDE	.5892	BRA	1.0554	BC3	1.3890	FSP	568

MID-COURSE EXECUTION ACCURACY

SGT	1880.6	SGR	642.2	SG3	207.2		
RRT	.1000	RRF	-.1159	RTF	-.8052		
SGB	1987.2	R23	-.0249	R13	-.8056		
SG1	1881.9	SG2	638.5	THA	2.21		

ORBIT DETERMINATION ACCURACY

ST	503.3	SR	596.1	SS	150.8
CRT	-.5733	CRS	.7888	CST	-.0396
LSA	700.8	MSA	371.1	SSA	50.2
EL1	695.5	EL2	353.5	ALF	126.74

LAUNCH DATE DEC 15 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 368.528 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	34.972	GAL	1.52	AZL	88.92	HCA	114.07	SMA	228.90	ECC	.35766	INC	1.0784	V1	30.260
RP	242.87	LAP	.98	LOP	197.14	VP	22.652	GAP	20.68	AZP	90.44	TAL	5.79	TAP	119.86	RCA	147.03	APO	310.77	V2	22.598
RC	144.629	GL	7.78	GP	2.48	ZAL	77.00	ZAP	171.49	ETS	161.72	ZAE	152.34	ETE	3.46	ZAC	92.09	ETC	255.90	CLP	171.86

PLANETOCENTRIC CONIC

C3	23.659	VHL	4.864	DLA	15.03	RAL	164.51	RAD	6568.0	VEL	12.043	PTH	2.15	VHP	9.609	DPA	-.21	RAP	189.77	ECC	1.3894

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 43 30	2741.76	-27.92	77.58	34.20	94.92	15 29 11	2141.8	-26.95	69.05
90.00	6 43 55	4412.17	6.83	183.87	27.25	62.45	7 57 27	3812.2	3.09	177.19
100.00	16 12 59	2453.15	-29.29	56.20	34.05	96.25	16 53 52	1853.1	-28.12	47.60
100.00	7 57 7	4176.01	8.05	165.85	26.59	61.11	9 6 43	3576.0	4.13	159.25
110.00	17 39 25	2182.72	-32.89	35.07	33.45	99.87	18 15 48	1582.7	-31.18	26.27
110.00	8 47 11	4019.20	11.17	152.08	24.71	57.48	9 54 10	3419.2	6.81	145.71

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2725	TRA	-1.0017	TC3	1.4768	BAU	.4671	SGT	1913.0	SGR	639.8	SG3	218.3	ST	489.1	SR	594.8	SS	161.9
RDE	-.5010	RRA	-.2023	RC3	.0145	FAU	.07033	RRT	.1080	RRF	-.1250	RTF	-.8112	CRT	-.5579	CRS	.8462	CST	-.1337
FDE	.1313	FRA	.2511	FC3	-2.5734	BSP	6230	SGB	2017.2	R23	-.0267	R13	-.8116	LSA	693.1	MSA	369.0	SSA	52.4
BDE	.5703	BRA	1.0219	BC3	1.4769	FSP	604	SG1	1914.4	SG2	635.6	THA	2.33	EL1	684.6	EL2	352.7	ALF	125.29

LAUNCH DATE DEC 15 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 371.127 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	34.868	GAL	1.66	AZL	88.94	HCA	114.99	SMA	226.06	ECC	.34977	INC	1.0585	V1	30.260
RP	242.60	LAP	.96	LOP	198.06	VP	22.517	GAP	20.06	AZP	90.45	TAL	6.40	TAP	121.39	RCA	146.99	APO	305.13	V2	22.624
RC	146.900	GL	7.74	GP	2.56	ZAL	75.80	ZAP	170.88	ETS	162.40	ZAE	152.51	ETE	3.78	ZAC	92.23	ETC	255.89	CLP	171.25

PLANETOCENTRIC CONIC

C3	22.832	VHL	4.778	DLA	15.47	RAL	163.35	RAD	6567.9	VEL	12.009	PTH	2.14	VHP	9.373	DPA	-.27	RAP	190.08	ECC	1.3758

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 34 51	2748.71	-27.96	78.09	32.57	94.67	15 20 40	2148.7	-27.02	69.55
90.00	6 43 18	4387.87	6.07	182.50	25.62	62.29	7 56 26	3787.9	2.31	175.83
100.00	16 4 40	2459.04	-29.33	56.64	32.42	96.02	16 45 39	1859.0	-28.19	48.02
100.00	7 56 10	4152.76	7.28	164.55	24.96	60.93	9 5 23	3552.8	3.35	157.97
110.00	17 31 47	2186.47	-32.94	35.36	31.84	99.71	18 8 13	1586.5	-31.25	26.54
110.00	8 45 33	3998.10	10.40	150.93	23.06	57.25	9 52 11	3398.1	6.01	144.59

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2534	TRA	-.9695	TC3	1.5668	BAU	.4783	SGT	1946.6	SGR	637.2	SG3	230.2	ST	474.6	SR	593.3	SS	174.6
RDE	-.4910	RRA	-.1952	RC3	.0214	FAU	.07295	RRT	.1166	RRF	-.1347	RTF	-.8168	CRT	-.5416	CRS	.8879	CST	-.2141
FDE	.1522	FRA	.2221	FC3	-2.7659	BSP	6367	SGB	2048.2	R23	-.0283	R13	-.8173	LSA	686.2	MSA	365.9	SSA	54.8
BDE	.5525	BRA	.9890	BC3	1.5669	FSP	643	SG1	1948.2	SG2	632.4	THA	2.44	EL1	673.6	EL2	351.4	ALF	123.72

LAUNCH DATE DEC 15 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 373.814 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	34.768	GAL	1.79	AZL	88.96	HCA	115.91	SMA	223.43	ECC	.34229	INC	1.0382	V1	30.260
RP	242.34	LAP	.93	LOP	198.98	VP	22.390	GAP	19.44	AZP	90.45	TAL	7.01	TAP	122.93	RCA	146.95	APO	299.90	V2	22.651
RC	149.184	GL	7.70	GP	2.64	ZAL	74.59	ZAP	170.26	ETS	162.99	ZAE	152.71	ETE	4.11	ZAC	92.37	ETC	255.88	CLP	170.62

PLANETOCENTRIC CONIC

C3	22.076	VHL	4.699	DLA	15.89	RAL	162.18	RAD	6567.9	VEL	11.977	PTH	2.13	VHP	9.143	DPA	-.32	RAP	190.39	ECC	1.3633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 26 14	2755.85	-28.00	78.61	30.96	94.41	15 12 9	2155.9	-27.09	70.06
90.00	6 42 35	4364.37	5.32	181.17	24.01	62.15	7 55 19	3764.4	1.55	174.52
100.00	15 56 23	2465.13	-29.38	57.08	30.82	95.79	16 37 28	1865.1	-28.26	48.46
100.00	7 55 7	4130.33	6.54	163.30	23.35	60.77	9 3 57	3530.3	2.59	156.74
110.00	17 24 10	2190.43	-32.98	35.66	30.25	99.54	18 0 41	1590.4	-31.31	26.83
110.00	8 43 49	3977.80	9.65	149.84	21.45	57.05	9 50 6	3377.8	5.24	143.52

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2339	TRA	-.9372	TC3	1.6577	BAU	.4893	SGT	1979.9	SGR	634.5	SG3	242.7	ST	458.9	SR	591.6	SS	189.6
RDE	-.4816	RRA	-.1883	RC3	.0291	FAU	.07571	RRT	.1264	RRF	-.1455	RTF	-.8226	CRT	-.5227	CRS	.9174	CST	-.2798
FDE	.1746	FRA	.1916	FC3	-2.9688	BSP	6500	SGB	2079.0	R23	-.0301	R13	-.8231	LSA	679.9	MSA	362.1	SSA	57.3
BDE	.5354	BRA	.9559	BC3	1.6579	FSP	683	SG1	1981.7	SG2	628.9	THA	2.58	EL1	662.1	EL2	349.6	ALF	121.92

LAUNCH DATE DEC 15 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 376.582 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	34.673	GAL	1.91	AZL	88.98	HCA	116.84	SMA	220.97	ECC	.33520	INC	1.0175	V1	30.260
RP	242.06	LAP	.91	LOP	199.90	VP	22.270	GAP	18.83	AZP	90.46	TAL	7.63	TAP	124.47	RCA	146.90	APO	295.04	V2	22.678
RC	151.478	GL	7.65	GP	2.72	ZAL	73.39	ZAP	169.63	ETS	163.51	ZAE	152.96	ETE	4.45	ZAC	92.51	ETC	255.88	CLP	169.99

PLANETOCENTRIC CONIC

C3	21.386	VHL	4.624	DLA	16.30	RAL	161.00	RAD	6567.9	VEL	11.948	PTH	2.13	VHP	8.920	DPA	-.36	RAP	190.68	ECC	1.3520

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 17 39	2763.13	-28.04	79.14	29.37	94.15	15 3 42	2163.1	-27.17	70.58
90.00	6 41 45	4341.75	4.60	179.90	22.44	62.03	7 54 7	3741.8	.82	173.26
100.00	15 48 8	2471.36	-29.42	57.54	29.23	95.55	16 29 19	1871.4	-28.34	48.90
100.00	7 53 58	4108.76	5.82	162.11	21.77	60.63	9 2 26	3508.8	1.86	155.55
110.00	17 16 36	2194.53	-33.03	35.97	28.68	99.36	17 53 11	1594.5	-31.38	27.13
110.00	8 41 58	3958.35	8.93	148.79	19.87	56.87	9 47 57	3358.4	4.50	142.50

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2144	TRA	-.9043	TC3	1.7490	BAU	.5002	SGT	2012.4	SGR	631.7	SG3	255.8	ST	442.2	SR	589.9	SS	206.5
RDE	-.4727	RRA	-.1814	RC3	.0377	FAU	.07862	RRT	.1370	RRF	-.1572	RTF	-.8280	CRT	-.5020	CRS	.9375	CST	-.3344
FDE	.1982	FRA	.1573	FC3	-3.1828	BSP	6616	SGB	2109.2	R23	-.0320	R13	-.8285	LSA	674.6	MSA	357.0	SSA	60.0
BDE	.5191	BRA	.9223	BC3	1.7494	FSP	724	SG1	2014.5	SG2	625.1	THA	2.72	EL1	650.6	EL2	346.8	ALF	119.90

LAUNCH DATE DEC 15 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 379.423 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	34.583	GAL	2.04	AZL	89.00	HCA	117.76	SMA	218.69	ECC	.32848	INC	.9965	V1	30.260
RP	241.79	LAP	.88	LOP	200.83	VP	22.157	GAP	18.23	AZP	90.46	TAL	8.25	TAP	126.01	RCA	146.85	APO	290.52	V2	22.706
RC	153.781	GL	7.58	GP	2.81	ZAL	72.19	ZAP	168.98	ETS	163.96	ZAE	153.24	ETE	4.82	ZAC	92.66	ETC	255.87	CLP	169.34

PLANETOCENTRIC CONIC

C3	20.755	VHL	4.556	DLA	16.69	RAL	159.81	RAD	6567.8	VEL	11.922	PTH	2.12	VHP	8.702	DPA	-.40	RAP	190.97	ECC	1.3416

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 9 10	2770.46	-28.07	79.67	27.80	93.88	14 55 20	2170.5	-27.24	71.10
90.00	6 40 49	4320.05	3.90	178.68	20.90	61.93	7 52 49	3720.0	.12	172.05
100.00	15 39 58	2477.64	-29.46	58.00	27.67	95.31	16 21 16	1877.6	-28.41	49.36
100.00	7 52 42	4088.10	5.13	160.96	20.22	60.51	9 0 50	3488.1	1.16	154.42
110.00	17 9 7	2198.72	-33.07	36.29	27.14	99.17	17 45 45	1598.7	-31.45	27.43
110.00	8 40 2	3939.78	8.24	147.80	18.31	56.71	9 45 42	3339.8	3.80	141.52

DIFFERENTIAL CORRECTIONS

TDE	.1957	TRA	-.8719	TC3	1.8380	BAU	.5102
RDE	-.4643	RRA	-.1745	RC3	.0472	FAU	.08164
FDE	.2222	FRA	.1206	FC3	-3.4054	BSP	6761
BDE	.5039	BRA	.8892	BC3	1.8386	FSP	770

MID-COURSE EXECUTION ACCURACY

SGT	2043.5	SGR	628.8	SG3	269.5		
RRT	.1483	RRF	-.1697	RTF	-.8329		
SGB	2138.0	R23	-.0340	R13	-.8335		
SG1	2045.8	SG2	621.1	THA	2.88		

ORBIT DETERMINATION ACCURACY

ST	425.5	SR	588.0	SS	224.3		
CRT	-.4798	CRS	.9495	CST	-.3765		
LSA	670.8	MSA	351.1	SSA	62.8		
EL1	639.5	EL2	343.2	ALF	117.77		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 382.332 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	34.496	GAL	2.16	AZL	89.02	HCA	118.69	SMA	216.55	ECC	.32210	INC	.9750	V1	30.260
RP	241.51	LAP	.86	LOP	201.76	VP	22.050	GAP	17.63	AZP	90.47	TAL	8.87	TAP	127.56	RCA	146.80	APO	286.31	V2	22.734
RC	156.092	GL	7.50	GP	2.90	ZAL	71.00	ZAP	168.32	ETS	164.36	ZAE	153.55	ETE	5.21	ZAC	92.81	ETC	255.86	CLP	168.68

PLANETOCENTRIC CONIC

C3	20.180	VHL	4.492	DLA	17.06	RAL	158.63	RAD	6567.8	VEL	11.898	PTH	2.11	VHP	8.489	DPA	-.43	RAP	191.26	ECC	1.3321

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 0 46	2777.81	-28.10	80.21	26.26	93.62	14 47 3	2177.8	-27.31	71.63
90.00	6 39 45	4299.27	3.24	177.52	19.38	61.85	7 51 24	3699.3	-.55	170.89
100.00	15 31 53	2483.94	-29.50	58.47	26.14	95.07	16 13 17	1883.9	-28.48	49.81
100.00	7 51 18	4068.37	4.46	159.87	18.70	60.41	8 59 7	3468.4	.49	153.34
110.00	17 1 41	2202.97	-33.12	36.61	25.62	98.99	17 38 24	1603.0	-31.52	27.75
110.00	8 38 0	3922.11	7.57	146.86	16.78	56.57	9 43 22	3322.1	3.13	140.60

DIFFERENTIAL CORRECTIONS

TDE	.1866	TRA	-.8297	TC3	1.9462	BAU	.5253
RDE	-.4566	RRA	-.1678	RC3	.0574	FAU	.08478
FDE	.2489	FRA	.0820	FC3	-3.6372	BSP	6665
BDE	.4932	BRA	.8465	BC3	1.9470	FSP	821

MID-COURSE EXECUTION ACCURACY

SGT	2083.1	SGR	626.0	SG3	283.8		
RRT	.1529	RRF	-.1837	RTF	-.8417		
SGB	2175.1	R23	-.0431	R13	-.8424		
SG1	2085.5	SG2	617.9	THA	2.88		

ORBIT DETERMINATION ACCURACY

ST	411.9	SR	586.2	SS	244.9		
CRT	-.4814	CRS	.9566	CST	.4328		
LSA	673.4	MSA	339.8	SSA	65.6		
EL1	633.9	EL2	333.9	ALF	116.60		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 385.303 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	34.413	GAL	2.27	AZL	89.05	HCA	119.62	SMA	214.56	ECC	.31606	INC	.9531	V1	30.260
RP	241.22	LAP	.83	LOP	202.69	VP	21.950	GAP	17.03	AZP	90.47	TAL	9.49	TAP	129.11	RCA	146.75	APO	282.38	V2	22.762
RC	158.408	GL	7.41	GP	3.00	ZAL	69.81	ZAP	167.65	ETS	164.72	ZAE	153.91	ETE	5.62	ZAC	92.96	ETC	255.85	CLP	168.01

PLANETOCENTRIC CONIC

C3	19.657	VHL	4.434	DLA	17.42	RAL	157.45	RAD	6567.8	VEL	11.876	PTH	2.11	VHP	8.283	DPA	-.45	RAP	191.53	ECC	1.3235

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 52 31	2785.01	-28.13	80.73	24.75	93.36	14 38 56	2185.0	-27.37	72.15
90.00	6 38 34	4279.57	2.60	176.42	17.90	61.79	7 49 53	3679.6	-1.19	169.79
100.00	15 23 58	2490.12	-29.53	58.93	24.64	94.83	16 5 28	1890.1	-28.55	50.26
100.00	7 49 48	4049.68	3.83	158.84	17.22	60.33	8 57 18	3449.7	-.14	152.31
110.00	16 54 24	2207.15	-33.16	36.93	24.13	98.80	17 31 11	1607.2	-31.59	28.05
110.00	8 35 51	3905.41	6.95	145.98	15.29	56.45	9 40 57	3305.4	2.49	139.73

DIFFERENTIAL CORRECTIONS

TDE	.1642	TRA	-.8020	TC3	2.0246	BAU	.5324
RDE	-.4490	RRA	-.1610	RC3	.0689	FAU	.08819
FDE	.2736	FRA	.0378	FC3	-3.8842	BSP	6901
BDE	.4781	BRA	.8180	BC3	2.0258	FSP	869

MID-COURSE EXECUTION ACCURACY

SGT	2109.0	SGR	622.9	SG3	299.2		
RRT	.1700	RRF	-.1979	RTF	-.8440		
SGB	2199.0	R23	-.0417	R13	-.8448		
SG1	2111.9	SG2	613.0	THA	3.14		

ORBIT DETERMINATION ACCURACY

ST	392.6	SR	584.0	SS	263.8		
CRT	-.4438	CRS	.9585	CST	-.4454		
LSA	669.5	MSA	334.2	SSA	68.8		
EL1	621.0	EL2	330.8	ALF	113.72		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 388.331 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	34.335	GAL	2.39	AZL	89.07	HCA	120.56	SMA	212.70	ECC	.31034	INC	.9308	V1	30.260
RP	240.93	LAP	.80	LOP	203.62	VP	21.857	GAP	16.44	AZP	90.47	TAL	10.10	TAP	130.66	RCA	146.69	APO	278.71	V2	22.791
RC	160.729	GL	7.31	GP	3.10	ZAL	68.64	ZAP	166.96	ETS	165.03	ZAE	154.29	ETE	6.07	ZAC	93.11	ETC	255.85	CLP	167.33

PLANETOCENTRIC CONIC

C3	19.180	VHL	4.379	DLA	17.75	RAL	156.27	RAD	6567.8	VEL	11.856	PTH	2.10	VHP	8.081	DPA	-.46	RAP	191.80	ECC	1.3157

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 44 26	2792.04	-28.16	81.24	23.27	93.10	14 30 58	2192.0	-27.43	72.65
90.00	6 37 15	4260.91	2.00	175.38	16.45	61.75	7 48 15	3660.9	-1.79	168.75
100.00	15 16 11	2496.16	-29.57	59.37	23.16	94.60	15 57 48	1896.2	-28.62	50.70
100.00	7 48 11	4032.01	3.24	157.87	15.76	60.27	8 55 23	3432.0	-.74	151.34
110.00	16 47 15	2211.26	-33.21	37.24	22.66	98.62	17 24 6	1611.3	-31.66	28.35
110.00	8 33 36	3889.68	6.35	145.14	13.83	56.34	9 38 26	3289.7	1.89	138.91

DIFFERENTIAL CORRECTIONS

TDE	.1449	TRA	-.7716	TC3	2.1063	BAU	.5405
RDE	-.4419	RRA	-.1542	RC3	.0814	FAU	.09176
FDE	.2995	FRA	-.0091	FC3	-4.1418	BSP	7078
BDE	.4651	BRA	.7868	BC3	2.1079	FSP	921

MID-COURSE EXECUTION ACCURACY

SGT	2136.2	SGR	619.9	SG3	315.3		
RRT	.1861	RRF	-.2134	RTF	-.8474		
SGB	2224.3	R23	-.0425	R13	-.8483		
SG1	2139.5	SG2	608.1	THA	3.36		

ORBIT DETERMINATION ACCURACY

ST	374.3	SR	581.7	SS	283.9		
CRT	-.4100	CRS	.9577	CST	-.4562		
LSA	668.6	MSA	326.9	SSA	72.1		
EL1	610.4	EL2	325.3	ALF	111.01		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 391.413 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	34.259	GAL	2.50	AZL	89.09	HCA	121.49	SMA	210.96	ECC	.30492	INC	.9079
RP	240.64	LAP	.77	LOP	204.56	VP	21.770	GAP	15.86	AZP	90.47	TAL	10.72	TAP	132.21	RCA	146.63	APO	275.28
RC	163.052	GL	7.20	GP	3.20	ZAL	67.48	ZAP	166.26	ETS	165.31	ZAE	154.72	ETE	6.55	ZAC	93.27	ETC	255.84

V1	30.260	V2	22.821	CLP	166.63														

PLANETOCENTRIC CONIC

C3	18.746	VHL	4.330	DLA	18.07	RAL	155.10	RAD	6567.8	VEL	11.838	PTH	2.10	VHP	7.885	DPA	-.46	RAP	192.06
ECC	1.3085																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 36 33	2798.84	-28.18	81.74	21.81	92.85	14 23 12	2198.8	-27.49	73.14
90.00	6 35 47	4243.33	1.44	174.40	15.03	61.72	7 46 30	3643.3	-2.35	167.77
100.00	15 8 36	2501.99	-29.60	59.80	21.71	94.38	15 50 18	1902.0	-28.68	51.12
100.00	7 46 25	4015.40	2.68	156.95	14.34	60.22	8 53 21	3415.4	-1.31	150.43
110.00	16 40 15	2215.23	-33.25	37.54	21.23	98.45	17 17 11	1615.2	-31.72	28.65
110.00	8 31 15	3874.94	5.80	144.37	12.40	56.25	9 35 50	3274.9	1.32	138.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1273	TRA	-.7403	TC3	2.1882	BAU	.5489	SGT	2163.5	SGR	616.9	SG3	332.2	ST	356.6	SR	579.3	SS	305.2
RDE	-.4353	RRA	-.1473	RC3	.0950	FAU	.09550	RRT	.2024	RRF	-.2303	RTF	-.8510	CRT	-.3769	CRS	.9549	CST	-.4632
FDE	.3268	FRA	-.0595	FC3	-4.4105	BSP	7230	SGB	2249.7	R23	-.0444	R13	-.8519	LSA	669.9	MSA	318.6	SSA	75.3
BDE	.4535	BRA	.7548	BC3	2.1902	FSP	976	SG1	2167.4	SG2	603.1	THA	3.58	EL1	601.2	EL2	318.3	ALF	108.38

LAUNCH DATE DEC 15 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 394.545 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	34.188	GAL	2.61	AZL	89.12	HCA	122.43	SMA	209.32	ECC	.29979	INC	.8845
RP	240.34	LAP	.75	LOP	205.49	VP	21.688	GAP	15.28	AZP	90.47	TAL	11.33	TAP	133.76	RCA	146.57	APO	272.07
RC	165.375	GL	7.07	GP	3.31	ZAL	66.34	ZAP	165.55	ETS	165.55	ZAE	155.17	ETE	7.06	ZAC	93.43	ETC	255.83

V1	30.260	V2	22.851	CLP	165.92														

PLANETOCENTRIC CONIC

C3	18.352	VHL	4.284	DLA	18.36	RAL	153.93	RAD	6567.7	VEL	11.821	PTH	2.09	VHP	7.694	DPA	-.46	RAP	192.32
ECC	1.3020																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 28 52	2805.31	-28.21	82.21	20.39	92.62	14 15 38	2205.3	-27.54	73.61
90.00	6 34 11	4226.88	.91	173.48	13.64	61.70	7 44 38	3626.9	-2.88	166.85
100.00	15 1 13	2507.55	-29.63	60.21	20.29	94.16	15 43 0	1907.5	-28.74	51.52
100.00	7 44 32	3999.88	2.15	156.10	12.95	60.18	8 51 12	3399.9	-1.83	149.58
110.00	16 33 26	2219.01	-33.28	37.83	19.83	98.28	17 10 25	1619.0	-31.78	28.93
110.00	8 28 48	3861.19	5.28	143.64	11.00	56.18	9 33 9	3261.2	.80	137.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1110	TRA	-.7081	TC3	2.2684	BAU	.5572	SGT	2189.8	SGR	614.1	SG3	349.8	ST	339.2	SR	576.8	SS	326.8
RDE	-.4289	RRA	-.1404	RC3	.1096	FAU	.09941	RRT	.2192	RRF	-.2484	RTF	-.8547	CRT	-.3437	CRS	.9505	CST	-.4666
FDE	.3545	FRA	-.1140	FC3	-4.6893	BSP	7338	SGB	2274.2	R23	-.0470	R13	-.8557	LSA	672.6	MSA	309.8	SSA	78.6
BDE	.4431	BRA	.7219	BC3	2.2710	FSP	1034	SG1	2194.2	SG2	597.9	THA	3.80	EL1	593.1	EL2	309.8	ALF	105.86

LAUNCH DATE DEC 15 1964 FLIGHT TIME 168.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 397.722 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	34.119	GAL	2.71	AZL	89.14	HCA	123.37	SMA	207.79	ECC	.29493	INC	.8605
RP	240.04	LAP	.72	LOP	206.43	VP	21.612	GAP	14.71	AZP	90.47	TAL	11.94	TAP	135.30	RCA	146.51	APO	269.07
RC	167.697	GL	6.93	GP	3.43	ZAL	65.22	ZAP	164.82	ETS	165.77	ZAE	155.66	ETE	7.62	ZAC	93.59	ETC	255.83

V1	30.260	V2	22.881	CLP	165.20														

PLANETOCENTRIC CONIC

C3	17.995	VHL	4.242	DLA	18.63	RAL	152.78	RAD	6567.7	VEL	11.806	PTH	2.09	VHP	7.507	DPA	-.44	RAP	192.56
ECC	1.2961																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 21 26	2811.41	-28.22	82.66	19.00	92.39	14 8 18	2211.4	-27.59	74.05
90.00	6 32 26	4211.60	.41	172.63	12.28	61.69	7 42 38	3611.6	-3.37	166.00
100.00	14 54 3	2512.76	-29.65	60.60	18.91	93.96	15 35 56	1912.8	-28.79	51.90
100.00	7 42 31	3985.48	1.66	155.31	11.59	60.15	8 48 56	3385.5	-2.32	148.79
110.00	16 26 49	2222.54	-33.32	38.10	18.45	98.13	17 3 51	1622.5	-31.84	29.19
110.00	8 26 14	3848.46	4.79	142.97	9.64	56.11	9 30 23	3248.5	.31	136.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0966	TRA	-.6762	TC3	2.3480	BAU	.5657	SGT	2216.8	SGR	611.5	SG3	368.5	ST	322.8	SR	574.1	SS	348.4
RDE	-.4230	RRA	-.1335	RC3	.1255	FAU	.10356	RRT	.2368	RRF	-.2679	RTF	-.8584	CRT	-.3121	CRS	.9450	CST	-.4677
FDE	.3826	FRA	-.1719	FC3	-4.9821	BSP	7456	SGB	2299.6	R23	-.0504	R13	-.8595	LSA	676.7	MSA	301.0	SSA	81.9
BDE	.4338	BRA	.6893	BC3	2.3513	FSP	1097	SG1	2221.9	SG2	592.7	THA	4.02	EL1	586.2	EL2	300.4	ALF	103.58

LAUNCH DATE DEC 15 1964 FLIGHT TIME 170.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 400.943 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	34.054	GAL	2.81	AZL	89.16	HCA	124.31	SMA	206.35	ECC	.29032	INC	.8361
RP	239.73	LAP	.69	LOP	207.38	VP	21.542	GAP	14.14	AZP	90.47	TAL	12.54	TAP	136.85	RCA	146.44	APO	266.26
RC	170.016	GL	6.78	GP	3.55	ZAL	64.12	ZAP	164.07	ETS	165.97	ZAE	156.18	ETE	8.22	ZAC	93.75	ETC	255.82

V1	30.260	V2	22.912	CLP	164.46														

PLANETOCENTRIC CONIC

C3	17.671	VHL	4.204	DLA	18.88	RAL	151.65	RAD	6567.7	VEL	11.792	PTH	2.08	VHP	7.326	DPA	-.41	RAP	192.80
ECC	1.2908																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 14 17	2817.05	-28.24	83.07	17.63	92.19	14 1 14	2217.0	-27.64	74.45
90.00	6 30 32	4197.50	-.04	171.84	10.96	61.68	7 40 30	3597.5	-3.83	165.21
100.00	14 47 9	2517.57	-29.67	60.95	17.55	93.78	15 29 6	1917.6	-28.84	52.25
100.00	7 40 21	3972.21	1.21	154.58	10.26	60.13	8 46 33	3372.2	-2.77	148.06
110.00	16 20 25	2225.78	-33.35	38.35	17.11	97.98	16 57 30	1625.8	-31.89	29.43
110.00	8 23 34	3836.76	4.35	142.36	8.31	56.06	9 27 31	3236.8	-.14	136.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0824	TRA	-.6446	TC3	2.4217	BAU	.5731	SGT	2240.5	SGR	609.1	SG3	388.0	ST	306.5	SR	571.4	SS	370.7
RDE	-.4173	RRA	-.1265	RC3	.1425	FAU	.10786	RRT	.2559	RRF	-.2889	RTF	-.8617	CRT	-.2765	CRS	.9389	CST	-.4624
FDE	.4118	FRA	-.2336	FC3	-5.2842	BSP	7548	SGB	2321.9	R23	-.0539	R13	-.8629	LSA	681.9	MSA	292.6	SSA	85.0
BDE	.4253	BRA	.6568	BC3	2.4259	FSP	1161	SG1	2246.3	SG2	587.3	THA	4.27	EL1	579.8	EL2	290.3	ALF	101.30

LAUNCH DATE DEC 15 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 404.205 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.991 GAL 2.91 AZL 89.19 HCA 125.25 SMA 204.99 ECC .28596 INC .8109 V1 30.260
RP 239.42 LAP .66 LOP 208.32 VP 21.476 GAP 13.58 AZP 90.47 TAL 13.13 TAP 138.39 RCA 146.37 APO 263.62 V2 22.943
RC 172.331 GL 6.62 GP 3.68 ZAL 63.04 ZAP 163.31 ETS 166.14 ZAE 156.73 ETE 8.88 ZAC 93.92 ETC 255.82 CLP 163.71

PLANETOCENTRIC CONIC

C3 17.377 VHL 4.169 DLA 19.10 RAL 150.52 RAD 6567.7 VEL 11.780 PTH 2.08 VHP 7.148 DPA -.37 RAP 193.02 ECC 1.2860

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 7 22	2822.22	-28.25	83.45	16.30	92.00	13 54 25	2222.2	-27.68	74.83
90.00	6 28 28	4184.56	-.46	171.12	9.67	61.69	7 38 13	3584.6	-4.24	164.48
100.00	14 40 29	2521.96	-29.69	61.28	16.22	93.61	15 22 31	1922.0	-28.88	52.57
100.00	7 38 3	3960.05	.80	153.92	8.97	60.12	8 44 3	3360.1	-3.18	147.39
110.00	16 14 13	2228.72	-33.38	38.57	15.79	97.85	16 51 21	1628.7	-31.93	29.64
110.00	8 20 48	3826.06	3.94	141.80	7.01	56.02	9 24 34	3226.1	-.55	135.59

DIFFERENTIAL CORRECTIONS
TDE .0848 TRA -.5973 TC3 2.5299 BAU .5889
RDE -.4119 RRA -.1193 RC3 .1608 FAU .11248
FDE .4400 FRA -.3020 FC3-5.6038 BSP 7276
BDE .4205 BRA .6091 BC3 2.5351 FSP 1227

MID-COURSE EXECUTION ACCURACY
SGT 2284.2 SGR 607.2 SG3 408.8
RRT .2651 RRF -.3107 RTF -.8700
SGB 2363.5 R23 -.0663 R13 -.8714
SG1 2290.2 SG2 583.9 THA 4.31

ORBIT DETERMINATION ACCURACY
ST 292.4 SR 568.6 SS 391.9
CRT -.3137 CRS .9314 CST -.5171
LSA 691.0 MSA 277.3 SSA 89.2
EL1 578.1 EL2 273.1 ALF 101.84

LAUNCH DATE DEC 15 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 407.502 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.932 GAL 3.00 AZL 89.21 HCA 126.20 SMA 203.73 ECC .28184 INC .7852 V1 30.260
RP 239.11 LAP .63 LOP 209.27 VP 21.416 GAP 13.03 AZP 90.46 TAL 13.72 TAP 139.92 RCA 146.31 APO 261.14 V2 22.975
RC 174.639 GL 6.45 GP 3.81 ZAL 61.99 ZAP 162.53 ETS 166.29 ZAE 157.32 ETE 9.61 ZAC 94.09 ETC 255.81 CLP 162.94

PLANETOCENTRIC CONIC

C3 17.112 VHL 4.137 DLA 19.30 RAL 149.42 RAD 6567.7 VEL 11.768 PTH 2.08 VHP 6.976 DPA -.32 RAP 193.24 ECC 1.2816

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 0 50	2826.72	-28.26	83.78	15.01	91.84	13 47 56	2226.7	-27.71	75.15
90.00	6 26 15	4172.94	-.84	170.47	8.42	61.69	7 35 48	3572.9	-4.61	163.83
100.00	14 34 9	2525.76	-29.71	61.56	14.93	93.46	15 16 15	1925.8	-28.91	52.85
100.00	7 35 36	3949.13	.43	153.32	7.71	60.11	8 41 25	3349.1	-3.55	146.79
110.00	16 8 18	2231.21	-33.40	38.76	14.51	97.74	16 45 30	1631.2	-31.97	29.83
110.00	8 17 57	3816.45	3.58	141.29	5.75	55.98	9 21 33	3216.4	-.91	135.09

DIFFERENTIAL CORRECTIONS
TDE .0590 TRA -.5797 TC3 2.5658 BAU .5884
RDE -.4067 RRA -.1120 RC3 .1806 FAU .11721
FDE .4707 FRA -.3720 FC3-5.9301 BSP 7702
BDE .4110 BRA .5904 BC3 2.5722 FSP 1303

MID-COURSE EXECUTION ACCURACY
SGT 2288.3 SGR 605.6 SG3 430.2
RRT .2966 RRF -.3351 RTF -.8686
SGB 2367.1 R23 -.0629 R13 -.8701
SG1 2295.8 SG2 576.4 THA 4.79

ORBIT DETERMINATION ACCURACY
ST 275.4 SR 565.5 SS 414.8
CRT -.2130 CRS .9247 CST -.4523
LSA 695.0 MSA 276.3 SSA 91.0
EL1 569.4 EL2 267.3 ALF 97.61

LAUNCH DATE DEC 15 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 410.835 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.875 GAL 3.10 AZL 89.24 HCA 127.15 SMA 202.53 ECC .27794 INC .7587 V1 30.260
RP 238.79 LAP .60 LOP 210.22 VP 21.361 GAP 12.48 AZP 90.46 TAL 14.30 TAP 141.45 RCA 146.24 APO 258.82 V2 23.007
RC 176.939 GL 6.26 GP 3.95 ZAL 60.96 ZAP 161.73 ETS 166.43 ZAE 157.93 ETE 10.40 ZAC 94.26 ETC 255.81 CLP 162.15

PLANETOCENTRIC CONIC

C3 16.871 VHL 4.107 DLA 19.48 RAL 148.34 RAD 6567.7 VEL 11.758 PTH 2.08 VHP 6.808 DPA -.26 RAP 193.44 ECC 1.2777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 54 35	2830.62	-28.27	84.06	13.75	91.69	13 41 46	2230.6	-27.74	75.44
90.00	6 23 52	4162.52	-1.17	169.89	7.19	61.71	7 33 14	3562.5	-4.94	163.24
100.00	14 28 7	2529.03	-29.72	61.80	13.68	93.33	15 10 16	1929.0	-28.94	53.08
100.00	7 33 1	3939.35	.10	152.78	6.49	60.11	8 38 40	3339.3	-3.88	146.25
110.00	16 2 38	2233.30	-33.42	38.93	13.26	97.65	16 39 52	1633.3	-32.00	29.98
110.00	8 14 59	3807.84	3.25	140.84	4.52	55.95	9 18 27	3207.8	-1.24	134.64

DIFFERENTIAL CORRECTIONS
TDE .0459 TRA -.5513 TC3 2.6256 BAU .5940
RDE -.4018 RRA -.1046 RC3 .2018 FAU .12225
FDE .5006 FRA -.4474 FC3-6.2729 BSP 7836
BDE .4044 BRA .5611 BC3 2.6333 FSP 1379

MID-COURSE EXECUTION ACCURACY
SGT 2306.9 SGR 604.6 SG3 452.9
RRT .3211 RRF -.3607 RTF -.8708
SGB 2384.8 R23 -.0663 R13 -.8724
SG1 2315.6 SG2 570.4 THA 5.12

ORBIT DETERMINATION ACCURACY
ST 261.1 SR 562.4 SS 436.6
CRT -.1649 CRS .9173 CST -.4299
LSA 702.1 MSA 271.0 SSA 93.3
EL1 564.4 EL2 256.6 ALF 95.52

LAUNCH DATE DEC 15 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 414.201 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.821 GAL 3.18 AZL 89.27 HCA 128.10 SMA 201.41 ECC .27425 INC .7314 V1 30.260
RP 238.47 LAP .58 LOP 211.17 VP 21.310 GAP 11.94 AZP 90.45 TAL 14.87 TAP 142.97 RCA 146.17 APO 256.64 V2 23.040
RC 179.231 GL 6.06 GP 4.10 ZAL 59.96 ZAP 160.91 ETS 166.55 ZAE 158.57 ETE 11.27 ZAC 94.44 ETC 255.80 CLP 161.34

PLANETOCENTRIC CONIC

C3 16.655 VHL 4.081 DLA 19.63 RAL 147.28 RAD 6567.7 VEL 11.749 PTH 2.07 VHP 6.644 DPA -.19 RAP 193.64 ECC 1.2741

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 48 42	2833.86	-28.28	84.30	12.52	91.57	13 35 56	2233.9	-27.76	75.67
90.00	6 21 18	4153.36	-1.47	169.38	6.00	61.72	7 30 31	3553.4	-5.24	162.73
100.00	14 22 24	2531.71	-29.73	62.00	12.45	93.23	15 4 35	1931.7	-28.97	53.28
100.00	7 30 17	3930.74	-.19	152.31	5.29	60.11	8 35 48	3330.7	-4.17	145.78
110.00	15 57 15	2234.95	-33.43	39.05	12.04	97.57	16 34 30	1635.0	-32.03	30.10
110.00	8 11 56	3800.26	2.96	140.45	3.33	55.93	9 15 16	3200.3	-1.53	134.24

DIFFERENTIAL CORRECTIONS
TDE .0363 TRA -.5212 TC3 2.6849 BAU .5999
RDE -.3970 RRA -.0969 RC3 .2244 FAU .12754
FDE .5301 FRA -.5285 FC3-6.6295 BSP 7916
BDE .3986 BRA .5302 BC3 2.6942 FSP 1460

MID-COURSE EXECUTION ACCURACY
SGT 2325.6 SGR 604.2 SG3 476.8
RRT .3453 RRF -.3876 RTF -.8733
SGB 2402.8 R23 -.0715 R13 -.8752
SG1 2335.6 SG2 564.6 THA 5.45

ORBIT DETERMINATION ACCURACY
ST 247.5 SR 559.1 SS 457.9
CRT -.1295 CRS .9094 CST -.4170
LSA 709.8 MSA 265.6 SSA 95.4
EL1 560.2 EL2 244.9 ALF 94.06

LAUNCH DATE DEC 15 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 417.599 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.770	GAL	3.27	AZL	89.30	HCA	129.06	SMA	200.35	ECC	.27076	INC	.7034	V1	30.260
RP	230.14	LAP	.55	LOP	212.12	VP	21.264	GAP	11.41	AZP	90.44	TAL	15.43	TAP	144.48	RCA	146.10	APO	254.59	V2	23.073
RC	181.513	GL	5.86	GP	4.26	ZAL	58.99	ZAP	160.08	ETS	166.65	ZAE	159.23	ETE	12.25	ZAC	94.62	ETC	255.80	CLP	160.52

PLANETOCENTRIC CONIC

C3	16.460	VHL	4.057	DLA	19.75	RAL	146.25	RAD	6567.7	VEL	11.741	PTH	2.07	VHP	6.485	DPA	-.10	RAP	193.82	ECC	1.2709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 43 9	2836.37	-28.28	84.48	11.33	91.48	13 30 26	2236.4	-27.78	75.85
90.00	6 18 34	4145.44	-1.72	168.94	4.84	61.73	7 27 40	3545.4	-5.49	162.28
100.00	14 17 0	2533.75	-29.74	62.15	11.26	93.15	14 59 14	1933.7	-28.99	53.43
100.00	7 27 25	3923.30	-.45	151.90	4.13	60.11	8 32 48	3323.3	-4.42	145.37
110.00	15 52 8	2236.12	-33.44	39.14	10.85	97.52	16 29 24	1636.1	-32.04	30.19
110.00	8 8 46	3793.69	2.71	140.10	2.16	55.91	9 12 0	3193.7	-1.78	133.90

DIFFERENTIAL CORRECTIONS

TDE	.0298	TRA	-.4890	TC3	2.7454	BAU	.6066
RDE	-.3924	RRA	-.0880	RC3	.2487	FAU	.13310
FDE	.5594	FRA	-.6155	FC3	-7.0005	BSP	7915
BDE	.3935	BRA	.4970	BC3	2.7567	FSP	1542

MID-COURSE EXECUTION ACCURACY

SGT	2345.8	SGR	604.7	SG3	501.9
RRT	.3695	RRF	-.4159	RTF	-.8765
SGB	2422.4	R23	-.0780	R13	-.8786
SG1	2357.0	SG2	559.2	THA	5.77

ORBIT DETERMINATION ACCURACY

ST	233.9	SR	555.6	SS	478.7
CRT	-.1086	CRS	.9010	CST	-.4147
LSA	718.0	NSA	259.9	SSA	97.5
EL1	556.3	EL2	232.2	ALF	93.17

LAUNCH DATE DEC 15 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 421.025 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.721	GAL	3.35	AZL	89.33	HCA	130.01	SMA	199.35	ECC	.26746	INC	.6746	V1	30.260
RP	237.81	LAP	.52	LOP	213.08	VP	21.222	GAP	10.88	AZP	90.43	TAL	15.98	TAP	145.99	RCA	146.03	APO	252.67	V2	23.106
RC	183.786	GL	5.64	GP	4.42	ZAL	58.05	ZAP	159.22	ETS	166.74	ZAE	159.92	ETE	13.33	ZAC	94.80	ETC	255.79	CLP	159.68

PLANETOCENTRIC CONIC

C3	16.284	VHL	4.035	DLA	19.85	RAL	145.24	RAD	6567.7	VEL	11.733	PTH	2.07	VHP	6.329	DPA	.00	RAP	193.99	ECC	1.2680

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 37 59	2838.09	-28.28	84.61	10.16	91.42	13 25 18	2238.1	-27.79	75.98
90.00	6 15 40	4138.81	-1.94	168.57	3.72	61.74	7 24 39	3538.8	-5.70	161.91
100.00	14 11 57	2535.09	-29.75	62.25	10.10	93.10	14 54 12	1935.1	-29.00	53.53
100.00	7 24 23	3917.04	-.66	151.56	3.01	60.11	8 29 40	3317.0	-4.63	145.02
110.00	15 47 19	2236.76	-33.45	39.19	9.70	97.49	16 24 35	1636.8	-32.05	30.24
110.00	8 5 31	3788.13	2.50	139.81	1.04	55.90	9 8 40	3188.1	-2.00	133.61

DIFFERENTIAL CORRECTIONS

TDE	.0192	TRA	-.4630	TC3	2.7876	BAU	.6098
RDE	-.3880	RRA	-.0807	RC3	.2745	FAU	.13887
FDE	.5897	FRA	-.7060	FC3	-7.3833	BSP	8052
BDE	.3884	BRA	.4700	BC3	2.8011	FSP	1633

MID-COURSE EXECUTION ACCURACY

SGT	2355.9	SGR	606.1	SG3	528.0
RRT	.3982	RRF	-.4458	RTF	-.8777
SGB	2432.7	R23	-.0828	R13	-.8801
SG1	2369.0	SG2	552.9	THA	6.19

ORBIT DETERMINATION ACCURACY

ST	222.0	SR	552.1	SS	499.9
CRT	-.0564	CRS	.8931	CST	-.3839
LSA	726.5	NSA	258.0	SSA	98.3
EL1	552.3	EL2	221.5	ALF	91.55

LAUNCH DATE DEC 15 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 424.480 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.674	GAL	3.43	AZL	89.36	HCA	130.97	SMA	198.41	ECC	.26434	INC	.6447	V1	30.260
RP	237.48	LAP	.49	LOP	214.04	VP	21.185	GAP	10.36	AZP	90.42	TAL	16.51	TAP	147.49	RCA	145.96	APO	250.86	V2	23.140
RC	186.049	GL	5.41	GP	4.60	ZAL	57.13	ZAP	158.34	ETS	166.82	ZAE	160.64	ETE	14.53	ZAC	94.99	ETC	255.79	CLP	158.81

PLANETOCENTRIC CONIC

C3	16.125	VHL	4.016	DLA	19.93	RAL	144.25	RAD	6567.6	VEL	11.726	PTH	2.07	VHP	6.178	DPA	.12	RAP	194.15	ECC	1.2654

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 33 12	2839.02	-28.29	84.67	9.04	91.38	13 20 31	2239.0	-27.79	76.04
90.00	6 12 35	4133.42	-2.11	168.27	2.62	61.76	7 21 29	3533.4	-5.87	161.61
100.00	14 7 16	2535.73	-29.75	62.30	8.97	93.07	14 49 31	1935.7	-29.01	53.57
100.00	7 21 13	3911.95	-.83	151.28	1.91	60.12	8 26 25	3311.9	-4.80	144.74
110.00	15 42 47	2236.87	-33.45	39.20	8.57	97.49	16 20 4	1636.9	-32.05	30.25
110.00	8 2 11	3783.57	2.32	139.57	359.94	55.89	9 5 15	3183.6	-2.17	133.37

DIFFERENTIAL CORRECTIONS

TDE	.0126	TRA	-.4355	TC3	2.8310	BAU	.6138
RDE	-.3836	RRA	-.0722	RC3	.3022	FAU	.14496
FDE	.6190	FRA	-.8041	FC3	-7.7828	BSP	8114
BDE	.3838	BRA	.4414	BC3	2.8471	FSP	1727

MID-COURSE EXECUTION ACCURACY

SGT	2367.8	SGR	608.7	SG3	555.5
RRT	.4263	RRF	-.4770	RTF	-.8795
SGB	2444.8	R23	-.0894	R13	-.8822
SG1	2382.8	SG2	547.2	THA	6.60

ORBIT DETERMINATION ACCURACY

ST	210.4	SR	548.4	SS	520.1
CRT	-.0243	CRS	.8848	CST	-.3689
LSA	735.0	NSA	255.9	SSA	99.0
EL1	548.4	EL2	210.4	ALF	90.63

LAUNCH DATE DEC 15 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 427.960 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.629	GAL	3.51	AZL	89.39	HCA	131.94	SMA	197.52	ECC	.26139	INC	.6139	V1	30.260
RP	237.15	LAP	.46	LOP	215.00	VP	21.151	GAP	9.85	AZP	90.41	TAL	17.04	TAP	148.97	RCA	145.89	APO	249.15	V2	23.174
RC	188.300	GL	5.16	GP	4.78	ZAL	56.25	ZAP	157.44	ETS	166.89	ZAE	161.38	ETE	15.89	ZAC	95.19	ETC	255.78	CLP	157.93

PLANETOCENTRIC CONIC

C3	15.983	VHL	3.998	DLA	19.98	RAL	143.29	RAD	6567.6	VEL	11.720	PTH	2.07	VHP	6.031	DPA	.26	RAP	194.30	ECC	1.2630

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 28 48	2839.11	-28.29	84.68	7.94	91.38	13 16 8	2239.1	-27.79	76.05
90.00	6 9 20	4129.29	-2.24	168.04	1.56	61.76	7 18 9	3529.3	-6.00	161.37
100.00	14 2 55	2535.62	-29.75	62.29	7.88	93.08	14 45 11	1935.6	-29.00	53.57
100.00	7 17 54	3908.01	-.96	151.06	.85	60.12	8 23 2	3308.0	-4.93	144.52
110.00	15 38 34	2236.41	-33.45	39.16	7.47	97.51	16 15 50	1636.4	-32.05	30.21
110.00	7 58 45	3779.99	2.19	139.39	358.88	55.88	9 1 45	3180.0	-2.31	133.18

DIFFERENTIAL CORRECTIONS

TDE	.0066	TRA	-.4086	TC3	2.8685	BAU	.6170
RDE	-.3794	RRA	-.0633	RC3	.3317	FAU	.15130
FDE	.6482	FRA	-.9075	FC3	-8.1958	BSP	8165
BDE	.3795	BRA	.4135	BC3	2.8876	FSP	1826

MID-COURSE EXECUTION ACCURACY

SGT	2376.7	SGR	612.6	SG3	584.2
RRT	.4555	RRF	-.5092	RTF	-.8810
SGB	2454.4	R23	-.0965	R13	-.8841
SG1	2393.9	SG2	541.5	THA	7.06

ORBIT DETERMINATION ACCURACY

ST	199.4	SR	544.6	SS	540.0
CRT	.0074	CRS	.8765	CST	-.3527
LSA	743.8	NSA	254.8	SSA	99.2
EL1	544.6	EL2	199.4	ALF	89.82

LAUNCH DATE DEC 15 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 431.466 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.587	GAL	3.58	AZL	89.42	HCA	132.90	SMA	196.69	ECC	.25860	INC	.5822	V1	30.260
RP	236.81	LAP	.43	LOP	215.97	VP	21.122	GAP	9.34	AZP	90.40	TAL	17.55	TAP	150.45	RCA	145.82	APO	247.55	V2	23.209
RC	190.540	GL	4.91	GP	4.97	ZAL	55.40	ZAP	156.52	ETS	166.94	ZAE	162.13	ETE	17.43	ZAC	95.39	ETC	255.77	CLP	157.02

PLANETOCENTRIC CONIC

C3	15.855	VHL	3.982	DLA	20.01	RAL	142.36	RAD	6567.6	VEL	11.715	PTH	2.06	VHP	5.888	DPA	.41	RAP	194.43	ECC	1.2609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 24 48	2838.35	-28.28	84.63	6.88	91.41	13 12 6	2238.3	-27.79	75.99
90.00	6 5 54	4126.40	-2.34	167.87	.53	61.77	7 14 41	3526.4	-6.09	161.21
100.00	13 58 57	2534.76	-29.75	62.23	6.81	93.11	14 41 12	1934.8	-29.00	53.50
100.00	7 14 26	3905.23	-1.06	150.91	359.82	60.12	8 19 32	3305.2	-5.03	144.37
110.00	15 34 39	2235.37	-33.44	39.08	6.41	97.56	16 11 54	1635.4	-32.03	30.14
110.00	7 55 14	3777.38	2.09	139.25	357.85	55.87	8 58 12	3177.4	-2.41	133.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0035	TRA	-.3814	TC3	2.9042	BAU	.6204	SGT	2385.4	SGR	618.1	SG3	614.6	ST	188.5	SR	540.6	SS	558.6
RDE	-.3752	RRA	-.0539	RC3	.3633	FAU	.15802	RRT	.4847	RRF	-.5423	RTF	-.8827	CRT	.0216	CRS	.8676	CST	-.3505
FDE	.6755	FRA	-1.0180	FC3	-8.6289	BSP	8183	SGB	2464.2	R23	-.1048	R13	-.8862	LSA	752.0	MSA	253.9	SSA	99.3
BDE	.3752	BRA	.3852	BC3	2.9269	FSP	1929	SG1	2405.1	SG2	536.2	THA	7.54	EL1	540.6	EL2	188.5	ALF	89.51

LAUNCH DATE DEC 15 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 434.995 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.546	GAL	3.65	AZL	89.45	HCA	133.87	SMA	195.90	ECC	.25597	INC	.5492	V1	30.260
RP	236.46	LAP	.40	LOP	216.93	VP	21.096	GAP	8.85	AZP	90.38	TAL	18.05	TAP	151.92	RCA	145.75	APO	246.04	V2	23.244
RC	192.768	GL	4.64	GP	5.18	ZAL	54.58	ZAP	155.57	ETS	166.99	ZAE	162.91	ETE	19.17	ZAC	95.60	ETC	255.77	CLP	156.09

PLANETOCENTRIC CONIC

C3	15.740	VHL	3.967	DLA	20.01	RAL	141.45	RAD	6567.6	VEL	11.710	PTH	2.06	VHP	5.748	DPA	-.58	RAP	194.55	ECC	1.2590

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 21 12	2836.70	-28.28	84.51	5.85	91.47	13 8 28	2236.7	-27.78	75.88
90.00	6 2 18	4124.75	-2.39	167.78	359.52	61.78	7 11 3	3524.7	-6.14	161.12
100.00	13 55 20	2533.11	-29.74	62.10	5.78	93.17	14 37 34	1933.1	-28.98	53.38
100.00	7 10 50	3903.57	-1.11	150.82	358.81	60.13	8 15 54	3303.6	-5.08	144.28
110.00	15 31 2	2233.72	-33.42	38.96	5.37	97.63	16 8 16	1633.7	-32.01	30.01
110.00	7 51 38	3775.73	2.02	139.16	356.85	55.87	8 54 33	3175.7	-2.47	132.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0043	TRA	-.3531	TC3	2.9421	BAU	.6247	SGT	2396.7	SGR	625.4	SG3	646.6	ST	177.3	SR	536.3	SS	575.7
RDE	-.3710	RRA	-.0441	RC3	.3973	FAU	.16513	RRT	.5133	RRF	-.5760	RTF	-.8848	CRT	.0064	CRS	.8579	CST	-.3718
FDE	.7003	FRA	-1.1355	FC3	-9.0830	BSP	8121	SGB	2476.9	R23	-.1145	R13	-.8888	LSA	759.4	MSA	252.8	SSA	99.5
BDE	.3710	BRA	.3558	BC3	2.9688	FSP	2033	SG1	2419.2	SG2	531.7	THA	8.02	EL1	536.3	EL2	177.3	ALF	89.86

LAUNCH DATE DEC 15 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 438.546 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.508	GAL	3.72	AZL	89.48	HCA	134.84	SMA	195.16	ECC	.25348	INC	.5151	V1	30.260
RP	236.12	LAP	.37	LOP	217.90	VP	21.074	GAP	8.36	AZP	90.36	TAL	18.53	TAP	153.37	RCA	145.69	APO	244.62	V2	23.279
RC	194.983	GL	4.36	GP	5.39	ZAL	53.79	ZAP	154.60	ETS	167.03	ZAE	163.69	ETE	21.15	ZAC	95.81	ETC	255.76	CLP	155.14

PLANETOCENTRIC CONIC

C3	15.636	VHL	3.954	DLA	19.98	RAL	140.58	RAD	6567.6	VEL	11.706	PTH	2.06	VHP	5.612	DPA	.77	RAP	194.65	ECC	1.2573

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 18 0	2834.13	-28.28	84.32	4.85	91.56	13 5 14	2234.1	-27.76	75.69
90.00	5 58 31	4124.34	-2.40	167.76	358.55	61.78	7 7 15	3524.3	-6.16	161.09
100.00	13 52 7	2530.63	-29.73	61.92	4.78	93.27	14 34 18	1930.6	-28.96	53.20
100.00	7 7 5	3903.06	-1.13	150.79	357.84	60.13	8 12 8	3303.1	-5.10	144.25
110.00	15 27 45	2231.43	-33.40	38.78	4.36	97.73	16 4 57	1631.4	-31.97	29.84
110.00	7 47 56	3775.04	2.00	139.13	355.89	55.87	8 50 51	3175.0	-2.50	132.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0027	TRA	-.3345	TC3	2.9507	BAU	.6234	SGT	2389.8	SGR	634.7	SG3	679.2	ST	169.8	SR	532.2	SS	594.7
RDE	-.3670	RRA	-.0339	RC3	.4331	FAU	.17233	RRT	.5460	RRF	-.6102	RTF	-.8843	CRT	.0577	CRS	.8502	CST	-.3355
FDE	.7288	FRA	-1.2557	FC3	-9.5417	BSP	8264	SGB	2472.7	R23	-.1226	R13	-.8889	LSA	768.5	MSA	255.8	SSA	97.9
BDE	.3670	BRA	.3362	BC3	2.9823	FSP	2153	SG1	2416.1	SG2	526.0	THA	8.67	EL1	532.3	EL2	169.5	ALF	88.83

LAUNCH DATE DEC 15 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 442.119 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.471	GAL	3.78	AZL	89.52	HCA	135.81	SMA	194.45	ECC	.25113	INC	.4799	V1	30.260
RP	235.77	LAP	.33	LOP	218.88	VP	21.055	GAP	7.87	AZP	90.34	TAL	19.00	TAP	154.81	RCA	145.62	APO	243.29	V2	23.315
RC	197.185	GL	4.07	GP	5.62	ZAL	53.03	ZAP	153.60	ETS	167.06	ZAE	164.48	ETE	23.44	ZAC	96.03	ETC	255.76	CLP	154.16

PLANETOCENTRIC CONIC

C3	15.543	VHL	3.942	DLA	19.93	RAL	139.73	RAD	6567.6	VEL	11.702	PTH	2.06	VHP	5.481	DPA	.98	RAP	194.75	ECC	1.2558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 15 12	2830.64	-28.27	84.06	3.88	91.69	13 2 23	2230.6	-27.74	75.44
90.00	5 54 34	4125.13	-2.38	167.80	357.61	61.77	7 3 19	3525.1	-6.13	161.14
100.00	13 49 15	2527.34	-29.72	61.68	3.80	93.40	14 31 23	1927.3	-28.93	52.96
100.00	7 3 11	3903.66	-1.11	150.82	356.90	60.13	8 8 15	3303.7	-5.08	144.28
110.00	15 24 47	2228.50	-33.37	38.56	3.38	97.86	16 1 55	1628.5	-31.93	29.63
110.00	7 44 10	3775.27	2.01	139.14	354.95	55.87	8 47 5	3175.3	-2.49	132.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0041	TRA	-.3125	TC3	2.9636	BAU	.6236	SGT	2386.2	SGR	646.4	SG3	713.6	ST	161.1	SR	527.8	SS	612.1
RDE	-.3630	RRA	-.0231	RC3	.4715	FAU	.17992	RRT	.5764	RRF	-.6443	RTF	-.8847	CRT	.0644	CRS	.8417	CST	-.3357
FDE	.7545	FRA	-1.3847	FC3	-10.0213	BSP	8285	SGB	2472.2	R23	-.1330	R13	-.8900	LSA	776.9	MSA	257.4	SSA	96.8
BDE	.3630	BRA	.3134	BC3	3.0009	FSP	2273	SG1	2416.6	SG2	521.5	THA	9.31	EL1	527.9	EL2	160.7	ALF	88.76

LAUNCH DATE DEC 15 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 445.712 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.436	GAL	3.84	AZL	89.56	HCA	136.79	SMA	193.79	ECC	.24891	INC	.4430
RP	235.42	LAP	.30	LOP	219.85	VP	21.039	GAP	7.40	AZP	90.32	TAL	19.45	TAP	156.24	RCA	145.56	APO	242.03
RC	199.372	GL	3.76	GP	5.86	ZAL	52.31	ZAP	152.57	ETS	167.09	ZAE	165.27	ETE	26.07	ZAC	96.26	ETC	255.75

V1 30.260 V2 23.351 CLP 153.16

PLANETOCENTRIC CONIC

C3	15.459	VHL	3.932	DLA	19.85	RAL	138.92	RAD	6567.6	VEL	11.698	PTH	2.06	VHP	5.353	DPA	1.21	RAP	194.82

ECC 1.2544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 12 48	2826.21	-28.26	83.74	2.93	91.85	12 59 55	2226.2	-27.70	75.12
90.00	5 50 26	4127.13	-2.31	167.92	356.69	61.77	6 59 13	3527.1	-6.07	161.25
100.00	13 46 46	2523.21	-29.70	61.37	2.86	93.56	14 28 49	1923.2	-28.89	52.66
100.00	6 59 9	3905.36	-1.05	150.92	355.99	60.12	8 4 14	3305.4	-5.02	144.37
110.00	15 22 7	2224.91	-33.34	38.28	2.42	98.02	15 59 12	1624.9	-31.87	29.36
110.00	7 40 18	3776.43	2.05	139.20	354.05	55.87	8 43 14	3176.4	-2.44	133.00

DIFFERENTIAL CORRECTIONS

TDE	-.0037	TRA	-.2911	TC3	2.9730	BAU	.6235
RDE	-.3589	RRA	-.0115	RC3	.5127	FAU	.18789
FDE	.7774	FRA	-1.5225	FC	-10.5221	BSP	8281
BDE	.3589	BRA	.2913	BC3	3.0169	FSP	2398

MID-COURSE EXECUTION ACCURACY

SGT	2381.0	SGR	660.6	SG3	749.8		
RRT	.6061	RRF	-.6779	RTF	-.8850		
SGB	2470.9	R23	-.1443	R13	-.8911		
SG1	2416.0	SG2	517.8	THA	10.01		

ORBIT DETERMINATION ACCURACY

ST	152.5	SR	523.2	SS	628.3
CRT	.0548	CRS	.8325	CST	-.3488
LSA	784.5	MSA	259.1	SSA	95.6
EL1	523.3	EL2	152.2	ALF	89.00

LAUNCH DATE DEC 15 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 449.326 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.403	GAL	3.90	AZL	89.59	HCA	137.77	SMA	193.17	ECC	.24682	INC	.4048
RP	235.06	LAP	.27	LOP	220.83	VP	21.027	GAP	6.93	AZP	90.30	TAL	19.89	TAP	157.66	RCA	145.49	APO	240.85
RC	201.544	GL	3.44	GP	6.12	ZAL	51.61	ZAP	151.52	ETS	167.10	ZAE	166.06	ETE	29.12	ZAC	96.50	ETC	255.75

V1 30.260 V2 23.387 CLP 152.13

PLANETOCENTRIC CONIC

C3	15.384	VHL	3.922	DLA	19.75	RAL	138.13	RAD	6567.6	VEL	11.695	PTH	2.06	VHP	5.228	DPA	1.46	RAP	194.88

ECC 1.2532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 10 49	2820.83	-28.25	83.35	2.02	92.05	12 57 50	2220.8	-27.67	74.73
90.00	5 46 7	4130.31	-2.21	168.09	355.80	61.76	6 54 58	3530.3	-5.97	161.43
100.00	13 44 39	2518.23	-29.68	61.00	1.94	93.75	14 26 38	1918.2	-28.84	52.30
100.00	6 54 58	3908.15	-.96	151.07	355.11	60.12	8 0 6	3308.1	-4.93	144.53
110.00	15 19 46	2220.64	-33.30	37.96	1.49	98.21	15 56 47	1620.6	-31.81	29.05
110.00	7 36 20	3778.50	2.13	139.31	353.18	55.88	8 39 19	3178.5	-2.36	133.11

DIFFERENTIAL CORRECTIONS

TDE	-.0007	TRA	-.2707	TC3	2.9776	BAU	.6230
RDE	-.3547	RRA	.0008	RC3	.5568	FAU	.19625
FDE	.7963	FRA	-1.6679	FC	-11.0437	BSP	8239
BDE	.3547	BRA	.2707	BC3	3.0292	FSP	2525

MID-COURSE EXECUTION ACCURACY

SGT	2373.3	SGR	677.6	SG3	787.6		
RRT	.6344	RRF	-.7106	RTF	-.8851		
SGB	2468.1	R23	-.1569	R13	-.8922		
SG1	2413.8	SG2	515.0	THA	10.76		

ORBIT DETERMINATION ACCURACY

ST	144.2	SR	518.2	SS	642.6
CRT	.0189	CRS	.8224	CST	-.3825
LSA	790.7	MSA	261.1	SSA	94.5
EL1	518.3	EL2	144.2	ALF	89.67

LAUNCH DATE DEC 15 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 452.959 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.372	GAL	3.95	AZL	89.63	HCA	138.75	SMA	192.58	ECC	.24484	INC	.3647
RP	234.71	LAP	.24	LOP	221.82	VP	21.018	GAP	6.47	AZP	90.27	TAL	20.31	TAP	159.06	RCA	145.43	APO	239.73
RC	203.699	GL	3.11	GP	6.39	ZAL	50.95	ZAP	150.43	ETS	167.11	ZAE	166.82	ETE	32.67	ZAC	96.75	ETC	255.74

V1 30.260 V2 23.424 CLP 151.07

PLANETOCENTRIC CONIC

C3	15.317	VHL	3.914	DLA	19.62	RAL	137.36	RAD	6567.6	VEL	11.692	PTH	2.06	VHP	5.107	DPA	1.74	RAP	194.92

ECC 1.2521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 9 13	2814.51	-28.23	82.88	1.13	92.28	12 56 7	2214.5	-27.62	74.27
90.00	5 41 38	4134.66	-2.07	168.34	354.94	61.75	6 50 33	3534.7	-5.83	161.67
100.00	13 42 54	2512.39	-29.65	60.57	1.04	93.98	14 24 46	1912.4	-28.78	51.87
100.00	6 50 38	3912.01	-.83	151.28	354.25	60.12	7 55 50	3312.0	-4.80	144.74
110.00	15 17 44	2215.69	-33.25	37.58	.58	98.43	15 54 40	1615.7	-31.73	28.68
110.00	7 32 17	3781.48	2.24	139.46	352.33	55.88	8 35 19	3181.5	-2.25	133.26

DIFFERENTIAL CORRECTIONS

TDE	.0139	TRA	-.2411	TC3	3.0052	BAU	.6277
RDE	-.3498	RRA	.0144	RC3	.6055	FAU	.20543
FDE	.8030	FRA	-1.8310	FC	-11.6113	BSP	7941
BDE	.3501	BRA	.2415	BC3	3.0656	FSP	2639

MID-COURSE EXECUTION ACCURACY

SGT	2382.0	SGR	698.1	SG3	829.1		
RRT	.6591	RRF	-.7423	RTF	-.8876		
SGB	2482.2	R23	-.1709	R13	-.8958		
SG1	2428.2	SG2	515.1	THA	11.45		

ORBIT DETERMINATION ACCURACY

ST	134.3	SR	512.4	SS	652.3
CRT	-.1482	CRS	.8075	CST	-.5074
LSA	793.0	MSA	261.4	SSA	94.3
EL1	512.8	EL2	132.7	ALF	92.38

LAUNCH DATE DEC 15 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 456.607 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.342	GAL	4.01	AZL	89.68	HCA	139.74	SMA	192.03	ECC	.24297	INC	.3236
RP	234.35	LAP	.21	LOP	222.80	VP	21.012	GAP	6.02	AZP	90.25	TAL	20.72	TAP	160.45	RCA	145.37	APO	238.68
RC	205.837	GL	2.78	GP	6.68	ZAL	50.32	ZAP	149.32	ETS	167.12	ZAE	167.55	ETE	36.79	ZAC	97.01	ETC	255.73

V1 30.260 V2 23.461 CLP 149.99

PLANETOCENTRIC CONIC

C3	15.255	VHL	3.906	DLA	19.46	RAL	136.63	RAD	6567.6	VEL	11.689	PTH	2.06	VHP	4.990	DPA	2.04	RAP	194.95

ECC 1.2511

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 8 2	2807.14	-28.21	82.35	.26	92.55	12 54 49	2207.1	-27.56	73.74
90.00	5 36 59	4140.21	-1.89	168.65	354.11	61.74	6 46 0	3540.2	-5.65	161.99
100.00	13 41 33	2505.60	-29.62	60.07	.17	94.24	14 23 18	1905.6	-28.72	51.38
100.00	6 46 10	3916.98	-.66	151.55	353.42	60.11	7 51 27	3317.0	-4.63	145.02
110.00	15 16 2	2209.97	-33.19	37.14	359.70	98.68	15 52 52	1610.0	-31.64	28.26
110.00	7 28 10	3785.38	2.39	139.67	351.51	55.89	8 31 15	3185.4	-2.10	133.46

DIFFERENTIAL CORRECTIONS

TDE	.0046	TRA	-.2383	TC3	2.9585	BAU	.6179
RDE	-.3461	RRA	.0275	RC3	.6541	FAU	.21381
FDE	.8314	FRA	-1.9773	FC	-12.1340	BSP	8220
BDE	.3462	BRA	.2399	BC3	3.0299	FSP	2809

MID-COURSE EXECUTION ACCURACY

SGT	2340.6	SGR	721.6	SG3	867.4		
RRT	.6877	RRF	-.7721	RTF	-.8833		
SGB	2449.3	R23	-.1847	R13	-.8931		
SG1	2395.2	SG2	512.0	THA	12.55		

ORBIT DETERMINATION ACCURACY

ST	131.3	SR	508.2	SS	670.8
CRT	-.0570	CRS	.8039	CST	-.4467
LSA	803.9	MSA	266.0	SSA	91.7
EL1	508.2	EL2	131.0	ALF	90.90

LAUNCH DATE DEC 15 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 460.274 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.314	GAL	4.06	AZL	89.72	HCA	140.72	SMA	191.50	ECC	.24120	INC	.2799
RP	233.98	LAP	.18	LOP	223.79	VP	21.009	GAP	5.57	AZP	90.22	TAL	21.10	TAP	161.83	RCA	145.31	APO	237.69
RC	207.958	GL	2.39	GP	6.98	ZAL	49.73	ZAP	148.18	ETS	167.12	ZAE	168.22	ETE	41.59	ZAC	97.28	ETC	255.72

V1	30.260	V2	23.498	CLP	148.87														

PLANETOCENTRIC CONIC

C3	15.200	VHL	3.899	DLA	19.28	RAL	135.93	RAD	6567.6	VEL	11.687	PTH	2.06	VHP	4.877	DPA	2.37	RAP	194.96
ECC	1.2501																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 7 14	2798.81	-28.18	81.74	359.42	92.85	12 53 53	2198.8	-27.49	73.14
90.00	5 32 10	4146.91	-1.68	169.02	353.30	61.73	6 41 17	3546.9	-5.44	162.36
100.00	13 40 33	2497.93	-29.58	59.50	359.32	94.53	14 22 11	1897.9	-28.64	50.82
100.00	6 41 32	3923.01	-.45	151.88	352.62	60.11	7 46 55	3323.0	-4.43	145.35
110.00	15 14 39	2203.53	-33.13	36.65	358.83	98.96	15 51 22	1603.5	-31.53	27.79
110.00	7 23 56	3790.18	2.58	139.92	350.72	55.90	8 27 6	3190.2	-1.92	133.72

DIFFERENTIAL CORRECTIONS

TDE	.0104	TRA	-.2237	TC3	2.9421	BAU	.6149
RDE	-.3416	RRA	.0424	RC3	.7083	FAU	.22323
FDE	.8421	FRA	-2.1450	FC	-12.7145	BSP	8157
BDE	.3417	BRA	.2277	BC3	3.0262	FSP	2954

MID-COURSE EXECUTION ACCURACY

SGT	2320.4	SGR	749.2	SG3	910.2		
RRT	.7111	RRF	-.8003	RTF	-.8821		
SGB	2438.4	R23	-.2001	R13	-.8936		
SG1	2383.8	SG2	512.7	THA	13.57		

ORBIT DETERMINATION ACCURACY

ST	126.1	SR	502.6	SS	682.6		
CRT	-.1363	CRS	.7934	CST	-.5055		
LSA	808.8	MSA	268.4	SSA	90.3		
EL1	502.9	EL2	124.8	ALF	92.09		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 463.958 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.287	GAL	4.10	AZL	89.76	HCA	141.72	SMA	191.01	ECC	.23954	INC	.2348
RP	233.62	LAP	.15	LOP	224.78	VP	21.008	GAP	5.14	AZP	90.18	TAL	21.47	TAP	163.19	RCA	145.26	APO	236.76
RC	210.060	GL	2.01	GP	7.30	ZAL	49.16	ZAP	147.00	ETS	167.12	ZAE	168.82	ETE	47.15	ZAC	97.56	ETC	255.72

V1	30.260	V2	23.536	CLP	147.73														

PLANETOCENTRIC CONIC

C3	15.149	VHL	3.892	DLA	19.07	RAL	135.25	RAD	6567.6	VEL	11.685	PTH	2.06	VHP	4.767	DPA	2.73	RAP	194.96
ECC	1.2493																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 6 51	2789.47	-28.15	81.06	358.60	93.19	12 53 20	2189.5	-27.41	72.47
90.00	5 27 9	4154.76	-1.42	169.46	352.51	61.72	6 36 24	3554.8	-5.19	162.81
100.00	13 39 55	2489.34	-29.53	58.87	358.49	94.86	14 21 24	1889.3	-28.54	50.20
100.00	6 36 46	3930.13	-.21	152.27	351.84	60.11	7 42 16	3330.1	-4.19	145.74
110.00	15 13 34	2196.33	-33.05	36.10	357.98	99.28	15 50 10	1596.3	-31.41	27.26
110.00	7 19 36	3795.90	2.79	140.22	349.96	55.92	8 22 52	3195.9	-1.70	134.01

DIFFERENTIAL CORRECTIONS

TDE	.0162	TRA	-.2118	TC3	2.9143	BAU	.6103
RDE	-.3369	RRA	.0582	RC3	.7658	FAU	.23280
FDE	.8505	FRA	-2.3199	FC	-13.3039	BSP	8113
BDE	.3373	BRA	.2197	BC3	3.0132	FSP	3112

MID-COURSE EXECUTION ACCURACY

SGT	2292.6	SGR	780.7	SG3	953.8		
RRT	.7323	RRF	-.8263	RTF	-.8800		
SGB	2421.9	R23	-.2165	R13	-.8938		
SG1	2366.5	SG2	515.1	THA	14.72		

ORBIT DETERMINATION ACCURACY

ST	122.4	SR	497.0	SS	694.0		
CRT	-.2182	CRS	.7833	CST	-.5620		
LSA	813.8	MSA	271.0	SSA	88.8		
EL1	497.7	EL2	119.3	ALF	93.27		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 467.658 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.261	GAL	4.15	AZL	89.81	HCA	142.71	SMA	190.54	ECC	.23797	INC	.1866
RP	233.25	LAP	.11	LOP	225.77	VP	21.011	GAP	4.71	AZP	90.15	TAL	21.83	TAP	164.54	RCA	145.20	APO	235.89
RC	212.144	GL	1.60	GP	7.65	ZAL	48.63	ZAP	145.79	ETS	167.12	ZAE	169.31	ETE	53.50	ZAC	97.85	ETC	255.71

V1	30.260	V2	23.574	CLP	146.55														

PLANETOCENTRIC CONIC

C3	15.104	VHL	3.886	DLA	18.83	RAL	134.60	RAD	6567.6	VEL	11.683	PTH	2.05	VHP	4.661	DPA	3.11	RAP	194.94
ECC	1.2486																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 6 50	2779.09	-28.11	80.30	357.80	93.57	12 53 9	2179.1	-27.32	71.72
90.00	5 21 58	4163.79	-1.13	169.96	351.75	61.70	6 31 22	3563.8	-4.90	163.31
100.00	13 39 39	2479.79	-29.47	58.16	357.68	95.23	14 20 59	1879.8	-28.44	49.51
100.00	6 31 50	3938.32	.06	152.72	351.09	60.11	7 37 28	3338.3	-3.91	146.19
110.00	15 12 49	2188.34	-32.96	35.50	357.15	99.63	15 49 17	1588.3	-31.28	26.68
110.00	7 15 10	3802.54	3.05	140.57	349.23	55.94	8 18 33	3202.5	-1.44	134.36

DIFFERENTIAL CORRECTIONS

TDE	.0232	TRA	-.2020	TC3	2.8808	BAU	.6052
RDE	-.3319	RRA	.0752	RC3	.8279	FAU	.24283
FDE	.8541	FRA	-2.5037	FC	-13.9188	BSP	8048
BDE	.3327	BRA	.2155	BC3	2.9974	FSP	3271

MID-COURSE EXECUTION ACCURACY

SGT	2261.4	SGR	816.9	SG3	999.5		
RRT	.7510	RRF	-.8502	RTF	-.8774		
SGB	2404.5	R23	-.2336	R13	-.8940		
SG1	2347.6	SG2	519.6	THA	15.98		

ORBIT DETERMINATION ACCURACY

ST	120.8	SR	491.0	SS	704.5		
CRT	-.3161	CRS	.7726	CST	-.6232		
LSA	818.2	MSA	273.7	SSA	87.4		
EL1	492.6	EL2	114.2	ALF	94.70		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 471.373 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.237	GAL	4.19	AZL	89.86	HCA	143.71	SMA	190.11	ECC	.23649	INC	.1372
RP	232.88	LAP	.08	LOP	226.77	VP	21.015	GAP	4.28	AZP	90.11	TAL	22.17	TAP	165.87	RCA	145.15	APO	235.06
RC	214.210	GL	1.17	GP	8.01	ZAL	48.12	ZAP	144.54	ETS	167.11	ZAE	169.66	ETE	60.61	ZAC	98.16	ETC	255.70

V1	30.260	V2	23.612	CLP	145.34														

PLANETOCENTRIC CONIC

C3	15.062	VHL	3.881	DLA	18.55	RAL	133.97	RAD	6567.6	VEL	11.681	PTH	2.05	VHP	4.559	DPA	3.53	RAP	194.90
ECC	1.2479																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 7 14	2767.65	-28.06	79.47	357.02	93.99	12 53 21	2167.7	-27.21	70.90
90.00	5 16 35	4173.99	-.80	170.53	351.02	61.69	6 26 9	3574.0	-4.58	163.89
100.00	13 39 46	2469.26	-29.41	57.39	356.89	95.63	14 20 55	1869.3	-28.31	48.75
100.00	6 26 44	3947.61	.38	153.23	350.36	60.11	7 32 32	3347.6	-3.60	146.71
110.00	15 12 22	2179.52	-32.86	34.83	356.34	100.01	15 48 41	1579.5	-31.13	26.03
110.00	7 10 37	3810.11	3.34	140.96	348.51	55.96	8 14 7	3210.1	-1.16	134.76

DIFFERENTIAL CORRECTIONS

TDE	.0318	TRA	-.1946	TC3	2.8394	BAU	.5995
RDE	-.3267	RRA	.0933	RC3	.8943	FAU	.25311
FDE	.8518	FRA	-2.6935	FC	-14.5481	BSP	7965
BDE	.3282	BRA	.2158	BC3	2.9769	FSP	3437

MID-COURSE EXECUTION ACCURACY

SGT	2225.2	SGR	857.6	SG3	1046.4		
RRT	.7667	RRF	-.8717	RTF	-.8741		
SGB	2384.7	R23	-.2513	R13	-.8941		
SG1	2325.8	SG2	526.8	THA	17.38		

ORBIT DETERMINATION ACCURACY

ST	121.8	SR	484.7	SS	713.3		
CRT	-.4275	CRS	.7615	CST	-.6847		
LSA	821.5	MSA	276.3	SSA	85.9		
EL1	487.6	EL2	109.5	ALF	96.46		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 475.104 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.214	GAL	4.22	AZL	89.92	HCA	144.71	SMA	189.69	ECC	.23509	INC	.0831
RP	232.51	LAP	.05	LOP	227.77	VP	21.023	GAP	3.87	AZP	90.07	TAL	22.48	TAP	167.19	RCA	145.10	APO	234.29
RC	216.258	GL	.73	GP	8.40	ZAL	47.65	ZAP	143.26	ETS	167.10	ZAE	169.83	ETE	68.36	ZAC	98.49	ETC	255.69

V1	30.260	V2	23.650	CLP	144.10

PLANETOCENTRIC CONIC

C3	15.024	VHL	3.876	DLA	18.25	RAL	133.37	RAD	6567.6	VEL	11.679	PTH	2.05	VHP	4.460	DPA	3.98	RAP	194.84
ECC	1.2473																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 8 0	2755.14	-28.00	78.56	356.25	94.44	12 53 55	2155.1	-27.09	70.01
90.00	5 11 1	4185.37	-.43	171.17	350.30	61.69	6 20 46	3585.4	-4.22	164.53
100.00	13 40 14	2457.72	-29.32	56.54	356.11	96.07	14 21 12	1857.7	-28.17	47.92
100.00	6 21 28	3958.02	.73	153.80	349.65	60.12	7 27 26	3358.0	-3.25	147.28
110.00	15 12 15	2169.85	-32.74	34.10	355.53	100.43	15 48 24	1569.9	-30.96	25.33
110.00	7 5 57	3818.65	3.66	141.41	347.83	55.99	8 9 36	3218.7	-.83	135.20

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0405	TRA	-.1902	TC3	2.7887	BAU	.5928	SGT	2182.9	SGR	903.6	SG3	1094.8	ST	125.2	SR	478.0	SS	721.5
RDE	-.3210	RRA	.1129	RC3	.9656	FAU	.26370	RRT	.7797	RRF	-.8909	RTF	-.8698	CRT	-.5285	CRS	.7501	CST	-.7324
FDE	.8441	FRA	-2.8914	FC	-15.1953	BSP	7890	SGB	2362.5	R23	-.2692	R13	-.8942	LSA	824.4	MSA	279.2	SSA	84.4
BDE	.3236	BRA	.2212	BC3	2.9512	FSP	3610	SG1	2300.7	SG2	536.8	THA	18.96	EL1	482.8	EL2	105.2	ALF	98.28

LAUNCH DATE DEC 15 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 478.849 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.193	GAL	4.26	AZL	89.97	HCA	145.71	SMA	189.31	ECC	.23376	INC	.0242
RP	232.14	LAP	.02	LOP	228.78	VP	21.032	GAP	3.46	AZP	90.02	TAL	22.79	TAP	168.50	RCA	145.05	APO	233.56
RC	218.287	GL	.25	GP	8.81	ZAL	47.21	ZAP	141.94	ETS	167.09	ZAE	169.80	ETE	76.48	ZAC	98.83	ETC	255.68

V1	30.260	V2	23.689	CLP	142.83

PLANETOCENTRIC CONIC

C3	14.989	VHL	3.872	DLA	17.91	RAL	132.80	RAD	6567.6	VEL	11.678	PTH	2.05	VHP	4.365	DPA	4.47	RAP	194.77
ECC	1.2467																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 9 11	2741.50	-27.92	77.57	355.50	94.93	12 54 52	2141.5	-26.94	69.04
90.00	5 5 15	4197.97	-.03	171.87	349.61	61.68	6 15 13	3598.0	-3.81	165.23
100.00	13 41 5	2445.14	-29.23	55.62	355.35	96.55	14 21 50	1845.1	-28.02	47.02
100.00	6 16 2	3969.57	1.12	154.44	348.97	60.13	7 22 11	3369.6	-2.86	147.91
110.00	15 12 27	2159.29	-32.61	33.30	354.74	100.88	15 48 26	1559.3	-30.76	24.57
110.00	7 1 9	3828.18	4.02	141.91	347.16	56.03	8 4 58	3228.2	-.46	135.70

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0513	TRA	-.1872	TC3	2.7310	BAU	.5858	SGT	2136.0	SGR	954.8	SG3	1144.6	ST	132.0	SR	470.7	SS	728.1
RDE	-.3149	RRA	.1340	RC3	1.0421	FAU	.27457	RRT	.7896	RRF	-.9079	RTF	-.8648	CRT	-.6327	CRS	.7374	CST	-.7690
FDE	.8277	FRA	-3.0988	FC	-15.8583	BSP	7789	SGB	2339.7	R23	-.2864	R13	-.8946	LSA	826.1	MSA	282.5	SSA	82.7
BDE	.3190	BRA	.2302	BC3	2.9231	FSP	3787	SG1	2274.1	SG2	550.4	THA	20.71	EL1	478.4	EL2	100.6	ALF	100.53

LAUNCH DATE DEC 15 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 482.609 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.172	GAL	4.29	AZL	90.03	HCA	146.72	SMA	188.94	ECC	.23252	INC	.0121
RP	231.76	LAP	-.02	LOP	229.78	VP	21.044	GAP	3.06	AZP	89.98	TAL	23.07	TAP	169.79	RCA	145.01	APO	232.87
RC	220.299	GL	-.25	GP	9.25	ZAL	46.81	ZAP	140.59	ETS	167.08	ZAE	169.55	ETE	84.66	ZAC	99.19	ETC	255.67

V1	30.260	V2	23.728	CLP	141.52

PLANETOCENTRIC CONIC

C3	14.958	VHL	3.868	DLA	17.54	RAL	132.24	RAD	6567.6	VEL	11.677	PTH	2.05	VHP	4.274	DPA	4.99	RAP	194.68
ECC	1.2462																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 10 45	2726.71	-27.83	76.49	354.76	95.46	12 56 11	2126.7	-26.78	67.98
90.00	4 59 16	4211.82	.42	172.64	348.94	61.69	6 9 28	3611.8	-3.37	166.01
100.00	13 42 18	2431.47	-29.12	54.61	354.59	97.07	14 22 49	1831.5	-27.84	46.05
100.00	6 10 24	3982.30	1.56	155.14	348.31	60.14	7 16 46	3382.3	-2.43	148.61
110.00	15 12 58	2147.79	-32.46	32.44	353.96	101.37	15 48 46	1547.8	-30.55	23.74
110.00	6 56 13	3838.74	4.42	142.46	346.52	56.07	8 0 12	3238.7	-.06	136.25

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0629	TRA	-.1871	TC3	2.6654	BAU	.5785	SGT	2084.2	SGR	1012.2	SG3	1196.0	ST	141.8	SR	462.9	SS	733.7
RDE	-.3080	RRA	.1569	RC3	1.1247	FAU	.28577	RRT	.7965	RRF	-.9227	RTF	-.8585	CRT	-.7204	CRS	.7236	CST	-.7870
FDE	.8025	FRA	-3.3148	FC	-16.5401	BSP	7677	SGB	2317.0	R23	-.3027	R13	-.8953	LSA	827.2	MSA	286.4	SSA	81.0
BDE	.3144	BRA	.2442	BC3	2.8930	FSP	3965	SG1	2246.3	SG2	567.9	THA	22.68	EL1	474.5	EL2	96.0	ALF	102.99

LAUNCH DATE DEC 15 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 486.382 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.153	GAL	4.32	AZL	90.09	HCA	147.73	SMA	188.60	ECC	.23134	INC	.0904
RP	231.38	LAP	-.05	LOP	230.79	VP	21.058	GAP	2.67	AZP	89.92	TAL	23.34	TAP	171.07	RCA	144.97	APO	232.23
RC	222.292	GL	-.78	GP	9.72	ZAL	46.43	ZAP	139.19	ETS	167.08	ZAE	169.07	ETE	92.52	ZAC	99.58	ETC	255.66

V1	30.260	V2	23.768	CLP	140.17

PLANETOCENTRIC CONIC

C3	14.929	VHL	3.864	DLA	17.13	RAL	131.71	RAD	6567.6	VEL	11.675	PTH	2.05	VHP	4.187	DPA	5.56	RAP	194.58
ECC	1.2457																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 12 42	2710.72	-27.72	75.34	354.02	96.03	12 57 53	2110.7	-26.59	66.85
90.00	4 53 4	4226.95	.91	173.48	348.29	61.70	6 3 31	3627.0	-2.88	166.85
100.00	13 43 54	2416.66	-28.99	53.53	353.85	97.62	14 24 10	1816.7	-27.63	44.99
100.00	6 4 34	3996.25	2.03	155.90	347.67	60.17	7 11 10	3396.2	-1.96	149.38
110.00	15 13 49	2135.30	-32.28	31.51	353.19	101.90	15 49 24	1535.3	-30.31	22.85
110.00	6 51 8	3850.37	4.87	143.07	345.91	56.12	7 55 18	3250.4	.38	136.85

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0748	TRA	-.1904	TC3	2.5897	BAU	.5707	SGT	2025.9	SGR	1075.3	SG3	1247.7	ST	154.2	SR	454.8	SS	739.2
RDE	-.3008	RRA	.1813	RC3	1.2126	FAU	.29702	RRT	.8000	RRF	-.9355	RTF	-.8507	CRT	-.7884	CRS	.7109	CST	-.7898
FDE	.7720	FRA	-3.5336	FC	-17.2241	BSP	7581	SGB	2293.6	R23	-.3174	R13	-.8964	LSA	828.6	MSA	290.3	SSA	79.1
BDE	.3100	BRA	.2629	BC3	2.8595	FSP	4156	SG1	2216.5	SG2	589.7	THA	24.89	EL1	471.4	EL2	91.5	ALF	105.56

LAUNCH DATE DEC 15 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 490.168 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.135 GAL 4.35 AZL 90.16 HCA 148.74 SMA 188.28 ECC .23023 INC .1555 V1 30.260
RP 231.01 LAP -.08 LOP 231.81 VP 21 074 GAP 2.28 AZP 89.87 TAL 23.58 TAP 172.33 RCA 144.93 APO 231.62 V2 23.807
RC 224.266 GL -1.34 GP 10.22 ZAL 46.09 ZAP 137.76 ETS 167.07 ZAE 168.37 ETE 99.81 ZAC 99.99 ETC 255.65 CLP 138.79

PLANETOCENTRIC CONIC

C3 14.903 VHL 3.860 DLA 16.68 RAL 131.20 RAD 6567.6 VEL 11.674 PTH 2.05 VHP 4.103 DPA 6.16 RAP 194.45 ECC 1.2453

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 15 4	2693.47	-27.59	74.09	353.30	96.64	12 59 58	2093.5	-26.38	65.63
90.00	4 46 37	4243.43	1.44	174.40	347.67	61.72	5 57 21	3643.4	-2.35	167.77
100.00	13 45 52	2400.65	-28.84	52.37	353.11	98.22	14 25 53	1800.7	-27.40	43.86
100.00	5 58 30	4011.48	2.54	156.74	347.05	60.21	7 5 22	3411.5	-1.44	150.22
110.00	15 15 0	2121.77	-32.09	30.50	352.43	102.47	15 50 22	1521.8	-30.04	21.89
110.00	6 45 52	3863.13	5.35	143.74	345.31	56.19	7 50 15	3263.1	.87	137.52

DIFFERENTIAL CORRECTIONS
TDE .0877 TRA -.1961 TC3 2.5050 BAU .5630
RDE -.2925 RRA .2080 RC3 1.3076 FAU .30854
FDE .7285 FRA-3.7637 FC-17.9235 BSP 7468
BDE .3054 BRA .2859 BC3 2.8258 FSP 4342

MID-COURSE EXECUTION ACCURACY
SGT 1962.1 SGR 1145.3 SG3 1300.8
RRT .8002 RRF -.9465 RTF -.8413
SGB 2271.9 R23 -.3293 R13 -.8983
SG1 2186.8 SG2 616.3 THA 27.39

ORBIT DETERMINATION ACCURACY
ST 169.1 SR 445.8 SS 743.8
CRT -.8427 CRS .6961 CST -.7779
LSA 829.1 MSA 295.4 SSA 76.9
EL1 468.9 EL2 86.6 ALF 108.38

LAUNCH DATE DEC 15 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 493.968 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.118 GAL 4.37 AZL 90.23 HCA 149.76 SMA 187.97 ECC .22918 INC .2260 V1 30.260
RP 230.62 LAP -.11 LOP 232.83 VP 21.092 GAP 1.90 AZP 89.80 TAL 23.81 TAP 173.58 RCA 144.89 APO 231.06 V2 23.847
RC 226.222 GL -1.94 GP 10.76 ZAL 45.78 ZAP 136.29 ETS 167.07 ZAE 167.47 ETE 106.34 ZAC 100.42 ETC 255.64 CLP 137.37

PLANETOCENTRIC CONIC

C3 14.880 VHL 3.857 DLA 16.19 RAL 130.71 RAD 6567.6 VEL 11.673 PTH 2.05 VHP 4.024 DPA 6.82 RAP 194.32 ECC 1.2449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 17 51	2674.89	-27.44	72.75	352.58	97.30	13 2 26	2074.9	-26.14	64.32
90.00	4 39 55	4261.33	2.02	175.40	347.06	61.75	5 50 57	3661.3	-1.77	168.77
100.00	13 48 14	2383.39	-28.67	51.11	352.38	98.86	14 27 58	1783.4	-27.15	42.64
100.00	5 52 13	4028.05	3.10	157.65	346.46	60.25	6 59 21	3428.1	-.88	151.13
110.00	15 16 32	2107.12	-31.87	29.41	351.66	103.07	15 51 39	1507.1	-29.74	20.85
110.00	6 40 24	3877.09	5.88	144.48	344.74	56.27	7 45 1	3277.1	1.41	138.25

DIFFERENTIAL CORRECTIONS
TDE .1008 TRA -.2056 TC3 2.4090 BAU .5552
RDE -.2834 RRA .2367 RC3 1.4090 FAU .32002
FDE .6756 FRA-3.9965 FC-18.6189 BSP 7376
BDE .3008 BRA .3135 BC3 2.7908 FSP 4538

MID-COURSE EXECUTION ACCURACY
SGT 1891.5 SGR 1221.9 SG3 1353.9
RRT .7966 RRF -.9558 RTF -.8293
SGB 2251.8 R23 -.3379 R13 -.9011
SG1 2156.6 SG2 647.9 THA 30.24

ORBIT DETERMINATION ACCURACY
ST 186.0 SR 436.3 SS 748.2
CRT -.8829 CRS .6818 CST -.7570
LSA 829.8 MSA 301.1 SSA 74.5
EL1 467.2 EL2 81.6 ALF 111.31

LAUNCH DATE DEC 15 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 497.780 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.102 GAL 4.40 AZL 90.30 HCA 150.78 SMA 187.69 ECC .22820 INC .3003 V1 30.260
RP 230.24 LAP -.15 LOP 233.85 VP 21.113 GAP 1.53 AZP 89.74 TAL 24.03 TAP 174.81 RCA 144.86 APO 230.52 V2 23.887
RC 228.159 GL -2.58 GP 11.33 ZAL 45.50 ZAP 134.77 ETS 167.07 ZAE 166.38 ETE 112.06 ZAC 100.88 ETC 255.62 CLP 135.92

PLANETOCENTRIC CONIC

C3 14.861 VHL 3.855 DLA 15.65 RAL 130.24 RAD 6567.6 VEL 11.672 PTH 2.05 VHP 3.948 DPA 7.51 RAP 194.17 ECC 1.2446

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 21 3	2654.90	-27.26	71.32	351.86	97.99	13 5 18	2054.9	-25.87	62.93
90.00	4 32 56	4280.71	2.64	176.48	346.47	61.80	5 44 17	3680.7	-1.15	169.86
100.00	13 51 1	2364.78	-28.46	49.77	351.65	99.54	14 30 25	1764.8	-26.85	41.34
100.00	5 45 39	4046.07	3.71	158.64	345.88	60.32	6 53 6	3446.1	-.27	152.12
110.00	15 18 25	2091.28	-31.62	28.25	350.90	103.72	15 53 16	1491.3	-29.41	19.74
110.00	6 34 44	3892.33	6.45	145.28	344.18	56.36	7 39 37	3292.3	1.99	139.04

DIFFERENTIAL CORRECTIONS
TDE .1143 TRA -.2186 TC3 2.3035 BAU .5481
RDE -.2730 RRA .2678 RC3 1.5184 FAU .33164
FDE .6081 FRA-4.2359 FC-19.3202 BSP 7293
BDE .2959 BRA .3458 BC3 2.7589 FSP 4730

MID-COURSE EXECUTION ACCURACY
SGT 1815.7 SGR 1306.2 SG3 1407.7
RRT .7888 RRF -.9637 RTF -.8145
SGB 2236.7 R23 -.3418 R13 -.9054
SG1 2129.4 SG2 684.6 THA 33.48

ORBIT DETERMINATION ACCURACY
ST 204.8 SR 425.7 SS 752.4
CRT -.9130 CRS .6664 CST -.7269
LSA 830.1 MSA 308.2 SSA 71.8
EL1 466.2 EL2 76.3 ALF 114.40

LAUNCH DATE DEC 15 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 501.605 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.087 GAL 4.42 AZL 90.38 HCA 151.81 SMA 187.43 ECC .22726 INC .3801 V1 30.260
RP 229.86 LAP -.18 LOP 234.87 VP 21.134 GAP 1.17 AZP 89.66 TAL 24.22 TAP 176.03 RCA 144.83 APO 230.02 V2 23.927
RC 230.076 GL -3.26 GP 11.95 ZAL 45.26 ZAP 133.22 ETS 167.08 ZAE 165.13 ETE 117.00 ZAC 101.38 ETC 255.61 CLP 134.42

PLANETOCENTRIC CONIC

C3 14.844 VHL 3.853 DLA 15.06 RAL 129.78 RAD 6567.6 VEL 11.672 PTH 2.05 VHP 3.877 DPA 8.26 RAP 194.01 ECC 1.2443

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 24 41	2633.43	-27.04	69.78	351.15	98.74	13 8 34	2033.4	-25.56	61.43
90.00	4 25 39	4301.71	3.32	177.66	345.91	61.86	5 37 21	3701.7	-.47	171.03
100.00	13 54 12	2344.75	-28.23	48.32	350.92	100.26	14 33 16	1744.7	-26.52	39.94
100.00	5 38 49	4065.62	4.37	159.72	345.33	60.40	6 46 35	3465.6	.40	153.19
110.00	15 20 40	2074.18	-31.34	26.99	350.14	104.41	15 55 14	1474.2	-29.04	18.54
110.00	6 28 50	3908.95	7.08	146.16	343.65	56.47	7 33 59	3309.0	2.62	139.91

DIFFERENTIAL CORRECTIONS
TDE .1286 TRA -.2339 TC3 2.1900 BAU .5425
RDE -.2611 RRA .3019 RC3 1.6363 FAU .34331
FDE .5253 FRA-4.4833 FC-20.0221 BSP 7214
BDE .2910 BRA .3820 BC3 2.7338 FSP 4920

MID-COURSE EXECUTION ACCURACY
SGT 1736.2 SGR 1398.9 SG3 1462.0
RRT .7766 RRF -.9703 RTF -.7965
SGB 2229.6 R23 -.3391 R13 -.9117
SG1 2108.2 SG2 725.8 THA 37.17

ORBIT DETERMINATION ACCURACY
ST 225.5 SR 414.2 SS 757.6
CRT -.9360 CRS .6508 CST -.6861
LSA 831.3 MSA 317.3 SSA 68.7
EL1 466.3 EL2 70.5 ALF 117.69

LAUNCH DATE DEC 15 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 505.442 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.073	GAL	4.43	AZL	90.47	HCA	152.83	SMA	187.18	ECC	.22638	INC	.4657
RP	229.47	LAP	-.21	LOP	235.90	VP	21.158	GAP	.81	AZP	89.59	TAL	24.40	TAP	177.23	RCA	144.80	APO	229.55
RC	231.973	GL	-3.99	GP	12.60	ZAL	45.05	ZAP	131.62	ETS	167.09	ZAE	163.73	ETE	121.22	ZAC	101.91	ETC	255.59

V1	30.260	V2	23.968	CLP	132.89														

PLANETOCENTRIC CONIC

C3	14.832	VHL	3.851	DLA	14.41	RAL	129.33	RAD	6567.6	VEL	11.671	PTH	2.05	VHP	3.810	DPA	9.07	RAP	193.84

ECC	1.2441	PO	CST TIM	INJ 2 LAT	INJ 2 LONG														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 28 46	2610.35	-26.79	68.14	350.43	99.52	13 12 16	2010.3	-25.20	59.83
90.00	4 18 1	4324.43	4.05	178.93	345.36	61.95	5 30 6	3724.4	.26	172.29
100.00	13 57 48	2323.17	-27.96	46.78	350.19	101.03	14 36 32	1723.2	-26.15	38.44
100.00	5 31 40	4086.83	5.08	160.89	344.79	60.50	6 39 47	3486.8	1.12	154.35
110.00	15 23 17	2055.69	-31.02	25.65	349.38	105.15	15 57 33	1455.7	-28.63	17.26
110.00	6 22 40	3927.07	7.76	147.13	343.15	56.60	7 28 7	3327.1	3.31	140.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1425	TRA	-.2541	TC3	2.0632	BAU	.5380	SGT	1650.1	SGR	1499.5	SG3	1515.0	ST	246.9	SR	401.9	SS	764.0
RDE	-.2474	RRA	.3387	RC3	1.7621	FAU	.35468	RRT	.7582	RRF	-.9758	RTF	-.7731	CRT	-.9513	CRS	.6366	CST	-.6411
FDE	.4274	FRA	-4.7307	FC	-20.7021	BSP	7177	SGB	2229.6	R23	-.3294	R13	-.9200	LSA	833.4	MSA	327.6	SSA	65.2
BDE	.2856	BRA	.4234	BC3	2.7133	FSP	5114	SG1	2092.0	SG2	771.2	THA	41.40	EL1	467.1	EL2	65.5	ALF	120.98

LAUNCH DATE DEC 15 1964 FLIGHT TIME 230.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 509.291 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.059	GAL	4.45	AZL	90.56	HCA	153.86	SMA	186.95	ECC	.22555	INC	.5581
RP	229.09	LAP	-.25	LOP	236.93	VP	21.183	GAP	.46	AZP	89.50	TAL	24.56	TAP	178.42	RCA	144.78	APO	229.11
RC	233.848	GL	-4.78	GP	13.31	ZAL	44.89	ZAP	129.98	ETS	167.11	ZAE	162.20	ETE	124.83	ZAC	102.48	ETC	255.58

V1	30.260	V2	24.009	CLP	131.32														

PLANETOCENTRIC CONIC

C3	14.826	VHL	3.850	DLA	13.71	RAL	128.90	RAD	6567.6	VEL	11.671	PTH	2.05	VHP	3.748	DPA	9.93	RAP	193.66

ECC	1.2440	PO	CST TIM	INJ 2 LAT	INJ 2 LONG														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 33 19	2585.54	-26.50	66.38	349.71	100.36	13 16 24	1985.5	-24.80	58.12
90.00	4 10 1	4349.03	4.83	180.31	344.84	62.06	5 22 30	3749.0	1.06	173.66
100.00	14 1 52	2299.94	-27.64	45.12	349.46	101.85	14 40 12	1699.9	-25.73	36.84
100.00	5 24 9	4109.86	5.85	162.17	344.28	60.63	6 32 39	3509.9	1.90	155.61
110.00	15 26 19	2035.72	-30.65	24.21	348.61	105.93	16 0 14	1435.7	-28.16	15.89
110.00	6 16 12	3946.84	8.50	148.18	342.66	56.77	7 21 59	3346.8	4.07	141.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1566	TRA	-.2779	TC3	1.9269	BAU	.5359	SGT	1561.2	SGR	1609.0	SG3	1566.9	ST	269.5	SR	388.8	SS	772.7
RDE	-.2318	RRA	.3785	RC3	1.8968	FAU	.36577	RRT	.7326	RRF	-.9804	RTF	-.7435	CRT	-.9608	CRS	.6255	CST	-.5891
FDE	.3134	FRA	-4.9786	FC	-21.3589	BSP	7186	SGB	2241.9	R23	-.3109	R13	-.9305	LSA	837.6	MSA	339.8	SSA	61.4
BDE	.2798	BRA	.4695	BC3	2.7039	FSP	5309	SG1	2086.9	SG2	819.2	THA	46.18	EL1	469.0	EL2	61.9	ALF	124.34

LAUNCH DATE DEC 15 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 513.152 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.047	GAL	4.46	AZL	90.66	HCA	154.90	SMA	186.73	ECC	.22477	INC	.6575
RP	228.70	LAP	-.28	LOP	237.96	VP	21.210	GAP	.12	AZP	89.40	TAL	24.70	TAP	179.59	RCA	144.76	APO	228.70
RC	235.703	GL	-5.64	GP	14.07	ZAL	44.76	ZAP	128.30	ETS	167.15	ZAE	160.55	ETE	127.89	ZAC	103.10	ETC	255.56

V1	30.260	V2	24.049	CLP	129.72														

PLANETOCENTRIC CONIC

C3	14.825	VHL	3.850	DLA	12.93	RAL	128.48	RAD	6567.6	VEL	11.671	PTH	2.05	VHP	3.690	DPA	10.85	RAP	193.47

ECC	1.2440	PO	CST TIM	INJ 2 LAT	INJ 2 LONG														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 38 22	2558.85	-26.16	64.50	348.98	101.24	13 21 1	1958.9	-24.35	56.30
90.00	4 1 36	4375.69	5.68	181.81	344.34	62.21	5 14 32	3775.7	1.92	175.15
100.00	14 6 24	2274.90	-27.28	43.35	348.72	102.72	14 44 19	1674.9	-25.26	35.13
100.00	5 16 15	4134.88	6.69	163.56	343.79	60.80	6 25 9	3534.9	2.74	156.99
110.00	15 29 45	2014.13	-30.24	22.66	347.83	106.76	16 3 19	1414.1	-27.65	14.43
110.00	6 9 24	3968.41	9.30	149.33	342.20	56.96	7 15 32	3368.4	4.89	143.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1706	TRA	-.3051	TC3	1.7806	BAU	.5370	SGT	1470.2	SGR	1729.0	SG3	1618.2	ST	292.8	SR	374.7	SS	785.5
RDE	-.2133	RRA	.4224	RC3	2.0421	FAU	.37666	RRT	.6983	RRF	-.9842	RTF	-.7059	CRT	-.9636	CRS	.6181	CST	-.5275
FDE	.1758	FRA	-5.2319	FC	-21.9960	BSP	7226	SGB	2269.6	R23	-.2823	R13	-.9432	LSA	845.0	MSA	354.7	SSA	57.2
BDE	.2732	BRA	.5210	BC3	2.7094	FSP	5488	SG1	2097.2	SG2	867.6	THA	51.56	EL1	471.4	EL2	62.3	ALF	127.74

LAUNCH DATE DEC 15 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 517.025 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.035	GAL	4.47	AZL	90.77	HCA	155.94	SMA	186.53	ECC	.22403	INC	.7649
RP	228.31	LAP	-.31	LOP	239.00	VP	21.239	GAP	-.22	AZP	89.30	TAL	24.82	TAP	180.76	RCA	144.74	APO	228.32
RC	237.537	GL	-6.56	GP	14.89	ZAL	44.68	ZAP	126.58	ETS	167.19	ZAE	158.79	ETE	130.51	ZAC	103.76	ETC	255.54

V1	30.260	V2	24.090	CLP	128.07														

PLANETOCENTRIC CONIC

C3	14.833	VHL	3.851	DLA	12.09	RAL	128.06	RAD	6567.6	VEL	11.671	PTH	2.05	VHP	3.637	DPA	11.84	RAP	193.29

ECC	1.2441	PO	CST TIM	INJ 2 LAT	INJ 2 LONG														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 43 56	2530.14	-25.76	62.49	348.25	102.17	13 26 6	1930.1	-23.83	54.36
90.00	3 52 43	4404.63	6.60	183.44	343.87	62.40	5 6 7	3804.6	2.85	176.77
100.00	14 11 26	2247.91	-26.86	41.45	347.97	103.63	14 48 54	1647.9	-24.72	33.31
100.00	5 7 53	4162.10	7.59	165.07	343.33	61.00	6 17 15	3562.1	3.66	158.49
110.00	15 33 37	1990.78	-29.77	21.01	347.05	107.64	16 6 48	1390.8	-27.07	12.86
110.00	6 2 12	3991.99	10.17	150.60	341.76	57.19	7 8 44	3392.0	5.78	144.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1917	TRA	-.3279	TC3	1.6452	BAU	.5457	SGT	1391.5	SGR	1866.7	SG3	1674.4	ST	324.4	SR	357.9	SS	808.6
RDE	-.1887	RRA	.4736	RC3	2.2058	FAU	.38850	RRT	.6597	RRF	-.9874	RTF	-.6657	CRT	-.9516	CRS	.6133	CST	-.4200
FDE	-.0154	FRA	-5.5190	FC	-22.6758	BSP	7172	SGB	2328.3	R23	-.2430	R13	-.9572	LSA	859.3	MSA	382.2	SSA	51.3
BDE	.2690	BRA	.5760	BC3	2.7518	FSP	5593	SG1	2142.6	SG2	911.1	THA	57.16	EL1	477.2	EL2	74.8	ALF	132.05

2112A

LAUNCH DATE DEC 15 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 520.908 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.024 GAL 4.48 AZL 90.88 HCA 156.98 SMA 186.34 ECC .22333 INC .8820 V1 30.260
RP 227.92 LAP -.35 LOP 240.04 VP 21.269 GAP -.55 AZP 89.19 TAL 24.93 TAP 181.90 RCA 144.73 APO 227.96 V2 24.132
RC 239.350 GL -7.56 GP 15.77 ZAL 44.65 ZAP 124.82 ETS 167.25 ZAE 156.94 ETE 132.73 ZAC 104.48 ETC 255.51 CLP 126.39

PLANETOCENTRIC CONIC

C3 14.849 VHL 3.853 DLA 11.15 RAL 127.65 RAD 6567.6 VEL 11.672 PTH 2.05 VHP 3.590 DPA 12.90 RAP 193.10 ECC 1.2444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 50 5	2499.14	-25.30	60.34	347.51	103.16	13 31 44	1899.1	-23.24	52.28
90.00	3 43 17	4436.14	7.59	185.23	343.42	62.64	4 57 13	3836.1	3.86	178.53
100.00	14 17 1	2218.72	-26.38	39.42	347.22	104.60	14 54 0	1618.7	-24.11	31.35
100.00	4 59 1	4191.79	8.56	166.74	342.90	61.25	6 8 53	3591.8	4.66	160.12
110.00	15 37 58	1965.44	-29.23	19.23	346.26	108.57	16 10 43	1365.4	-26.42	11.17
110.00	5 54 34	4017.83	11.12	152.00	341.36	57.47	7 1 32	3417.8	6.76	145.63

DIFFERENTIAL CORRECTIONS
TDE .2008 TRA -.3676 TC3 1.4656 BAU .5530
RDE -.1639 RRA .5250 RC3 2.3690 FAU .39764
FDE -.1904 FRA-5.7567 FC-23.1830 BSP 7423
BDE .2591 BRA .6409 BC3 2.7857 FSP 5775

MID-COURSE EXECUTION ACCURACY
SGT 1294.3 SGR 2006.5 SG3 1718.1
RRT .5954 RRF -.9898 RTF -.5986
SGB 2387.7 R23 -.1977 R13 -.9700
SG1 2189.3 SG2 953.0 THA 63.62

ORBIT DETERMINATION ACCURACY
ST 343.8 SR 345.4 SS 833.2
CRT -.9327 CRS .6305 CST -.3625
LSA 879.3 MSA 395.5 SSA 47.2
EL1 479.1 EL2 89.4 ALF 134.85

LAUNCH DATE DEC 15 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 524.802 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.014 GAL 4.48 AZL 91.01 HCA 158.02 SMA 186.17 ECC .22267 INC 1.0103 V1 30.260
RP 227.53 LAP -.38 LOP 241.09 VP 21.300 GAP -.87 AZP 89.06 TAL 25.02 TAP 183.04 RCA 144.71 APO 227.62 V2 24.173
RC 241.142 GL -8.66 GP 16.73 ZAL 44.66 ZAP 123.02 ETS 167.33 ZAE 154.99 ETE 134.63 ZAC 105.27 ETC 255.48 CLP 124.68

PLANETOCENTRIC CONIC

C3 14.878 VHL 3.857 DLA 10.13 RAL 127.24 RAD 6567.6 VEL 11.673 PTH 2.05 VHP 3.548 DPA 14.04 RAP 192.93 ECC 1.2449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 56 50	2465.64	-24.76	58.03	346.76	104.19	13 37 56	1865.6	-22.57	50.05
90.00	3 33 15	4470.51	8.66	187.19	343.01	62.93	4 47 45	3870.5	4.96	180.46
100.00	14 23 12	2187.13	-25.82	37.24	346.45	105.61	14 59 39	1587.1	-23.43	29.26
100.00	4 49 34	4224.26	9.62	168.57	342.49	61.56	5 59 59	3624.3	5.75	161.92
110.00	15 42 50	1937.94	-28.62	17.32	345.45	109.54	16 15 8	1337.9	-25.69	9.37
110.00	5 46 25	4046.21	12.16	153.55	340.98	57.80	6 53 51	3446.2	7.82	147.14

DIFFERENTIAL CORRECTIONS
TDE .2087 TRA -.4101 TC3 1.2789 BAU .5663
RDE -.1347 RRA .5820 RC3 2.5434 FAU .40599
FDE -.3887 FRA-5.9945 FC-23.6233 BSP 7748
BDE .2484 BRA .7120 BC3 2.8468 FSP 5945

MID-COURSE EXECUTION ACCURACY
SGT 1205.2 SGR 2159.0 SG3 1758.5
RRT .5113 RRF -.9919 RTF -.5121
SGB 2472.6 R23 -.1480 R13 -.9808
SG1 2267.4 SG2 986.2 THA 70.17

ORBIT DETERMINATION ACCURACY
ST 362.6 SR 336.0 SS 866.8
CRT -.8964 CRS .6646 CST -.3010
LSA 909.2 MSA 409.0 SSA 42.9
EL1 481.4 EL2 112.2 ALF 137.42

LAUNCH DATE DEC 15 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 528.707 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.005 GAL 4.48 AZL 91.15 HCA 159.07 SMA 186.01 ECC .22205 INC 1.1514 V1 30.260
RP 227.14 LAP -.41 LOP 242.14 VP 21.333 GAP -1.18 AZP 88.92 TAL 25.09 TAP 184.16 RCA 144.71 APO 227.31 V2 24.214
RC 242.914 GL -9.85 GP 17.76 ZAL 44.74 ZAP 121.18 ETS 167.42 ZAE 152.94 ETE 136.26 ZAC 106.12 ETC 255.45 CLP 122.93

PLANETOCENTRIC CONIC

C3 14.924 VHL 3.863 DLA 8.99 RAL 126.83 RAD 6567.6 VEL 11.675 PTH 2.05 VHP 3.512 DPA 15.26 RAP 192.76 ECC 1.2456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 4 16	2429.36	-24.13	55.56	346.00	105.28	13 44 46	1829.4	-21.80	47.67
90.00	3 22 30	4508.15	9.81	189.35	342.63	63.31	4 37 38	3908.2	6.15	182.58
100.00	14 30 0	2152.86	-25.17	34.90	345.67	106.68	15 5 53	1552.9	-22.64	27.01
100.00	4 39 28	4259.89	10.77	170.59	342.13	61.95	5 50 27	3659.9	6.94	163.90
110.00	15 48 15	1908.02	-27.92	15.27	344.64	110.57	16 20 3	1308.0	-24.87	7.43
110.00	5 37 43	4077.49	13.29	155.27	340.65	58.21	6 45 40	3477.5	8.99	148.81

DIFFERENTIAL CORRECTIONS
TDE .2153 TRA -.4575 TC3 1.0820 BAU .5855
RDE -.1000 RRA .6443 RC3 2.7279 FAU .41317
FDE -.6146 FRA-6.2200 FC-23.9681 BSP 8167
BDE .2374 BRA .7902 BC3 2.9347 FSP 6100

MID-COURSE EXECUTION ACCURACY
SGT 1128.2 SGR 2323.8 SG3 1793.7
RRT .4005 RRF -.9935 RTF -.3995
SGB 2583.2 R23 -.0990 R13 -.9886
SG1 2377.4 SG2 1010.5 THA 76.52

ORBIT DETERMINATION ACCURACY
ST 380.9 SR 332.0 SS 909.9
CRT -.8351 CRS .7162 CST -.2386
LSA 950.6 MSA 422.0 SSA 38.6
EL1 484.5 EL2 143.6 ALF 139.68

LAUNCH DATE DEC 15 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 532.623 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.997 GAL 4.48 AZL 91.31 HCA 160.12 SMA 185.86 ECC .22146 INC 1.3064 V1 30.260
RP 226.75 LAP -.44 LOP 243.19 VP 21.366 GAP -1.49 AZP 88.77 TAL 25.15 TAP 185.26 RCA 144.70 APO 227.02 V2 24.256
RC 244.666 GL -11.17 GP 18.88 ZAL 44.89 ZAP 119.30 ETS 167.54 ZAE 150.81 ETE 137.65 ZAC 107.06 ETC 255.41 CLP 121.14

PLANETOCENTRIC CONIC

C3 14.990 VHL 3.872 DLA 7.74 RAL 126.40 RAD 6567.6 VEL 11.678 PTH 2.05 VHP 3.483 DPA 16.57 RAP 192.62 ECC 1.2467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 12 27	2389.96	-23.40	52.91	345.23	106.41	13 52 17	1790.0	-20.93	45.11
90.00	3 10 57	4549.53	11.07	191.74	342.30	63.77	4 26 47	3949.5	7.46	184.92
100.00	14 37 31	2115.59	-24.42	32.39	344.89	107.80	15 12 47	1515.6	-21.75	24.60
100.00	4 28 34	4299.14	12.02	172.84	341.81	62.42	5 40 13	3699.1	8.23	166.09
110.00	15 54 16	1875.41	-27.12	13.07	343.81	111.65	16 25 32	1275.4	-23.94	5.35
110.00	5 28 19	4112.08	14.52	157.19	340.36	58.71	6 36 51	3512.1	10.27	150.67

DIFFERENTIAL CORRECTIONS
TDE .2197 TRA -.5091 TC3 .8759 BAU .6120
RDE -.0573 RRA .7145 RC3 2.9258 FAU .41945
FDE -.8807 FRA-6.4470 FC-24.2250 BSP 8657
BDE .2270 BRA .8773 BC3 3.0541 FSP 6212

MID-COURSE EXECUTION ACCURACY
SGT 1069.4 SGR 2505.7 SG3 1825.2
RRT .2604 RRF -.9949 RTF -.2579
SGB 2724.4 R23 -.0550 R13 -.9933
SG1 2524.2 SG2 1025.0 THA 82.40

ORBIT DETERMINATION ACCURACY
ST 397.6 SR 338.1 SS 968.5
CRT -.7379 CRS .7835 CST -.1748
LSA 1010.6 MSA 433.6 SSA 34.2
EL1 487.6 EL2 186.1 ALF 141.23

2113A

LAUNCH DATE DEC 15 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 536.549 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.989 GAL 4.48 AZL 91.48 HCA 161.17 SMA 185.73 ECC .22091 INC 1.4795 V1 30.260
RP 226.36 LAP -.48 LOP 244.24 VP 21.402 GAP -1.80 AZP 88.60 TAL 25.18 TAP 186.36 RCA 144.70 APO 226.76 V2 24.297
RC 246.398 GL -12.63 GP 20.10 ZAL 45.11 ZAP 117.38 ETS 167.69 ZAE 148.59 ETE 138.84 ZAC 108.08 ETC 255.36 CLP 119.32

PLANETOCENTRIC CONIC

C3 15.083 VHL 3.884 DLA 6.34 RAL 125.97 RAD 6567.6 VEL 11.682 PTH 2.05 VHP 3.461 DPA 17.99 RAP 192.50 ECC 1.2482

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 21 28	2347.02	-22.55	50.05	344.46	107.60	14 0 35	1747.0	-19.93	42.36
90.00	2 58 27	4595.25	12.43	194.41	342.02	64.35	4 15 2	3995.2	8.88	187.53
100.00	14 45 50	2074.93	-23.54	29.68	344.10	108.97	15 20 25	1474.9	-20.74	22.01
100.00	4 16 47	4342.57	13.37	175.35	341.55	63.01	5 29 9	3742.6	9.65	168.54
110.00	16 0 58	1839.76	-26.20	10.71	342.98	112.78	16 31 38	1239.8	-22.89	3.12
110.00	5 18 7	4150.51	15.87	159.36	340.13	59.32	6 27 18	3550.5	11.68	152.75

DIFFERENTIAL CORRECTIONS
TDE .2219 TRA -.5651 TC3 .6628 BAU .6454
RDE -.0066 RRA .7916 RC3 3.1312 FAU .42378
FDE-1.1720 FRA-6.6525 FC-24.3236 BSP 9262
BDE .2220 BRA .9726 BC3 3.2005 FSP 6307

MID-COURSE EXECUTION ACCURACY
SGT 1037.3 SGR 2701.1 SG3 1847.9
RRT .0940 RRF -.9959 RTF -.0906
SGB 2893.4 R23 -.0191 R13 -.9958
SG1 2703.1 SG2 1031.9 THA 87.58

ORBIT DETERMINATION ACCURACY
ST 413.2 SR 360.1 SS 1039.7
CRT -.6102 CRS .8536 CST -.1189
LSA 1088.1 MSA 443.2 SSA 30.0
EL1 493.2 EL2 239.0 ALF 141.37

LAUNCH DATE DEC 15 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 540.486 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.981 GAL 4.47 AZL 91.67 HCA 162.23 SMA 185.60 ECC .22039 INC 1.6725 V1 30.260
RP 225.97 LAP -.51 LOP 245.30 VP 21.438 GAP -2.09 AZP 88.41 TAL 25.21 TAP 187.44 RCA 144.70 APO 226.51 V2 24.339
RC 248.110 GL -14.25 GP 21.43 ZAL 45.42 ZAP 115.43 ETS 167.86 ZAE 146.28 ETE 139.86 ZAC 109.21 ETC 255.30 CLP 117.48

PLANETOCENTRIC CONIC

C3 15.212 VHL 3.900 DLA 4.79 RAL 125.51 RAD 6567.6 VEL 11.687 PTH 2.06 VHP 3.448 DPA 19.51 RAP 192.42 ECC 1.2504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 31 26	2300.06	-21.55	46.97	343.68	108.83	14 9 46	1700.1	-18.78	39.39
90.00	2 44 50	4646.03	13.91	197.40	341.82	65.08	4 2 16	4046.0	10.43	190.45
100.00	14 55 2	2030.42	-22.53	26.76	343.30	110.19	15 28 52	1430.4	-19.58	19.21
100.00	4 3 55	4390.90	14.85	178.18	341.35	63.75	5 17 6	3790.9	11.20	171.29
110.00	16 8 27	1800.66	-25.15	8.16	342.14	113.95	16 38 27	1200.7	-21.70	.71
110.00	5 6 59	4193.42	17.34	161.81	339.97	60.07	6 16 53	3593.4	13.23	155.11

DIFFERENTIAL CORRECTIONS
TDE .2189 TRA -.6278 TC3 .4391 BAU .6862
RDE .0548 RRA .8778 RC3 3.3456 FAU .42629
FDE-1.4971 FRA-6.8420 FC-24.2601 BSP 9977
BDE .2256 BRA 1.0792 BC3 3.3743 FSP 6368

MID-COURSE EXECUTION ACCURACY
SGT 1037.9 SGR 2914.1 SG3 1862.5
RRT -.0919 RRF -.9968 RTF .0959
SGB 3093.4 R23 .0089 R13 -.9968
SG1 2915.9 SG2 1032.9 THA 92.14

ORBIT DETERMINATION ACCURACY
ST 424.9 SR 404.1 SS 1127.0
CRT -.4723 CRS .9131 CST -.0792
LSA 1188.3 MSA 448.6 SSA 26.1
EL1 503.5 EL2 300.6 ALF 138.04

LAUNCH DATE DEC 15 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 544.433 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.975 GAL 4.47 AZL 91.89 HCA 163.29 SMA 185.49 ECC .21990 INC 1.8902 V1 30.260
RP 225.58 LAP -.54 LOP 246.37 VP 21.475 GAP -2.38 AZP 88.19 TAL 25.21 TAP 188.51 RCA 144.70 APO 226.28 V2 24.381
RC 249.803 GL -16.05 GP 22.89 ZAL 45.84 ZAP 113.46 ETS 168.07 ZAE 143.88 ETE 140.73 ZAC 110.45 ETC 255.23 CLP 115.60

PLANETOCENTRIC CONIC

C3 15.389 VHL 3.923 DLA 3.06 RAL 125.02 RAD 6567.6 VEL 11.695 PTH 2.06 VHP 3.443 DPA 21.15 RAP 192.39 ECC 1.2533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 42 30	2248.47	-20.38	43.64	342.91	110.10	14 19 59	1648.5	-17.46	36.18
90.00	2 29 52	4702.80	15.51	200.80	341.71	66.01	3 48 15	4102.8	12.14	193.75
100.00	15 5 16	1981.50	-21.34	23.61	342.51	111.44	15 38 18	1381.5	-18.24	16.19
100.00	3 49 47	4445.01	16.45	181.40	341.26	64.68	5 3 52	3845.0	12.91	174.40
110.00	16 16 47	1757.65	-23.93	5.41	341.31	115.17	16 46 5	1157.7	-20.34	358.11
110.00	4 54 45	4241.62	18.95	164.61	339.91	61.01	6 5 27	3641.6	14.94	157.79

DIFFERENTIAL CORRECTIONS
TDE .2118 TRA -.6949 TC3 .2123 BAU .7353
RDE .1302 RRA .9756 RC3 3.5677 FAU .42672
FDE-1.8597 FRA-7.0155 FC-24.0063 BSP 10787
BDE .2486 BRA 1.1978 BC3 3.5740 FSP 6378

MID-COURSE EXECUTION ACCURACY
SGT 1075.4 SGR 3147.6 SG3 1867.9
RRT -.2733 RRF -.9975 RTF .2775
SGB 3326.2 R23 .0289 R13 -.9971
SG1 3162.9 SG2 1029.5 THA 95.97

ORBIT DETERMINATION ACCURACY
ST 434.4 SR 475.9 SS 1232.9
CRT -.3448 CRS .9542 CST -.0530
LSA 1315.5 MSA 452.0 SSA 22.4
EL1 530.4 EL2 365.9 ALF 127.58

LAUNCH DATE DEC 15 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 548.389 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.969 GAL 4.46 AZL 92.14 HCA 164.36 SMA 185.39 ECC .21943 INC 2.1371 V1 30.260
RP 225.19 LAP -.58 LOP 247.43 VP 21.513 GAP -2.66 AZP 87.94 TAL 25.20 TAP 189.56 RCA 144.71 APO 226.07 V2 24.423
RC 251.477 GL -18.06 GP 24.49 ZAL 46.39 ZAP 111.45 ETS 168.32 ZAE 141.39 ETE 141.47 ZAC 111.83 ETC 255.14 CLP 113.69

PLANETOCENTRIC CONIC

C3 15.629 VHL 3.953 DLA 1.11 RAL 124.49 RAD 6567.6 VEL 11.705 PTH 2.06 VHP 3.450 DPA 22.92 RAP 192.43 ECC 1.2572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 54 52	2191.51	-19.00	40.03	342.15	111.40	14 31 24	1591.5	-15.93	32.70
90.00	2 13 17	4766.75	17.24	204.70	341.71	67.18	3 32 43	4166.7	14.00	197.52
100.00	15 16 43	1927.46	-19.96	20.20	341.74	112.72	15 48 51	1327.5	-16.71	12.91
100.00	3 34 6	4506.02	18.19	185.10	341.28	65.86	4 49 12	3906.0	14.77	177.97
110.00	16 26 9	1710.15	-22.52	2.44	340.48	116.42	16 54 39	1110.1	-18.79	355.30
110.00	4 41 10	4296.11	20.72	167.85	339.97	62.18	5 52 46	3696.1	16.83	160.88

DIFFERENTIAL CORRECTIONS
TDE .1980 TRA -.7696 TC3 -.0197 BAU .7925
RDE .2228 RRA 1.0861 RC3 3.7928 FAU .42455
FDE-2.2572 FRA-7.1603 FC-23.5174 BSP 11697
BDE .2981 BRA 1.3312 BC3 3.7929 FSP 6339

MID-COURSE EXECUTION ACCURACY
SGT 1152.0 SGR 3402.4 SG3 1861.5
RRT -.4364 RRF -.9980 RTF .4404
SGB 3592.1 R23 .0428 R13 -.9971
SG1 3443.0 SG2 1024.3 THA 99.23

ORBIT DETERMINATION ACCURACY
ST 440.8 SR 579.2 SS 1356.6
CRT -.2563 CRS .9779 CST -.0517
LSA 1471.4 MSA 452.8 SSA 19.1
EL1 601.0 EL2 410.7 ALF 111.42

LAUNCH DATE DEC 15 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 552.354 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.964 GAL 4.45 AZL 92.42 HCA 165.43 SMA 185.30 ECC .21899 INC 2.4204 V1 30.260
RP 224.80 LAP -.61 LOP 248.50 VP 21.553 GAP -2.94 AZP 87.66 TAL 25.18 TAP 190.60 RCA 144.72 APO 225.87 V2 24.465
RC 253.132 GL -20.33 GP 26.25 ZAL 47.09 ZAP 109.43 ETS 168.61 ZAE 138.80 ETE 142.09 ZAC 113.36 ETC 255.02 CLP 111.77

PLANETOCENTRIC CONIC

C3 15.955 VHL 3.994 DLA -1.08 RAL 123.91 RAD 6567.6 VEL 11.719 PTH 2.06 VHP 3.470 DPA 24.84 RAP 192.56 ECC 1.2626

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 8 48	2128.19	-17.38	36.08	341.44	112.71	14 44 16	1528.2	-14.16	28.89
90.00	1 54 42	4839.41	19.10	209.22	341.88	68.69	3 15 21	4239.4	16.03	201.89
100.00	15 29 38	1867.43	-18.34	16.48	341.01	114.03	16 0 46	1267.4	-14.94	9.33
100.00	3 16 33	4575.41	20.06	189.40	341.47	67.37	4 32 48	3975.4	16.82	182.10
110.00	16 36 44	1657.43	-20.89	359.22	339.69	117.69	17 4 21	1057.4	-17.02	352.24
110.00	4 25 57	4358.18	22.64	171.64	340.20	63.68	5 38 35	3758.2	18.92	164.48

DIFFERENTIAL CORRECTIONS
TDE .1712 TRA -.8569 TC3 -.2661 BAU .8544
RDE .3298 RRA 1.2053 RC3 3.9967 FAU .41733
FDE-2.6430 FRA-7.2303 FC-22.6455 BSP 12866
BDE .3716 BRA 1.4789 BC3 4.0056 FSP 6330

MID-COURSE EXECUTION ACCURACY
SGT 1271.6 SGR 3661.7 SG3 1831.3
RRT -.5774 RRF -.9984 RTF .5813
SGB 3876.2 R23 .0529 R13 -.9971
SG1 3740.6 SG2 1016.3 THA 102.26

ORBIT DETERMINATION ACCURACY
ST 443.1 SR 708.6 SS 1479.7
CRT -.2414 CRS .9895 CST -.1008
LSA 1639.0 MSA 448.6 SSA 16.4
EL1 721.0 EL2 422.6 ALF 103.19

LAUNCH DATE DEC 15 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 556.330 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.959 GAL 4.43 AZL 92.75 HCA 166.50 SMA 185.21 ECC .21858 INC 2.7487 V1 30.260
RP 224.41 LAP -.64 LOP 249.58 VP 21.593 GAP -3.21 AZP 87.33 TAL 25.14 TAP 191.63 RCA 144.73 APO 225.70 V2 24.506
RC 254.766 GL -22.90 GP 28.20 ZAL 47.97 ZAP 107.39 ETS 168.96 ZAE 136.11 ETE 142.61 ZAC 115.07 ETC 254.87 CLP 109.82

PLANETOCENTRIC CONIC

C3 16.401 VHL 4.050 DLA -3.57 RAL 123.25 RAD 6567.7 VEL 11.738 PTH 2.07 VHP 3.506 DPA 26.93 RAP 192.80 ECC 1.2699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 24 39	2057.38	-15.47	31.77	340.80	114.02	14 58 56	1457.4	-12.10	24.71
90.00	1 33 37	4922.80	21.07	214.54	342.26	70.64	2 55 40	4322.8	18.24	207.01
100.00	15 44 19	1800.36	-16.43	12.41	340.34	115.33	16 14 20	1200.4	-12.89	5.41
100.00	2 56 38	4655.05	22.07	194.46	341.87	69.31	4 14 13	4055.0	19.05	186.96
110.00	16 48 44	1598.69	-18.99	355.72	338.96	118.97	17 15 23	998.7	-14.98	348.90
110.00	4 8 42	4429.48	24.72	176.14	340.67	65.61	5 22 31	3829.5	21.22	168.74

DIFFERENTIAL CORRECTIONS
TDE .1408 TRA -.9462 TC3 -.4913 BAU .9287
RDE .4714 RRA 1.3510 RC3 4.2069 FAU .40857
FDE-3.0986 FRA-7.3040 FC-21.5664 BSP 13977
BDE .4920 BRA 1.6494 BC3 4.2355 FSP 6160

MID-COURSE EXECUTION ACCURACY
SGT 1413.2 SGR 3965.2 SG3 1794.8
RRT -.6767 RRF -.9988 RTF .6801
SGB 4209.5 R23 .0578 R13 -.9971
SG1 4086.7 SG2 1009.6 THA 104.46

ORBIT DETERMINATION ACCURACY
ST 449.1 SR 886.2 SS 1635.4
CRT -.2501 CRS .9954 CST -.1579
LSA 1860.4 MSA 447.5 SSA 13.7
EL1 895.5 EL2 430.4 ALF 99.42

LAUNCH DATE DEC 15 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 560.316 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.954 GAL 4.42 AZL 93.13 HCA 167.57 SMA 185.14 ECC .21819 INC 3.1339 V1 30.260
RP 224.02 LAP -.67 LOP 250.66 VP 21.634 GAP -3.47 AZP 86.94 TAL 25.08 TAP 192.65 RCA 144.74 APO 225.54 V2 24.548
RC 256.380 GL -25.82 GP 30.36 ZAL 49.08 ZAP 105.34 ETS 169.38 ZAE 133.32 ETE 143.05 ZAC 116.98 ETC 254.68 CLP 107.85

PLANETOCENTRIC CONIC

C3 17.017 VHL 4.125 DLA -6.38 RAL 122.50 RAD 6567.7 VEL 11.764 PTH 2.08 VHP 3.562 DPA 29.20 RAP 193.18 ECC 1.2800

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 42 57	1977.39	-13.20	26.99	340.28	115.28	15 15 55	1377.4	-9.68	20.08
90.00	1 9 18	5019.70	23.12	220.91	342.94	73.18	2 32 58	4419.7	20.60	213.14
100.00	16 1 16	1724.78	-14.18	7.93	339.79	116.59	16 30 1	1124.8	-10.49	1.07
100.00	2 33 41	4747.54	24.16	200.53	342.58	71.85	3 52 49	4147.5	21.46	192.78
110.00	17 2 34	1532.86	-16.78	351.90	338.33	120.23	17 28 7	932.9	-12.64	345.24
110.00	3 48 53	4512.23	26.94	181.55	341.46	68.12	5 4 5	3912.2	23.73	173.85

DIFFERENTIAL CORRECTIONS
TDE .0976 TRA-1.0466 TC3 -.7084 BAU 1.0119
RDE .6477 RRA 1.5199 RC3 4.3914 FAU .39549
FDE-3.5648 FRA-7.3197 FC-20.1209 BSP 15185
BDE .6550 BRA 1.8454 BC3 4.4482 FSP 5920

MID-COURSE EXECUTION ACCURACY
SGT 1581.1 SGR 4295.1 SG3 1738.2
RRT -.7514 RRF -.9991 RTF .7544
SGB 4576.9 R23 .0600 R13 -.9973
SG1 4465.5 SG2 1003.4 THA 106.31

ORBIT DETERMINATION ACCURACY
ST 459.6 SR 1107.8 SS 1799.6
CRT -.3134 CRS .9980 CST -.2546
LSA 2116.2 MSA 445.4 SSA 11.4
EL1 1118.8 EL2 432.2 ALF 98.72

LAUNCH DATE DEC 15 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 564.310 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.951 GAL 4.40 AZL 93.59 HCA 168.65 SMA 185.08 ECC .21783 INC 3.5926 V1 30.260
RP 223.63 LAP -.71 LOP 251.74 VP 21.676 GAP -3.73 AZP 86.48 TAL 25.01 TAP 193.66 RCA 144.76 APO 225.39 V2 24.590
RC 257.974 GL -29.14 GP 32.77 ZAL 50.47 ZAP 103.29 ETS 169.87 ZAE 130.41 ETE 143.42 ZAC 119.13 ETC 254.43 CLP 105.86

PLANETOCENTRIC CONIC

C3 17.877 VHL 4.228 DLA -9.59 RAL 121.62 RAD 6567.7 VEL 11.801 PTH 2.09 VHP 3.644 DPA 31.68 RAP 193.75 ECC 1.2942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 4 33	1885.86	-10.48	21.65	339.97	116.46	15 35 59	1285.9	-6.84	14.86
90.00	0 40 41	5134.08	25.16	228.67	344.00	76.56	2 6 15	4534.1	23.06	220.62
100.00	16 21 11	1638.65	-11.50	2.94	339.44	117.78	16 48 30	1038.6	-7.69	356.22
100.00	2 6 45	4856.53	26.27	207.94	343.69	75.20	3 27 41	4256.5	23.98	199.89
110.00	17 18 42	1458.53	-14.18	347.71	337.87	121.43	17 43 1	858.5	-9.92	341.20
110.00	3 25 43	4609.41	29.23	188.18	342.69	71.43	4 42 32	4009.4	26.42	180.12

DIFFERENTIAL CORRECTIONS
TDE .0388 TRA-1.1598 TC3 -.9081 BAU 1.1032
RDE .8661 RRA 1.7155 RC3 4.5259 FAU .37693
FDE-4.0133 FRA-7.2540 FC-18.2539 BSP 16566
BDE .8669 BRA 2.0708 BC3 4.6161 FSP 5629

MID-COURSE EXECUTION ACCURACY
SGT 1770.1 SGR 4645.8 SG3 1655.7
RRT -.8069 RRF -.9993 RTF .8095
SGB 4971.6 R23 .0604 R13 -.9975
SG1 4870.5 SG2 997.3 THA 107.86

ORBIT DETERMINATION ACCURACY
ST 481.6 SR 1375.1 SS 1959.7
CRT -.4215 CRS .9992 CST -.3853
LSA 2401.5 MSA 442.8 SSA 9.4
EL1 1391.6 EL2 431.5 ALF 99.30

LAUNCH DATE DEC 15 1964 FLIGHT TIME 260.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 568.312 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	32.947	GAL	4.38	AZL	94.15	HCA	169.73	SMA	185.02	ECC	.21749	INC	4.1485	V1	30.260
RP	223.24	LAP	-.74	LOP	252.82	VP	21.718	GAP	-3.99	AZP	85.92	TAL	24.92	TAP	194.66	RCA	144.78	APO	225.26	V2	24.632
RC	259.547	GL	-32.94	GP	35.45	ZAL	52.19	ZAP	101.26	ETS	170.45	ZAE	127.38	ETE	143.74	ZAC	121.54	ETC	254.11	CLP	103.87

PLANETOCENTRIC CONIC

C3	19.102	VHL	4.371	DLA	-13.25	RAL	120.57	RAD	6567.8	VEL	11.853	PTH	2.10	VHP	3.761	DPA	34.38	RAP	194.55	ECC	1.3144

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 30 50	1779.00	-7.17	15.53	339.99	117.47	16 0 29	1179.0	-3.44	8.84
90.00	0 6 1	5272.02	26.99	238.35	345.57	81.08	1 33 53	4672.0	25.48	230.01
100.00	16 45 15	1538.86	-8.27	357.29	339.40	118.83	17 10 54	938.9	-4.36	350.68
100.00	1 34 16	4987.40	28.21	217.18	345.33	79.69	2 57 24	4387.4	26.50	208.80
110.00	17 37 58	1373.79	-11.12	343.05	337.68	122.53	18 0 51	773.8	-6.75	336.68
110.00	2 58 3	4725.23	31.45	196.46	344.52	75.87	4 16 49	4125.2	29.19	187.99

DIFFERENTIAL CORRECTIONS

TDE	-.0377	TRA	-1.2880	TC3	-1.0774	BAU	1.2035
RDE	1.1416	RRA	1.9474	RC3	4.5876	FAU	.35251
FDE	-4.4267	FRA	-7.0965	FC	-15.9762	BSP	18096
BDE	1.1422	BRA	2.3348	BC3	4.7125	FSP	5260

MID-COURSE EXECUTION ACCURACY

SGT	1974.5	SGR	5019.9	SG3	1545.7		
RRT	-.8475	RRF	-.9994	RTF	.8498		
SGB	5394.3	R23	.0595	R13	-.9977		
SG1	5302.2	SG2	992.2	THA	109.13		

ORBIT DETERMINATION ACCURACY

ST	523.5	SR	1695.1	SS	2107.6		
CRT	-.5487	CRS	.9997	CST	-.5274		
LSA	2719.3	MSA	440.9	SSA	7.7		
EL1	1720.9	EL2	431.1	ALF	100.27		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 262.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 572.321 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	32.945	GAL	4.36	AZL	94.84	HCA	170.82	SMA	184.97	ECC	.21717	INC	4.8358	V1	30.260
RP	222.85	LAP	-.77	LOP	253.91	VP	21.762	GAP	-4.23	AZP	85.23	TAL	24.82	TAP	195.64	RCA	144.80	APO	225.14	V2	24.674
RC	261.100	GL	-37.29	GP	38.45	ZAL	54.32	ZAP	99.26	ETS	171.13	ZAE	124.23	ETE	144.02	ZAC	124.26	ETC	253.68	CLP	101.86

PLANETOCENTRIC CONIC

C3	20.892	VHL	4.571	DLA	-17.43	RAL	119.28	RAD	6567.8	VEL	11.928	PTH	2.12	VHP	3.924	DPA	37.33	RAP	195.67	ECC	1.3438

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 26	1649.67	-3.06	8.26	340.60	118.16	16 31 56	1049.7	.73	1.63
90.00	23 18 11	5443.98	28.19	250.77	347.70	87.19	24 48 55	4844.0	27.50	242.18
100.00	17 15 40	1419.82	-4.31	350.67	339.91	119.61	17 39 20	819.8	-.34	344.14
100.00	0 53 34	5149.06	29.62	228.98	347.60	85.74	2 19 23	4549.1	28.71	220.29
110.00	18 1 42	1275.61	-7.48	337.78	337.95	123.45	18 22 57	675.6	-3.03	331.52
110.00	2 24 1	4866.03	33.31	207.01	347.13	81.85	3 45 7	4266.0	31.83	198.10

DIFFERENTIAL CORRECTIONS

TDE	-.1391	TRA	-1.4385	TC3	-1.2073	BAU	1.3177
RDE	1.4989	RRA	2.2334	RC3	4.5608	FAU	.32278
FDE	-4.7860	FRA	-6.8464	FC	-13.3758	BSP	19601
BDE	1.5053	BRA	2.6566	BC3	4.7179	FSP	4760

MID-COURSE EXECUTION ACCURACY

SGT	2195.5	SGR	5433.5	SG3	1410.2		
RRT	-.8780	RRF	-.9995	RTF	.8801		
SGB	5860.3	R23	.0574	R13	-.9979		
SG1	5776.4	SG2	988.4	THA	110.15		

ORBIT DETERMINATION ACCURACY

ST	594.1	SR	2078.6	SS	2233.9		
CRT	-.6728	CRS	.9999	CST	-.6612		
LSA	3077.5	MSA	439.7	SSA	6.3		
EL1	2118.4	EL2	431.3	ALF	101.36		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 576.338 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	32.942	GAL	4.33	AZL	95.71	HCA	171.90	SMA	184.93	ECC	.21687	INC	5.7087	V1	30.260
RP	222.47	LAP	-.80	LOP	255.01	VP	21.805	GAP	-4.48	AZP	84.35	TAL	24.71	TAP	196.61	RCA	144.83	APO	225.04	V2	24.716
RC	262.633	GL	-42.28	GP	41.79	ZAL	56.91	ZAP	97.32	ETS	171.93	ZAE	120.95	ETE	144.29	ZAC	127.30	ETC	253.11	CLP	99.84

PLANETOCENTRIC CONIC

C3	23.594	VHL	4.857	DLA	-22.18	RAL	117.65	RAD	6568.0	VEL	12.040	PTH	2.15	VHP	4.156	DPA	40.54	RAP	197.19	ECC	1.3883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 51 58	1479.54	2.43	358.76	342.31	118.22	17 16 37	879.5	6.18	352.10
90.00	22 17 41	5673.04	27.81	267.49	350.21	95.54	23 52 14	5073.0	28.29	258.86
100.00	17 57 21	1268.47	.81	342.35	341.41	119.88	18 18 30	668.5	4.78	335.82
100.00	23 54 58	5359.35	29.66	244.59	350.39	93.93	25 24 18	4759.3	29.89	235.79
110.00	18 32 34	1158.11	-3.03	331.59	339.01	124.06	18 51 52	558.1	1.46	325.39
110.00	1 40 11	5042.48	34.18	220.70	350.56	89.89	3 4 14	4442.5	33.79	211.48

DIFFERENTIAL CORRECTIONS

TDE	-.2662	TRA	-1.6149	TC3	-1.2762	BAU	1.4452
RDE	1.9604	RRA	2.5886	RC3	4.4003	FAU	.28645
FDE	-5.0192	FRA	-6.4622	FC	-10.5104	BSP	21199
BDE	1.9784	BRA	3.0511	BC3	4.5816	FSP	4162

MID-COURSE EXECUTION ACCURACY

SGT	2422.3	SGR	5873.2	SG3	1243.3		
RRT	-.9004	RRF	-.9996	RTF	.9023		
SGB	6353.1	R23	.0547	R13	-.9981		
SG1	6276.1	SG2	986.3	THA	110.91		

ORBIT DETERMINATION ACCURACY

ST	693.4	SR	2518.4	SS	2306.0		
CRT	-.7681	CRS	1.0000	CST	-.7623		
LSA	3456.4	MSA	441.1	SSA	5.1		
EL1	2575.8	EL2	434.1	ALF	102.30		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 580.360 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	32.940	GAL	4.31	AZL	96.85	HCA	172.99	SMA	184.90	ECC	.21659	INC	6.8546	V1	30.260
RP	222.08	LAP	-.83	LOP	256.10	VP	21.850	GAP	-4.71	AZP	83.20	TAL	24.59	TAP	197.58	RCA	144.85	APO	224.95	V2	24.758
RC	264.145	GL	-47.96	GP	45.49	ZAL	60.02	ZAP	95.48	ETS	172.86	ZAE	117.55	ETE	144.58	ZAC	130.68	ETC	252.35	CLP	97.83

PLANETOCENTRIC CONIC

C3	27.861	VHL	5.278	DLA	-27.56	RAL	115.53	RAD	6568.1	VEL	12.216	PTH	2.20	VHP	4.490	DPA	43.98	RAP	199.23	ECC	1.4585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 53	1160.59	12.37	340.60	347.11	115.68	18 48 13	560.6	15.72	333.53
90.00	20 23 52	786.06	22.05	317.42	351.19	108.22	20 36 58	186.1	24.34	309.50
100.00	19 8 49	1031.51	8.74	329.24	345.22	118.70	19 26 1	431.5	12.51	322.47
100.00	22 26 37	5678.41	25.95	267.50	352.48	105.38	24 1 16	5078.4	27.81	259.19
110.00	19 17 14	1005.07	2.82	323.60	341.59	124.08	19 33 59	405.1	7.27	317.35
110.00	0 38 37	5277.61	32.72	238.85	354.26	100.51	2 6 35	4677.6	33.82	229.79

DIFFERENTIAL CORRECTIONS

TDE	-.4211	TRA	-1.8267	TC3	-1.2675	BAU	1.5840
RDE	2.5493	RRA	3.0308	RC3	4.0594	FAU	.24256
FDE	-5.0228	FRA	-5.8899	FC3	-7.5372	BSP	23141
BDE	2.5838	BRA	3.5387	BC3	4.2526	FSP	3510

MID-COURSE EXECUTION ACCURACY

SGT	2646.0	SGR	6308.1	SG3	1040.6		
RRT	-.9165	RRF	-.9997	RTF	.9184		
SGB	6840.6	R23	.0518	R13	-.9983		
SG1	6769.2	SG2	986.2	THA	111.51		

ORBIT DETERMINATION ACCURACY

ST	812.9	SR	2985.5	SS	2277.3		
CRT	-.8311	CRS	1.0000	CST	-.8284		
LSA	3815.9	MSA	446.1	SSA	4.2		
EL1	3062.7	EL2	440.6	ALF	103.02		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 268.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 584.386 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	32.939	GAL	4.28	AZL	98.42	HCA	174.08	SMA	184.88	ECC	.21634	INC	8.4232
RP	221.70	LAP	-.87	LOP	257.20	VP	21.895	GAP	-4.94	AZP	81.62	TAL	24.45	TAP	198.53	RCA	144.88	APO	224.87
RC	265.639	GL	-54.41	GP	49.53	ZAL	63.70	ZAP	93.77	ETS	173.93	ZAE	114.06	ETE	144.92	ZAC	134.38	ETC	251.33

V1	30.260	V2	24.799	CLP	95.82														

PLANETOCENTRIC CONIC

C3	35.016	VHL	5.917	DLA	-33.57	RAL	112.66	RAD	6568.4	VEL	12.505	PTH	2.26	VHP	4.986	DPA	47.60	RAP	201.96
ECC	1.5763																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.17	16 52 26	1485.06	18.81	8.08	351.77	118.33	17 17 11	885.1	22.44	.88
108.83	21 37 26	5864.46	18.82	278.35	351.78	118.32	23 15 10	5264.5	22.45	271.15
71.17	16 52 26	1485.06	18.81	8.08	351.77	118.33	17 17 11	885.1	22.44	.88
108.83	21 37 26	5864.46	18.82	278.35	351.78	118.32	23 15 10	5264.5	22.45	271.15
110.00	20 55 26	705.00	13.97	307.53	348.87	121.52	21 7 11	105.0	18.04	300.78
110.00	22 33 37	5692.51	23.80	267.68	354.48	115.29	24 8 29	5092.5	27.00	259.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6158	TRA	-2.1041	TC3	-1.1887	BAU	1.7639	SGT	2883.2	SGR	6809.9	SG3	819.0	ST	946.2	SR	3483.7
RDE	3.3471	RRA	3.6476	RC3	3.5754	FAU	.19502	RRT	-.9294	RRF	-.9997	RTF	.9314	CRT	-.8708	CRS	1.0000
FDE	-4.7607	FRA	-5.1660	FC3	-4.8216	BSP	24433	SGB	7395.1	R23	.0481	R13	-.9986	LSA	4168.1	MSA	456.2
BDE	3.4032	BRA	4.2110	BC3	3.7679	FSP	2678	SG1	7328.7	SG2	988.5	THA	111.90	EL1	3581.4	EL2	452.5

SS	2133.1	CST	-.8701	ALF	103.53
SSA	3.4				

LAUNCH DATE DEC 15 1964 FLIGHT TIME 292.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 633.951 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	32.950	GAL	3.69	AZL	80.88	HCA	187.75	SMA	185.06	ECC	.21391	INC	9.1191
RP	217.27	LAP	-1.22	LOP	270.71	VP	22.462	GAP	-7.26	AZP	99.04	TAL	21.19	TAP	208.94	RCA	145.48	APO	224.65
RC	282.167	GL	58.64	GP	-42.66	ZAL	68.02	ZAP	79.58	ETS	169.13	ZAE	103.12	ETE	190.38	ZAC	43.38	ETC	251.91

V1	30.260	V2	25.287	CLP	75.76														

PLANETOCENTRIC CONIC

C3	37.245	VHL	6.103	DLA	71.56	RAL	172.51	RAD	6568.5	VEL	12.594	PTH	2.28	VHP	4.378	DPA	-31.87	RAP	149.46
ECC	1.6130																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
11.65	9 27 6	4362.56	-48.96	243.67	127.74	15.70	10 39 48	3762.6	-56.60	240.17
11.65	1 50 43	4815.57	-18.88	250.21	21.77	10.83	3 10 58	4215.6	-26.73	248.95
21.06	5 57 58	4571.61	-32.61	237.69	70.21	22.06	7 14 10	3971.6	-39.97	234.20
158.94	16 33 19	2809.10	-32.60	85.76	70.19	22.05	17 20 8	2209.1	-39.96	82.26
21.06	5 57 58	4571.61	-32.61	237.69	70.21	22.06	7 14 10	3971.6	-39.97	234.20
158.94	16 33 19	2809.10	-32.60	85.76	70.19	22.05	17 20 8	2209.1	-39.96	82.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	6.0522	TRA	.1020	TC3	-2.7338	BAU	1.9572	SGT	6596.3	SGR	5849.7	SG3	1031.7	ST	5683.6	SR	4274.3
RDE	4.5295	RRA	.4707	RC3	-2.8243	FAU	.26969	RRT	.9684	RRF	.9992	RTF	.9615	CRT	.9966	CRS	-1.0000
FDE	9.2434	FRA	.9950	FC3	-6.2688	BSP	28867	SGB	8685.0	R23	.1692	R13	.9851	LSA	7833.2	MSA	328.4
BDE	7.5595	BRA	.4816	BC3	3.9307	FSP	3666	SG1	8617.8	SG2	1079.0	THA	40.44	EL1	7105.9	EL2	281.7

SS	3300.6	CST	-.9963	ALF	36.92
SSA	4.8				

LAUNCH DATE DEC 15 1964 FLIGHT TIME 294.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 638.102 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	32.953	GAL	3.63	AZL	81.87	HCA	188.89	SMA	185.11	ECC	.21382	INC	8.1279
RP	216.91	LAP	-1.25	LOP	271.86	VP	22.510	GAP	-7.42	AZP	98.03	TAL	20.87	TAP	209.75	RCA	145.53	APO	224.69
RC	283.431	GL	55.33	GP	-39.02	ZAL	66.53	ZAP	77.62	ETS	168.71	ZAE	102.24	ETE	188.28	ZAC	46.73	ETC	253.06

V1	30.260	V2	25.327	CLP	73.98														

PLANETOCENTRIC CONIC

C3	31.964	VHL	5.654	DLA	68.65	RAL	167.22	RAD	6568.3	VEL	12.383	PTH	2.24	VHP	4.118	DPA	-28.43	RAP	150.91
ECC	1.5260																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
24.43	5 44 2	4523.98	-34.31	232.92	61.75	26.15	6 59 26	3924.0	-41.41	228.65
155.57	16 4 59	2779.55	-34.30	84.53	61.74	26.15	16 51 18	2179.6	-41.40	80.26
24.43	5 44 2	4523.98	-34.31	232.92	61.75	26.15	6 59 26	3924.0	-41.41	228.65
155.57	16 4 59	2779.55	-34.30	84.53	61.74	26.15	16 51 18	2179.6	-41.40	80.26
24.43	5 44 2	4523.98	-34.31	232.92	61.75	26.15	6 59 26	3924.0	-41.41	228.65
155.57	16 4 59	2779.55	-34.30	84.53	61.74	26.15	16 51 18	2179.6	-41.40	80.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	5.6789	TRA	-.0731	TC3	-3.2485	BAU	1.8763	SGT	6830.4	SGR	5221.5	SG3	1195.9	ST	5756.5	SR	3926.4
RDE	3.8644	RRA	.3151	RC3	-2.9541	FAU	.30313	RRT	.9910	RRF	.9992	RTF	.9648	CRT	.9970	CRS	-1.0000
FDE	9.8735	FRA	.8253	FC3	-8.2102	BSP	28696	SGB	8597.6	R23	.1742	R13	.9841	LSA	7823.1	MSA	307.4
BDE	6.8690	BRA	.3235	BC3	4.3908	FSP	4250	SG1	8539.4	SG2	999.2	THA	37.18	EL1	6963.5	EL2	252.7

SS	3569.5	CST	-.9968	ALF	34.27
SSA	5.5				

LAUNCH DATE DEC 15 1964 FLIGHT TIME 296.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 642.265 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	32.956	GAL	3.57	AZL	82.64	HCA	190.03	SMA	185.16	ECC	.21375	INC	7.3585
RP	216.57	LAP	-1.28	LOP	273.02	VP	22.559	GAP	-7.59	AZP	97.25	TAL	20.52	TAP	210.56	RCA	145.58	APO	224.74
RC	284.679	GL	52.44	GP	-35.78	ZAL	65.33	ZAP	75.70	ETS	168.44	ZAE	101.14	ETE	186.46	ZAC	49.74	ETC	253.94

V1	30.260	V2	25.365	CLP	72.28														

PLANETOCENTRIC CONIC

C3	28.242	VHL	5.314	DLA	65.99	RAL	163.74	RAD	6568.1	VEL	12.232	PTH	2.20	VHP	3.939	DPA	-25.33	RAP	152.10
ECC	1.4648																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
27.53	5 37 4	4483.13	-35.40	228.38	55.30	29.95	6 51 47	3883.1	-42.22	223.42
152.47	15 44 12	2758.32	-35.39	83.37	55.28	29.94	16 30 11	2158.3	-42.21	78.41
27.53	5 37 4	4483.13	-35.40	228.38	55.30	29.95	6 51 47	3883.1	-42.22	223.42
152.47	15 44 12	2758.32	-35.39	83.37	55.28	29.94	16 30 11	2158.3	-42.21	78.41
27.53	5 37 4	4483.13	-35.40	228.38	55.30	29.95	6 51 47	3883.1	-42.22	223.42
152.47	15 44 12	2758.32	-35.39	83.37	55.28	29.94	16 30 11	2158.3	-42.21	78.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	5.3575	TRA	-.2171	TC3	-3.7743	BAU	1.8260	SGT	7056.0	SGR	4820.8	SG3	1330.3	ST	5780.0	SR	3557.1
RDE	3.2946	RRA	.2048	RC3	-3.0237	FAU	.33022	RRT	.9730	RRF	.9990	RTF	.9672	CRT	.9971	CRS	-1.0000
FDE	10.0977	FRA	.6318	FC3	-10.1226	BSP	28441	SGB	8545.6	R23	.1794	R13	.9830	LSA	7729.3	MSA	292.6
BDE	6.2894	BRA	.2985	BC3	4.8361	FSP	4687	SG1	8495.5	SG2	924.2	THA	34.07	EL1	6782.9	EL2	229.9

SS	3710.3	CST	-.9971	ALF	31.58
SSA	6.3				

LAUNCH DATE DEC 15 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 646.438 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.959 GAL 3.51 AZL 83.26 HCA 191.19 SMA 185.22 ECC .21368 INC 6.7441 V1 30.260
RP 216.22 LAP -1.31 LOP 274.17 VP 22.607 GAP -7.74 AZP 96.62 TAL 20.16 TAP 211.35 RCA 145.64 APO 224.80 V2 25.404
RC 285.910 GL 49.92 GP -32.89 ZAL 64.39 ZAP 73.83 ETS 168.26 ZAE 99.89 ETE 184.89 ZAC 52.42 ETC 254.62 CLP 70.63

PLANETOCENTRIC CONIC

C3 25.496 VHL 5.049 DLA 63.59 RAL 161.37 RAD 6568.0 VEL 12.119 PTH 2.17 VHP 3.815 DPA -22.56 RAP 153.07 ECC 1.4196

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.35	5 34 9	4447.48	-36.06	224.15	50.18	33.39	6 48 17	3847.5	-42.60	218.59
149.65	15 28 13	2743.19	-36.05	82.33	50.16	33.38	16 13 57	2143.2	-42.59	76.77
30.35	5 34 9	4447.48	-36.06	224.15	50.18	33.39	6 48 17	3847.5	-42.60	218.59
149.65	15 28 13	2743.19	-36.05	82.33	50.16	33.38	16 13 57	2143.2	-42.59	76.77
30.35	5 34 9	4447.48	-36.06	224.15	50.18	33.39	6 48 17	3847.5	-42.60	218.59
149.65	15 28 13	2743.19	-36.05	82.33	50.16	33.38	16 13 57	2143.2	-42.59	76.77

DIFFERENTIAL CORRECTIONS
TDE 5.1018 TRA -.3267 TC3-4.2908 BAU 1.7909
RDE 2.8299 RRA .1358 RC3-3.0323 FAU .35005
FDE10.0835 FRA .4713 FC-11.8861 BSP 28521
BDE 5.8341 BRA .3538 BC3 5.2542 FSP 5055

MID-COURSE EXECUTION ACCURACY
SGT 7279.1 SGR 4450.7 SG3 1436.5
RRT .9745 RRF .9989 RTF .9688
SGB 8531.9 R23 .1846 R13 .9819
SG1 8488.8 SG2 856.5 THA 31.14

ORBIT DETERMINATION ACCURACY
ST 5796.0 SR 3214.1 SS 3774.8
CRT .9971 CRS-1.0000 CST -.9972
LSA 7621.8 MSA 284.0 SSA 7.2
EL1 6624.1 EL2 212.7 ALF 28.97

LAUNCH DATE DEC 15 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 650.621 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.963 GAL 3.45 AZL 83.76 HCA 192.34 SMA 185.28 ECC .21363 INC 6.2417 V1 30.260
RP 215.88 LAP -1.33 LOP 275.34 VP 22.655 GAP -7.90 AZP 96.10 TAL 19.79 TAP 212.13 RCA 145.70 APO 224.86 V2 25.442
RC 287.127 GL 47.70 GP -30.34 ZAL 63.67 ZAP 72.02 ETS 168.16 ZAE 98.53 ETE 183.55 ZAC 54.82 ETC 255.15 CLP 69.04

PLANETOCENTRIC CONIC

C3 23.394 VHL 4.837 DLA 61.41 RAL 159.73 RAD 6567.9 VEL 12.032 PTH 2.15 VHP 3.729 DPA -20.09 RAP 153.89 ECC 1.3850

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
32.93	5 33 47	4415.82	-36.41	220.23	46.04	36.48	6 47 23	3815.8	-42.67	214.19
147.07	15 15 29	2732.60	-36.40	81.43	46.03	36.48	16 1 1	2132.6	-42.66	75.39
32.93	5 33 47	4415.82	-36.41	220.23	46.04	36.48	6 47 23	3815.8	-42.67	214.19
147.07	15 15 29	2732.60	-36.40	81.43	46.03	36.48	16 1 1	2132.6	-42.66	75.39
32.93	5 33 47	4415.82	-36.41	220.23	46.04	36.48	6 47 23	3815.8	-42.67	214.19
147.07	15 15 29	2732.60	-36.40	81.43	46.03	36.48	16 1 1	2132.6	-42.66	75.39

DIFFERENTIAL CORRECTIONS
TDE 4.8973 TRA -.4127 TC3-4.7996 BAU 1.7700
RDE 2.4508 RRA .0916 RC3-2.9986 FAU .36400
FDE 9.9120 FRA .3402 FC-13.4703 BSP 28778
BDE 5.4763 BRA .4228 BC3 5.6593 FSP 5345

MID-COURSE EXECUTION ACCURACY
SGT 7500.4 SGR 4110.2 SG3 1517.2
RRT .9757 RRF .9986 RTF .9700
SGB 8552.7 R23 .1891 R13 .9807
SG1 8515.8 SG2 793.7 THA 28.40

ORBIT DETERMINATION ACCURACY
ST 5811.1 SR 2905.3 SS 3786.0
CRT .9971 CRS-1.0000 CST -.9972
LSA 7514.4 MSA 278.1 SSA 8.1
EL1 6493.8 EL2 198.5 ALF 26.52

LAUNCH DATE DEC 15 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 654.813 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.966 GAL 3.38 AZL 84.18 HCA 193.51 SMA 185.35 ECC .21358 INC 5.8230 V1 30.260
RP 215.54 LAP -1.36 LOP 276.50 VP 22.703 GAP -8.05 AZP 95.66 TAL 19.39 TAP 212.90 RCA 145.76 APO 224.93 V2 25.480
RC 288.329 GL 45.74 GP -28.06 ZAL 63.13 ZAP 70.26 ETS 168.11 ZAE 97.10 ETE 182.40 ZAC 56.95 ETC 255.58 CLP 67.50

PLANETOCENTRIC CONIC

C3 21.736 VHL 4.662 DLA 59.44 RAL 158.59 RAD 6567.9 VEL 11.963 PTH 2.13 VHP 3.671 DPA -17.89 RAP 154.58 ECC 1.3577

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.28	5 35 9	4387.24	-36.54	216.63	42.65	39.26	6 48 16	3787.2	-42.55	210.18
144.72	15 5 2	2725.47	-36.53	80.68	42.63	39.25	15 50 28	2125.5	-42.53	74.24
35.28	5 35 9	4387.24	-36.54	216.63	42.65	39.26	6 48 16	3787.2	-42.55	210.18
144.72	15 5 2	2725.47	-36.53	80.68	42.63	39.25	15 50 28	2125.5	-42.53	74.24
35.28	5 35 9	4387.24	-36.54	216.63	42.65	39.26	6 48 16	3787.2	-42.55	210.18
144.72	15 5 2	2725.47	-36.53	80.68	42.63	39.25	15 50 28	2125.5	-42.53	74.24

DIFFERENTIAL CORRECTIONS
TDE 4.7253 TRA -.4864 TC3-5.3111 BAU 1.7643
RDE 2.1366 RRA .0611 RC3-2.9418 FAU .37391
FDE 9.6245 FRA .2250 FC-14.8926 BSP 28988
BDE 5.1859 BRA .4902 BC3 6.0714 FSP 5526

MID-COURSE EXECUTION ACCURACY
SGT 7722.0 SGR 3800.1 SG3 1576.7
RRT .9766 RRF .9983 RTF .9709
SGB 8606.4 R23 .1925 R13 .9797
SG1 8575.0 SG2 735.3 THA 25.87

ORBIT DETERMINATION ACCURACY
ST 5819.8 SR 2627.5 SS 3754.6
CRT .9970 CRS-1.0000 CST -.9972
LSA 7402.4 MSA 273.2 SSA 9.0
EL1 6382.7 EL2 186.0 ALF 24.25

LAUNCH DATE DEC 15 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 659.011 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.970 GAL 3.31 AZL 84.53 HCA 194.67 SMA 185.41 ECC .21355 INC 5.4683 V1 30.260
RP 215.21 LAP -1.38 LOP 277.67 VP 22.750 GAP -8.19 AZP 95.29 TAL 18.99 TAP 213.66 RCA 145.82 APO 225.01 V2 25.517
RC 289.516 GL 44.00 GP -26.04 ZAL 62.76 ZAP 68.57 ETS 168.11 ZAE 95.62 ETE 181.42 ZAC 58.85 ETC 255.93 CLP 66.01

PLANETOCENTRIC CONIC

C3 20.392 VHL 4.516 DLA 57.64 RAL 157.82 RAD 6567.8 VEL 11.907 PTH 2.12 VHP 3.634 DPA -15.92 RAP 155.18 ECC 1.3356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.44	5 37 41	4361.14	-36.52	213.30	39.85	41.75	6 50 22	3761.1	-42.28	206.52
142.56	14 56 22	2720.93	-36.51	80.08	39.84	41.75	15 41 43	2120.9	-42.27	73.31
37.44	5 37 41	4361.14	-36.52	213.30	39.85	41.75	6 50 22	3761.1	-42.28	206.52
142.56	14 56 22	2720.93	-36.51	80.08	39.84	41.75	15 41 43	2120.9	-42.27	73.31
37.44	5 37 41	4361.14	-36.52	213.30	39.85	41.75	6 50 22	3761.1	-42.28	206.52
142.56	14 56 22	2720.93	-36.51	80.08	39.84	41.75	15 41 43	2120.9	-42.27	73.31

DIFFERENTIAL CORRECTIONS
TDE 4.5963 TRA -.5337 TC3-5.7954 BAU 1.7599
RDE 1.8873 RRA .0529 RC3-2.8432 FAU .37712
FDE 9.3288 FRA .1959 FC-16.0102 BSP 29686
BDE 4.9687 BRA .5363 BC3 6.4553 FSP 5769

MID-COURSE EXECUTION ACCURACY
SGT 7937.7 SGR 3513.3 SG3 1615.0
RRT .9770 RRF .9979 RTF .9714
SGB 8680.4 R23 .1953 R13 .9787
SG1 8653.2 SG2 687.2 THA 23.54

ORBIT DETERMINATION ACCURACY
ST 5846.1 SR 2396.1 SS 3719.5
CRT .9967 CRS-1.0000 CST -.9970
LSA 7326.4 MSA 276.4 SSA 9.8
EL1 6315.6 EL2 179.1 ALF 22.24

LAUNCH DATE DEC 15 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 663.223 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.975 GAL 3.24 AZL 84.84 HCA 195.84 SMA 185.49 ECC .21352 INC 5.1642 V1 30.260
RP 214.88 LAP -1.41 LOP 278.84 VP 22.798 GAP -8.33 AZP 94.97 TAL 18.57 TAP 214.41 RCA 145.88 APO 225.09 V2 25.554
RC 290.691 GL 42.44 GP -24.23 ZAL 62.52 ZAP 66.94 ETS 168.14 ZAE 94.11 ETE 180.58 ZAC 60.56 ETC 256.21 CLP 64.56

PLANETOCENTRIC CONIC

C3 19.281 VHL 4.391 DLA 56.00 RAL 157.32 RAD 6567.8 VEL 11.860 PTH 2.10 VHP 3.613 DPA -14.17 RAP 155.71 ECC 1.3173

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.43	5 41 6	4336.94	-36.39	210.22	37.53	44.00	6 53 23	3736.9	-41.92	203.17
140.57	14 48 59	2718.49	-36.38	79.62	37.51	43.99	15 34 18	2118.5	-41.91	72.57
39.43	5 41 6	4336.94	-36.39	210.22	37.53	44.00	6 53 23	3736.9	-41.92	203.17
140.57	14 48 59	2718.49	-36.38	79.62	37.51	43.99	15 34 18	2118.5	-41.91	72.57
39.43	5 41 6	4336.94	-36.39	210.22	37.53	44.00	6 53 23	3736.9	-41.92	203.17
140.57	14 48 59	2718.49	-36.38	79.62	37.51	43.99	15 34 18	2118.5	-41.91	72.57

DIFFERENTIAL CORRECTIONS
TDE 4.4734 TRA -.5831 TC3-6.2994 BAU 1.7728
RDE 1.6667 RRA .0384 RC3-2.7600 FAU .38083
FDE 8.9204 FRA .1165 FC-17.0997 BSP 29970
BDE 4.7738 BRA .5843 BC3 6.8775 FSP 5791

MID-COURSE EXECUTION ACCURACY
SGT 8156.5 SGR 3257.7 SG3 1641.7
RRT .9778 RRF .9973 RTF .9720
SGB 8783.0 R23 .1961 R13 .9780
SG1 8760.0 SG2 635.6 THA 21.45

ORBIT DETERMINATION ACCURACY
ST 5853.7 SR 2176.1 SS 3636.6
CRT .9966 CRS-1.0000 CST -.9970
LSA 7221.7 MSA 270.2 SSA 10.9
EL1 6242.9 EL2 167.7 ALF 20.34

LAUNCH DATE DEC 15 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 667.443 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.979 GAL 3.16 AZL 85.10 HCA 197.01 SMA 185.56 ECC .21351 INC 4.8999 V1 30.260
RP 214.56 LAP -1.43 LOP 280.02 VP 22.845 GAP -8.47 AZP 94.69 TAL 18.14 TAP 215.15 RCA 145.94 APO 225.18 V2 25.590
RC 291.851 GL 41.05 GP -22.61 ZAL 62.41 ZAP 65.36 ETS 168.19 ZAE 92.59 ETE 179.86 ZAC 62.09 ETC 256.45 CLP 63.16

PLANETOCENTRIC CONIC

C3 18.343 VHL 4.283 DLA 54.49 RAL 157.04 RAD 6567.7 VEL 11.821 PTH 2.09 VHP 3.605 DPA -12.60 RAP 156.18 ECC 1.3019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.28	5 45 10	4314.34	-36.19	207.36	35.60	46.02	6 57 4	3714.3	-41.50	200.09
138.72	14 42 42	2717.63	-36.18	79.26	35.58	46.01	15 28 0	2117.6	-41.49	72.00
41.28	5 45 10	4314.34	-36.19	207.36	35.60	46.02	6 57 4	3714.3	-41.50	200.09
138.72	14 42 42	2717.63	-36.18	79.26	35.58	46.01	15 28 0	2117.6	-41.49	72.00
41.28	5 45 10	4314.34	-36.19	207.36	35.60	46.02	6 57 4	3714.3	-41.50	200.09
138.72	14 42 42	2717.63	-36.18	79.26	35.58	46.01	15 28 0	2117.6	-41.49	72.00

DIFFERENTIAL CORRECTIONS
TDE 4.3643 TRA -.6259 TC3-6.8081 BAU 1.7933
RDE 1.4818 RRA .0302 RC3-2.6691 FAU .38210
FDE 8.4950 FRA .0605 FC-18.0337 BSP 30224
BDE 4.6090 BRA .6266 BC3 7.3126 FSP 5768

MID-COURSE EXECUTION ACCURACY
SGT 8377.0 SGR 3026.8 SG3 1657.0
RRT .9783 RRF .9967 RTF .9725
SGB 8907.1 R23 .1956 R13 .9774
SG1 8887.5 SG2 590.6 THA 19.56

ORBIT DETERMINATION ACCURACY
ST 5857.1 SR 1983.6 SS 3542.3
CRT .9964 CRS-1.0000 CST -.9969
LSA 7121.6 MSA 266.2 SSA 12.0
EL1 6181.9 EL2 158.7 ALF 18.66

LAUNCH DATE DEC 15 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 671.670 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.984 GAL 3.09 AZL 85.33 HCA 198.19 SMA 185.64 ECC .21351 INC 4.6683 V1 30.260
RP 214.24 LAP -1.46 LOP 281.20 VP 22.892 GAP -8.60 AZP 94.44 TAL 17.69 TAP 215.88 RCA 146.01 APO 225.28 V2 25.626
RC 292.998 GL 39.80 GP -21.15 ZAL 62.40 ZAP 63.85 ETS 168.26 ZAE 91.07 ETE 179.25 ZAC 63.48 ETC 256.64 CLP 61.80

PLANETOCENTRIC CONIC

C3 17.538 VHL 4.188 DLA 53.10 RAL 156.94 RAD 6567.7 VEL 11.786 PTH 2.08 VHP 3.606 DPA -11.20 RAP 156.62 ECC 1.2886

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.01	5 49 46	4292.98	-35.93	204.69	33.99	47.86	7 1 19	3693.0	-41.05	197.24
136.99	14 37 17	2718.08	-35.92	79.02	33.98	47.85	15 22 35	2118.1	-41.04	71.57
43.01	5 49 46	4292.98	-35.93	204.69	33.99	47.86	7 1 19	3693.0	-41.05	197.24
136.99	14 37 17	2718.08	-35.92	79.02	33.98	47.85	15 22 35	2118.1	-41.04	71.57
43.01	5 49 46	4292.98	-35.93	204.69	33.99	47.86	7 1 19	3693.0	-41.05	197.24
136.99	14 37 17	2718.08	-35.92	79.02	33.98	47.85	15 22 35	2118.1	-41.04	71.57

DIFFERENTIAL CORRECTIONS
TDE 4.2764 TRA -.6515 TC3-7.2977 BAU 1.8138
RDE 1.3277 RRA .0297 RC3-2.5655 FAU .38023
FDE 8.0780 FRA .0470 FC-18.7688 BSP 30735
BDE 4.4777 BRA .6522 BC3 7.7355 FSP 5754

MID-COURSE EXECUTION ACCURACY
SGT 8590.4 SGR 2814.5 SG3 1660.3
RRT .9786 RRF .9959 RTF .9728
SGB 9039.7 R23 .1941 R13 .9768
SG1 9022.9 SG2 550.9 THA 17.85

ORBIT DETERMINATION ACCURACY
ST 5870.4 SR 1817.7 SS 3446.1
CRT .9962 CRS -.9999 CST -.9968
LSA 7040.7 MSA 263.8 SSA 13.0
EL1 6143.5 EL2 151.3 ALF 17.15

LAUNCH DATE DEC 15 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 675.905 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 32.989 GAL 3.01 AZL 85.54 HCA 199.37 SMA 185.72 ECC .21353 INC 4.4634 V1 30.260
RP 213.93 LAP -1.48 LOP 282.38 VP 22.938 GAP -8.74 AZP 94.21 TAL 17.23 TAP 216.60 RCA 146.07 APO 225.38 V2 25.662
RC 294.131 GL 38.67 GP -19.83 ZAL 62.49 ZAP 62.38 ETS 168.34 ZAE 89.56 ETE 178.72 ZAC 64.73 ETC 256.81 CLP 60.47

PLANETOCENTRIC CONIC

C3 16.838 VHL 4.103 DLA 51.80 RAL 156.98 RAD 6567.7 VEL 11.757 PTH 2.08 VHP 3.615 DPA -9.94 RAP 157.03 ECC 1.2771

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.63	5 54 49	4272.59	-35.63	202.18	32.66	49.54	7 6 2	3672.6	-40.57	194.58
135.37	14 32 34	2719.64	-35.62	78.86	32.65	49.53	15 17 54	2119.6	-40.56	71.27
44.63	5 54 49	4272.59	-35.63	202.18	32.66	49.54	7 6 2	3672.6	-40.57	194.58
135.37	14 32 34	2719.64	-35.62	78.86	32.65	49.53	15 17 54	2119.6	-40.56	71.27
44.63	5 54 49	4272.59	-35.63	202.18	32.66	49.54	7 6 2	3672.6	-40.57	194.58
135.37	14 32 34	2719.64	-35.62	78.86	32.65	49.53	15 17 54	2119.6	-40.56	71.27

DIFFERENTIAL CORRECTIONS
TDE 4.1994 TRA -.6691 TC3-7.7841 BAU 1.8376
RDE 1.1971 RRA .0324 RC3-2.4585 FAU .37647
FDE 7.6667 FRA .0535 FC-19.3568 BSP 31274
BDE 4.3667 BRA .6698 BC3 8.1631 FSP 5713

MID-COURSE EXECUTION ACCURACY
SGT 8801.9 SGR 2621.1 SG3 1655.1
RRT .9787 RRF .9949 RTF .9731
SGB 9183.9 R23 .1913 R13 .9763
SG1 9169.4 SG2 518.3 THA 16.30

ORBIT DETERMINATION ACCURACY
ST 5884.3 SR 1672.8 SS 3346.6
CRT .9959 CRS -.9999 CST -.9967
LSA 6968.0 MSA 262.4 SSA 14.1
EL1 6115.7 EL2 145.1 ALF 15.82

LAUNCH DATE DEC 15 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 680.148 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	32.994	GAL	2.93	AZL	85.72	HCA	200.56	SMA	185.81	ECC	.21355	INC	4.2806	V1	30.260
RP	213.62	LAP	-1.50	LOP	283.57	VP	22.985	GAP	-8.86	AZP	94.01	TAL	16.76	TAP	217.31	RCA	146.13	APO	225.49	V2	25.697
RC	295.251	GL	37.64	GP	-18.64	ZAL	62.68	ZAP	60.97	ETS	168.44	ZAE	88.06	ETE	178.27	ZAC	65.88	ETC	256.94	CLP	59.19

PLANETOCENTRIC CONIC

C3	16.220	VHL	4.027	DLA	50.58	RAL	157.15	RAD	6567.7	VEL	11.730	PTH	2.07	VHP	3.630	DPA	-8.81	RAP	157.43	ECC	1.2669		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.16	6 0 14	4252.88	-35.31	199.81	31.56	51.08	7 11 7	3652.9	-40.07	192.09
133.84	14 28 28	2722.07	-35.30	78.79	31.55	51.07	15 13 50	2122.1	-40.06	71.07
46.16	6 0 14	4252.88	-35.31	199.81	31.56	51.08	7 11 7	3652.9	-40.07	192.09
133.84	14 28 28	2722.07	-35.30	78.79	31.55	51.07	15 13 50	2122.1	-40.06	71.07
46.16	6 0 14	4252.88	-35.31	199.81	31.56	51.08	7 11 7	3652.9	-40.07	192.09
133.84	14 28 28	2722.07	-35.30	78.79	31.55	51.07	15 13 50	2122.1	-40.06	71.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.1300	TRA	-.6787	TC3	-8.2687	BAU	1.8642	SGT	9010.7	SGR	2445.1	SG3	1643.3	ST	5896.6	SR	1545.0	SS	3243.7
RDE	1.0851	RRA	.0372	RC3	-2.3517	FAU	.37144	RRT	.9786	RRF	.9937	RTF	.9732	CRT	.9956	CRS	-.9999	CST	-.9965
FDE	7.2615	FRA	.0766	FC	-19.8249	BSP	31829	SGB	9336.6	R23	.1872	R13	.9759	LSA	6900.0	MSA	261.5	SSA	15.1
BDE	4.2702	BRA	.6797	BC3	8.5966	FSP	5653	SG1	9323.9	SG2	486.4	THA	14.91	EL1	6094.0	EL2	139.8	ALF	14.63

LAUNCH DATE DEC 15 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 684.398 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	32.999	GAL	2.84	AZL	85.88	HCA	201.75	SMA	185.90	ECC	.21359	INC	4.1165	V1	30.260		
RP	213.31	LAP	-1.52	LOP	284.76	VP	23.031	GAP	-8.99	AZP	93.82	TAL	16.27	TAP	218.01	RCA	146.19	APO	225.60	V2	25.731		
RC	296.356	GL	36.70	GP	-17.56	ZAL	62.94	ZAP	59.60	ETS	168.54	ZAE	86.58	ETE	177.88	ZAC	66.92	ETC	257.05	CLP	57.94		

PLANETOCENTRIC CONIC

C3	15.670	VHL	3.958	DLA	49.44	RAL	157.42	RAD	6567.6	VEL	11.707	PTH	2.06	VHP	3.651	DPA	-7.80	RAP	157.81	ECC	1.2579		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.61	6 6 1	4234.08	-34.96	197.54	30.67	52.51	7 16 35	3634.1	-39.56	189.73
132.39	14 24 50	2725.35	-34.95	78.79	30.66	52.50	15 10 16	2125.4	-39.55	70.97
47.61	6 6 1	4234.08	-34.96	197.54	30.67	52.51	7 16 35	3634.1	-39.56	189.73
132.39	14 24 50	2725.35	-34.95	78.79	30.66	52.50	15 10 16	2125.4	-39.55	70.97
47.61	6 6 1	4234.08	-34.96	197.54	30.67	52.51	7 16 35	3634.1	-39.56	189.73
132.39	14 24 50	2725.35	-34.95	78.79	30.66	52.50	15 10 16	2125.4	-39.55	70.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.0684	TRA	-.6798	TC3	-8.7473	BAU	1.8919	SGT	9215.5	SGR	2283.9	SG3	1625.6	ST	5909.8	SR	1432.3	SS	3139.4
RDE	.9887	RRA	.0435	RC3	-2.2450	FAU	.36517	RRT	.9782	RRF	.9923	RTF	.9733	CRT	.9953	CRS	-.9999	CST	-.9963
FDE	6.8672	FRA	.1143	FC	-20.1751	BSP	32409	SGB	9494.3	R23	.1818	R13	.9755	LSA	6838.4	MSA	260.8	SSA	16.2
BDE	4.1868	BRA	.6812	BC3	9.0308	FSP	5569	SG1	9483.1	SG2	460.6	THA	13.66	EL1	6079.4	EL2	135.1	ALF	13.57

LAUNCH DATE DEC 15 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 688.655 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.004	GAL	2.76	AZL	86.03	HCA	202.94	SMA	185.99	ECC	.21364	INC	3.9683	V1	30.260		
RP	213.01	LAP	-1.55	LOP	285.95	VP	23.076	GAP	-9.11	AZP	93.66	TAL	15.77	TAP	218.70	RCA	146.26	APO	225.72	V2	25.765		
RC	297.448	GL	35.85	GP	-16.58	ZAL	63.28	ZAP	58.28	ETS	168.64	ZAE	85.12	ETE	177.55	ZAC	67.88	ETC	257.14	CLP	56.73		

PLANETOCENTRIC CONIC

C3	15.174	VHL	3.895	DLA	48.36	RAL	157.78	RAD	6567.6	VEL	11.686	PTH	2.06	VHP	3.677	DPA	-6.89	RAP	158.19	ECC	1.2497		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.01	6 12 5	4215.63	-34.60	195.38	29.95	53.83	7 22 21	3615.6	-39.05	187.48
130.99	14 21 39	2729.33	-34.59	78.86	29.95	53.82	15 7 8	2129.3	-39.04	70.96
49.01	6 12 5	4215.63	-34.60	195.38	29.95	53.83	7 22 21	3615.6	-39.05	187.48
130.99	14 21 39	2729.33	-34.59	78.86	29.95	53.82	15 7 8	2129.3	-39.04	70.96
49.01	6 12 5	4215.63	-34.60	195.38	29.95	53.83	7 22 21	3615.6	-39.05	187.48
130.99	14 21 39	2729.33	-34.59	78.86	29.95	53.82	15 7 8	2129.3	-39.04	70.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.0129	TRA	-.6716	TC3	-9.2215	BAU	1.9204	SGT	9416.1	SGR	2136.5	SG3	1603.2	ST	5923.2	SR	1333.4	SS	3036.5
RDE	.9056	RRA	.0518	RC3	-2.1391	FAU	.35786	RRT	.9775	RRF	.9905	RTF	.9733	CRT	.9949	CRS	-.9998	CST	-.9961
FDE	6.4900	FRA	.1728	FC	-20.4173	BSP	33055	SGB	9655.4	R23	.1756	R13	.9751	LSA	6783.4	MSA	261.7	SSA	17.2
BDE	4.1138	BRA	.6736	BC3	9.4664	FSP	5489	SG1	9645.4	SG2	440.3	THA	12.53	EL1	6070.0	EL2	131.4	ALF	12.63

LAUNCH DATE DEC 15 1964 FLIGHT TIME 320.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 692.920 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.009	GAL	2.67	AZL	86.17	HCA	204.13	SMA	186.08	ECC	.21370	INC	3.8335	V1	30.260		
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.121	GAP	-9.23	AZP	93.50	TAL	15.25	TAP	219.39	RCA	146.32	APO	225.85	V2	25.798		
RC	298.526	GL	35.07	GP	-15.68	ZAL	63.68	ZAP	57.01	ETS	168.74	ZAE	83.69	ETE	177.26	ZAC	68.76	ETC	257.22	CLP	55.56		

PLANETOCENTRIC CONIC

C3	14.724	VHL	3.837	DLA	47.33	RAL	158.22	RAD	6567.6	VEL	11.667	PTH	2.05	VHP	3.706	DPA	-6.07	RAP	158.56	ECC	1.2423		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.35	6 18 29	4197.47	-34.23	193.29	29.39	55.06	7 28 26	3597.5	-38.53	185.32
129.65	14 18 48	2734.04	-34.22	78.99	29.38	55.05	15 4 22	2134.0	-38.52	71.02
50.35	6 18 29	4197.47	-34.23	193.29	29.39	55.06	7 28 26	3597.5	-38.53	185.32
129.65	14 18 48	2734.04	-34.22	78.99	29.38	55.05	15 4 22	2134.0	-38.52	71.02
50.35	6 18 29	4197.47	-34.23	193.29	29.39	55.06	7 28 26	3597.5	-38.53	185.32
129.65	14 18 48	2734.04	-34.22	78.99	29.38	55.05	15 4 22	2134.0	-38.52	71.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.9588	TRA	-.6592	TC3	-9.6975	BAU	1.9506	SGT	9614.5	SGR	2001.4	SG3	1577.2	ST	5931.3	SR	1244.6	SS	2930.5
RDE	.8325	RRA	.0594	RC3	-2.0368	FAU	.35006	RRT	.9765	RRF	.9885	RTF	.9733	CRT	.9945	CRS	-.9998	CST	-.9958
FDE	6.1196	FRA	.2297	FC	-20.5821	BSP	33644	SGB	9820.6	R23	.1678	R13	.9748	LSA	6726.7	MSA	261.6	SSA	18.2
BDE	4.0454	BRA	.6619	BC3	9.9091	FSP	5382	SG1	9811.5	SG2	422.4	THA	11.51	EL1	6059.2	EL2	127.8	ALF	11.79

LAUNCH DATE DEC 15 1964 FLIGHT TIME 322.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 697.192 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.015	GAL	2.58	AZL	86.29	HCA	205.33	SMA	186.18	ECC	.21378	INC	3.7105	V1	30.260
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.166	GAP	-9.34	AZP	93.35	TAL	14.72	TAP	220.06	RCA	146.38	APO	225.98	V2	25.831
RC	299.592	GL	34.35	GP	-14.85	ZAL	64.15	ZAP	55.77	ETS	168.85	ZAE	82.28	ETE	177.02	ZAC	69.58	ETC	257.28	CLP	54.42

PLANETOCENTRIC CONIC

C3 14.313 VHL 3.783 DLA 46.34 RAL 158.74 RAD 6567.6 VEL 11.649 PTH 2.04 VHP 3.739 DPA -5.33 RAP 158.94 ECC 1.2356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.64	6 25 10	4179.53	-33.85	191.27	28.97	56.22	7 34 50	3579.5	-38.01	183.24
128.36	14 16 14	2739.41	-33.84	79.19	28.96	56.21	15 1 54	2139.4	-38.00	71.16
51.64	6 25 10	4179.53	-33.85	191.27	28.97	56.22	7 34 50	3579.5	-38.01	183.24
128.36	14 16 14	2739.41	-33.84	79.19	28.96	56.21	15 1 54	2139.4	-38.00	71.16
51.64	6 25 10	4179.53	-33.85	191.27	28.97	56.22	7 34 50	3579.5	-38.01	183.24
128.36	14 16 14	2739.41	-33.84	79.19	28.96	56.21	15 1 54	2139.4	-38.00	71.16

DIFFERENTIAL CORRECTIONS

TDE	3.9082	TRA	-.6392	TC-10.1712	BAU	1.9813	
RDE	.7687	RRA	.0678	RC3-1.9374	FAU	.34175	
FDE	5.7652	FRA	.2979	FC-20.6706	BSP	34254	
BDE	3.9830	BRA	.6428	BC310.3541	FSP	5270	

MID-COURSE EXECUTION ACCURACY

SGT	9809.5	SGR	1877.9	SG3	1548.7		
RRT	.9752	RRF	.9860	RTF	.9733		
SGB	9987.7	R23	.1593	R13	.9745		
SG1	9979.3	SG2	408.8	THA	10.59		

ORBIT DETERMINATION ACCURACY

ST	5938.1	SR	1165.9	SS	2825.6		
CRT	.9940	CRS	-.9997	CST	-.9955		
LSA	6673.5	MSA	262.3	SSA	19.2		
EL1	6050.2	EL2	124.7	ALF	11.05		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 701.471 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.021	GAL	2.49	AZL	86.40	HCA	206.53	SMA	186.28	ECC	.21387	INC	3.5976	V1	30.260
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.210	GAP	-9.45	AZP	93.22	TAL	14.18	TAP	220.72	RCA	146.44	APO	226.12	V2	25.863
RC	300.645	GL	33.68	GP	-14.10	ZAL	64.68	ZAP	54.58	ETS	168.96	ZAE	80.89	ETE	176.80	ZAC	70.34	ETC	257.33	CLP	53.31

PLANETOCENTRIC CONIC

C3 13.935 VHL 3.733 DLA 45.39 RAL 159.33 RAD 6567.5 VEL 11.633 PTH 2.04 VHP 3.775 DPA -4.67 RAP 159.32 ECC 1.2293

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.91	6 32 9	4161.73	-33.45	189.29	28.67	57.32	7 41 30	3561.7	-37.49	181.22
127.09	14 13 56	2745.41	-33.44	79.44	28.66	57.31	14 59 41	2145.4	-37.48	71.37
52.91	6 32 9	4161.73	-33.45	189.29	28.67	57.32	7 41 30	3561.7	-37.49	181.22
127.09	14 13 56	2745.41	-33.44	79.44	28.66	57.31	14 59 41	2145.4	-37.48	71.37
52.91	6 32 9	4161.73	-33.45	189.29	28.67	57.32	7 41 30	3561.7	-37.49	181.22
127.09	14 13 56	2745.41	-33.44	79.44	28.66	57.31	14 59 41	2145.4	-37.48	71.37

DIFFERENTIAL CORRECTIONS

TDE	3.8598	TRA	-.6115	TC-10.6414	BAU	2.0119	
RDE	.7126	RRA	.0766	RC3-1.8408	FAU	.33300	
FDE	5.4252	FRA	.3742	FC-20.6882	BSP	34886	
BDE	3.9251	BRA	.6163	BC310.7994	FSP	5154	

MID-COURSE EXECUTION ACCURACY

SGT	10000.2	SGR	1764.4	SG3	1517.7		
RRT	.9734	RRF	.9832	RTF	.9732		
SGB	10154.6	R23	.1501	R13	.9742		
SG1	10146.8	SG2	398.5	THA	9.76		

ORBIT DETERMINATION ACCURACY

ST	5942.7	SR	1095.7	SS	2721.6		
CRT	.9936	CRS	-.9997	CST	-.9952		
LSA	6622.2	MSA	263.4	SSA	20.2		
EL1	6041.6	EL2	121.9	ALF	10.39		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 705.757 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.027	GAL	2.39	AZL	86.51	HCA	207.74	SMA	186.38	ECC	.21398	INC	3.4935	V1	30.260
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.254	GAP	-9.56	AZP	93.09	TAL	13.63	TAP	221.37	RCA	146.50	APO	226.26	V2	25.895
RC	301.687	GL	33.06	GP	-13.40	ZAL	65.27	ZAP	53.43	ETS	169.06	ZAE	79.53	ETE	176.62	ZAC	71.05	ETC	257.36	CLP	52.23

PLANETOCENTRIC CONIC

C3 13.585 VHL 3.686 DLA 44.47 RAL 159.97 RAD 6567.5 VEL 11.618 PTH 2.04 VHP 3.814 DPA -4.08 RAP 159.71 ECC 1.2236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.15	6 39 26	4143.87	-33.05	187.35	28.48	58.36	7 48 30	3543.9	-36.96	179.24
125.85	14 11 47	2752.15	-33.04	79.76	28.47	58.34	14 57 39	2152.1	-36.95	71.65
54.15	6 39 26	4143.87	-33.05	187.35	28.48	58.36	7 48 30	3543.9	-36.96	179.24
125.85	14 11 47	2752.15	-33.04	79.76	28.47	58.34	14 57 39	2152.1	-36.95	71.65
54.15	6 39 26	4143.87	-33.05	187.35	28.48	58.36	7 48 30	3543.9	-36.96	179.24
125.85	14 11 47	2752.15	-33.04	79.76	28.47	58.34	14 57 39	2152.1	-36.95	71.65

DIFFERENTIAL CORRECTIONS

TDE	3.8113	TRA	-.5798	TC-11.1170	BAU	2.0439	
RDE	.6629	RRA	.0846	RC3-1.7491	FAU	.32426	
FDE	5.0982	FRA	.4475	FC-20.6640	BSP	35469	
BDE	3.8685	BRA	.5860	BC311.2537	FSP	5025	

MID-COURSE EXECUTION ACCURACY

SGT	10191.0	SGR	1660.8	SG3	1486.0		
RRT	.9712	RRF	.9798	RTF	.9731		
SGB	10325.4	R23	.1398	R13	.9739		
SG1	10318.0	SG2	390.5	THA	9.01		

ORBIT DETERMINATION ACCURACY

ST	5941.9	SR	1032.7	SS	2617.7		
CRT	.9931	CRS	-.9997	CST	-.9948		
LSA	6569.2	MSA	264.0	SSA	21.2		
EL1	6029.8	EL2	119.3	ALF	9.80		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 710.050 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.033	GAL	2.29	AZL	86.60	HCA	208.95	SMA	186.49	ECC	.21410	INC	3.3972	V1	30.260
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.297	GAP	-9.67	AZP	92.97	TAL	13.06	TAP	222.01	RCA	146.56	APO	226.41	V2	25.926
RC	302.717	GL	32.49	GP	-12.76	ZAL	65.92	ZAP	52.31	ETS	169.16	ZAE	78.20	ETE	176.46	ZAC	71.71	ETC	257.39	CLP	51.18

PLANETOCENTRIC CONIC

C3 13.261 VHL 3.642 DLA 43.58 RAL 160.68 RAD 6567.5 VEL 11.604 PTH 2.03 VHP 3.855 DPA -3.55 RAP 160.11 ECC 1.2182

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.37	6 47 3	4125.92	-32.64	185.43	28.39	59.35	7 55 48	3525.9	-36.43	177.29
124.63	14 9 48	2759.58	-32.63	80.13	28.38	59.33	14 55 48	2159.6	-36.42	71.99
55.37	6 47 3	4125.92	-32.64	185.43	28.39	59.35	7 55 48	3525.9	-36.43	177.29
124.63	14 9 48	2759.58	-32.63	80.13	28.38	59.33	14 55 48	2159.6	-36.42	71.99
55.37	6 47 3	4125.92	-32.64	185.43	28.39	59.35	7 55 48	3525.9	-36.43	177.29
124.63	14 9 48	2759.58	-32.63	80.13	28.38	59.33	14 55 48	2159.6	-36.42	71.99

DIFFERENTIAL CORRECTIONS

TDE	3.7656	TRA	-.5395	TC-11.5833	BAU	2.0745	
RDE	.6192	RRA	.0930	RC3-1.6586	FAU	.31503	
FDE	4.7887	FRA	.5284	FC-20.5671	BSP	36106	
BDE	3.8162	BRA	.5475	BC311.7015	FSP	4900	

MID-COURSE EXECUTION ACCURACY

SGT	10375.3	SGR	1565.0	SG3	1452.1		
RRT	.9685	RRF	.9759	RTF	.9730		
SGB	10492.6	R23	.1293	R13	.9737		
SG1	10485.5	SG2	385.4	THA	8.32		

ORBIT DETERMINATION ACCURACY

ST	5940.7	SR	976.7	SS	2516.7		
CRT	.9926	CRS	-.9996	CST	-.9944		
LSA	6519.9	MSA	265.1	SSA	22.1		
EL1	6019.3	EL2	116.8	ALF	9.27		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 714.348 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.039	GAL	2.19	AZL	86.69	HCA	210.16	SMA	186.59	ECC	.21424	INC	3.3077	V1	30.260
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.339	GAP	-9.77	AZP	92.86	TAL	12.48	TAP	222.64	RCA	146.62	APO	226.57	V2	25.956
RC	303.736	GL	31.95	GP	-12.16	ZAL	66.62	ZAP	51.23	ETS	169.26	ZAE	76.89	ETE	176.32	ZAC	72.33	ETC	257.41	CLP	50.16

PLANETOCENTRIC CONIC

C3	12.958	VHL	3.600	DLA	42.71	RAL	161.43	RAD	6567.5	VEL	11.591	PTH	2.03	VHP	3.898	DPA	-3.08	RAP	160.52	ECC	1.2133

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.59	6 54 59	4107.74	-32.22	183.51	28.39	60.30	8 3 26	3507.7	-35.90	175.35
123.41	14 7 55	2767.79	-32.21	80.57	28.38	60.28	14 54 3	2167.8	-35.89	72.41
56.59	6 54 59	4107.74	-32.22	183.51	28.39	60.30	8 3 26	3507.7	-35.90	175.35
123.41	14 7 55	2767.79	-32.21	80.57	28.38	60.28	14 54 3	2167.8	-35.89	72.41
56.59	6 54 59	4107.74	-32.22	183.51	28.39	60.30	8 3 26	3507.7	-35.90	175.35
123.41	14 7 55	2767.79	-32.21	80.57	28.38	60.28	14 54 3	2167.8	-35.89	72.41

DIFFERENTIAL CORRECTIONS

TDE	3.7170	TRA	-.4942	TC-12.0508	BAU	2.1053	SGT10555.5	SGR	1476.2	SG3	1416.9
RDE	.5797	RRA	.1013	RC3-1.5713	FAU	.30567	RRT	.9651	RRF	.9713	RTF .9728
FDE	4.4870	FRA	.6127	FC-20.4216	BSP	36708	SGB10658.3	R23	.1191	R13	.9734
BDE	3.7619	BRA	.5044	BC312.1528	FSP	4773	SG110651.4	SG2	383.1	THA	7.70

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	5930.6	SR	925.7	SS	2413.8		
CRT	.9921	CRS	-.9996	CST	-.9938		
LSA	6464.0	MSA	266.9	SSA	23.0		
EL1	6001.3	EL2	114.6	ALF	8.81		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 718.653 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.045	GAL	2.09	AZL	86.78	HCA	211.37	SMA	186.70	ECC	.21439	INC	3.2243	V1	30.260
RP	211.08	LAP	-1.68	LOP	294.40	VP	23.381	GAP	-9.88	AZP	92.75	TAL	11.88	TAP	223.26	RCA	146.67	APO	226.73	V2	25.986
RC	304.746	GL	31.45	GP	-11.61	ZAL	67.37	ZAP	50.18	ETS	169.36	ZAE	75.61	ETE	176.21	ZAC	72.91	ETC	257.41	CLP	49.17

PLANETOCENTRIC CONIC

C3	12.676	VHL	3.560	DLA	41.85	RAL	162.24	RAD	6567.5	VEL	11.579	PTH	2.02	VHP	3.943	DPA	-2.66	RAP	160.94	ECC	1.2086

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.80	7 3 16	4089.21	-31.79	181.60	28.48	61.21	8 11 25	3489.2	-35.35	173.42
122.20	14 6 5	2776.86	-31.78	81.08	28.47	61.19	14 52 22	2176.9	-35.34	72.90
57.80	7 3 16	4089.21	-31.79	181.60	28.48	61.21	8 11 25	3489.2	-35.35	173.42
122.20	14 6 5	2776.86	-31.78	81.08	28.47	61.19	14 52 22	2176.9	-35.34	72.90
57.80	7 3 16	4089.21	-31.79	181.60	28.48	61.21	8 11 25	3489.2	-35.35	173.42
122.20	14 6 5	2776.86	-31.78	81.08	28.47	61.19	14 52 22	2176.9	-35.34	72.90

DIFFERENTIAL CORRECTIONS

TDE	3.6690	TRA	-.4415	TC-12.5194	BAU	2.1365	SGT10735.1	SGR	1395.5	SG3	1382.1
RDE	.5447	RRA	.1094	RC3-1.4882	FAU	.29648	RRT	.9611	RRF	.9660	RTF .9726
FDE	4.2009	FRA	.6985	FC-20.2493	BSP	37312	SGB10825.4	R23	.1088	R13	.9731
BDE	3.7093	BRA	.4549	BC312.6075	FSP	4644	SG110818.7	SG2	382.6	THA	7.13

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	5917.6	SR	880.1	SS	2313.2		
CRT	.9916	CRS	-.9995	CST	-.9932		
LSA	6408.6	MSA	268.8	SSA	24.0		
EL1	5981.6	EL2	112.3	ALF	8.39		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 722.964 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.052	GAL	1.99	AZL	86.85	HCA	212.59	SMA	186.81	ECC	.21457	INC	3.1464	V1	30.260
RP	210.82	LAP	-1.69	LOP	295.62	VP	23.422	GAP	-9.98	AZP	92.65	TAL	11.28	TAP	223.87	RCA	146.73	APO	226.90	V2	26.015
RC	305.746	GL	30.97	GP	-11.10	ZAL	68.18	ZAP	49.16	ETS	169.46	ZAE	74.35	ETE	176.11	ZAC	73.46	ETC	257.42	CLP	48.21

PLANETOCENTRIC CONIC

C3	12.411	VHL	3.523	DLA	41.00	RAL	163.10	RAD	6567.5	VEL	11.567	PTH	2.02	VHP	3.990	DPA	-2.29	RAP	161.37	ECC	1.2043

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.01	7 11 56	4070.23	-31.34	179.68	28.64	62.08	8 19 46	3470.2	-34.80	171.48
120.99	14 4 16	2786.84	-31.33	81.67	28.64	62.07	14 50 42	2186.8	-34.79	73.47
59.01	7 11 56	4070.23	-31.34	179.68	28.64	62.08	8 19 46	3470.2	-34.80	171.48
120.99	14 4 16	2786.84	-31.33	81.67	28.64	62.07	14 50 42	2186.8	-34.79	73.47
59.01	7 11 56	4070.23	-31.34	179.68	28.64	62.08	8 19 46	3470.2	-34.80	171.48
120.99	14 4 16	2786.84	-31.33	81.67	28.64	62.07	14 50 42	2186.8	-34.79	73.47

DIFFERENTIAL CORRECTIONS

TDE	3.6200	TRA	-.3840	TC-12.9822	BAU	2.1667	SGT10909.4	SGR	1320.1	SG3	1345.6
RDE	.5134	RRA	.1170	RC3-1.4063	FAU	.28698	RRT	.9562	RRF	.9598	RTF .9724
FDE	3.9274	FRA	.7818	FC-20.0177	BSP	37926	SGB10989.0	R23	.0985	R13	.9728
BDE	3.6562	BRA	.4014	BC313.0581	FSP	4518	SG110982.3	SG2	383.8	THA	6.61

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	5899.0	SR	838.8	SS	2213.8		
CRT	.9912	CRS	-.9995	CST	-.9925		
LSA	6350.5	MSA	270.6	SSA	24.8		
EL1	5957.3	EL2	110.1	ALF	8.03		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 727.278 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.058	GAL	1.88	AZL	86.93	HCA	213.81	SMA	186.92	ECC	.21475	INC	3.0733	V1	30.260
RP	210.58	LAP	-1.71	LOP	296.84	VP	23.463	GAP	-10.07	AZP	92.55	TAL	10.66	TAP	224.47	RCA	146.78	APO	227.07	V2	26.043
RC	306.737	GL	30.53	GP	-10.63	ZAL	69.04	ZAP	48.18	ETS	169.55	ZAE	73.12	ETE	176.02	ZAC	73.99	ETC	257.41	CLP	47.28

PLANETOCENTRIC CONIC

C3	12.163	VHL	3.488	DLA	40.16	RAL	164.01	RAD	6567.5	VEL	11.556	PTH	2.02	VHP	4.039	DPA	-1.97	RAP	161.82	ECC	1.2002

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.24	7 21 3	4050.55	-30.89	177.72	28.89	62.94	8 28 33	3450.6	-34.24	169.51
119.76	14 2 22	2797.96	-30.87	82.34	28.88	62.92	14 49 0	2198.0	-34.23	74.14
60.24	7 21 3	4050.55	-30.89	177.72	28.89	62.94	8 28 33	3450.6	-34.24	169.51
119.76	14 2 22	2797.96	-30.87	82.34	28.88	62.92	14 49 0	2198.0	-34.23	74.14
60.24	7 21 3	4050.55	-30.89	177.72	28.89	62.94	8 28 33	3450.6	-34.24	169.51
119.76	14 2 22	2797.96	-30.87	82.34	28.88	62.92	14 49 0	2198.0	-34.23	74.14

DIFFERENTIAL CORRECTIONS

TDE	3.5882	TRA	-.3016	TC-13.3864	BAU	2.1873	SGT11061.4	SGR	1250.1	SG3	1305.4
RDE	.4879	RRA	.1273	RC3-1.3181	FAU	.27586	RRT	.9497	RRF	.9527	RTF .9721
FDE	3.7003	FRA	.9017	FC-19.6346	BSP	38944	SGB11131.8	R23	.0907	R13	.9724
BDE	3.6213	BRA	.3273	BC313.4511	FSP	4454	SG111125.0	SG2	389.1	THA	6.13

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	5904.8	SR	806.3	SS	2135.7		
CRT	.9908	CRS	-.9994	CST	-.9916		
LSA	6324.6	MSA	276.1	SSA	25.3		
EL1	5958.6	EL2	108.0	ALF	7.71		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 731.601 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.065 GAL 1.77 AZL 87.00 HCA 215.04 SMA 187.04 ECC .21496 INC 3.0045 V1 30.260
RP 210.34 LAP -1.72 LOP 298.06 VP 23.503 GAP -10.17 AZP 92.46 TAL 10.02 TAP 225.06 RCA 146.83 APO 227.25 V2 26.071
RC 307.719 GL 30.10 GP -10.18 ZAL 69.94 ZAP 47.22 ETS 169.64 ZAE 71.91 ETE 175.94 ZAC 74.48 ETC 257.40 CLP 46.37

PLANETOCENTRIC CONIC

C3 11.932 VHL 3.454 DLA 39.32 RAL 164.95 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 4.089 DPA -1.68 RAP 162.28 ECC 1.1964

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.49	7 30 35	4030.14	-30.41	175.72	29.20	63.77	8 37 46	3430.1	-33.67	167.51
118.51	14 0 22	2810.25	-30.40	83.10	29.19	63.75	14 47 12	2210.3	-33.66	74.89
61.49	7 30 35	4030.14	-30.41	175.72	29.20	63.77	8 37 46	3430.1	-33.67	167.51
118.51	14 0 22	2810.25	-30.40	83.10	29.19	63.75	14 47 12	2210.3	-33.66	74.89
61.49	7 30 35	4030.14	-30.41	175.72	29.20	63.77	8 37 46	3430.1	-33.67	167.51
118.51	14 0 22	2810.25	-30.40	83.10	29.19	63.75	14 47 12	2210.3	-33.66	74.89

DIFFERENTIAL CORRECTIONS
TDE 3.5278 TRA -.2388 TC-13.8681 BAU 2.2211
RDE .4612 RRA .1332 RC3-1.2471 FAU .26746
FDE 3.4342 FRA .9695 FC-19.4062 BSP 39365
BDE 3.5578 BRA .2734 BC313.9241 FSP 4300

MID-COURSE EXECUTION ACCURACY
SGT11238.0 SGR 1187.1 SG3 1271.3
RRT .9434 RRF .9448 RTF .9719
SGB11300.5 R23 .0807 R13 .9722
SG111293.7 SG2 391.8 THA 5.70

ORBIT DETERMINATION ACCURACY
ST 5860.6 SR 770.3 SS 2029.3
CRT .9904 CRS -.9993 CST -.9907
LSA 6243.5 MSA 277.0 SSA 26.3
EL1 5910.1 EL2 105.4 ALF 7.42

LAUNCH DATE DEC 15 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 735.930 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.071 GAL 1.66 AZL 87.06 HCA 216.26 SMA 187.16 ECC .21519 INC 2.9397 V1 30.260
RP 210.10 LAP -1.74 LOP 299.29 VP 23.542 GAP -10.26 AZP 92.37 TAL 9.37 TAP 225.64 RCA 146.88 APO 227.43 V2 26.098
RC 308.691 GL 29.69 GP -9.77 ZAL 70.90 ZAP 46.29 ETS 169.72 ZAE 70.73 ETE 175.88 ZAC 74.96 ETC 257.38 CLP 45.48

PLANETOCENTRIC CONIC

C3 11.715 VHL 3.423 DLA 38.49 RAL 165.94 RAD 6567.4 VEL 11.537 PTH 2.01 VHP 4.140 DPA -1.44 RAP 162.75 ECC 1.1928

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.76	7 40 39	4008.77	-29.93	173.67	29.58	64.57	8 47 28	3408.8	-33.08	165.46
117.24	13 58 11	2823.93	-29.91	83.97	29.57	64.56	14 45 15	2223.9	-33.07	75.76
62.76	7 40 39	4008.77	-29.93	173.67	29.58	64.57	8 47 28	3408.8	-33.08	165.46
117.24	13 58 11	2823.93	-29.91	83.97	29.57	64.56	14 45 15	2223.9	-33.07	75.76
62.76	7 40 39	4008.77	-29.93	173.67	29.58	64.57	8 47 28	3408.8	-33.08	165.46
117.24	13 58 11	2823.93	-29.91	83.97	29.57	64.56	14 45 15	2223.9	-33.07	75.76

DIFFERENTIAL CORRECTIONS
TDE 3.4681 TRA -.1679 TC-14.3403 BAU 2.2534
RDE .4375 RRA .1391 RC3-1.1770 FAU .25889
FDE 3.1850 FRA 1.0395 FC-19.1330 BSP 39789
BDE 3.4956 BRA .2180 BC314.3885 FSP 4143

MID-COURSE EXECUTION ACCURACY
SGT11410.3 SGR 1128.7 SG3 1236.8
RRT .9360 RRF .9357 RTF .9718
SGB11466.0 R23 .0712 R13 .9720
SG111459.2 SG2 395.8 THA 5.30

ORBIT DETERMINATION ACCURACY
ST 5814.1 SR 738.3 SS 1927.2
CRT .9901 CRS -.9992 CST -.9896
LSA 6163.2 MSA 278.2 SSA 27.3
EL1 5859.9 EL2 102.8 ALF 7.17

LAUNCH DATE DEC 15 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 740.263 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.078 GAL 1.54 AZL 87.12 HCA 217.49 SMA 187.28 ECC .21544 INC 2.8784 V1 30.260
RP 209.88 LAP -1.75 LOP 300.52 VP 23.580 GAP -10.36 AZP 92.28 TAL 8.71 TAP 226.20 RCA 146.93 APO 227.62 V2 26.124
RC 309.654 GL 29.30 GP -9.39 ZAL 71.90 ZAP 45.39 ETS 169.80 ZAE 69.56 ETE 175.82 ZAC 75.41 ETC 257.36 CLP 44.62

PLANETOCENTRIC CONIC

C3 11.512 VHL 3.393 DLA 37.65 RAL 166.97 RAD 6567.4 VEL 11.528 PTH 2.01 VHP 4.193 DPA -1.23 RAP 163.24 ECC 1.1895

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.07	7 51 16	3986.20	-29.42	171.54	30.02	65.36	8 57 42	3386.2	-32.48	163.33
115.93	13 55 46	2839.19	-29.41	84.95	30.01	65.35	14 43 5	2239.2	-32.47	76.75
64.07	7 51 16	3986.20	-29.42	171.54	30.02	65.36	8 57 42	3386.2	-32.48	163.33
115.93	13 55 46	2839.19	-29.41	84.95	30.01	65.35	14 43 5	2239.2	-32.47	76.75
64.07	7 51 16	3986.20	-29.42	171.54	30.02	65.36	8 57 42	3386.2	-32.48	163.33
115.93	13 55 46	2839.19	-29.41	84.95	30.01	65.35	14 43 5	2239.2	-32.47	76.75

DIFFERENTIAL CORRECTIONS
TDE 3.4076 TRA -.0892 TC-14.7989 BAU 2.2839
RDE .4162 RRA .1449 RC3-1.1076 FAU .25016
FDE 2.9471 FRA 1.1104 FC-18.8133 BSP 40300
BDE 3.4329 BRA .1702 BC314.8403 FSP 4004

MID-COURSE EXECUTION ACCURACY
SGT11575.5 SGR 1074.4 SG3 1201.4
RRT .9273 RRF .9254 RTF .9716
SGB11625.3 R23 .0623 R13 .9718
SG111618.4 SG2 400.6 THA 4.93

ORBIT DETERMINATION ACCURACY
ST 5762.6 SR 709.2 SS 1826.5
CRT .9899 CRS -.9990 CST -.9883
LSA 6080.1 MSA 279.7 SSA 28.2
EL1 5805.2 EL2 100.0 ALF 6.95

LAUNCH DATE DEC 15 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 744.601 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.085 GAL 1.42 AZL 87.18 HCA 218.72 SMA 187.40 ECC .21571 INC 2.8203 V1 30.260
RP 209.66 LAP -1.76 LOP 301.75 VP 23.618 GAP -10.45 AZP 92.20 TAL 8.04 TAP 226.76 RCA 146.97 APO 227.82 V2 26.149
RC 310.607 GL 28.92 GP -9.02 ZAL 72.95 ZAP 44.52 ETS 169.88 ZAE 68.42 ETE 175.78 ZAC 75.84 ETC 257.33 CLP 43.78

PLANETOCENTRIC CONIC

C3 11.322 VHL 3.365 DLA 36.81 RAL 168.03 RAD 6567.4 VEL 11.520 PTH 2.01 VHP 4.247 DPA -1.05 RAP 163.74 ECC 1.1863

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.43	8 2 32	3962.19	-28.90	169.32	30.52	66.14	9 8 35	3362.2	-31.86	161.12
114.57	13 53 0	2856.32	-28.89	86.08	30.51	66.12	14 40 37	2256.3	-31.85	77.88
65.43	8 2 32	3962.19	-28.90	169.32	30.52	66.14	9 8 35	3362.2	-31.86	161.12
114.57	13 53 0	2856.32	-28.89	86.08	30.51	66.12	14 40 37	2256.3	-31.85	77.88
65.43	8 2 32	3962.19	-28.90	169.32	30.52	66.14	9 8 35	3362.2	-31.86	161.12
114.57	13 53 0	2856.32	-28.89	86.08	30.51	66.12	14 40 37	2256.3	-31.85	77.88

DIFFERENTIAL CORRECTIONS
TDE 3.3446 TRA -.0035 TC-15.2536 BAU 2.3143
RDE .3970 RRA .1508 RC3-1.0405 FAU .24159
FDE 2.7220 FRA 1.1847 FC-18.4732 BSP 40789
BDE 3.3681 BRA .1509 BC315.2890 FSP 3868

MID-COURSE EXECUTION ACCURACY
SGT11739.2 SGR 1024.7 SG3 1166.8
RRT .9173 RRF .9138 RTF .9713
SGB11783.8 R23 .0545 R13 .9715
SG111776.8 SG2 406.7 THA 4.58

ORBIT DETERMINATION ACCURACY
ST 5703.4 SR 683.1 SS 1728.6
CRT .9897 CRS -.9986 CST -.9866
LSA 5991.9 MSA 282.4 SSA 29.1
EL1 5743.4 EL2 97.1 ALF 6.76

LAUNCH DATE DEC 15 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 748.943 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.092	GAL	1.30	AZL	87.23	HCA	219.96	SMA	187.52	ECC	.21600	INC	2.7652
RP	209.44	LAP	-1.78	LOP	302.99	VP	23.655	GAP	-10.54	AZP	92.12	TAL	7.35	TAP	227.31	RCA	147.02	APO	228.02
RC	311.551	GL	28.56	GP	-8.69	ZAL	74.05	ZAP	43.67	ETS	169.95	ZAE	67.30	ETE	175.74	ZAC	76.26	ETC	257.30

V1	30.260	V2	26.174	CLP	42.97														

PLANETOCENTRIC CONIC

C3	11.146	VHL	3.339	DLA	35.96	RAL	169.14	RAD	6567.4	VEL	11.512	PTH	2.01	VHP	4.302	DPA	-.90	RAP	164.25

ECC	1.1834																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.84	8 14 33	3936.39	-28.36	166.98	31.08	66.90	9 20 9	3336.4	-31.23	158.78
113.16	13 49 48	2875.64	-28.35	87.36	31.08	66.88	14 37 43	2275.6	-31.22	79.17
66.84	8 14 33	3936.39	-28.36	166.98	31.08	66.90	9 20 9	3336.4	-31.23	158.78
113.16	13 49 48	2875.64	-28.35	87.36	31.08	66.88	14 37 43	2275.6	-31.22	79.17
66.84	8 14 33	3936.39	-28.36	166.98	31.08	66.90	9 20 9	3336.4	-31.23	158.78
113.16	13 49 48	2875.64	-28.35	87.36	31.08	66.88	14 37 43	2275.6	-31.22	79.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.2804	TRA	.0906	TC-15.6958	BAU	2.3434	SGT11898.3	SGR	979.0	SG3	1132.1	ST	5638.8	SR	659.6	SS	1634.0		
RDE	.3798	RRA	.1567	RC3 -.9744	FAU	.23299	RRT .9058	RRF	.9009	RTF	.9711	CRT	.9897	CRS	-.9981	CST	-.9847		
FDE	2.5097	FRA	1.2601	FC-18.0964	BSP	41304	SGB11938.5	R23	.0475	R13	.9712	LSA	5900.7	MSA	285.7	SSA	30.0		
BDE	3.3023	BRA	.1810	BC315.7260	FSP	3737	SG111931.3	SG2	413.6	THA	4.27	EL1	5676.5	EL2	93.9	ALF	6.61		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 753.290 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.099	GAL	1.18	AZL	87.29	HCA	221.19	SMA	187.64	ECC	.21631	INC	2.7127
RP	209.24	LAP	-1.79	LOP	304.23	VP	23.691	GAP	-10.62	AZP	92.04	TAL	6.65	TAP	227.85	RCA	147.05	APO	228.23
RC	312.486	GL	28.20	GP	-8.37	ZAL	75.19	ZAP	42.84	ETS	170.02	ZAE	66.20	ETE	175.70	ZAC	76.66	ETC	257.27

V1	30.260	V2	26.198	CLP	42.17														

PLANETOCENTRIC CONIC

C3	10.983	VHL	3.314	DLA	35.10	RAL	170.27	RAD	6567.4	VEL	11.505	PTH	2.00	VHP	4.359	DPA	-.79	RAP	164.78

ECC	1.1808																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.33	8 27 24	3908.44	-27.80	164.49	31.70	67.64	9 32 33	3308.4	-30.57	156.31
111.67	13 46 1	2897.54	-27.79	88.83	31.69	67.63	14 34 19	2297.5	-30.56	80.66
68.33	8 27 24	3908.44	-27.80	164.49	31.70	67.64	9 32 33	3308.4	-30.57	156.31
111.67	13 46 1	2897.54	-27.79	88.83	31.69	67.63	14 34 19	2297.5	-30.56	80.66
68.33	8 27 24	3908.44	-27.80	164.49	31.70	67.64	9 32 33	3308.4	-30.57	156.31
111.67	13 46 1	2897.54	-27.79	88.83	31.69	67.63	14 34 19	2297.5	-30.56	80.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.2163	TRA	.1911	TC-16.1225	BAU	2.3711	SGT12053.2	SGR	937.0	SG3	1097.6	ST	5571.0	SR	638.7	SS	1543.4		
RDE	.3645	RRA	.1621	RC3 -.9098	FAU	.22447	RRT .8931	RRF	.8864	RTF	.9709	CRT	.9898	CRS	-.9973	CST	-.9824		
FDE	2.3109	FRA	1.3300	FC-17.6932	BSP	41900	SGB12089.5	R23	.0406	R13	.9710	LSA	5808.8	MSA	288.5	SSA	30.7		
BDE	3.2368	BRA	.2506	BC316.1482	FSP	3623	SG112082.2	SG2	420.6	THA	3.98	EL1	5606.7	EL2	90.3	ALF	6.48		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 350.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 757.641 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.106	GAL	1.06	AZL	87.34	HCA	222.43	SMA	187.77	ECC	.21665	INC	2.6627
RP	209.04	LAP	-1.80	LOP	305.47	VP	23.727	GAP	-10.71	AZP	91.97	TAL	5.94	TAP	228.37	RCA	147.09	APO	228.45
RC	313.411	GL	27.85	GP	-8.07	ZAL	76.38	ZAP	42.04	ETS	170.09	ZAE	65.12	ETE	175.67	ZAC	77.05	ETC	257.23

V1	30.260	V2	26.221	CLP	41.40														

PLANETOCENTRIC CONIC

C3	10.833	VHL	3.291	DLA	34.23	RAL	171.45	RAD	6567.4	VEL	11.499	PTH	2.00	VHP	4.416	DPA	-.70	RAP	165.32

ECC	1.1783																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.91	8 41 18	3877.68	-27.21	161.80	32.37	68.38	9 45 56	3277.7	-29.90	153.64
110.09	13 41 28	2922.67	-27.20	90.54	32.37	68.37	14 30 11	2322.7	-29.89	82.38
69.91	8 41 18	3877.68	-27.21	161.80	32.37	68.38	9 45 56	3277.7	-29.90	153.64
110.09	13 41 28	2922.67	-27.20	90.54	32.37	68.37	14 30 11	2322.7	-29.89	82.38
69.91	8 41 18	3877.68	-27.21	161.80	32.37	68.38	9 45 56	3277.7	-29.90	153.64
110.09	13 41 28	2922.67	-27.20	90.54	32.37	68.37	14 30 11	2322.7	-29.89	82.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.1452	TRA	.2972	TC-16.5427	BAU	2.3990	SGT12204.7	SGR	898.0	SG3	1063.0	ST	5488.1	SR	619.1	SS	1451.0		
RDE	.3503	RRA	.1673	RC3 -.8465	FAU	.21601	RRT .8784	RRF	.8703	RTF	.9707	CRT	.9901	CRS	-.9960	CST	-.9795		
FDE	2.1158	FRA	1.3996	FC-17.2620	BSP	42394	SGB12237.7	R23	.0348	R13	.9707	LSA	5702.7	MSA	292.3	SSA	31.5		
BDE	3.1647	BRA	.3410	BC316.5644	FSP	3497	SG112230.2	SG2	428.3	THA	3.70	EL1	5522.2	EL2	86.5	ALF	6.37		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 352.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 761.996 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.114	GAL	.93	AZL	87.39	HCA	223.67	SMA	187.90	ECC	.21701	INC	2.6148
RP	208.85	LAP	-1.81	LOP	306.71	VP	23.761	GAP	-10.80	AZP	91.89	TAL	5.21	TAP	228.89	RCA	147.12	APO	228.67
RC	314.329	GL	27.51	GP	-7.79	ZAL	77.62	ZAP	41.25	ETS	170.15	ZAE	64.06	ETE	175.65	ZAC	77.42	ETC	257.19

V1	30.260	V2	26.243	CLP	40.64														

PLANETOCENTRIC CONIC

C3	10.697	VHL	3.271	DLA	33.35	RAL	172.65	RAD	6567.4	VEL	11.493	PTH	2.00	VHP	4.475	DPA	-.63	RAP	165.88

ECC	1.1760																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.60	8 56 29	3843.34	-26.61	158.87	33.10	69.11	10 0 32	3243.3	-29.20	150.72
108.40	13 35 54	2951.82	-26.60	92.55	33.09	69.10	14 25 6	2351.8	-29.19	84.40
71.60	8 56 29	3843.34	-26.61	158.87	33.10	69.11	10 0 32	3243.3	-29.20	150.72
108.40	13 35 54	2951.82	-26.60	92.55	33.09	69.10	14 25 6	2351.8	-29.19	84.40
110.00	14 42 49	2746.66	-31.00	78.26	34.73	74.82	15 28 36	2146.7	-32.77	69.49
110.00	12 48 44	3096.50	-22.37	101.72	31.05	63.45	13 40 20	2496.5	-25.75	94.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.0716	TRA	.4093	TC-16.9521	BAU	2.4268	SGT12355.1	SGR	862.7	SG3	1029.7	ST	5397.4	SR	601.4	SS	1361.4		
RDE	.3376	RRA	.1721	RC3 -.7859	FAU	.20791	RRT .8624	RRF	.8527	RTF	.9704	CRT	.9905	CRS	-.9941	CST	-.9759		
FDE	1.9308	FRA	1.4651	FC-16.8277	BSP	42917	SGB12385.2	R23	.0293	R13	.9705	LSA	5590.9	MSA	296.3	SSA	32.3		
BDE	3.0901	BRA	.4440	BC316.9703	FSP	3380	SG112377.5	SG2	436.0	THA	3.45	EL1	5430.2	EL2	82.2	ALF	6.30		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 766.354 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.121 GAL .80 AZL 87.43 HCA 224.92 SMA 188.03 ECC .21739 INC 2.5690 V1 30.260
RP 208.67 LAP -1.81 LOP 307.95 VP 23.795 GAP -10.88 AZP 91.82 TAL 4.47 TAP 229.39 RCA 147.15 APO 228.90 V2 26.264
RC 315.238 GL 27.16 GP -7.52 ZAL 78.90 ZAP 40.49 ETS 170.21 ZAE 63.02 ETE 175.63 ZAC 77.78 ETC 257.15 CLP 39.91

PLANETOCENTRIC CONIC

C3 10.573 VHL 3.252 DLA 32.45 RAL 173.88 RAD 6567.4 VEL 11.487 PTH 2.00 VHP 4.534 DPA -.60 RAP 166.45 ECC 1.1740

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.44	9 13 14	3804.39	-25.98	155.61	33.88	69.83	10 16 39	3204.4	-28.48	147.48
106.56	13 28 59	2986.05	-25.97	94.91	33.87	69.82	14 18 45	2386.0	-28.48	86.79
73.44	9 13 14	3804.39	-25.98	155.61	33.88	69.83	10 16 39	3204.4	-28.48	147.48
106.56	13 28 59	2986.05	-25.97	94.91	33.87	69.82	14 18 45	2386.0	-28.48	86.79
110.00	15 12 43	2665.98	-32.29	72.32	35.95	78.11	15 57 9	2066.0	-33.59	63.33
110.00	12 28 40	3172.46	-19.98	106.33	30.95	61.67	13 21 33	2572.5	-23.61	99.06

DIFFERENTIAL CORRECTIONS
TDE 2.9946 TRA .5259 TC-17.3511 BAU 2.4547
RDE .3262 RRA .1763 RC3 -.7269 FAU .20001
FDE 1.7561 FRA 1.5220 FC-16.3775 BSP 43399
BDE 3.0123 BRA .5546 BC317.3663 FSP 3259

MID-COURSE EXECUTION ACCURACY
SGT12504.9 SGR 830.3 SG3 996.8
RRT .8448 RRF .8334 RTF .9704
SGB12532.4 R23 .0236 R13 .9704
SG112524.6 SG2 443.6 THA 3.21

ORBIT DETERMINATION ACCURACY
ST 5297.8 SR 585.5 SS 1274.6
CRT .9911 CRS -.9913 CST -.9718
LSA 5472.0 MSA 299.5 SSA 33.1
EL1 5329.5 EL2 77.4 ALF 6.25

LAUNCH DATE DEC 15 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 770.716 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.128 GAL .66 AZL 87.47 HCA 226.16 SMA 188.16 ECC .21780 INC 2.5252 V1 30.260
RP 208.49 LAP -1.82 LOP 309.20 VP 23.828 GAP -10.97 AZP 91.75 TAL 3.72 TAP 229.88 RCA 147.17 APO 229.14 V2 26.285
RC 316.140 GL 26.82 GP -7.27 ZAL 80.23 ZAP 39.75 ETS 170.27 ZAE 62.00 ETE 175.61 ZAC 78.14 ETC 257.10 CLP 39.19

PLANETOCENTRIC CONIC

C3 10.463 VHL 3.235 DLA 31.54 RAL 175.15 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 4.595 DPA -.58 RAP 167.03 ECC 1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.50	9 32 7	3759.05	-25.33	151.90	34.71	70.55	10 34 46	3159.0	-27.74	143.79
104.50	13 20 11	3027.15	-25.32	97.78	34.71	70.53	14 10 38	2427.1	-27.74	89.67
75.50	9 32 7	3759.05	-25.33	151.90	34.71	70.55	10 34 46	3159.0	-27.74	143.79
104.50	13 20 11	3027.15	-25.32	97.78	34.71	70.53	14 10 38	2427.1	-27.74	89.67
110.00	15 36 54	2602.63	-33.08	67.55	36.97	80.84	16 20 16	2002.6	-33.99	58.43
110.00	12 14 35	3231.57	-18.04	109.81	31.14	60.46	13 8 26	2631.6	-21.83	102.73

DIFFERENTIAL CORRECTIONS
TDE 2.9175 TRA .6540 TC-17.7143 BAU 2.4795
RDE .3161 RRA .1809 RC3 -.6674 FAU .19184
FDE 1.5919 FRA 1.5869 FC-15.8740 BSP 44004
BDE 2.9346 BRA .6785 BC317.7269 FSP 3158

MID-COURSE EXECUTION ACCURACY
SGT12644.4 SGR 800.8 SG3 963.2
RRT .8249 RRF .8124 RTF .9700
SGB12669.7 R23 .0198 R13 .9701
SG112661.6 SG2 452.1 THA 2.99

ORBIT DETERMINATION ACCURACY
ST 5195.4 SR 571.4 SS 1192.6
CRT .9919 CRS -.9872 CST -.9663
LSA 5352.3 MSA 305.0 SSA 33.8
EL1 5226.2 EL2 72.3 ALF 6.23

LAUNCH DATE DEC 15 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 775.081 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.136 GAL .53 AZL 87.52 HCA 227.41 SMA 188.29 ECC .21824 INC 2.4830 V1 30.260
RP 208.32 LAP -1.83 LOP 310.45 VP 23.860 GAP -11.05 AZP 91.68 TAL 2.95 TAP 230.36 RCA 147.20 APO 229.38 V2 26.304
RC 317.035 GL 26.48 GP -7.04 ZAL 81.60 ZAP 39.03 ETS 170.32 ZAE 60.99 ETE 175.60 ZAC 78.48 ETC 257.06 CLP 38.49

PLANETOCENTRIC CONIC

C3 10.366 VHL 3.220 DLA 30.61 RAL 176.44 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 4.656 DPA -.59 RAP 167.62 ECC 1.1706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.87	9 54 7	3704.01	-24.65	147.50	35.59	71.25	10 55 51	3104.0	-26.98	139.41
102.13	13 8 29	3078.44	-24.64	101.38	35.59	71.24	13 59 47	2478.4	-26.97	93.30
77.87	9 54 7	3704.01	-24.65	147.50	35.59	71.25	10 55 51	3104.0	-26.98	139.41
102.13	13 8 29	3078.44	-24.64	101.38	35.59	71.24	13 59 47	2478.4	-26.97	93.30
110.00	15 58 14	2547.87	-33.59	63.36	37.90	83.27	16 40 42	1947.9	-34.16	54.16
110.00	12 3 32	3282.58	-16.30	112.74	31.52	59.53	12 58 14	2682.6	-20.22	105.81

DIFFERENTIAL CORRECTIONS
TDE 2.8315 TRA .7835 TC-18.0917 BAU 2.5086
RDE .3068 RRA .1846 RC3 -.6133 FAU .18468
FDE 1.4309 FRA 1.6394 FC-15.4237 BSP 44475
BDE 2.8481 BRA .8049 BC318.1020 FSP 3048

MID-COURSE EXECUTION ACCURACY
SGT12795.7 SGR 774.5 SG3 933.0
RRT .8043 RRF .7899 RTF .9699
SGB12819.1 R23 .0148 R13 .9700
SG112810.9 SG2 459.7 THA 2.79

ORBIT DETERMINATION ACCURACY
ST 5074.4 SR 558.1 SS 1109.5
CRT .9928 CRS -.9813 CST -.9596
LSA 5214.9 MSA 309.8 SSA 34.6
EL1 5104.6 EL2 66.6 ALF 6.23

LAUNCH DATE DEC 15 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 779.448 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.143 GAL .39 AZL 87.56 HCA 228.66 SMA 188.42 ECC .21871 INC 2.4424 V1 30.260
RP 208.16 LAP -1.83 LOP 311.70 VP 23.891 GAP -11.13 AZP 91.61 TAL 2.17 TAP 230.83 RCA 147.21 APO 229.63 V2 26.323
RC 317.924 GL 26.13 GP -6.82 ZAL 83.02 ZAP 38.33 ETS 170.37 ZAE 60.01 ETE 175.58 ZAC 78.82 ETC 257.01 CLP 37.81

PLANETOCENTRIC CONIC

C3 10.283 VHL 3.207 DLA 29.66 RAL 177.75 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 4.719 DPA -.61 RAP 168.23 ECC 1.1692

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.79	10 21 19	3632.44	-23.95	141.91	36.52	71.96	11 21 52	3032.4	-26.19	133.85
99.21	12 51 46	3146.79	-23.94	106.22	36.52	71.94	13 44 13	2546.8	-26.18	98.16
100.00	13 29 13	3027.04	-26.08	98.04	37.23	74.85	14 19 40	2427.0	-27.91	89.71
100.00	12 26 33	3227.42	-21.83	111.40	35.71	69.06	13 20 20	2627.4	-24.49	103.60
110.00	16 17 51	2498.42	-33.92	59.54	38.79	85.51	16 59 30	1898.4	-34.17	50.30
110.00	11 54 24	3328.81	-14.69	115.35	32.03	58.78	12 49 53	2728.8	-18.71	108.55

DIFFERENTIAL CORRECTIONS
TDE 2.7411 TRA .9187 TC-18.4322 BAU 2.5352
RDE .2983 RRA .1879 RC3 -.5584 FAU .17721
FDE 1.2730 FRA 1.6855 FC-14.9186 BSP 44939
BDE 2.7573 BRA .9377 BC318.4406 FSP 2936

MID-COURSE EXECUTION ACCURACY
SGT12934.6 SGR 749.4 SG3 900.9
RRT .7814 RRF .7650 RTF .9698
SGB12956.3 R23 .0100 R13 .9698
SG112947.8 SG2 467.2 THA 2.60

ORBIT DETERMINATION ACCURACY
ST 4943.1 SR 545.6 SS 1026.2
CRT .9938 CRS -.9727 CST -.9508
LSA 5068.0 MSA 314.8 SSA 35.4
EL1 4972.7 EL2 60.4 ALF 6.26

LAUNCH DATE DEC 15 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 783.818 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.151	GAL	.25	AZL	87.60	HCA	229.91	SMA	188.56	ECC	.21921	INC	2.4033	V1	30.260
RP	208.01	LAP	-1.84	LOP	312.95	VP	23.921	GAP	-11.21	AZP	91.55	TAL	1.38	TAP	231.29	RCA	147.22	APO	229.89	V2	26.341
RC	318.808	GL	25.78	GP	-6.61	ZAL	84.47	ZAP	37.65	ETS	170.41	ZAE	59.04	ETE	175.57	ZAC	79.14	ETC	256.96	CLP	37.15

PLANETOCENTRIC CONIC

C3	10.215	VHL	3.196	DLA	28.69	RAL	179.09	RAD	6567.4	VEL	11.472	PTH	1.99	VHP	4.782	DPA	-.66	RAP	168.85	ECC	1.1681

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.17	11 1 39	3518.55	-23.22	133.26	37.50	72.65	12 0 17	2918.5	-25.37	125.22
94.83	12 22 7	3258.00	-23.21	114.17	37.50	72.64	13 16 25	2658.0	-25.37	106.13
100.00	14 14 15	2897.33	-28.07	88.91	38.85	79.26	15 2 33	2297.3	-29.26	80.31
100.00	11 52 12	3354.45	-18.53	119.38	35.62	66.12	12 48 6	2754.5	-21.60	111.93
110.00	16 36 18	2452.62	-34.11	55.97	39.66	87.61	17 17 11	1852.6	-34.06	46.73
110.00	11 46 38	3371.93	-13.15	117.75	32.66	58.16	12 42 50	2771.9	-17.26	111.05

DIFFERENTIAL CORRECTIONS

TDE	2.6492	TRA	1.0575	TC-18.7460	BAU	2.5610	
RDE	.2911	RRA	.1903	RC3 -.5044	FAU	.16977	
FDE	1.1270	FRA	1.7175	FC-14.3885	BSP	45394	
BDE	2.6652	BRA	1.0745	BC318.7528	FSP	2822	

MID-COURSE EXECUTION ACCURACY

SGT13069.6	SGR	726.2	SG3	868.3	
RRT .7567	RRF	.7378	RTF	.9699	
SGB13089.7	R23	.0044	R13	.9699	
SG113081.1	SG2	474.4	THA	2.41	

ORBIT DETERMINATION ACCURACY

ST	4806.7	SR	534.7	SS	948.2
CRT	.9949	CRS	-.9613	CST	-.9407
LSA	4918.0	MSA	318.0	SSA	36.1
EL1	4836.1	EL2	53.9	ALF	6.32

LAUNCH DATE DEC 15 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 788.190 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.158	GAL	.10	AZL	87.63	HCA	231.17	SMA	188.69	ECC	.21974	INC	2.3655	V1	30.260
RP	207.86	LAP	-1.84	LOP	314.21	VP	23.950	GAP	-11.29	AZP	91.48	TAL	.57	TAP	231.74	RCA	147.23	APO	230.15	V2	26.357
RC	319.685	GL	25.43	GP	-6.41	ZAL	85.97	ZAP	36.98	ETS	170.46	ZAE	58.08	ETE	175.56	ZAC	79.46	ETC	256.91	CLP	36.50

PLANETOCENTRIC CONIC

C3	10.162	VHL	3.188	DLA	27.71	RAL	180.45	RAD	6567.4	VEL	11.470	PTH	1.99	VHP	4.846	DPA	-.72	RAP	169.48	ECC	1.1672

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 38 54	3219.33	-25.82	112.10	39.48	77.96	13 32 34	2619.3	-27.23	103.71
90.00	10 55 43	3555.12	-19.17	134.41	37.33	68.76	11 54 58	2955.1	-21.89	126.79
100.00	14 44 23	2814.82	-28.97	82.95	40.09	82.28	15 31 18	2214.8	-29.73	74.23
100.00	11 32 55	3434.86	-16.24	124.26	36.00	64.56	12 30 10	2834.9	-19.54	117.01
110.00	16 53 53	2409.54	-34.18	52.61	40.53	89.60	17 34 3	1809.5	-33.86	43.38
110.00	11 39 34	3412.91	-11.67	120.00	33.40	57.64	12 36 47	2812.9	-15.86	113.40

DIFFERENTIAL CORRECTIONS

TDE	2.5491	TRA	1.2075	TC-19.0508	BAU	2.5888	
RDE	.2840	RRA	.1931	RC3 -.4541	FAU	.16300	
FDE	.9745	FRA	1.7604	FC-13.8870	BSP	45773	
BDE	2.5649	BRA	1.2229	BC319.0562	FSP	2687	

MID-COURSE EXECUTION ACCURACY

SGT13210.7	SGR	705.8	SG3	838.7	
RRT .7311	RRF	.7092	RTF	.9695	
SGB13229.5	R23	-.0007	R13	.9695	
SG113220.7	SG2	481.2	THA	2.24	

ORBIT DETERMINATION ACCURACY

ST	4654.7	SR	523.9	SS	867.0
CRT	.9958	CRS	-.9425	CST	-.9244
LSA	4752.3	MSA	326.7	SSA	36.8
EL1	4683.8	EL2	47.5	ALF	6.40

LAUNCH DATE DEC 15 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 792.563 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.166	GAL	-.04	AZL	87.67	HCA	232.42	SMA	188.83	ECC	.22030	INC	2.3291	V1	30.260
RP	207.73	LAP	-1.85	LOP	315.46	VP	23.978	GAP	-11.38	AZP	91.42	TAL	359.75	TAP	232.18	RCA	147.23	APO	230.43	V2	26.373
RC	320.558	GL	25.06	GP	-6.22	ZAL	87.50	ZAP	36.33	ETS	170.49	ZAE	57.14	ETE	175.56	ZAC	79.78	ETC	256.85	CLP	35.87

PLANETOCENTRIC CONIC

C3	10.124	VHL	3.182	DLA	26.70	RAL	181.83	RAD	6567.4	VEL	11.468	PTH	1.99	VHP	4.912	DPA	-.80	RAP	170.12	ECC	1.1666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 16 40	3111.96	-27.13	104.51	40.90	81.55	14 8 32	2512.0	-28.02	95.95
90.00	10 28 58	3660.98	-16.43	140.97	37.62	66.61	11 29 59	3061.0	-19.46	133.60
100.00	15 9 41	2747.62	-29.48	78.02	41.22	84.82	15 55 28	2147.6	-29.89	69.24
100.00	11 18 39	3500.56	-14.28	128.15	36.59	63.46	12 16 59	2900.6	-17.73	121.06
110.00	17 10 49	2368.56	-34.15	49.41	41.40	91.49	17 50 18	1768.6	-33.57	40.22
110.00	11 33 59	3452.38	-10.22	122.14	34.22	57.20	12 31 32	2852.4	-14.47	115.62

DIFFERENTIAL CORRECTIONS

TDE	2.4550	TRA	1.3803	TC-19.2356	BAU	2.6039	
RDE	.2801	RRA	.1982	RC3 -.3920	FAU	.15344	
FDE	.8727	FRA	1.8460	FC-13.1215	BSP	46749	
BDE	2.4709	BRA	1.3944	BC319.2396	FSP	2746	

MID-COURSE EXECUTION ACCURACY

SGT13308.5	SGR	690.1	SG3	801.4	
RRT .6963	RRF	.6815	RTF	.9681	
SGB13326.4	R23	.0090	R13	.9681	
SG113317.2	SG2	495.0	THA	2.07	

ORBIT DETERMINATION ACCURACY

ST	4513.9	SR	518.5	SS	824.9
CRT	.9967	CRS	-.9211	CST	-.9085
LSA	4605.2	MSA	340.4	SSA	37.3
EL1	4543.4	EL2	42.0	ALF	6.53

LAUNCH DATE DEC 15 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 796.938 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.174	GAL	-.20	AZL	87.71	HCA	233.68	SMA	188.97	ECC	.22089	INC	2.2937	V1	30.260
RP	207.60	LAP	-1.85	LOP	316.72	VP	24.005	GAP	-11.46	AZP	91.36	TAL	358.92	TAP	232.60	RCA	147.23	APO	230.71	V2	26.388
RC	321.425	GL	24.69	GP	-6.04	ZAL	89.07	ZAP	35.70	ETS	170.53	ZAE	56.21	ETE	175.55	ZAC	80.09	ETC	256.80	CLP	35.25

PLANETOCENTRIC CONIC

C3	10.101	VHL	3.178	DLA	25.68	RAL	183.23	RAD	6567.4	VEL	11.467	PTH	1.99	VHP	4.978	DPA	-.90	RAP	170.78	ECC	1.1662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 45 28	3033.34	-27.79	98.85	42.14	84.31	14 36 1	2433.3	-28.28	90.22
90.00	10 11 20	3738.73	-14.28	145.66	38.21	65.28	11 13 39	3138.7	-17.49	138.46
100.00	15 32 21	2688.76	-29.76	73.66	42.31	87.10	16 17 9	2088.8	-29.85	64.86
100.00	11 7 8	3558.55	-12.49	131.53	37.32	62.62	12 6 26	2958.5	-16.06	124.56
110.00	17 27 14	2329.29	-34.04	46.35	42.29	93.30	18 6 3	1729.3	-33.21	37.21
110.00	11 28 44	3490.78	-8.80	124.20	35.12	56.83	12 26 55	2890.8	-13.10	117.75

DIFFERENTIAL CORRECTIONS

TDE	2.3521	TRA	1.5349	TC-19.5067	BAU	2.6348	
RDE	.2751	RRA	.1994	RC3 -.3494	FAU	.14804	
FDE	.7403	FRA	1.8614	FC-12.6877	BSP	47014	
BDE	2.3682	BRA	1.5478	BC319.5098	FSP	2562	

MID-COURSE EXECUTION ACCURACY

SGT13459.4	SGR	674.1	SG3	776.1	
RRT .6703	RRF	.6504	RTF	.9685	
SGB13476.2	R23	.0004	R13	.9685	
SG113467.0	SG2	499.9	THA	1.93	

ORBIT DETERMINATION ACCURACY

ST	4355.0	SR	510.3	SS	755.7
CRT	.9971	CRS	-.8891	CST	-.8857
LSA	4435.8	MSA	346.7	SSA	37.9
EL1	4384.7	EL2	38.5	ALF	6.66

LAUNCH DATE DEC 15 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 801.314 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.182 GAL -.35 AZL 87.74 HCA 234.94 SMA 189.11 ECC .22152 INC 2.2595 V1 30.260
RP 207.48 LAP -1.85 LOP 317.98 VP 24.032 GAP -11.54 AZP 91.30 TAL 358.08 TAP 233.01 RCA 147.22 APO 231.00 V2 26.402
RC 322.286 GL 24.31 GP -5.87 ZAL 90.68 ZAP 35.08 ETS 170.56 ZAE 55.30 ETE 175.54 ZAC 80.39 ETC 256.75 CLP 34.65

PLANETOCENTRIC CONIC

C3 10.096 VHL 3.177 DLA 24.63 RAL 184.65 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 5.045 DPA -1.01 RAP 171.44 ECC 1.1662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 10 23	2967.17	-28.14	94.04	43.30	86.69	14 59 50	2367.2	-28.30	85.38
90.00	9 57 41	3804.68	-12.36	149.56	38.97	64.32	11 1 6	3204.7	-15.72	142.49
100.00	15 53 19	2635.29	-29.88	69.69	43.37	89.18	16 37 15	2035.3	-29.68	60.90
100.00	10 57 26	3611.80	-10.81	134.58	38.16	61.96	11 57 38	3011.8	-14.47	127.71
110.00	17 43 14	2291.44	-33.86	43.41	43.20	95.03	18 21 25	1691.4	-32.79	34.33
110.00	11 24 1	3528.42	-7.39	126.21	36.11	56.53	12 22 50	2928.4	-11.74	119.82

DIFFERENTIAL CORRECTIONS
TDE 2.2457 TRA 1.7062 TC-19.7176 BAU 2.6617
RDE .2716 RRA .2016 RC3 -.3046 FAU .14197
FDE .6261 FRA 1.8991 FC-12.1740 BSP 47371
BDE 2.2621 BRA 1.7180 BC319.7199 FSP 2442

MID-COURSE EXECUTION ACCURACY
SGT13596.4 SGR 661.2 SG3 749.8
RRT .6409 RRF .6198 RTF .9683
SGB13612.4 R23 -.0022 R13 .9683
SG113603.0 SG2 507.3 THA 1.79

ORBIT DETERMINATION ACCURACY
ST 4191.8 SR 504.3 SS 703.6
CRT .9969 CRS -.8475 CST -.8581
LSA 4265.1 MSA 357.8 SSA 38.4
EL1 4221.8 EL2 39.2 ALF 6.84

LAUNCH DATE DEC 15 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 805.691 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.189 GAL -.51 AZL 87.77 HCA 236.20 SMA 189.25 ECC .22218 INC 2.2262 V1 30.260
RP 207.36 LAP -1.85 LOP 319.24 VP 24.057 GAP -11.62 AZP 91.24 TAL 357.22 TAP 233.41 RCA 147.20 APO 231.29 V2 26.416
RC 323.141 GL 23.92 GP -5.71 ZAL 92.32 ZAP 34.48 ETS 170.59 ZAE 54.41 ETE 175.54 ZAC 80.69 ETC 256.70 CLP 34.06

PLANETOCENTRIC CONIC

C3 10.108 VHL 3.179 DLA 23.57 RAL 186.07 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 5.113 DPA -1.14 RAP 172.12 ECC 1.1663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 1	2908.37	-28.30	89.75	44.44	88.84	15 21 30	2308.4	-28.16	81.08
90.00	9 46 27	3863.95	-10.59	153.01	39.85	63.58	10 50 51	3263.9	-14.06	146.04
100.00	16 13 6	2585.71	-29.87	66.01	44.44	91.12	16 56 12	1985.7	-29.40	57.24
100.00	10 49 3	3661.85	-9.19	137.42	39.11	61.43	11 50 5	3061.8	-12.94	130.63
110.00	17 58 52	2254.81	-33.60	40.58	44.14	96.69	18 36 27	1654.8	-32.31	31.58
110.00	11 19 47	3565.51	-5.99	128.17	37.16	56.28	12 19 12	2965.5	-10.38	121.83

DIFFERENTIAL CORRECTIONS
TDE 2.1347 TRA 1.8818 TC-19.8790 BAU 2.6865
RDE .2686 RRA .2031 RC3 -.2586 FAU .13544
FDE .5129 FRA 1.9259 FC-11.6001 BSP 47856
BDE 2.1515 BRA 1.8928 BC319.8807 FSP 2352

MID-COURSE EXECUTION ACCURACY
SGT13721.0 SGR 648.7 SG3 720.8
RRT .6087 RRF .5862 RTF .9680
SGB13736.3 R23 -.0048 R13 .9680
SG113726.7 SG2 514.5 THA 1.65

ORBIT DETERMINATION ACCURACY
ST 4021.9 SR 498.7 SS 654.3
CRT .9957 CRS -.7915 CST -.8227
LSA 4088.3 MSA 369.9 SSA 38.9
EL1 4052.5 EL2 45.8 ALF 7.04

LAUNCH DATE DEC 15 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 810.068 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.197 GAL -.67 AZL 87.81 HCA 237.46 SMA 189.39 ECC .22289 INC 2.1939 V1 30.260
RP 207.26 LAP -1.85 LOP 320.50 VP 24.081 GAP -11.70 AZP 91.18 TAL 356.35 TAP 233.80 RCA 147.18 APO 231.60 V2 26.428
RC 323.990 GL 23.52 GP -5.56 ZAL 93.99 ZAP 33.90 ETS 170.62 ZAE 53.52 ETE 175.53 ZAC 80.99 ETC 256.64 CLP 33.49

PLANETOCENTRIC CONIC

C3 10.138 VHL 3.184 DLA 22.50 RAL 187.51 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 5.182 DPA -1.28 RAP 172.81 ECC 1.1668

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 54 7	2854.59	-28.31	85.81	45.57	90.81	15 41 42	2254.6	-27.89	77.17
90.00	9 36 50	3918.91	-8.91	156.17	40.83	63.01	10 42 9	3318.9	-12.46	149.29
100.00	16 31 58	2539.09	-29.76	62.55	45.51	92.94	17 14 17	1939.1	-29.04	53.82
100.00	10 41 40	3709.65	-7.62	140.10	40.14	61.01	11 43 30	3109.7	-11.43	133.39
110.00	18 14 12	2219.28	-33.29	37.85	45.11	98.27	18 51 11	1619.3	-31.79	28.95
110.00	11 15 56	3602.22	-4.60	130.10	38.28	56.09	12 15 59	3002.2	-9.02	123.80

DIFFERENTIAL CORRECTIONS
TDE 2.0200 TRA 2.0643 TC-20.0053 BAU 2.7115
RDE .2663 RRA .2042 RC3 -.2149 FAU .12916
FDE .4051 FRA 1.9459 FC-11.0300 BSP 48313
BDE 2.0375 BRA 2.0743 BC320.0065 FSP 2259

MID-COURSE EXECUTION ACCURACY
SGT13844.4 SGR 637.7 SG3 692.4
RRT .5759 RRF .5514 RTF .9677
SGB13859.1 R23 -.0082 R13 .9677
SG113849.3 SG2 521.1 THA 1.52

ORBIT DETERMINATION ACCURACY
ST 3849.0 SR 493.9 SS 612.0
CRT .9929 CRS -.7197 CST -.7796
LSA 3909.6 MSA 383.5 SSA 39.2
EL1 3880.1 EL2 58.1 ALF 7.26

LAUNCH DATE DEC 15 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 814.444 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.205 GAL -.83 AZL 87.84 HCA 238.72 SMA 189.53 ECC .22363 INC 2.1625 V1 30.260
RP 207.16 LAP -1.85 LOP 321.77 VP 24.104 GAP -11.79 AZP 91.12 TAL 355.46 TAP 234.18 RCA 147.15 APO 231.92 V2 26.439
RC 324.833 GL 23.11 GP -5.41 ZAL 95.68 ZAP 33.32 ETS 170.64 ZAE 52.65 ETE 175.53 ZAC 81.28 ETC 256.59 CLP 32.93

PLANETOCENTRIC CONIC

C3 10.186 VHL 3.192 DLA 21.40 RAL 188.96 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 5.252 DPA -1.44 RAP 173.51 ECC 1.1676

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 14 5	2804.52	-28.20	82.15	46.70	92.65	16 0 50	2204.5	-27.54	73.55
90.00	9 28 27	3970.90	-7.29	159.13	41.91	62.56	10 34 37	3370.9	-10.91	152.32
100.00	16 50 8	2494.85	-29.56	59.27	46.60	94.65	17 31 42	1894.9	-28.60	50.60
100.00	10 35 5	3755.81	-6.09	142.67	41.26	60.68	11 37 41	3155.8	-9.95	136.01
110.00	18 29 15	2184.74	-32.92	35.22	46.11	99.78	19 5 40	1584.7	-31.22	26.41
110.00	11 12 27	3638.69	-3.21	132.01	39.47	55.95	12 13 6	3038.7	-7.66	125.75

DIFFERENTIAL CORRECTIONS
TDE 1.9032 TRA 2.2563 TC-20.0888 BAU 2.7359
RDE .2652 RRA .2053 RC3 -.1726 FAU .12297
FDE .3087 FRA 1.9696 FC-10.4508 BSP 48789
BDE 1.9216 BRA 2.2657 BC320.0895 FSP 2171

MID-COURSE EXECUTION ACCURACY
SGT13965.5 SGR 628.9 SG3 664.9
RRT .5422 RRF .5170 RTF .9672
SGB13979.6 R23 -.0097 R13 .9672
SG113969.7 SG2 528.3 THA 1.40

ORBIT DETERMINATION ACCURACY
ST 3677.6 SR 490.6 SS 582.0
CRT .9880 CRS -.6353 CST -.7330
LSA 3734.1 MSA 399.4 SSA 39.5
EL1 3709.5 EL2 75.1 ALF 7.51

LAUNCH DATE DEC 15 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 818.820 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.213	GAL	-1.00	AZL	87.87	HCA	239.98	SMA	189.67	ECC	.22441	INC	2.1318
RP	207.08	LAP	-1.85	LOP	323.03	VP	24.127	GAP	-11.87	AZP	91.07	TAL	354.56	TAP	234.55	RCA	147.11	APO	232.24
RC	325.671	GL	22.69	GP	-5.27	ZAL	97.41	ZAP	32.77	ETS	170.66	ZAE	51.80	ETE	175.52	ZAC	81.57	ETC	256.54

V1 30.260 V2 26.449 CLP 32.39

PLANETOCENTRIC CONIC

C3	10.255	VHL	3.202	DLA	20.30	RAL	190.42	RAD	6567.4	VEL	11.474	PTH	1.99	VHP	5.323	DPA	-1.61	RAP	174.21

ECC 1.1688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 11	2757.38	-28.01	78.72	47.86	94.36	16 19 8	2157.4	-27.11	70.17
90.00	9 20 59	4020.74	-5.72	161.95	43.06	62.22	10 28 0	3420.7	-9.39	155.20
100.00	17 7 42	2452.62	-29.29	56.16	47.72	96.27	17 48 34	1852.6	-28.11	47.56
100.00	10 29 9	3800.73	-4.59	145.16	42.44	60.43	11 32 30	3200.7	-8.49	138.55
110.00	18 44 4	2151.12	-32.50	32.69	47.15	101.23	19 19 55	1551.1	-30.61	23.98
110.00	11 9 17	3674.99	-1.83	133.91	40.72	55.86	12 10 32	3075.0	-6.30	127.67

DIFFERENTIAL CORRECTIONS

TDE	1.7812	TRA	2.4534	TC-20.1389	BAU	2.7611	
RDE	.2645	RRA	.2059	RC3 -.1328	FAU	.11709	
FDE	.2139	FRA	1.9855	FC3-9.8848	BSP	49231	
BDE	1.8008	BRA	2.4620	BC320.1394	FSP	2085	

MID-COURSE EXECUTION ACCURACY

SGT14086.4	SGR	620.9	SG3	638.3			
RRT	.5081	RRF	.4813	RTF	.9668		
SGB14100.1	R23	-.0124	R13	.9668			
SG114090.0	SG2	534.7	THA	1.28			

ORBIT DETERMINATION ACCURACY

ST	3504.0	SR	487.8	SS	558.3		
CRT	.9800	CRS	-.5330	CST	-.6791		
LSA	3556.9	MSA	418.0	SSA	39.6		
EL1	3536.5	EL2	96.3	ALF	7.77		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 823.195 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.221	GAL	-1.17	AZL	87.90	HCA	241.25	SMA	189.82	ECC	.22524	INC	2.1019
RP	207.00	LAP	-1.84	LOP	324.30	VP	24.148	GAP	-11.95	AZP	91.01	TAL	353.65	TAP	234.90	RCA	147.06	APO	232.57
RC	326.503	GL	22.26	GP	-5.14	ZAL	99.15	ZAP	32.22	ETS	170.68	ZAE	50.95	ETE	175.52	ZAC	81.85	ETC	256.48

V1 30.260 V2 26.459 CLP 31.85

PLANETOCENTRIC CONIC

C3	10.344	VHL	3.216	DLA	19.18	RAL	191.89	RAD	6567.4	VEL	11.477	PTH	2.00	VHP	5.395	DPA	-1.79	RAP	174.93

ECC 1.1702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 51 34	2712.63	-27.73	75.47	49.03	95.96	16 36 47	2112.6	-26.62	66.99
90.00	9 14 16	4068.97	-4.18	164.66	44.29	61.97	10 22 5	3469.0	-7.90	157.95
100.00	17 24 46	2412.11	-28.95	53.20	48.87	97.79	18 4 58	1812.1	-27.57	44.67
100.00	10 23 46	3844.72	-3.11	147.58	43.70	60.25	11 27 51	3244.7	-7.04	141.01
110.00	18 58 39	2118.38	-32.04	30.25	48.22	102.61	19 33 57	1518.4	-29.97	21.65
110.00	11 6 22	3711.21	-.44	135.80	42.04	55.82	12 8 13	3111.2	-4.92	129.58

DIFFERENTIAL CORRECTIONS

TDE	1.6584	TRA	2.6584	TC-20.1410	BAU	2.7853	
RDE	.2648	RRA	.2063	RC3 -.0944	FAU	.11120	
FDE	.1276	FRA	1.9997	FC3-9.3071	BSP	49682	
BDE	1.6794	BRA	2.6664	BC320.141[illegible]	FSP	1999	

MID-COURSE EXECUTION ACCURACY

SGT14202.6	SGR	614.5	SG3	611.7			
RRT	.4734	RRF	.4455	RTF	.9662		
SGB14215.9	R23	-.0141	R13	.9662			
SG114205.6	SG2	541.2	THA	1.18			

ORBIT DETERMINATION ACCURACY

ST	3337.9	SR	486.0	SS	544.4		
CRT	.9678	CRS	-.4222	CST	-.6267		
LSA	3388.2	MSA	438.9	SSA	39.6		
EL1	3371.0	EL2	121.1	ALF	8.03		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 382.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 827.568 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.229	GAL	-1.34	AZL	87.93	HCA	242.52	SMA	189.96	ECC	.22611	INC	2.0727
RP	206.93	LAP	-1.84	LOP	325.56	VP	24.168	GAP	-12.04	AZP	90.96	TAL	352.73	TAP	235.24	RCA	147.01	APO	232.92
RC	327.330	GL	21.81	GP	-5.02	ZAL	100.92	ZAP	31.69	ETS	170.70	ZAE	50.12	ETE	175.51	ZAC	82.13	ETC	256.43

V1 30.260 V2 26.467 CLP 31.33

PLANETOCENTRIC CONIC

C3	10.455	VHL	3.233	DLA	18.05	RAL	193.35	RAD	6567.4	VEL	11.482	PTH	2.00	VHP	5.468	DPA	-1.99	RAP	175.66

ECC 1.1721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 22	2669.93	-27.39	72.40	50.24	97.47	16 53 52	2069.9	-26.08	63.98
90.00	9 8 11	4115.97	-2.67	167.29	45.59	61.80	10 18 47	3516.0	-6.42	160.62
100.00	17 41 24	2373.15	-28.56	50.37	50.04	99.23	18 20 57	1773.1	-26.99	41.92
100.00	10 18 51	3887.98	-1.64	149.96	45.02	60.15	11 23 38	3288.0	-5.60	143.41
110.00	19 13 1	2086.50	-31.54	27.90	49.34	103.92	19 47 47	1486.5	-29.31	19.40
110.00	11 3 43	3747.39	.94	137.69	43.41	55.83	12 6 10	3147.4	-3.55	131.48

DIFFERENTIAL CORRECTIONS

TDE	1.5324	TRA	2.8701	TC-20.1021	BAU	2.8097	
RDE	.2659	RRA	.2063	RC3 -.0580	FAU	.10547	
FDE	.0490	FRA	2.0091	FC3-8.7334	BSP	50146	
BDE	1.5553	BRA	2.8775	BC320.1022	FSP	1921	

MID-COURSE EXECUTION ACCURACY

SGT14316.9	SGR	609.3	SG3	585.5			
RRT	.4383	RRF	.4098	RTF	.9656		
SGB14329.9	R23	-.0156	R13	.9656			
SG114319.4	SG2	547.6	THA	1.07			

ORBIT DETERMINATION ACCURACY

ST	3178.1	SR	485.1	SS	538.2		
CRT	.9502	CRS	-.3087	CST	-.5811		
LSA	3226.7	MSA	461.1	SSA	39.4		
EL1	3211.5	EL2	149.6	ALF	8.27		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 384.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 831.940 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.238	GAL	-1.52	AZL	87.96	HCA	243.78	SMA	190.11	ECC	.22702	INC	2.0442
RP	206.86	LAP	-1.83	LOP	326.83	VP	24.187	GAP	-12.12	AZP	90.90	TAL	351.79	TAP	235.57	RCA	146.95	APO	233.27
RC	328.152	GL	21.36	GP	-4.90	ZAL	102.69	ZAP	31.17	ETS	170.71	ZAE	49.30	ETE	175.50	ZAC	82.41	ETC	256.38

V1 30.260 V2 26.474 CLP 30.82

PLANETOCENTRIC CONIC

C3	10.588	VHL	3.254	DLA	16.91	RAL	194.82	RAD	6567.4	VEL	11.488	PTH	2.00	VHP	5.542	DPA	-2.19	RAP	176.40

ECC 1.1743

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 26 39	2629.03	-27.00	69.47	51.47	98.89	17 10 28	2029.0	-25.49	61.12
90.00	9 2 38	4162.01	-1.19	169.86	46.96	61.71	10 12 0	3562.0	-4.96	163.21
100.00	17 57 38	2335.59	-28.12	47.67	51.26	100.59	18 36 34	1735.6	-26.37	39.30
100.00	10 14 19	3930.68	-.19	152.30	46.41	60.11	11 19 50	3330.7	-4.17	145.77
110.00	19 27 10	2055.47	-31.01	25.63	50.50	105.16	20 1 26	1455.5	-28.62	17.25
110.00	11 1 17	3783.57	2.32	139.57	44.84	55.89	12 4 20	3183.6	-2.17	133.37

DIFFERENTIAL CORRECTIONS

TDE	1.4042	TRA	3.0895	TC-20.0214	BAU	2.8342	
RDE	.2678	RRA	.2059	RC3 -.0237	FAU	.09986	
FDE	-.0253	FRA	2.0137	FC3-8.1652	BSP	50581	
BDE	1.4295	BRA	3.0964	BC320.0214	FSP	1838	

MID-COURSE EXECUTION ACCURACY

SGT14429.8	SGR	605.0	SG3	559.8			
RRT	.4033	RRF	.3737	RTF	.9649		
SGB14442.5	R23	-.0174	R13	.9648			
SG114431.9	SG2	553.6	THA	.97			

ORBIT DETERMINATION ACCURACY

ST	3029.1	SR	485.0	SS	538.2		
CRT	.9256	CRS	-.1934	CST	-.5429		
LSA	3076.1	MSA	485.9	SSA	39.1		
EL1	3062.3	EL2	181.6	ALF	8.46		

LAUNCH DATE DEC 15 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 836.309 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.246	GAL	-1.70	AZL	87.98	HCA	245.05	SMA	190.26	ECC	.22799	INC	2.0162
RP	206.81	LAP	-1.83	LOP	328.10	VP	24.205	GAP	-12.21	AZP	90.85	TAL	350.84	TAP	235.89	RCA	146.88	APO	233.64
RC	328.970	GL	20.90	GP	-4.78	ZAL	104.49	ZAP	30.66	ETS	170.72	ZAE	48.49	ETE	175.50	ZAC	82.69	ETC	256.33

V1	30.260	V2	26.480	CLP	30.32														

PLANETOCENTRIC CONIC

C3	10.746	VHL	3.278	DLA	15.76	RAL	196.29	RAD	6567.4	VEL	11.495	PTH	2.00	VHP	5.617	DPA	-2.41	RAP	177.14

ECC	1.1768	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	16 43 29	2589.76	-26.55	66.68	52.74	100.22	17 26 39	1989.8	-24.87	58.41	
		90.00	8 57 31	4207.28	.27	172.39	48.39	61.68	10 7 38	3607.3	-3.51	165.75	
		100.00	18 13 32	2299.35	-27.64	45.08	52.50	101.87	18 51 51	1699.4	-25.72	36.80	
		100.00	10 10 9	3972.92	1.24	154.62	47.86	60.13	11 16 22	3372.9	-2.75	148.10	
		110.00	19 41 8	2025.28	-30.45	23.46	51.69	106.33	20 14 53	1425.3	-27.91	15.18	
		110.00	10 59 2	3819.76	3.70	141.47	46.32	55.99	12 2 42	3219.8	-.79	135.26	

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.2746	TRA	3.3174	TC-19.8949	BAU	2.8581	SGT14539.4	SGR	601.8	SG3	534.8	ST	2895.4	SR	485.6	SS	543.7
RDE	.2704	RRA	.2052	RC3 .0083	FAU	.09443	RRT	.3687	RRF	.3383	RTF	.9640	CRT	.8924	CRS	-.0842	CST -.5182
FDE	-.0931	FRA	2.0158	FC3-7.6078	BSP	51054	SGB14551.8	R23	-.0191	R13	.9640	LSA	2941.2	MSA	512.3	SSA	38.7
BDE	1.3030	BRA	3.3237	BC319.8949	FSP	1764	SG114541.1	SG2	559.3	THA	.88	EL1	2927.9	EL2	216.7	ALF	8.56

LAUNCH DATE DEC 15 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 840.675 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.254	GAL	-1.88	AZL	88.01	HCA	246.32	SMA	190.41	ECC	.22900	INC	1.9888
RP	206.77	LAP	-1.82	LOP	329.37	VP	24.222	GAP	-12.30	AZP	90.80	TAL	349.88	TAP	236.19	RCA	146.80	APO	234.01
RC	329.784	GL	20.42	GP	-4.67	ZAL	106.29	ZAP	30.17	ETS	170.73	ZAE	47.70	ETE	175.49	ZAC	82.97	ETC	256.29

V1	30.260	V2	26.486	CLP	29.84														

PLANETOCENTRIC CONIC

C3	10.928	VHL	3.306	DLA	14.62	RAL	197.76	RAD	6567.4	VEL	11.503	PTH	2.00	VHP	5.693	DPA	-2.63	RAP	177.90

ECC	1.1798	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	16 59 55	2552.00	-26.07	64.02	54.04	101.47	17 42 27	1952.0	-24.23	55.84	
		90.00	8 52 47	4251.92	1.71	174.88	49.89	61.73	10 3 39	3651.9	-2.08	168.25	
		100.00	18 29 6	2264.36	-27.12	42.61	53.79	103.08	19 6 51	1664.4	-25.05	34.42	
		100.00	10 6 17	4014.79	2.66	156.92	49.36	60.21	11 13 12	3414.8	-1.33	150.40	
		110.00	19 54 53	1995.94	-29.87	21.37	52.93	107.45	20 28 9	1395.9	-27.20	13.20	
		110.00	10 56 59	3855.98	5.08	143.37	47.86	56.15	12 1 15	3256.0	.60	137.15	

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.1426	TRA	3.5515	TC-19.7268	BAU	2.8821	SGT14645.6	SGR	599.3	SG3	509.9	ST	2777.9	SR	486.8	SS	552.9
RDE	.2737	RRA	.2041	RC3 .0385	FAU	.08905	RRT	.3341	RRF	.3025	RTF	.9629	CRT	.8491	CRS	.0195	CST -.5059
FDE	-.1571	FRA	2.0129	FC3-7.0543	BSP	51511	SGB14657.9	R23	-.0209	R13	.9629	LSA	2822.4	MSA	540.4	SSA	38.1
BDE	1.1749	BRA	3.5573	BC319.7268	FSP	1687	SG114647.0	SG2	564.9	THA	.78	EL1	2808.8	EL2	254.3	ALF	8.53

LAUNCH DATE DEC 15 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 845.037 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.262	GAL	-2.07	AZL	88.04	HCA	247.58	SMA	190.56	ECC	.23007	INC	1.9620
RP	206.73	LAP	-1.81	LOP	330.64	VP	24.238	GAP	-12.39	AZP	90.75	TAL	348.90	TAP	236.49	RCA	146.72	APO	234.40
RC	330.595	GL	19.94	GP	-4.57	ZAL	108.09	ZAP	29.69	ETS	170.74	ZAE	46.91	ETE	175.48	ZAC	83.24	ETC	256.24

V1	30.260	V2	26.490	CLP	29.37														

PLANETOCENTRIC CONIC

C3	11.137	VHL	3.337	DLA	13.46	RAL	199.22	RAD	6567.4	VEL	11.512	PTH	2.01	VHP	5.770	DPA	-2.87	RAP	178.66

ECC	1.1833	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	17 15 58	2515.65	-25.55	61.48	55.38	102.64	17 57 54	1915.7	-23.56	53.38	
		90.00	8 48 25	4296.04	3.13	177.34	51.44	61.84	10 0 1	3696.0	-.65	170.71	
		100.00	18 44 22	2230.58	-26.58	40.24	55.11	104.21	19 21 32	1630.6	-24.36	32.14	
		100.00	10 2 42	4056.34	4.06	159.21	50.93	60.36	11 10 18	3456.3	.08	152.68	
		110.00	20 8 27	1967.47	-29.27	19.37	54.21	108.49	20 41 15	1367.5	-26.47	11.31	
		110.00	10 55 6	3892.22	6.45	145.28	49.45	56.36	11 59 58	3292.2	1.98	139.04	

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.0105	TRA	3.7953	TC-19.5169	BAU	2.9059	SGT14750.8	SGR	597.9	SG3	486.0	ST	2683.9	SR	488.9	SS	564.7
RDE	.2778	RRA	.2027	RC3 .0660	FAU	.08387	RRT	.3006	RRF	.2683	RTF	.9618	CRT	.7947	CRS	.1096	CST -.5111
FDE	-.2134	FRA	2.0088	FC3-6.5199	BSP	51987	SGB14762.9	R23	-.0222	R13	.9618	LSA	2727.2	MSA	567.5	SSA	37.4
BDE	1.0480	BRA	3.8007	BC319.5170	FSP	1615	SG114751.9	SG2	570.2	THA	.70	EL1	2712.2	EL2	293.6	ALF	8.34

LAUNCH DATE DEC 15 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 849.395 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.270	GAL	-2.26	AZL	88.06	HCA	248.85	SMA	190.71	ECC	.23118	INC	1.9355
RP	206.70	LAP	-1.81	LOP	331.90	VP	24.253	GAP	-12.49	AZP	90.70	TAL	347.91	TAP	236.77	RCA	146.62	APO	234.79
RC	331.403	GL	19.45	GP	-4.47	ZAL	109.90	ZAP	29.22	ETS	170.74	ZAE	46.14	ETE	175.47	ZAC	83.51	ETC	256.20

V1	30.260	V2	26.493	CLP	28.90														

PLANETOCENTRIC CONIC

C3	11.373	VHL	3.372	DLA	12.31	RAL	200.68	RAD	6567.4	VEL	11.522	PTH	2.01	VHP	5.848	DPA	-3.11	RAP	179.43

ECC	1.1872	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	17 31 41	2480.66	-25.01	59.07	56.75	103.73	18 13 2	1880.7	-22.87	51.05	
		90.00	8 44 20	4339.71	4.53	179.79	53.04	62.02	9 56 40	3739.7	.76	173.14	
		100.00	18 59 20	2197.98	-26.01	37.99	56.47	105.27	19 35 58	1598.0	-23.67	29.97	
		100.00	9 59 22	4097.62	5.44	161.49	52.54	60.56	11 7 39	3497.6	1.48	154.94	
		110.00	20 21 49	1939.88	-28.66	17.45	55.53	109.48	20 54 9	1339.9	-25.74	9.50	
		110.00	10 53 22	3928.49	7.81	147.20	51.09	56.62	11 58 51	3328.5	3.37	140.93	

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.8737	TRA	4.0436	TC-19.2761	BAU	2.9309	SGT14855.4	SGR	596.9	SG3	462.4	ST	2608.7	SR	491.4	SS	577.3
RDE	.2826	RRA	.2008	RC3 .0915	FAU	.07880	RRT	.2668	RRF	.2336	RTF	.9604	CRT	.7277	CRS	.1929	CST -.5280
FDE	-.2664	FRA	1.9975	FC3-5.9982	BSP	52393	SGB14867.3	R23	-.0239	R13	.9604	LSA	2650.7	MSA	593.6	SSA	36.7
BDE	.9182	BRA	4.0485	BC319.2763	FSP	1539	SG114856.2	SG2	575.2	THA	.62	EL1	2633.5	EL2	333.9	ALF	7.93

LAUNCH DATE DEC 15 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 853.749 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.279	GAL	-2.46	AZL	88.09	HCA	250.12	SMA	190.86	ECC	.23236	INC	1.9096	V1	30.260
RP	206.68	LAP	-1.80	LOP	333.17	VP	24.267	GAP	-12.58	AZP	90.65	TAL	346.91	TAP	237.04	RCA	146.51	APO	235.20	V2	26.495
RC	332.208	GL	18.95	GP	-4.37	ZAL	111.71	ZAP	28.76	ETS	170.75	ZAE	45.37	ETE	175.46	ZAC	83.78	ETC	256.15	CLP	28.45

PLANETOCENTRIC CONIC

C3	11.638	VHL	3.412	DLA	11.17	RAL	202.13	RAD	6567.4	VEL	11.534	PTH	2.01	VHP	5.927	DPA	-3.37	RAP	180.22	ECC	1.1915

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 4	2446.99	-24.45	56.76	58.16	104.75	18 27 51	1847.0	-22.18	48.82
90.00	8 40 31	4382.98	5.91	182.22	54.70	62.26	9 53 34	3783.0	2.15	175.56
100.00	19 14 1	2166.54	-25.43	35.83	57.86	106.26	19 50 8	1566.5	-22.96	27.91
100.00	9 56 15	4138.66	6.81	163.77	54.21	60.82	11 5 14	3538.7	2.87	157.20
110.00	20 34 59	1913.20	-28.04	15.62	56.89	110.40	21 6 52	1313.2	-25.01	7.77
110.00	10 51 47	3964.76	9.17	149.14	52.78	56.92	11 57 52	3364.8	4.75	142.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7370	TRA	4.3006	TC-18.9944	BAU	2.9555	SGT14956.4	SGR	596.6	SG3	439.4	ST	2561.6	SR	494.6	SS	589.7
RDE	.2882	RRA	.1986	RC3 .1146	FAU	.07388	RRT .2341	RRF	.2000	RTF	.9590	CRT	.6499	CRS	.2646	CST	-.5568
FDE	-.3129	FRA	1.9831	FC3-5.4955	BSP	52824	SGB14968.3	R23	-.0256	R13	.9590	LSA	2602.5	MSA	616.2	SSA	35.8
BDE	.7914	BRA	4.3052	BC318.9948	FSP	1469	SG114957.1	SG2	580.0	THA	.54	EL1	2582.1	EL2	372.9	ALF	7.31

LAUNCH DATE DEC 15 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 858.098 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.287	GAL	-2.66	AZL	88.12	HCA	251.39	SMA	191.01	ECC	.23359	INC	1.8840	V1	30.260
RP	206.67	LAP	-1.79	LOP	334.44	VP	24.279	GAP	-12.68	AZP	90.60	TAL	345.90	TAP	237.29	RCA	146.39	APO	235.63	V2	26.497
RC	333.009	GL	18.45	GP	-4.28	ZAL	113.51	ZAP	28.31	ETS	170.75	ZAE	44.62	ETE	175.44	ZAC	84.05	ETC	256.11	CLP	28.01

PLANETOCENTRIC CONIC

C3	11.934	VHL	3.455	DLA	10.03	RAL	203.57	RAD	6567.5	VEL	11.546	PTH	2.02	VHP	6.007	DPA	-3.63	RAP	181.00	ECC	1.1964

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 8	2414.59	-23.87	54.56	59.61	105.71	18 42 23	1814.6	-21.48	46.70
90.00	8 36 57	4425.90	7.26	184.65	56.42	62.56	9 50 43	3825.9	3.53	177.96
100.00	19 28 26	2136.25	-24.84	33.78	59.29	107.19	20 4 3	1536.3	-22.25	25.93
100.00	9 53 21	4179.47	8.16	166.05	55.93	61.14	11 3 0	3579.5	4.25	159.44
110.00	20 47 57	1887.45	-27.42	13.88	58.29	111.26	21 19 24	1287.4	-24.28	6.12
110.00	10 50 19	4001.04	10.51	151.09	54.52	57.28	11 57 0	3401.0	6.12	144.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6003	TRA	4.5661	TC-18.6797	BAU	2.9804	SGT15056.7	SGR	596.9	SG3	416.9	ST	2542.5	SR	498.3	SS	601.7
RDE	.2945	RRA	.1961	RC3 .1355	FAU	.06906	RRT .2023	RRF	.1673	RTF	.9572	CRT	.5633	CRS	.3279	CST	-.5923
FDE	-.3549	FRA	1.9657	FC3-5.0097	BSP	53261	SGB15068.5	R23	-.0272	R13	.9571	LSA	2582.7	MSA	634.7	SSA	34.9
BDE	.6686	BRA	4.5703	BC318.6802	FSP	1401	SG115057.2	SG2	584.6	THA	.46	EL1	2558.3	EL2	409.2	ALF	6.47

LAUNCH DATE DEC 15 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 862.440 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.295	GAL	-2.86	AZL	88.14	HCA	252.66	SMA	191.16	ECC	.23488	INC	1.8588	V1	30.260
RP	206.67	LAP	-1.77	LOP	335.71	VP	24.291	GAP	-12.78	AZP	90.55	TAL	344.88	TAP	237.54	RCA	146.26	APO	236.06	V2	26.497
RC	333.807	GL	17.94	GP	-4.19	ZAL	115.30	ZAP	27.87	ETS	170.74	ZAE	43.87	ETE	175.43	ZAC	84.32	ETC	256.07	CLP	27.58

PLANETOCENTRIC CONIC

C3	12.262	VHL	3.502	DLA	8.90	RAL	205.01	RAD	6567.5	VEL	11.561	PTH	2.02	VHP	6.089	DPA	-3.90	RAP	181.80	ECC	1.2018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 16 55	2383.45	-23.28	52.47	61.09	106.60	18 56 38	1783.5	-20.78	44.69
90.00	8 33 37	4468.48	8.59	187.07	58.18	62.91	9 48 5	3868.5	4.89	180.35
100.00	19 42 35	2107.12	-24.24	31.82	60.76	108.05	20 17 43	1507.1	-21.54	24.06
100.00	9 50 37	4220.05	9.49	168.33	57.70	61.52	11 0 57	3620.1	5.61	161.69
110.00	21 0 43	1862.64	-26.80	12.22	59.73	112.06	21 31 45	1262.6	-23.57	4.55
110.00	10 48 59	4037.29	11.83	153.06	56.30	57.69	11 56 17	3437.3	7.49	146.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4623	TRA	4.8394	TC-18.3345	BAU	3.0057	SGT15155.3	SGR	597.7	SG3	395.0	ST	2549.9	SR	502.5	SS	612.2
RDE	.3014	RRA	.1931	RC3 .1541	FAU	.06437	RRT .1712	RRF	.1351	RTF	.9551	CRT	.4703	CRS	.3839	CST	-.6311
FDE	-.3926	FRA	1.9437	FC3-4.5448	BSP	53683	SGB15167.1	R23	-.0291	R13	.9551	LSA	2590.0	MSA	648.1	SSA	33.9
BDE	.5519	BRA	4.8432	BC318.3351	FSP	1333	SG115155.7	SG2	588.8	THA	.39	EL1	2561.1	EL2	441.5	ALF	5.46

LAUNCH DATE DEC 15 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 866.777 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.303	GAL	-3.07	AZL	88.17	HCA	253.93	SMA	191.31	ECC	.23623	INC	1.8340	V1	30.260
RP	206.68	LAP	-1.76	LOP	336.98	VP	24.302	GAP	-12.88	AZP	90.51	TAL	343.84	TAP	237.77	RCA	146.12	APO	236.51	V2	26.496
RC	334.601	GL	17.43	GP	-4.11	ZAL	117.09	ZAP	27.44	ETS	170.74	ZAE	43.14	ETE	175.41	ZAC	84.59	ETC	256.04	CLP	27.16

PLANETOCENTRIC CONIC

C3	12.624	VHL	3.553	DLA	7.78	RAL	206.43	RAD	6567.5	VEL	11.576	PTH	2.02	VHP	6.172	DPA	-4.18	RAP	182.61	ECC	1.2078

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 23	2353.56	-22.68	50.48	62.61	107.42	19 10 37	1753.6	-20.08	42.77
90.00	8 30 28	4510.75	9.89	189.50	59.99	63.33	9 45 39	3910.8	6.24	182.73
100.00	19 56 29	2079.13	-23.64	29.96	62.27	108.85	20 31 8	1479.1	-20.84	22.27
100.00	9 48 4	4260.42	10.79	170.62	59.52	61.95	10 59 4	3660.4	6.95	163.93
110.00	21 13 16	1838.81	-26.18	10.65	61.20	112.81	21 43 55	1238.8	-22.86	3.06
110.00	10 47 46	4073.50	13.14	155.05	58.14	58.16	11 55 39	3473.5	8.84	148.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3225	TRA	5.1193	TC-17.9614	BAU	3.0314	SGT15251.1	SGR	598.8	SG3	373.5	ST	2581.7	SR	507.0	SS	620.7
RDE	.3091	RRA	.1897	RC3 .1706	FAU	.05978	RRT .1406	RRF	.1033	RTF	.9528	CRT	.3739	CRS	.4337	CST	-.6706
FDE	-.4259	FRA	1.9165	FC3-4.1000	BSP	54089	SGB15262.8	R23	-.0312	R13	.9528	LSA	2622.2	MSA	656.1	SSA	32.9
BDE	.4467	BRA	5.1228	BC317.9622	FSP	1266	SG115251.3	SG2	592.8	THA	.32	EL1	2588.9	EL2	469.0	ALF	4.34

LAUNCH DATE DEC 15 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 871.106 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.312 GAL -3.28 AZL 88.19 HCA 255.20 SMA 191.47 ECC .23765 INC 1.8095 V1 30.260
RP 206.69 LAP -1.75 LOP 338.25 VP 24.311 GAP -12.98 AZP 90.46 TAL 342.79 TAP 237.99 RCA 145.96 APO 236.97 V2 26.494
RC 335.390 GL 16.92 GP -4.03 ZAL 118.86 ZAP 27.03 ETS 170.74 ZAE 42.42 ETE 175.40 ZAC 84.86 ETC 256.00 CLP 26.75

PLANETOCENTRIC CONIC

C3 13.021 VHL 3.608 DLA 6.67 RAL 207.84 RAD 6567.5 VEL 11.593 PTH 2.03 VHP 6.256 DPA -4.46 RAP 183.42 ECC 1.2143

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 35	2324.90	-22.08	48.59	64.16	108.19	19 24 20	1724.9	-19.39	40.95
90.00	8 27 31	4552.71	11.17	191.92	61.85	63.81	9 43 23	3952.7	7.56	185.10
100.00	20 10 6	2052.29	-23.03	28.19	63.80	109.60	20 44 19	1452.3	-20.15	20.58
100.00	9 45 40	4300.55	12.06	172.92	61.39	62.44	10 57 21	3700.6	8.28	166.17
110.00	21 25 37	1815.97	-25.57	9.15	62.71	113.50	21 55 53	1216.0	-22.17	1.65
110.00	10 46 39	4109.64	14.43	157.06	60.01	58.67	11 55 9	3509.6	10.18	150.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1839 TRA 5.4080 TC-17.5645 BAU 3.0577 SGT15346.4 SGR 600.3 SG3 352.7 ST 2637.6 SR 512.0 SS 626.8
RDE .3175 RRA .1860 RC3 .1850 FAU .05531 RRT .1112 RRF .0729 RTF .9500 CRT .2792 CRS .4768 CST -.7083
FDE -.4541 FRA 1.8867 FC3-3.6778 BSP 54482 SGB15358.2 R23 -.0331 R13 .9500 LSA 2679.0 MSA 658.8 SSA 32.0
BDE .3669 BRA 5.4112 BC317.5655 FSP 1199 SG115346.6 SG2 596.6 THA .25 EL1 2641.6 EL2 490.9 ALF 3.21

LAUNCH DATE DEC 15 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 875.428 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.320 GAL -3.50 AZL 88.21 HCA 256.47 SMA 191.62 ECC .23914 INC 1.7853 V1 30.260
RP 206.72 LAP -1.74 LOP 339.52 VP 24.320 GAP -13.09 AZP 90.42 TAL 341.73 TAP 238.19 RCA 145.80 APO 237.45 V2 26.491
RC 336.176 GL 16.41 GP -3.95 ZAL 120.61 ZAP 26.62 ETS 170.73 ZAE 41.70 ETE 175.38 ZAC 85.12 ETC 255.97 CLP 26.35

PLANETOCENTRIC CONIC

C3 13.455 VHL 3.668 DLA 5.57 RAL 209.23 RAD 6567.5 VEL 11.612 PTH 2.03 VHP 6.341 DPA -4.76 RAP 184.24 ECC 1.2214

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 30	2297.46	-21.49	46.80	65.74	108.90	19 37 48	1697.5	-18.71	39.23
90.00	8 24 43	4594.37	12.41	194.35	63.76	64.34	9 41 17	3994.4	8.85	187.48
100.00	20 23 29	2026.60	-22.44	26.52	65.37	110.29	20 57 15	1426.6	-19.47	18.98
100.00	9 43 26	4340.46	13.31	175.23	63.30	62.98	10 55 46	3740.5	9.58	168.42
110.00	21 37 46	1794.13	-24.97	7.74	64.25	114.14	22 7 40	1194.1	-21.49	.31
110.00	10 45 38	4145.69	15.70	159.08	61.94	59.24	11 54 44	3545.7	11.50	152.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0447 TRA 5.7045 TC-17.1461 BAU 3.0845 SGT15439.6 SGR 602.1 SG3 332.3 ST 2713.1 SR 517.2 SS 630.4
RDE .3265 RRA .1818 RC3 .1974 FAU .05096 RRT .0826 RRF .0429 RTF .9469 CRT .1880 CRS .5157 CST -.7421
FDE -.4785 FRA 1.8518 FC3-3.2789 BSP 54868 SGB15451.4 R23 -.0355 R13 .9469 LSA 2755.4 MSA 657.7 SSA 31.0
BDE .3296 BRA 5.7074 BC317.1472 FSP 1135 SG115439.7 SG2 600.0 THA .18 EL1 2714.9 EL2 507.6 ALF 2.13

LAUNCH DATE DEC 15 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 879.740 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.329 GAL -3.72 AZL 88.24 HCA 257.73 SMA 191.78 ECC .24069 INC 1.7613 V1 30.260
RP 206.75 LAP -1.72 LOP 340.79 VP 24.327 GAP -13.20 AZP 90.37 TAL 340.65 TAP 238.39 RCA 145.62 APO 237.94 V2 26.488
RC 336.957 GL 15.90 GP -3.88 ZAL 122.34 ZAP 26.22 ETS 170.72 ZAE 41.00 ETE 175.36 ZAC 85.38 ETC 255.94 CLP 25.95

PLANETOCENTRIC CONIC

C3 13.929 VHL 3.732 DLA 4.50 RAL 210.61 RAD 6567.5 VEL 11.632 PTH 2.04 VHP 6.428 DPA -5.06 RAP 185.07 ECC 1.2292

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 9	2271.24	-20.90	45.10	67.35	109.55	19 51 0	1671.2	-18.05	37.59
90.00	8 22 5	4635.71	13.61	196.79	65.71	64.93	9 39 21	4035.7	10.12	189.85
100.00	20 36 36	2002.06	-21.85	24.93	66.98	110.92	21 9 58	1402.1	-18.81	17.46
100.00	9 41 19	4380.13	14.52	177.55	65.26	63.58	10 54 19	3780.1	10.86	170.67
110.00	21 49 41	1773.32	-24.38	6.41	65.82	114.74	22 19 15	1173.3	-20.84	359.05
110.00	10 44 43	4181.63	16.94	161.13	63.90	59.86	11 54 24	3581.6	12.81	154.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0941 TRA 6.0090 TC-16.7081 BAU 3.1116 SGT15530.1 SGR 604.2 SG3 312.5 ST 2804.9 SR 522.7 SS 631.2
RDE .3363 RRA .1772 RC3 .2079 FAU .04670 RRT .0549 RRF .0142 RTF .9432 CRT .1029 CRS .5498 CST -.7720
FDE -.4983 FRA 1.8138 FC3-2.9024 BSP 55236 SGB15541.8 R23 -.0377 R13 .9432 LSA 2840.0 MSA 653.2 SSA 30.1
BDE .3492 BRA 6.0116 BC316.7094 FSP 1072 SG115530.1 SG2 603.3 THA .12 EL1 2805.4 EL2 519.8 ALF 1.14

LAUNCH DATE DEC 15 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 884.044 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.337 GAL -3.94 AZL 88.26 HCA 259.00 SMA 191.93 ECC .24232 INC 1.7376 V1 30.260
RP 206.79 LAP -1.71 LOP 342.06 VP 24.333 GAP -13.32 AZP 90.33 TAL 339.57 TAP 238.57 RCA 145.42 APO 238.44 V2 26.483
RC 337.733 GL 15.39 GP -3.81 ZAL 124.05 ZAP 25.83 ETS 170.72 ZAE 40.30 ETE 175.34 ZAC 85.65 ETC 255.92 CLP 25.57

PLANETOCENTRIC CONIC

C3 14.444 VHL 3.801 DLA 3.44 RAL 211.97 RAD 6567.6 VEL 11.655 PTH 2.05 VHP 6.516 DPA -5.36 RAP 185.91 ECC 1.2377

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 31	2246.23	-20.32	43.50	68.99	110.15	20 3 57	1646.2	-17.40	36.04
90.00	8 19 35	4676.75	14.78	199.24	67.70	65.57	9 37 32	4076.7	11.36	192.23
100.00	20 49 28	1978.67	-21.27	23.43	68.61	111.51	21 22 27	1378.7	-18.16	16.02
100.00	9 39 20	4419.54	15.70	179.88	67.25	64.23	10 52 59	3819.5	12.11	172.93
110.00	22 1 24	1753.53	-23.81	5.15	67.42	115.28	22 30 38	1153.5	-20.21	357.86
110.00	10 43 53	4217.44	18.15	163.20	65.91	60.52	11 54 10	3617.4	14.09	156.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2328 TRA 6.3218 TC-16.2592 BAU 3.1400 SGT15621.2 SGR 606.4 SG3 293.2 ST 2909.5 SR 528.4 SS 629.5
RDE .3466 RRA .1722 RC3 .2165 FAU .04255 RRT .0280 RRF -.0142 RTF .9389 CRT .0248 CRS .5812 CST -.7970
FDE -.5150 FRA 1.7712 FC3-2.5505 BSP 55591 SGB15633.0 R23 -.0405 R13 .9389 LSA 2953.1 MSA 647.0 SSA 29.1
BDE .4176 BRA 6.3241 BC316.2607 FSP 1009 SG115621.2 SG2 606.2 THA .06 EL1 2909.5 EL2 528.2 ALF .27

LAUNCH DATE DEC 15 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 888.338 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.345	GAL	-4.17	AZL	88.29	HCA	260.27	SMA	192.09	ECC	.24402	INC	1.7141
RP	206.84	LAP	-1.69	LOP	343.33	VP	24.338	GAP	-13.43	AZP	90.29	TAL	338.47	TAP	238.74	RCA	145.22	APO	238.96
RC	338.506	GL	14.88	GP	-3.74	ZAL	125.74	ZAP	25.46	ETS	170.71	ZAE	39.61	ETE	175.31	ZAC	85.91	ETC	255.89

V1	30.260	V2	26.477	CLP	25.20														

PLANETOCENTRIC CONIC

C3	15.003	VHL	3.873	DLA	2.40	RAL	213.32	RAD	6567.6	VEL	11.679	PTH	2.05	VHP	6.606	DPA	-5.67	RAP	186.75
ECC	1.2469																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 38	2222.42	-19.76	41.98	70.66	110.71	20 16 40	1622.4	-16.76	34.58
90.00	8 17 14	4717.46	15.91	201.69	69.73	66.26	9 35 51	4117.6	12.57	194.61
100.00	21 2 6	1956.44	-20.71	22.02	70.26	112.05	21 34 42	1356.4	-17.54	14.66
100.00	9 37 27	4458.68	16.85	182.22	69.29	64.94	10 51 46	3858.7	13.33	175.19
110.00	22 12 54	1734.79	-23.26	3.98	69.05	115.78	22 41 49	1134.8	-19.60	356.75
110.00	10 43 8	4252.95	19.33	165.29	67.97	61.24	11 54 1	3652.9	15.35	158.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3713	TRA	6.6424	TC	-15.7965	BAU	3.1687	SGT	15708.7	SGR	608.8	SG3	274.4	ST	3023.3	SR	534.1	SS	624.9
RDE	.3576	RRA	.1667	RC3	.2234	FAU	.03849	RRT	.0020	RRF	-.0418	RTF	.9338	CRT	-.0458	CRS	.6098	CST	-.8177
FDE	-.5280	FRA	1.7242	FC3	-2.2210	BSP	55929	SGB	15720.5	R23	-.0436	R13	.9338	LSA	3067.0	MSA	639.5	SSA	28.2
BDE	.5155	BRA	6.6445	BC3	15.7981	FSP	948	SG1	15708.7	SG2	608.8	THA	.00	EL1	3023.4	EL2	533.6	ALF	179.52

LAUNCH DATE DEC 15 1964 FLIGHT TIME 412.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 892.621 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.354	GAL	-4.41	AZL	88.31	HCA	261.54	SMA	192.25	ECC	.24580	INC	1.6908
RP	206.90	LAP	-1.67	LOP	344.60	VP	24.343	GAP	-13.55	AZP	90.25	TAL	337.36	TAP	238.90	RCA	144.99	APO	239.50
RC	339.274	GL	14.38	GP	-3.67	ZAL	127.41	ZAP	25.09	ETS	170.70	ZAE	38.94	ETE	175.29	ZAC	86.17	ETC	255.87

V1	30.260	V2	26.470	CLP	24.84														

PLANETOCENTRIC CONIC

C3	15.608	VHL	3.951	DLA	1.39	RAL	214.65	RAD	6567.6	VEL	11.704	PTH	2.06	VHP	6.697	DPA	-5.99	RAP	187.60
ECC	1.2569																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 29	2199.80	-19.21	40.55	72.36	111.22	20 29 9	1599.8	-16.15	33.20
90.00	8 15 0	4757.85	17.00	204.16	71.81	67.01	9 34 18	4157.9	13.74	196.99
100.00	21 14 28	1935.34	-20.17	20.69	71.95	112.54	21 46 43	1335.3	-16.94	13.39
100.00	9 35 42	4497.54	17.95	184.58	71.37	65.69	10 50 40	3897.5	14.52	177.47
110.00	22 24 12	1717.10	-22.73	2.87	70.70	116.24	22 52 49	1117.1	-19.02	355.70
110.00	10 42 28	4288.55	20.48	167.40	70.06	62.01	11 53 56	3688.6	16.58	160.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5083	TRA	6.9723	TC	-15.3253	BAU	3.1982	SGT	15795.0	SGR	611.4	SG3	256.2	ST	3143.8	SR	540.0	SS	617.3
RDE	.3692	RRA	.1609	RC3	.2287	FAU	.03453	RRT	-.0230	RRF	-.0683	RTF	.9280	CRT	-.1085	CRS	.6353	CST	-.8349
FDE	-.5367	FRA	1.6734	FC3	-1.9154	BSP	56249	SGB	15806.8	R23	.0468	R13	-.9280	LSA	3187.0	MSA	631.3	SSA	27.4
BDE	.6283	BRA	6.9742	BC3	15.3270	FSP	887	SG1	15795.0	SG2	611.3	THA	179.95	EL1	3144.3	EL2	536.7	ALF	178.90

LAUNCH DATE DEC 15 1964 FLIGHT TIME 414.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 896.892 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.362	GAL	-4.65	AZL	88.33	HCA	262.80	SMA	192.40	ECC	.24765	INC	1.6676
RP	206.97	LAP	-1.65	LOP	345.86	VP	24.346	GAP	-13.68	AZP	90.21	TAL	336.24	TAP	239.05	RCA	144.75	APO	240.05
RC	340.039	GL	13.89	GP	-3.61	ZAL	129.04	ZAP	24.73	ETS	170.68	ZAE	38.27	ETE	175.26	ZAC	86.43	ETC	255.85

V1	30.260	V2	26.462	CLP	24.48														

PLANETOCENTRIC CONIC

C3	16.261	VHL	4.032	DLA	.39	RAL	215.97	RAD	6567.7	VEL	11.732	PTH	2.07	VHP	6.789	DPA	-6.31	RAP	188.46
ECC	1.2676																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 4	2178.35	-18.67	39.20	74.08	111.68	20 41 23	1578.4	-15.57	31.90
90.00	8 12 53	4797.91	18.05	206.63	73.92	67.81	9 32 51	4197.9	14.88	199.38
100.00	21 26 36	1915.38	-19.64	19.44	73.66	113.00	21 58 31	1315.4	-16.36	12.19
100.00	9 34 3	4536.12	19.02	186.95	73.49	66.49	10 49 39	3936.1	15.67	179.75
110.00	22 35 16	1700.45	-22.23	1.84	72.38	116.66	23 3 36	1100.4	-18.47	354.73
110.00	10 41 52	4323.81	21.59	169.53	72.19	62.83	11 53 56	3723.8	17.78	162.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6455	TRA	7.3095	TC	-14.8510	BAU	3.2289	SGT	15879.7	SGR	614.1	SG3	238.4	ST	3267.8	SR	545.9	SS	607.2
RDE	.3814	RRA	.1546	RC3	.2326	FAU	.03065	RRT	-.0474	RRF	-.0941	RTF	.9209	CRT	-.1646	CRS	.6591	CST	-.8486
FDE	-.5425	FRA	1.6184	FC3	-1.6318	BSP	56549	SGB	15891.6	R23	.0504	R13	-.9209	LSA	3310.0	MSA	623.0	SSA	26.6
BDE	.7497	BRA	7.3111	BC3	14.8528	FSP	828	SG1	15879.7	SG2	613.4	THA	179.89	EL1	3269.1	EL2	538.3	ALF	178.38

LAUNCH DATE DEC 15 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 901.151 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.371	GAL	-4.90	AZL	88.36	HCA	264.07	SMA	192.56	ECC	.24959	INC	1.6447
RP	207.04	LAP	-1.64	LOP	347.13	VP	24.348	GAP	-13.81	AZP	90.17	TAL	335.11	TAP	239.18	RCA	144.50	APO	240.62
RC	340.800	GL	13.40	GP	-3.55	ZAL	130.65	ZAP	24.38	ETS	170.67	ZAE	37.61	ETE	175.23	ZAC	86.69	ETC	255.84

V1	30.260	V2	26.453	CLP	24.14														

PLANETOCENTRIC CONIC

C3	16.965	VHL	4.119	DLA	-.57	RAL	217.26	RAD	6567.7	VEL	11.762	PTH	2.08	VHP	6.883	DPA	-6.64	RAP	189.33
ECC	1.2792																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 17 25	2158.07	-18.16	37.93	75.82	112.11	20 53 23	1558.1	-15.00	30.68
90.00	8 10 53	4837.62	19.05	209.11	76.06	68.65	9 31 31	4237.6	15.99	201.78
100.00	21 38 29	1896.54	-19.14	18.27	75.39	113.41	22 10 6	1296.5	-15.81	11.06
100.00	9 32 30	4574.38	20.04	189.33	75.64	67.34	10 48 44	3974.4	16.79	182.04
110.00	22 46 7	1684.83	-21.75	.89	74.08	117.05	23 14 12	1084.8	-17.95	353.82
110.00	10 41 21	4358.86	22.66	171.69	74.36	63.70	11 54 0	3758.9	18.95	164.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7805	TRA	7.6574	TC	-14.3706	BAU	3.2598	SGT	15962.3	SGR	616.8	SG3	221.2	ST	3393.8	SR	551.8	SS	594.9
RDE	.3942	RRA	.1479	RC3	.2351	FAU	.02686	RRT	-.0707	RRF	-.1193	RTF	.9126	CRT	-.2137	CRS	.6814	CST	-.8589
FDE	-.5455	FRA	1.5594	FC3	-1.3706	BSP	56854	SGB	15974.2	R23	.0548	R13	-.9126	LSA	3434.7	MSA	615.2	SSA	25.8
BDE	.8744	BRA	7.6589	BC3	14.3726	FSP	769	SG1	15962.4	SG2	615.3	THA	179.84	EL1	3395.9	EL2	538.7	ALF	177.96

LAUNCH DATE DEC 15 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 6 1966

HELIOCENTRIC CONIC DISTANCE 905.396 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.379	GAL	-5.15	AZL	88.38	HCA	265.33	SMA	192.72	ECC	.25162	INC	1.6217	V1	30.260
RP	207.13	LAP	-1.62	LOP	348.39	VP	24.349	GAP	-13.94	AZP	90.13	TAL	333.97	TAP	239.30	RCA	144.23	APO	241.21	V2	26.444
RC	341.558	GL	12.91	GP	-3.49	ZAL	132.23	ZAP	24.04	ETS	170.66	ZAE	36.96	ETE	175.20	ZAC	86.95	ETC	255.83	CLP	23.80

PLANETOCENTRIC CONIC

C3	17.723	VHL	4.210	DLA	-1.52	RAL	218.54	RAD	6567.7	VEL	11.794	PTH	2.09	VHP	6.979	DPA	-6.97	RAP	190.20	ECC	1.2917

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 29 30	2138.93	-17.66	36.75	77.59	112.50	21 5 9	1538.9	-14.46	29.53
90.00	8 8 59	4876.99	20.01	211.60	78.24	69.54	9 30 16	4277.0	17.05	204.18
100.00	21 50 9	1878.81	-18.65	17.18	77.14	113.79	22 21 27	1278.8	-15.28	10.01
100.00	9 31 2	4612.33	21.01	191.73	77.83	68.24	10 47 54	4012.3	17.87	184.34
110.00	22 56 46	1670.25	-21.29	360.00	75.80	117.39	23 24 36	1070.3	-17.45	352.97
110.00	10 40 54	4393.66	23.70	173.86	76.56	64.61	11 54 7	3793.7	20.08	166.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.9165	TRA	8.0107	TC-13.8966	BAU	3.2931	SGT16043.9	SGR	619.6	SG3	204.6	ST	3519.2	SR	557.6	SS	579.8
RDE	.4075	RRA	.1408	RC3 .2364	FAU	.02317	RRT -.0936	RRF	-.1437	RTF	.9026	CRT	-.2578	CRS	.7023	CST	-.8672
FDE	-.5452	FRA	1.4959	FC3-1.1318	BSP	57070	SGB16055.8	R23	.0594	R13	-.9026	LSA	3558.4	MSA	607.4	SSA	25.1
BDE	1.0030	BRA	8.0119	BC313.8986	FSP	711	SG116044.0	SG2	616.9	THA	179.79	EL1	3522.2	EL2	538.3	ALF	177.61

LAUNCH DATE DEC 15 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 8 1966

HELIOCENTRIC CONIC DISTANCE 909.627 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.388	GAL	-5.40	AZL	88.40	HCA	266.59	SMA	192.88	ECC	.25374	INC	1.5989	V1	30.260
RP	207.22	LAP	-1.60	LOP	349.66	VP	24.349	GAP	-14.08	AZP	90.09	TAL	332.82	TAP	239.41	RCA	143.94	APO	241.82	V2	26.433
RC	342.314	GL	12.44	GP	-3.44	ZAL	133.78	ZAP	23.71	ETS	170.64	ZAE	36.32	ETE	175.17	ZAC	87.21	ETC	255.82	CLP	23.47

PLANETOCENTRIC CONIC

C3	18.537	VHL	4.306	DLA	-2.44	RAL	219.80	RAD	6567.8	VEL	11.829	PTH	2.09	VHP	7.076	DPA	-7.31	RAP	191.08	ECC	1.3051

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 41 21	2120.91	-17.19	35.64	79.37	112.85	21 16 42	1520.9	-13.95	28.46
90.00	8 7 11	4915.99	20.92	214.10	80.45	70.47	9 29 7	4316.0	18.07	206.59
100.00	22 1 34	1862.18	-18.19	16.15	78.91	114.14	22 32 36	1262.2	-14.78	9.02
100.00	9 29 39	4649.96	21.94	194.13	80.05	69.18	10 47 9	4050.0	18.92	186.65
110.00	23 7 12	1656.70	-20.87	359.18	77.53	117.71	23 34 49	1056.7	-16.99	352.19
110.00	10 40 30	4428.20	24.69	176.05	78.80	65.57	11 54 19	3828.2	21.18	168.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.0500	TRA	8.3748	TC-13.4231	BAU	3.3271	SGT16124.1	SGR	622.4	SG3	188.5	ST	3643.0	SR	563.3	SS	562.7
RDE	.4214	RRA	.1332	RC3 .2366	FAU	.01954	RRT -.1155	RRF	-.1673	RTF	.8903	CRT	-.2961	CRS	.7221	CST	-.8729
FDE	-.5422	FRA	1.4286	FC3 -.9124	BSP	57319	SGB16136.1	R23	.0647	R13	-.8903	LSA	3680.3	MSA	600.4	SSA	24.4
BDE	1.1314	BRA	8.3759	BC313.4251	FSP	654	SG116124.3	SG2	618.3	THA	179.74	EL1	3646.9	EL2	537.5	ALF	177.32

LAUNCH DATE DEC 15 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 10 1966

HELIOCENTRIC CONIC DISTANCE 913.842 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.396	GAL	-5.66	AZL	88.42	HCA	267.86	SMA	193.04	ECC	.25595	INC	1.5763	V1	30.260
RP	207.32	LAP	-1.58	LOP	350.92	VP	24.348	GAP	-14.22	AZP	90.06	TAL	331.65	TAP	239.51	RCA	143.63	APO	242.45	V2	26.421
RC	343.066	GL	11.98	GP	-3.39	ZAL	135.30	ZAP	23.39	ETS	170.63	ZAE	35.69	ETE	175.13	ZAC	87.47	ETC	255.82	CLP	23.16

PLANETOCENTRIC CONIC

C3	19.412	VHL	4.406	DLA	-3.33	RAL	221.04	RAD	6567.8	VEL	11.866	PTH	2.10	VHP	7.175	DPA	-7.65	RAP	191.97	ECC	1.3195

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 52 57	2104.00	-16.74	34.60	81.17	113.18	21 28 1	1504.0	-13.46	27.46
90.00	8 5 28	4954.63	21.78	216.61	82.70	71.44	9 28 3	4354.6	19.04	209.01
100.00	22 12 45	1846.62	-17.76	15.20	80.70	114.45	22 43 31	1246.6	-14.31	8.11
100.00	9 28 22	4687.24	22.83	196.55	82.30	70.16	10 46 29	4087.2	19.91	188.97
110.00	23 17 25	1644.15	-20.47	358.42	79.29	118.00	23 44 49	1044.1	-16.56	351.48
110.00	10 40 11	4462.48	25.63	178.27	81.08	66.57	11 54 33	3862.5	22.24	170.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.1817	TRA	8.7475	TC-12.9529	BAU	3.3620	SGT16201.1	SGR	625.2	SG3	172.9	ST	3763.6	SR	568.9	SS	543.2
RDE	.4358	RRA	.1252	RC3 .2357	FAU	.01598	RRT -.1366	RRF	-.1898	RTF	.8753	CRT	-.3297	CRS	.7410	CST	-.8766
FDE	-.5362	FRA	1.3568	FC3 -.7126	BSP	57512	SGB16213.2	R23	.0706	R13	-.8754	LSA	3798.7	MSA	593.8	SSA	23.8
BDE	1.2595	BRA	8.7484	BC312.9550	FSP	598	SG116201.3	SG2	619.4	THA	179.70	EL1	3768.4	EL2	536.4	ALF	177.09

LAUNCH DATE DEC 15 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 12 1966

HELIOCENTRIC CONIC DISTANCE 918.041 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.405	GAL	-5.93	AZL	88.45	HCA	269.12	SMA	193.20	ECC	.25825	INC	1.5536	V1	30.260
RP	207.43	LAP	-1.55	LOP	352.18	VP	24.346	GAP	-14.37	AZP	90.02	TAL	330.48	TAP	239.60	RCA	143.31	APO	243.10	V2	26.408
RC	343.815	GL	11.52	GP	-3.33	ZAL	136.79	ZAP	23.08	ETS	170.61	ZAE	35.06	ETE	175.10	ZAC	87.73	ETC	255.82	CLP	22.85

PLANETOCENTRIC CONIC

C3	20.349	VHL	4.511	DLA	-4.20	RAL	222.26	RAD	6567.8	VEL	11.905	PTH	2.12	VHP	7.276	DPA	-8.00	RAP	192.86	ECC	1.3349

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 4 20	2088.16	-16.31	33.63	82.99	113.47	21 39 8	1488.2	-13.00	26.52
90.00	8 3 51	4992.89	22.58	219.13	84.96	72.45	9 27 4	4392.9	19.97	211.43
100.00	22 23 42	1832.11	-17.35	14.32	82.51	114.73	22 54 14	1232.1	-13.87	7.26
100.00	9 27 10	4724.17	23.66	198.98	84.58	71.18	10 45 54	4124.2	20.87	191.29
110.00	23 27 26	1632.59	-20.10	357.73	81.06	118.25	23 54 39	1032.6	-16.16	350.82
110.00	10 39 55	4496.46	26.54	180.50	83.39	67.62	11 54 52	3896.5	23.26	172.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.3122	TRA	9.1296	TC-12.4886	BAU	3.3981	SGT16276.2	SGR	628.0	SG3	157.9	ST	3880.6	SR	574.2	SS	521.9
RDE	.4507	RRA	.1167	RC3 .2340	FAU	.01249	RRT -.1570	RRF	-.2112	RTF	.8567	CRT	-.3593	CRS	.7594	CST	-.8783
FDE	-.5278	FRA	1.2811	FC3 -.5313	BSP	57715	SGB16288.3	R23	.0775	R13	-.8567	LSA	3913.4	MSA	587.8	SSA	23.1
BDE	1.3874	BRA	9.1303	BC312.4908	FSP	544	SG116276.5	SG2	620.2	THA	179.65	EL1	3886.1	EL2	535.1	ALF	176.90

LAUNCH DATE DEC 15 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 14 1966

HELIOCENTRIC CONIC DISTANCE 922.222 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.414 GAL -6.21 AZL 88.47 HCA 270.38 SMA 193.36 ECC .26065 INC 1.5310 V1 30.260
RP 207.54 LAP -1.53 LOP 353.44 VP 24.342 GAP -14.52 AZP 89.99 TAL 329.29 TAP 239.67 RCA 142.96 APO 243.76 V2 26.395
RC 344.561 GL 11.07 GP -3.28 ZAL 138.25 ZAP 22.77 ETS 170.60 ZAE 34.45 ETE 175.06 ZAC 87.99 ETC 255.82 CLP 22.55

PLANETOCENTRIC CONIC

C3 21.353 VHL 4.621 DLA -5.04 RAL 223.46 RAD 6567.9 VEL 11.947 PTH 2.13 VHP 7.379 DPA -8.35 RAP 193.76 ECC 1.3514

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 15 28	2073.37	-15.91	32.73	84.82	113.74	21 50 1	1473.4	-12.57	25.65
90.00	8 2 19	5030.77	23.34	221.64	87.26	73.49	9 26 10	4430.8	20.86	213.85
100.00	22 34 26	1818.63	-16.96	13.51	84.32	114.99	23 4 45	1218.6	-13.45	6.47
100.00	9 26 2	4760.75	24.44	201.42	86.88	72.23	10 45 23	4160.8	21.78	193.63
110.00	23 37 14	1621.99	-19.75	357.10	82.84	118.48	24 4 16	1022.0	-15.80	350.22
110.00	10 39 43	4530.15	27.39	182.75	85.72	68.70	11 55 13	3930.1	24.25	174.99

DIFFERENTIAL CORRECTIONS
TDE-1.4402 TRA 9.5212 TC-12.0322 BAU 3.4355
RDE .4661 RRA .1078 RC3 .2316 FAU .00905
FDE -.5168 FRA 1.2013 FC3 -.3669 BSP 57894
BDE 1.5138 BRA 9.5218 BC312.0344 FSP 490

MID-COURSE EXECUTION ACCURACY
SGT16349.2 SGR 630.7 SG3 143.6
RRT -.1766 RRF -.2311 RTF .8332
SGB16361.4 R23 .0850 R13 -.8332
SG116349.6 SG2 620.8 THA 179.61

ORBIT DETERMINATION ACCURACY
ST 3992.6 SR 579.4 SS 498.7
CRT -.3852 CRS .7774 CST -.8781
LSA 4023.2 MSA 582.3 SSA 22.6
EL1 3999.0 EL2 533.8 ALF 176.74

LAUNCH DATE DEC 15 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 16 1966

HELIOCENTRIC CONIC DISTANCE 926.384 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.422 GAL -6.49 AZL 88.49 HCA 271.63 SMA 193.52 ECC .26316 INC 1.5084 V1 30.260
RP 207.67 LAP -1.51 LOP 354.70 VP 24.338 GAP -14.68 AZP 89.96 TAL 328.10 TAP 239.73 RCA 142.60 APO 244.45 V2 26.380
RC 345.302 GL 10.64 GP -3.24 ZAL 139.68 ZAP 22.48 ETS 170.58 ZAE 33.84 ETE 175.01 ZAC 88.25 ETC 255.83 CLP 22.25

PLANETOCENTRIC CONIC

C3 22.427 VHL 4.736 DLA -5.85 RAL 224.65 RAD 6567.9 VEL 11.992 PTH 2.14 VHP 7.484 DPA -8.70 RAP 194.67 ECC 1.3691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 26 22	2059.61	-15.53	31.90	86.66	113.98	22 0 42	1459.6	-12.16	24.85
90.00	8 0 51	5068.26	24.04	224.17	89.57	74.57	9 25 20	4468.3	21.69	216.28
100.00	22 44 57	1806.14	-16.60	12.76	86.15	115.22	23 15 3	1206.1	-13.07	5.75
100.00	9 24 58	4796.96	25.17	203.86	89.21	73.32	10 44 55	4197.0	22.65	195.97
110.00	23 46 50	1612.35	-19.44	356.53	84.64	118.69	24 13 43	1012.4	-15.46	349.67
110.00	10 39 34	4563.52	28.19	185.01	88.09	69.82	11 55 37	3963.5	25.18	177.13

DIFFERENTIAL CORRECTIONS
TDE-1.5673 TRA 9.9220 TC-11.5869 BAU 3.4748
RDE .4820 RRA .0985 RC3 .2285 FAU .00569
FDE -.5040 FRA 1.1168 FC3 -.2198 BSP 58036
BDE 1.6397 BRA 9.9225 BC311.5892 FSP 437

MID-COURSE EXECUTION ACCURACY
SGT16421.0 SGR 633.4 SG3 129.9
RRT -.1957 RRF -.2498 RTF .8033
SGB16433.2 R23 .0942 R13 -.8034
SG116421.5 SG2 621.1 THA 179.57

ORBIT DETERMINATION ACCURACY
ST 4099.9 SR 584.2 SS 474.2
CRT -.4082 CRS .7957 CST -.8758
LSA 4128.2 MSA 577.4 SSA 22.0
EL1 4107.0 EL2 532.4 ALF 176.61

LAUNCH DATE DEC 15 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 18 1966

HELIOCENTRIC CONIC DISTANCE 930.526 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.431 GAL -6.77 AZL 88.51 HCA 272.89 SMA 193.69 ECC .26577 INC 1.4858 V1 30.260
RP 207.80 LAP -1.48 LOP 355.95 VP 24.333 GAP -14.85 AZP 89.92 TAL 326.89 TAP 239.78 RCA 142.21 APO 245.16 V2 26.364
RC 346.039 GL 10.21 GP -3.19 ZAL 141.08 ZAP 22.19 ETS 170.56 ZAE 33.24 ETE 174.97 ZAC 88.50 ETC 255.84 CLP 21.97

PLANETOCENTRIC CONIC

C3 23.576 VHL 4.855 DLA -6.64 RAL 225.82 RAD 6568.0 VEL 12.040 PTH 2.15 VHP 7.591 DPA -9.06 RAP 195.59 ECC 1.3880

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 37 4	2046.83	-15.18	31.13	88.52	114.20	22 11 10	1446.8	-11.78	24.10
90.00	7 59 29	5105.36	24.69	226.69	91.90	75.68	9 24 34	4505.4	22.48	218.72
100.00	22 55 14	1794.63	-16.26	12.06	88.00	115.43	23 25 9	1194.6	-12.71	5.08
100.00	9 23 59	4832.80	25.85	206.31	91.56	74.44	10 44 32	4232.8	23.46	198.32
110.00	0 0 11	1603.62	-19.15	356.01	86.44	118.87	0 26 54	1003.6	-15.15	349.18
110.00	10 39 28	4596.57	28.95	187.28	90.48	70.97	11 56 5	3996.6	26.08	179.28

DIFFERENTIAL CORRECTIONS
TDE-1.6931 TRA10.3316 TC-11.1525 BAU 3.5158
RDE .4983 RRA .0887 RC3 .2248 FAU .00238
FDE -.4887 FRA 1.0282 FC3 -.0874 BSP 58129
BDE 1.7649 BRA10.3320 BC311.1548 FSP 385

MID-COURSE EXECUTION ACCURACY
SGT16490.4 SGR 636.0 SG3 116.9
RRT -.2141 RRF -.2659 RTF .7645
SGB16502.6 R23 .1044 R13 -.7646
SG116490.9 SG2 621.2 THA 179.53

ORBIT DETERMINATION ACCURACY
ST 4201.8 SR 588.9 SS 448.1
CRT -.4286 CRS .8140 CST -.8716
LSA 4227.8 MSA 572.8 SSA 21.5
EL1 4209.5 EL2 531.1 ALF 176.51

LAUNCH DATE DEC 15 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 20 1966

HELIOCENTRIC CONIC DISTANCE 934.647 EARTH TO MARS

RL 147.23 LAL .00 LOL 83.06 VL 33.439 GAL -7.06 AZL 88.54 HCA 274.14 SMA 193.85 ECC .26849 INC 1.4633 V1 30.260
RP 207.94 LAP -1.46 LOP 357.21 VP 24.327 GAP -15.02 AZP 89.89 TAL 325.67 TAP 239.82 RCA 141.80 APO 245.90 V2 26.348
RC 346.771 GL 9.80 GP -3.15 ZAL 142.44 ZAP 21.91 ETS 170.55 ZAE 32.65 ETE 174.92 ZAC 88.76 ETC 255.86 CLP 21.70

PLANETOCENTRIC CONIC

C3 24.802 VHL 4.980 DLA -7.40 RAL 226.96 RAD 6568.0 VEL 12.090 PTH 2.16 VHP 7.699 DPA -9.42 RAP 196.51 ECC 1.4082

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 32	2035.01	-14.85	30.42	90.38	114.39	22 21 27	1435.0	-11.43	23.41
90.00	7 58 10	5142.07	25.29	229.22	94.25	76.81	9 23 52	4542.1	23.22	221.16
100.00	23 5 19	1784.06	-15.95	11.43	89.85	115.62	23 35 3	1184.1	-12.38	4.47
100.00	9 23 4	4868.25	26.47	208.76	93.93	75.58	10 44 12	4268.3	24.23	200.67
110.00	0 9 23	1595.78	-18.89	355.55	88.26	119.03	0 35 59	995.8	-14.88	348.74
110.00	10 39 25	4629.29	29.65	189.57	92.89	72.16	11 56 35	4029.3	26.93	181.44

DIFFERENTIAL CORRECTIONS
TDE-1.8151 TRA10.7525 TC-10.7272 BAU 3.5577
RDE .5150 RRA .0785 RC3 .2206 FAU-.00090
FDE -.4714 FRA .9356 FC3 .0313 BSP 58237
BDE 1.8868 BRA10.7528 BC310.7295 FSP 335

MID-COURSE EXECUTION ACCURACY
SGT16557.1 SGR 638.5 SG3 104.9
RRT -.2317 RRF -.2782 RTF .7135
SGB16569.4 R23 .1159 R13 -.7136
SG116557.7 SG2 621.1 THA 179.49

ORBIT DETERMINATION ACCURACY
ST 4297.5 SR 593.2 SS 420.8
CRT -.4461 CRS .8326 CST -.8648
LSA 4321.3 MSA 568.7 SSA 21.0
EL1 4305.8 EL2 529.9 ALF 176.42

LAUNCH DATE DEC 15 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 22 1966

HELIOCENTRIC CONIC DISTANCE 938.744 EARTH TO MARS

RL	147.23	LAL	.00	LOL	83.06	VL	33.448	GAL	-7.36	AZL	88.56	HCA	275.40	SMA	194.01	ECC	.27133	INC	1.4406	V1	30.260
RP	208.09	LAP	-1.43	LOP	358.46	VP	24.320	GAP	-15.20	AZP	89.86	TAL	324.45	TAP	239.85	RCA	141.37	APO	246.66	V2	26.331
RC	347.497	GL	9.39	GP	-3.10	ZAL	143.78	ZAP	21.64	ETS	170.53	ZAE	32.07	ETE	174.87	ZAC	89.01	ETC	255.88	CLP	21.43

PLANETOCENTRIC CONIC

C3	26.112	VHL	5.110	DLA	-8.14	RAL	228.09	RAD	6568.1	VEL	12.144	PTH	2.18	VHP	7.810	DPA	-9.78	RAP	197.44	ECC	1.4297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 47	2024.11	-14.54	29.77	92.26	114.57	22 31 31	1424.1	-11.10	22.78
90.00	7 56 56	5178.36	25.82	231.74	96.62	77.96	9 23 14	4578.4	23.91	223.59
100.00	23 15 12	1774.39	-15.67	10.86	91.71	115.79	23 44 46	1174.4	-12.07	3.91
100.00	9 22 13	4903.32	27.04	211.20	96.31	76.75	10 43 56	4303.3	24.95	203.03
110.00	0 18 24	1588.81	-18.66	355.14	90.08	119.17	0 44 52	988.8	-14.63	348.35
110.00	10 39 26	4661.66	30.31	191.86	95.32	73.37	11 57 8	4061.7	27.73	183.62

DIFFERENTIAL CORRECTIONS

TDE	-1.9364	TRA	11.1823	TC	-10.3165	BAU	3.6022
RDE	.5321	RRA	.0679	RC3	.2160	FAU	-.00410
FDE	-.4524	FRA	.8383	FC3	.1360	BSP	58298
BDE	2.0081	BRA	11.1825	BC3	10.3188	FSP	285

MID-COURSE EXECUTION ACCURACY

SGT	16622.3	SGR	640.8	SG3	93.8		
RRT	-.2487	RRF	-.2861	RTF	.6463		
SGB	16634.7	R23	.1292	R13	-.6464		
SG1	16623.1	SG2	620.6	THA	179.45		

ORBIT DETERMINATION ACCURACY

ST	4387.7	SR	597.1	SS	392.6
CRT	-.4618	CRS	.8522	CST	-.8549
LSA	4409.4	MSA	565.0	SSA	20.5
EL1	4396.5	EL2	528.6	ALF	176.35

LAUNCH DATE DEC 16 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 357.365 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	35.389	GAL	1.29	AZL	88.86	HCA	109.85	SMA	241.03	ECC	.38976	INC	1.1383	V1	30.263
RP	243.75	LAP	1.07	LOP	193.93	VP	23.202	GAP	22.93	AZP	90.39	TAL	4.61	TAP	114.46	RCA	147.08	APO	334.97	V2	22.510
RC	136.814	GL	7.70	GP	2.28	ZAL	79.52	ZAP	173.56	ETS	157.94	ZAE	152.06	ETE	2.53	ZAC	91.65	ETC	255.94	CLP	173.98

PLANETOCENTRIC CONIC

C3	27.518	VHL	5.246	DLA	13.59	RAL	167.83	RAD	6568.1	VEL	12.202	PTH	2.19	VHP	10.515	DPA	.06	RAP	188.70	ECC	1.4529

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 5 45	2728.27	-27.84	76.61	39.73	95.40	15 51 13	2128.3	-26.80	68.09
90.00	6 40 19	4500.25	9.57	188.89	32.72	63.22	7 55 19	3900.2	5.90	182.13
100.00	16 34 13	2442.94	-29.21	55.45	39.57	96.63	17 14 56	1842.9	-27.99	46.87
100.00	7 54 31	4260.82	10.80	170.64	32.07	61.96	9 5 32	3660.8	6.97	163.95
110.00	17 58 29	2179.28	-32.85	34.81	38.95	100.02	18 34 49	1579.3	-31.12	26.02
110.00	8 46 45	4097.24	13.99	156.36	30.20	58.49	9 55 2	3497.2	9.72	149.87

DIFFERENTIAL CORRECTIONS

TDE	.3316	TRA	-1.0845	TC3	1.1637	BAU	.4281
RDE	-.5480	RRA	-.2289	RC3	-.0023	FAU	.06195
FDE	.0778	FRA	.2931	FC3	-1.9489	BSP	5614
BDE	.6406	BRA	1.1084	BC3	1.1637	FSP	481

MID-COURSE EXECUTION ACCURACY

SGT	1762.6	SGR	651.5	SG3	179.1		
RRT	.0816	RRF	-.0968	RTF	-.7847		
SGB	1879.2	R23	-.0227	R13	-.7850		
SG1	1763.6	SG2	649.0	THA	2.00		

ORBIT DETERMINATION ACCURACY

ST	516.0	SR	603.5	SS	130.8
CRT	-.6057	CRS	.6728	CST	.1020
LSA	716.2	MSA	363.9	SSA	46.1
EL1	714.2	EL2	346.9	ALF	127.72

LAUNCH DATE DEC 16 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 359.576 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	35.265	GAL	1.43	AZL	88.88	HCA	110.76	SMA	237.25	ECC	.38020	INC	1.1192	V1	30.263
RP	243.50	LAP	1.05	LOP	194.85	VP	23.036	GAP	22.30	AZP	90.40	TAL	5.21	TAP	115.97	RCA	147.05	APO	327.46	V2	22.535
RC	139.022	GL	7.70	GP	2.35	ZAL	78.33	ZAP	172.99	ETS	159.15	ZAE	152.08	ETE	2.81	ZAC	91.78	ETC	255.93	CLP	173.39

PLANETOCENTRIC CONIC

C3	26.398	VHL	5.138	DLA	14.05	RAL	166.71	RAD	6568.1	VEL	12.156	PTH	2.18	VHP	10.254	DPA	-.02	RAP	189.02	ECC	1.4344

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 57 10	2734.15	-27.88	77.03	38.03	95.19	15 42 44	2134.1	-26.86	68.51
90.00	6 39 57	4473.72	8.75	187.37	30.99	62.96	7 54 31	3873.7	5.06	180.64
100.00	16 25 58	2447.79	-29.25	55.81	37.87	96.45	17 6 46	1847.8	-28.05	47.21
100.00	7 53 51	4235.30	9.98	169.19	30.34	61.68	9 4 26	3635.3	6.12	162.53
110.00	17 50 54	2182.01	-32.89	35.02	37.26	99.90	18 27 16	1582.0	-31.17	26.22
110.00	8 45 23	4073.85	13.16	155.07	28.47	58.16	9 53 17	3473.9	8.85	148.61

DIFFERENTIAL CORRECTIONS

TDE	.3108	TRA	-1.0537	TC3	1.2445	BAU	.4392
RDE	-.5362	RRA	-.2214	RC3	.0022	FAU	.06412
FDE	.0960	FRA	.2708	FC3	-2.1030	BSP	5769
BDE	.6197	BRA	1.0767	BC3	1.2445	FSP	512

MID-COURSE EXECUTION ACCURACY

SGT	1795.2	SGR	649.8	SG3	188.9		
RRT	.0890	RRF	-.1042	RTF	-.7909		
SGB	1909.2	R23	-.0234	R13	-.7912		
SG1	1796.2	SG2	646.9	THA	2.12		

ORBIT DETERMINATION ACCURACY

ST	503.6	SR	602.8	SS	138.3
CRT	-.5913	CRS	.7558	CST	-.0086
LSA	708.3	MSA	363.6	SSA	48.1
EL1	704.4	EL2	347.6	ALF	126.50

LAUNCH DATE DEC 16 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 361.911 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	35.147	GAL	1.57	AZL	88.90	HCA	111.68	SMA	233.77	ECC	.37114	INC	1.0998	V1	30.263
RP	243.25	LAP	1.02	LOP	195.76	VP	22.879	GAP	21.67	AZP	90.41	TAL	5.82	TAP	117.50	RCA	147.01	APO	320.53	V2	22.560
RC	141.251	GL	7.69	GP	2.42	ZAL	77.14	ZAP	172.40	ETS	160.17	ZAE	152.14	ETE	3.09	ZAC	91.92	ETC	255.92	CLP	172.79

PLANETOCENTRIC CONIC

C3	25.372	VHL	5.037	DLA	14.51	RAL	165.57	RAD	6568.0	VEL	12.114	PTH	2.17	VHP	10.000	DPA	-.09	RAP	189.34	ECC	1.4176

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 48 32	2740.44	-27.91	77.49	36.35	94.97	15 34 12	2140.4	-26.93	68.96
90.00	6 39 30	4447.83	7.95	185.90	29.30	62.73	7 53 38	3847.8	4.23	179.19
100.00	16 17 39	2453.05	-29.29	56.20	36.19	96.25	16 58 32	1853.0	-28.12	47.59
100.00	7 53 5	4210.45	9.17	167.79	28.64	61.43	9 3 15	3610.5	5.29	161.16
110.00	17 43 16	2185.12	-32.92	35.25	35.60	99.77	18 19 42	1585.1	-31.22	26.44
110.00	8 43 56	4051.14	12.34	153.82	26.76	57.87	9 51 27	3451.1	8.01	147.40

DIFFERENTIAL CORRECTIONS

TDE	.2901	TRA	-1.0223	TC3	1.3289	BAU	.4508
RDE	-.5250	RRA	-.2140	RC3	.0073	FAU	.06646
FDE	.1154	FRA	.2467	FC3	-2.2676	BSP	5904
BDE	.5998	BRA	1.0445	BC3	1.3289	FSP	545

MID-COURSE EXECUTION ACCURACY

SGT	1828.7	SGR	648.0	SG3	199.3		
RRT	.0969	RRF	-.1125	RTF	-.7974		
SGB	1940.1	R23	-.0244	R13	-.7978		
SG1	1829.9	SG2	644.5	THA	2.25		

ORBIT DETERMINATION ACCURACY

ST	490.2	SR	601.9	SS	148.4		
CRT	-.5756	CRS	.8220	CST	-.1096		
LSA	700.5	MSA	362.5	SSA	50.2		
EL1	694.1	EL2	347.6	ALF	125.13		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 364.358 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	35.034	GAL	1.71	AZL	88.92	HCA	112.60	SMA	230.56	ECC	.36254	INC	1.0801	V1	30.263
RP	243.00	LAP	1.00	LOP	196.68	VP	22.731	GAP	21.04	AZP	90.42	TAL	6.43	TAP	119.03	RCA	146.97	APO	314.14	V2	22.585
RC	143.499	GL	7.67	GP	2.49	ZAL	75.94	ZAP	171.80	ETS	161.04	ZAE	152.25	ETE	3.38	ZAC	92.06	ETC	255.91	CLP	172.19

PLANETOCENTRIC CONIC

C3	24.434	VHL	4.943	DLA	14.96	RAL	164.42	RAD	6568.0	VEL	12.075	PTH	2.16	VHP	9.753	DPA	-.15	RAP	189.65	ECC	1.4021

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 39 52	2747.08	-27.95	77.97	34.68	94.73	15 25 39	2147.1	-27.00	69.43
90.00	6 38 58	4422.64	7.16	184.46	27.63	62.53	7 52 41	3822.6	3.43	177.78
100.00	16 9 18	2458.64	-29.33	56.61	34.54	96.04	16 50 17	1858.6	-28.19	47.99
100.00	7 52 13	4186.31	8.38	166.43	26.97	61.20	9 1 59	3586.3	4.48	159.82
110.00	17 35 37	2188.57	-32.96	35.51	33.95	99.62	18 12 6	1588.6	-31.28	26.69
110.00	8 42 23	4029.15	11.54	152.62	25.07	57.60	9 49 32	3429.1	7.18	146.23

DIFFERENTIAL CORRECTIONS

TDE	.2709	TRA	-.9902	TC3	1.4149	BAU	.4622
RDE	-.5144	RRA	-.2067	RC3	.0132	FAU	.06889
FDE	.1348	FRA	.2200	FC3	-2.4409	BSP	6036
BDE	.5814	BRA	1.0116	BC3	1.4150	FSP	579

MID-COURSE EXECUTION ACCURACY

SGT	1861.9	SGR	645.9	SG3	210.2		
RRT	.1044	RRF	-.1209	RTF	-.8037		
SGB	1970.8	R23	-.0259	R13	-.8041		
SG1	1863.3	SG2	641.9	THA	2.35		

ORBIT DETERMINATION ACCURACY

ST	476.9	SR	600.9	SS	159.7		
CRT	-.5609	CRS	.8700	CST	-.1970		
LSA	694.0	MSA	360.0	SSA	52.5		
EL1	684.3	EL2	346.7	ALF	123.71		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 366.907 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	34.926	GAL	1.84	AZL	88.94	HCA	113.51	SMA	227.58	ECC	.35440	INC	1.0601	V1	30.263
RP	242.74	LAP	.97	LOP	197.60	VP	22.591	GAP	20.42	AZP	90.42	TAL	7.05	TAP	120.56	RCA	146.92	APO	308.23	V2	22.611
RC	145.763	GL	7.64	GP	2.56	ZAL	74.73	ZAP	171.19	ETS	161.80	ZAE	152.40	ETE	3.69	ZAC	92.20	ETC	255.90	CLP	171.57

PLANETOCENTRIC CONIC

C3	23.576	VHL	4.856	DLA	15.40	RAL	163.25	RAD	6568.0	VEL	12.040	PTH	2.15	VHP	9.512	DPA	-.21	RAP	189.96	ECC	1.3880

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 31 11	2754.00	-27.99	78.47	33.04	94.48	15 17 5	2154.0	-27.07	69.93
90.00	6 38 20	4398.21	6.39	183.08	25.98	62.36	7 51 38	3798.2	2.64	176.41
100.00	16 0 57	2464.51	-29.37	57.04	32.90	95.82	16 42 2	1864.5	-28.26	48.41
100.00	7 51 15	4162.93	7.62	165.12	25.32	61.01	9 0 38	3562.9	3.69	158.53
110.00	17 27 57	2192.28	-33.00	35.80	32.33	99.46	18 4 29	1592.3	-31.35	26.96
110.00	8 40 45	4007.92	10.76	151.46	23.42	57.36	9 47 32	3407.9	6.38	145.11

DIFFERENTIAL CORRECTIONS

TDE	.2515	TRA	-.9586	TC3	1.5024	BAU	.4736
RDE	-.5044	RRA	-.1995	RC3	.0197	FAU	.07145
FDE	.1557	FRA	.1913	FC3	-2.6238	BSP	6179
BDE	.5636	BRA	.9792	BC3	1.5025	FSP	616

MID-COURSE EXECUTION ACCURACY

SGT	1895.6	SGR	643.6	SG3	221.6		
RRT	.1130	RRF	-.1304	RTF	-.8097		
SGB	2001.9	R23	-.0274	R13	-.8102		
SG1	1897.2	SG2	639.0	THA	2.48		

ORBIT DETERMINATION ACCURACY

ST	462.5	SR	599.7	SS	173.4		
CRT	-.5438	CRS	.9051	CST	-.2710		
LSA	687.9	MSA	356.9	SSA	54.9		
EL1	674.0	EL2	345.3	ALF	122.10		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 369.548 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	34.823	GAL	1.97	AZL	88.96	HCA	114.44	SMA	224.81	ECC	.34668	INC	1.0398	V1	30.263
RP	242.47	LAP	.95	LOP	198.52	VP	22.458	GAP	19.80	AZP	90.43	TAL	7.67	TAP	122.11	RCA	146.88	APO	302.75	V2	22.638
RC	148.041	GL	7.60	GP	2.64	ZAL	73.52	ZAP	170.57	ETS	162.45	ZAE	152.59	ETE	4.01	ZAC	92.34	ETC	255.89	CLP	170.95

PLANETOCENTRIC CONIC

C3	22.793	VHL	4.774	DLA	15.82	RAL	162.07	RAD	6567.9	VEL	12.007	PTH	2.14	VHP	9.278	DPA	-.26	RAP	190.26	ECC	1.3751

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 22 32	2761.13	-28.03	78.99	31.42	94.22	15 8 33	2161.1	-27.15	70.44
90.00	6 37 36	4374.60	5.64	181.75	24.37	62.21	7 50 31	3774.6	1.88	175.09
100.00	15 52 37	2470.59	-29.41	57.49	31.28	95.58	16 33 48	1870.6	-28.33	48.85
100.00	7 50 12	4140.38	6.87	163.86	23.70	60.84	8 59 12	3540.4	2.93	157.29
110.00	17 20 19	2196.22	-33.05	36.10	30.73	99.28	17 56 55	1596.2	-31.41	27.25
110.00	8 39 0	3987.50	10.01	150.36	21.79	57.14	9 45 27	3387.5	5.61	144.03

DIFFERENTIAL CORRECTIONS

TDE	.2322	TRA	-.9260	TC3	1.5893	BAU	.4844
RDE	-.4950	RRA	-.1924	RC3	.0270	FAU	.07413
FDE	.1778	FRA	.1595	FC3	-2.8157	BSP	6313
BDE	.5467	BRA	.9458	BC3	1.5895	FSP	655

MID-COURSE EXECUTION ACCURACY

SGT	1927.4	SGR	641.2	SG3	233.6		
RRT	.1221	RRF	-.1406	RTF	-.8154		
SGB	2031.2	R23	-.0291	R13	-.8160		
SG1	1929.2	SG2	635.8	THA	2.61		

ORBIT DETERMINATION ACCURACY

ST	447.0	SR	598.4	SS	189.0		
CRT	-.5254	CRS	.9293	CST	-.3331		
LSA	682.6	MSA	352.6	SSA	57.4		
EL1	663.5	EL2	343.0	ALF	120.30		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 372.274 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	34.725	GAL	2.10	AZL	88.98	HCA	115.36	SMA	222.25	ECC	.33936	INC	1.0192	V1	30.263
RP	242.20	LAP	.92	LOP	199.44	VP	22.333	GAP	19.18	AZP	90.44	TAL	8.29	TAP	123.65	RCA	146.83	APO	297.67	V2	22.664
RC	150.330	GL	7.55	GP	2.72	ZAL	72.31	ZAP	169.94	ETS	163.02	ZAE	152.82	ETE	4.35	ZAC	92.48	ETC	255.88	CLP	170.31

PLANETOCENTRIC CONIC

C3	22.078	VHL	4.699	DLA	16.23	RAL	160.89	RAD	6567.9	VEL	11.977	PTH	2.13	VHP	9.050	DPA	-.31	RAP	190.56	ECC	1.3633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 13 55	2768.42	-28.06	79.52	29.82	93.96	15 0 4	2168.4	-27.22	70.96
90.00	6 36 46	4351.85	4.92	180.47	22.79	62.08	7 49 18	3751.8	1.15	173.82
100.00	15 44 21	2476.81	-29.45	57.94	29.69	95.35	16 25 37	1876.8	-28.40	49.30
100.00	7 49 2	4118.69	6.15	162.66	22.11	60.69	8 57 41	3518.7	2.20	156.10
110.00	17 12 43	2200.33	-33.09	36.41	29.15	99.10	17 49 23	1600.3	-31.48	27.55
110.00	8 37 9	3967.93	9.28	149.31	20.20	56.95	9 43 17	3367.9	4.87	143.00

DIFFERENTIAL CORRECTIONS

TDE	.2134	TRA	-.8932	TC3	1.6789	BAU	.4956
RDE	-.4861	RRA	-.1854	RC3	.0352	FAU	.07699
FDE	.2008	FRA	.1249	FC3	-3.0191	BSP	6419
BDE	.5309	BRA	.9122	BC3	1.6792	FSP	694

MID-COURSE EXECUTION ACCURACY

SGT	1960.5	SGR	638.7	SG3	246.4		
RRT	.1318	RRF	-.1517	RTF	-.8213		
SGB	2061.9	R23	-.0312	R13	-.8219		
SG1	1962.5	SG2	632.5	THA	2.74		

ORBIT DETERMINATION ACCURACY

ST	431.0	SR	597.0	SS	206.0		
CRT	-.5059	CRS	.9444	CST	-.3829		
LSA	678.5	MSA	347.3	SSA	60.1		
EL1	653.2	EL2	339.8	ALF	118.38		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 375.077 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	34.632	GAL	2.22	AZL	89.00	HCA	116.28	SMA	219.86	ECC	.33242	INC	.9981	V1	30.263
RP	241.93	LAP	.89	LOP	200.37	VP	22.215	GAP	18.57	AZP	90.44	TAL	8.92	TAP	125.21	RCA	146.77	APO	292.94	V2	22.692
RC	152.629	GL	7.48	GP	2.81	ZAL	71.10	ZAP	169.29	ETS	163.53	ZAE	153.09	ETE	4.71	ZAC	92.63	ETC	255.87	CLP	169.67

PLANETOCENTRIC CONIC

C3	21.426	VHL	4.629	DLA	16.62	RAL	159.70	RAD	6567.9	VEL	11.950	PTH	2.13	VHP	8.828	DPA	-.34	RAP	190.85	ECC	1.3526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 5 23	2775.77	-28.10	80.06	28.25	93.69	14 51 39	2175.8	-27.29	71.48
90.00	6 35 49	4330.02	4.22	179.24	21.23	61.97	7 47 59	3730.0	.44	172.61
100.00	15 36 8	2483.11	-29.49	58.41	28.13	95.10	16 17 32	1883.1	-28.47	49.75
100.00	7 47 45	4097.91	5.45	161.50	20.55	60.56	8 56 3	3497.9	1.49	154.96
110.00	17 5 11	2204.53	-33.14	36.73	27.60	98.92	17 41 55	1604.5	-31.55	27.86
110.00	8 35 13	3949.25	8.59	148.31	18.63	56.79	9 41 2	3349.3	4.16	142.02

DIFFERENTIAL CORRECTIONS

TDE	.1946	TRA	-.8615	TC3	1.7652	BAU	.5058
RDE	-.4778	RRA	-.1784	RC3	.0442	FAU	.07995
FDE	.2244	FRA	.0880	FC3	-3.2305	BSP	6558
BDE	.5159	BRA	.8797	BC3	1.7657	FSP	738

MID-COURSE EXECUTION ACCURACY

SGT	1991.7	SGR	636.0	SG3	259.7		
RRT	.1428	RRF	-.1636	RTF	-.8263		
SGB	2090.8	R23	-.0329	R13	-.8270		
SG1	1994.0	SG2	628.8	THA	2.90		

ORBIT DETERMINATION ACCURACY

ST	414.6	SR	595.4	SS	224.2		
CRT	-.4833	CRS	.9529	CST	-.4196		
LSA	675.3	MSA	341.5	SSA	63.0		
EL1	643.0	EL2	336.1	ALF	116.28		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 377.952 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	34.542	GAL	2.34	AZL	89.02	HCA	117.21	SMA	217.63	ECC	.32585	INC	.9766	V1	30.263
RP	241.65	LAP	.87	LOP	201.29	VP	22.104	GAP	17.97	AZP	90.45	TAL	9.55	TAP	126.76	RCA	146.71	APO	288.55	V2	22.720
RC	154.936	GL	7.41	GP	2.90	ZAL	69.90	ZAP	168.64	ETS	163.97	ZAE	153.39	ETE	5.10	ZAC	92.78	ETC	255.86	CLP	169.01

PLANETOCENTRIC CONIC

C3	20.832	VHL	4.564	DLA	17.00	RAL	158.51	RAD	6567.8	VEL	11.925	PTH	2.12	VHP	8.612	DPA	-.37	RAP	191.13	ECC	1.3428

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 56 58	2783.11	-28.13	80.59	26.70	93.43	14 43 21	2183.1	-27.35	72.01
90.00	6 34 46	4309.16	3.56	178.08	19.71	61.89	7 46 35	3709.2	-.23	171.44
100.00	15 28 2	2489.42	-29.53	58.87	26.59	94.86	16 9 32	1889.4	-28.54	50.21
100.00	7 46 22	4078.09	4.79	160.41	19.03	60.46	8 54 20	3478.1	.82	153.87
110.00	16 57 44	2208.78	-33.18	37.05	26.08	98.73	17 34 33	1608.8	-31.62	28.17
110.00	8 33 10	3931.49	7.93	147.36	17.10	56.64	9 38 41	3331.5	3.48	141.09

DIFFERENTIAL CORRECTIONS

TDE	.1766	TRA	-.8286	TC3	1.8517	BAU	.5159
RDE	-.4699	RRA	-.1715	RC3	.0540	FAU	.08307
FDE	.2492	FRA	.0473	FC3	-3.4523	BSP	6677
BDE	.5020	BRA	.8461	BC3	1.8524	FSP	784

MID-COURSE EXECUTION ACCURACY

SGT	2022.2	SGR	633.3	SG3	273.7		
RRT	.1542	RRF	-.1764	RTF	-.8313		
SGB	2119.0	R23	-.0351	R13	-.8320		
SG1	2024.8	SG2	624.9	THA	3.06		

ORBIT DETERMINATION ACCURACY

ST	397.7	SR	593.7	SS	243.5		
CRT	-.4601	CRS	.9567	CST	-.4492		
LSA	673.6	MSA	334.4	SSA	65.9		
EL1	633.3	EL2	331.0	ALF	114.10		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 380.892 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	34.457	GAL	2.46	AZL	89.05	HCA	118.14	SMA	215.55	ECC	.31963	INC	.9548	V1	30.263
RP	241.36	LAP	.84	LOP	202.22	VP	22.000	GAP	17.37	AZP	90.45	TAL	10.18	TAP	128.32	RCA	146.65	APO	284.45	V2	22.748
RC	157.250	GL	7.32	GP	2.99	ZAL	68.71	ZAP	167.97	ETS	164.36	ZAE	153.73	ETE	5.50	ZAC	92.92	ETC	255.86	CLP	168.34

PLANETOCENTRIC CONIC

C3	20.291	VHL	4.505	DLA	17.36	RAL	157.32	RAD	6567.8	VEL	11.903	PTH	2.11	VHP	8.401	DPA	-.40	RAP	191.41	ECC	1.3339

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 48 40	2790.40	-28.15	81.12	25.19	93.16	14 35 10	2190.4	-27.42	72.54
90.00	6 33 34	4289.28	2.92	176.96	18.22	61.82	7 45 4	3689.3	-.87	170.33
100.00	15 20 3	2495.68	-29.57	59.34	25.08	94.62	16 1 39	1895.7	-28.61	50.66
100.00	7 44 52	4059.24	4.16	159.37	17.53	60.37	8 52 31	3459.2	.18	152.84
110.00	16 50 24	2213.04	-33.22	37.38	24.58	98.55	17 27 17	1613.0	-31.69	28.49
110.00	8 31 1	3914.65	7.29	146.47	15.59	56.51	9 36 16	3314.6	2.84	140.21

DIFFERENTIAL CORRECTIONS

TDE	.1665	TRA	-.7883	TC3	1.9518	BAU	.5298
RDE	-.4626	RRA	-.1646	RC3	.0647	FAU	.08632
FDE	.2759	FRA	.0046	FC3	-3.6831	BSP	6628
BDE	.4916	BRA	.8053	BC3	1.9529	FSP	835

MID-COURSE EXECUTION ACCURACY

SGT	2059.2	SGR	630.6	SG3	288.3		
RRT	.1604	RRF	-.1907	RTF	-.8393		
SGB	2153.6	R23	-.0431	R13	-.8401		
SG1	2062.0	SG2	621.6	THA	3.09		

ORBIT DETERMINATION ACCURACY

ST	383.4	SR	592.0	SS	264.8		
CRT	-.4573	CRS	.9574	CST	-.4899		
LSA	676.9	MSA	323.5	SSA	69.0		
EL1	627.8	EL2	321.5	ALF	112.78		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 383.892 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	34.376	GAL	2.57	AZL	89.07	HCA	119.07	SMA	213.61	ECC	.31374	INC	.9325	V1	30.263
RP	241.08	LAP	.82	LOP	203.16	VP	21.903	GAP	16.77	AZP	90.45	TAL	10.81	TAP	129.88	RCA	146.59	APO	280.63	V2	22.777
RC	159.568	GL	7.22	GP	3.09	ZAL	67.54	ZAP	167.28	ETS	164.70	ZAE	154.10	ETE	5.93	ZAC	93.08	ETC	255.85	CLP	167.66

PLANETOCENTRIC CONIC

C3	19.799	VHL	4.450	DLA	17.70	RAL	156.14	RAD	6567.8	VEL	11.882	PTH	2.11	VHP	8.196	DPA	-.41	RAP	191.68	ECC	1.3258

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 40 33	2797.50	-28.18	81.64	23.70	92.90	14 27 10	2197.5	-27.48	73.05
90.00	6 32 16	4270.50	2.31	175.91	16.76	61.77	7 43 26	3670.5	-1.48	169.29
100.00	15 12 15	2501.78	-29.60	59.79	23.59	94.39	15 53 57	1901.8	-28.68	51.10
100.00	7 43 15	4041.45	3.56	158.39	16.07	60.30	8 50 36	3441.4	-.42	151.86
110.00	16 43 13	2217.19	-33.27	37.69	23.11	98.36	17 20 10	1617.2	-31.75	28.79
110.00	8 28 46	3890.80	6.70	145.63	14.13	56.40	9 33 45	3298.8	2.24	139.38

DIFFERENTIAL CORRECTIONS

TDE	.1455	TRA	-.7601	TC3	2.0281	BAU	.5372
RDE	-.4555	RRA	-.1577	RC3	.0766	FAU	.08984
FDE	.3013	FRA	-.0433	FC3	-3.9283	BSP	6842
BDE	.4782	BRA	.7763	BC3	2.0296	FSP	884

MID-COURSE EXECUTION ACCURACY

SGT	2085.2	SGR	627.7	SG3	303.9		
RRT	.1773	RRF	-.2053	RTF	-.8421		
SGB	2177.7	R23	-.0423	R13	-.8429		
SG1	2088.5	SG2	616.8	THA	3.35		

ORBIT DETERMINATION ACCURACY

ST	364.7	SR	590.0	SS	284.8		
CRT	-.4185	CRS	.9549	CST	-.4935		
LSA	675.5	MSA	317.3	SSA	72.3		
EL1	617.1	EL2	316.7	ALF	109.97		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 386.948 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	34.298	GAL	2.69	AZL	89.09	HCA	120.01	SMA	211.79	ECC	.30815	INC	.9098	V1	30.263
RP	240.79	LAP	.79	LOP	204.09	VP	21.811	GAP	16.18	AZP	90.46	TAL	11.43	TAP	131.44	RCA	146.53	APO	277.06	V2	22.806
RC	161.890	GL	7.10	GP	3.19	ZAL	66.37	ZAP	166.59	ETS	165.01	ZAE	154.51	ETE	6.40	ZAC	93.23	ETC	255.84	CLP	166.97

PLANETOCENTRIC CONIC

C3	19.352	VHL	4.399	DLA	18.02	RAL	154.97	RAD	6567.8	VEL	11.863	PTH	2.10	VHP	7.996	DPA	-.42	RAP	191.94	ECC	1.3185

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 32 37	2804.38	-28.20	82.14	22.24	92.65	14 19 21	2204.4	-27.54	73.54
90.00	6 30 49	4252.74	1.74	174.93	15.33	61.73	7 41 42	3652.7	-2.05	168.30
100.00	15 4 37	2507.69	-29.63	60.22	22.14	94.16	15 46 25	1907.7	-28.74	51.53
100.00	7 41 30	4024.72	2.99	157.47	14.64	60.24	8 48 34	3424.7	-.99	150.94
110.00	16 36 11	2221.23	-33.31	38.00	21.68	98.18	17 13 12	1621.2	-31.82	29.09
110.00	8 26 26	3883.94	6.14	144.84	12.69	56.31	9 31 9	3283.9	1.67	138.61

DIFFERENTIAL CORRECTIONS

TDE	.1268	TRA	-.7299	TC3	2.1054	BAU	.5452
RDE	-.4489	RRA	-.1507	RC3	.0894	FAU	.09349
FDE	.3280	FRA	-.0941	FC3	-4.1823	BSP	7000
BDE	.4664	BRA	.7453	BC3	2.1073	FSP	937

MID-COURSE EXECUTION ACCURACY

SGT	2111.4	SGR	624.9	SG3	320.3		
RRT	.1937	RRF	-.2213	RTF	-.8455		
SGB	2201.9	R23	-.0434	R13	-.8464		
SG1	2115.2	SG2	612.0	THA	3.58		

ORBIT DETERMINATION ACCURACY

ST	346.9	SR	587.9	SS	305.9		
CRT	-.3819	CRS	.9509	CST	-.4949		
LSA	676.6	MSA	309.9	SSA	75.5		
EL1	608.2	EL2	309.9	ALF	107.33		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 390.055 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	34.224	GAL	2.79	AZL	89.11	HCA	120.94	SMA	210.09	ECC	.30287	INC	.8866	V1	30.263
RP	240.49	LAP	.76	LOP	205.03	VP	21.726	GAP	15.60	AZP	90.46	TAL	12.05	TAP	132.99	RCA	146.46	APO	273.72	V2	22.836
RC	164.213	GL	6.98	GP	3.30	ZAL	65.23	ZAP	165.87	ETS	165.28	ZAE	154.95	ETE	6.90	ZAC	93.38	ETC	255.84	CLP	166.26

PLANETOCENTRIC CONIC

C3	18.947	VHL	4.353	DLA	18.31	RAL	153.80	RAD	6567.8	VEL	11.846	PTH	2.10	VHP	7.801	DPA	-.41	RAP	192.19	ECC	1.3118

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 24 54	2810.96	-28.22	82.62	20.81	92.41	14 11 45	2211.0	-27.59	74.02
90.00	6 29 14	4236.21	1.21	174.00	13.94	61.71	7 39 50	3636.2	-2.58	167.37
100.00	14 57 11	2513.34	-29.66	60.64	20.72	93.94	15 39 5	1913.3	-28.79	51.94
100.00	7 39 37	4009.06	2.46	156.61	13.24	60.20	8 46 26	3409.1	-1.52	150.08
110.00	16 29 19	2225.09	-33.34	38.30	20.27	98.01	17 6 24	1625.1	-31.88	29.37
110.00	8 23 59	3870.08	5.61	144.11	11.29	56.23	9 28 29	3270.1	1.14	137.88

DIFFERENTIAL CORRECTIONS

TDE	.1105	TRA	-.6981	TC3	2.1831	BAU	.5536
RDE	-.4426	RRA	-.1437	RC3	.1033	FAU	.09734
FDE	.3555	FRA	-.1491	FC3	-4.4477	BSP	7134
BDE	.4562	BRA	.7128	BC3	2.1856	FSP	993

MID-COURSE EXECUTION ACCURACY

SGT	2137.8	SGR	622.3	SG3	337.4		
RRT	.2098	RRF	-.2386	RTF	-.8492		
SGB	2226.5	R23	-.0458	R13	-.8503		
SG1	2142.1	SG2	607.2	THA	3.80		

ORBIT DETERMINATION ACCURACY

ST	329.8	SR	585.7	SS	327.6		
CRT	-.3482	CRS	.9457	CST	-.4957		
LSA	679.6	MSA	301.7	SSA	78.8		
EL1	600.8	EL2	301.3	ALF	104.93		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 166.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 393.210 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	34.154	GAL	2.90	AZL	89.14	HCA	121.88	SMA	208.50	ECC	.29787	INC	.8628	V1	30.263
RP	240.19	LAP	.73	LOP	205.96	VP	21.646	GAP	15.02	AZP	90.46	TAL	12.67	TAP	134.55	RCA	146.39	APO	270.60	V2	22.866
RC	166.536	GL	6.85	GP	3.42	ZAL	64.10	ZAP	165.15	ETS	165.53	ZAE	155.43	ETE	7.44	ZAC	93.54	ETC	255.83	CLP	165.54

PLANETOCENTRIC CONIC

C3	18.579	VHL	4.310	DLA	18.59	RAL	152.65	RAD	6567.8	VEL	11.831	PTH	2.10	VHP	7.611	DPA	-.40	RAP	192.43	ECC	1.3058

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 17 25	2817.18	-28.24	83.08	19.42	92.18	14 4 22	2217.2	-27.64	74.46
90.00	6 27 30	4220.78	.71	173.14	12.58	61.69	7 37 51	3620.8	-3.08	166.51
100.00	14 49 59	2518.67	-29.68	61.04	19.33	93.73	15 31 58	1918.7	-28.85	52.33
100.00	7 37 37	3994.52	1.97	155.81	11.88	60.17	8 44 12	3394.5	-2.01	149.29
110.00	16 22 39	2228.72	-33.38	38.57	18.89	97.85	16 59 48	1628.7	-31.93	29.64
110.00	8 21 26	3857.24	5.13	143.43	9.92	56.16	9 25 43	3257.2	.65	137.21

DIFFERENTIAL CORRECTIONS

TDE	.0956	TRA	-.6666	TC3	2.2588	BAU	.5618
RDE	-.4367	RRA	-.1366	RC3	.1183	FAU	.10138
FDE	.3834	FRA	-.2075	FC3	-4.7241	BSP	7262
BDE	.4470	BRA	.6805	BC3	2.2619	FSP	1054

MID-COURSE EXECUTION ACCURACY

SGT	2163.8	SGR	619.7	SG3	355.5		
RRT	.2268	RRF	-.2571	RTF	-.8529		
SGB	2250.8	R23	-.0487	R13	-.8540		
SG1	2168.8	SG2	602.2	THA	4.03		

ORBIT DETERMINATION ACCURACY

ST	313.4	SR	583.3	SS	349.4		
CRT	-.3142	CRS	.9396	CST	-.4930		
LSA	683.8	MSA	293.7	SSA	82.0		
EL1	594.3	EL2	292.0	ALF	102.69		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 168.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 396.410 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 34.086 GAL 3.00 AZL 89.16 HCA 122.82 SMA 207.00 ECC .29313 INC .8385 V1 30.263
RP 239.88 LAP .70 LOP 206.90 VP 21.572 GAP 14.45 AZP 90.45 TAL 13.28 TAP 136.10 RCA 146.32 APO 267.68 V2 22.897
RC 168.857 GL 6.70 GP 3.53 ZAL 63.00 ZAP 164.41 ETS 165.74 ZAE 155.94 ETE 8.03 ZAC 93.70 ETC 255.82 CLP 164.80

PLANETOCENTRIC CONIC

C3 18.246 VHL 4.272 DLA 18.84 RAL 151.51 RAD 6567.7 VEL 11.816 PTH 2.09 VHP 7.427 DPA -.37 RAP 192.67 ECC 1.3003

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 10 12	2822.96	-28.25	83.50	18.05	91.97	13 57 15	2223.0	-27.68	74.88
90.00	6 25 37	4206.52	.25	172.34	11.26	61.68	7 35 44	3606.5	-3.54	165.71
100.00	14 43 2	2523.61	-29.70	61.40	17.98	93.54	15 25 5	1923.6	-28.89	52.69
100.00	7 35 29	3981.10	1.52	155.07	10.55	60.14	8 41 50	3381.1	-2.47	148.55
110.00	16 16 13	2232.07	-33.41	38.83	17.55	97.70	16 53 25	1632.1	-31.98	29.89
110.00	8 18 47	3845.41	4.68	142.81	8.58	56.10	9 22 53	3245.4	.19	136.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0816 TRA -.6344 TC3 2.3326 BAU .5699 SGT 2189.0 SGR 617.4 SG3 374.5 ST 297.2 SR 580.8 SS 371.3
RDE -.4310 RRA -.1295 RC3 .1345 FAU .10564 RRT .2447 RRF -.2769 RTF -.8566 CRT -.2793 CRS .9327 CST -.4874
FDE .4118 FRA -.2709 FC3-5.0126 BSP 7350 SGB 2274.4 R23 -.0520 R13 -.8578 LSA 688.9 MSA 285.8 SSA 85.2
BDE .4387 BRA .6475 BC3 2.3365 FSP 1116 SG1 2194.6 SG2 597.1 THA 4.26 EL1 588.5 EL2 281.6 ALF 100.58

LAUNCH DATE DEC 16 1964 FLIGHT TIME 170.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 399.652 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 34.022 GAL 3.10 AZL 89.19 HCA 123.76 SMA 205.60 ECC .28865 INC .8136 V1 30.263
RP 239.58 LAP .68 LOP 207.85 VP 21.504 GAP 13.88 AZP 90.45 TAL 13.89 TAP 137.65 RCA 146.25 APO 264.95 V2 22.928
RC 171.174 GL 6.54 GP 3.66 ZAL 61.92 ZAP 163.65 ETS 165.94 ZAE 156.48 ETE 8.66 ZAC 93.87 ETC 255.82 CLP 164.05

PLANETOCENTRIC CONIC

C3 17.945 VHL 4.236 DLA 19.07 RAL 150.38 RAD 6567.7 VEL 11.804 PTH 2.09 VHP 7.246 DPA -.34 RAP 192.90 ECC 1.2953

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 3 16	2828.25	-28.27	83.89	16.73	91.78	13 50 24	2228.3	-27.72	75.26
90.00	6 23 36	4193.46	-.17	171.62	9.97	61.68	7 33 29	3593.5	-3.96	164.98
100.00	14 36 20	2528.12	-29.72	61.73	16.65	93.37	15 18 29	1928.1	-28.94	53.02
100.00	7 33 13	3968.83	1.10	154.40	9.26	60.13	8 39 21	3368.8	-2.88	147.87
110.00	16 10 0	2235.11	-33.43	39.06	16.23	97.57	16 47 15	1635.1	-32.03	30.12
110.00	8 16 3	3834.61	4.27	142.24	7.29	56.05	9 19 57	3234.6	-.22	136.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0681 TRA -.6035 TC3 2.4018 BAU .5774 SGT 2212.5 SGR 615.4 SG3 394.4 ST 281.7 SR 578.2 SS 393.8
RDE -.4257 RRA -.1222 RC3 .1519 FAU .11009 RRT .2642 RRF -.2984 RTF -.8598 CRT -.2409 CRS .9257 CST -.4760
FDE .4413 FRA -.3377 FC3-5.3114 BSP 7455 SGB 2296.5 R23 -.0556 R13 -.8612 LSA 695.1 MSA 278.9 SSA 88.0
BDE .4311 BRA .6158 BC3 2.4066 FSP 1182 SG1 2219.0 SG2 591.8 THA 4.53 EL1 583.3 EL2 271.0 ALF 98.56

LAUNCH DATE DEC 16 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 402.933 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.961 GAL 3.19 AZL 89.21 HCA 124.71 SMA 204.28 ECC .28441 INC .7881 V1 30.263
RP 239.26 LAP .65 LOP 208.79 VP 21.440 GAP 13.32 AZP 90.45 TAL 14.49 TAP 139.19 RCA 146.18 APO 262.38 V2 22.959
RC 173.485 GL 6.37 GP 3.79 ZAL 60.86 ZAP 162.87 ETS 166.11 ZAE 157.05 ETE 9.36 ZAC 94.04 ETC 255.81 CLP 163.28

PLANETOCENTRIC CONIC

C3 17.673 VHL 4.204 DLA 19.27 RAL 149.28 RAD 6567.7 VEL 11.792 PTH 2.08 VHP 7.071 DPA -.29 RAP 193.11 ECC 1.2909

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 56 37	2833.02	-28.28	84.24	15.43	91.60	13 43 50	2233.0	-27.75	75.61
90.00	6 21 25	4181.59	-.56	170.95	8.71	61.69	7 31 6	3581.6	-4.34	164.31
100.00	14 29 55	2532.17	-29.74	62.03	15.36	93.21	15 12 7	1932.2	-28.97	53.31
100.00	7 30 48	3957.68	.72	153.78	8.00	60.12	8 36 46	3357.7	-3.26	147.26
110.00	16 4 0	2237.80	-33.46	39.27	14.95	97.45	16 41 18	1637.8	-32.07	30.32
110.00	8 13 12	3824.81	3.89	141.73	6.02	56.01	9 16 57	3224.8	-.59	135.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0656 TRA -.5626 TC3 2.4892 BAU .5895 SGT 2246.8 SGR 613.7 SG3 415.4 ST 267.1 SR 575.5 SS 415.6
RDE -.4206 RRA -.1148 RC3 .1704 FAU .11479 RRT .2779 RRF -.3209 RTF -.8662 CRT -.2530 CRS .9179 CST -.5050
FDE .4704 FRA -.4103 FC3-5.6233 BSP 7310 SGB 2329.1 R23 -.0650 R13 -.8677 LSA 703.6 MSA 268.0 SSA 91.5
BDE .4257 BRA .5742 BC3 2.4950 FSP 1251 SG1 2253.7 SG2 587.7 THA 4.66 EL1 580.4 EL2 256.2 ALF 98.33

LAUNCH DATE DEC 16 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 406.249 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.902 GAL 3.28 AZL 89.24 HCA 125.66 SMA 203.04 ECC .28041 INC .7621 V1 30.263
RP 238.95 LAP .62 LOP 209.74 VP 21.382 GAP 12.77 AZP 90.44 TAL 15.07 TAP 140.73 RCA 146.11 APO 259.97 V2 22.991
RC 175.790 GL 6.19 GP 3.93 ZAL 59.83 ZAP 162.08 ETS 166.26 ZAE 157.65 ETE 10.12 ZAC 94.21 ETC 255.81 CLP 162.50

PLANETOCENTRIC CONIC

C3 17.427 VHL 4.175 DLA 19.45 RAL 148.20 RAD 6567.7 VEL 11.782 PTH 2.08 VHP 6.900 DPA -.24 RAP 193.32 ECC 1.2868

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 50 20	2837.12	-28.28	84.54	14.17	91.45	13 37 37	2237.1	-27.78	75.91
90.00	6 19 5	4170.99	-.90	170.36	7.49	61.70	7 28 36	3571.0	-4.67	163.72
100.00	14 23 50	2535.62	-29.75	62.29	14.10	93.08	15 6 6	1935.6	-29.00	53.57
100.00	7 28 16	3947.73	.38	153.24	6.77	60.11	8 34 3	3347.7	-3.60	146.71
110.00	15 58 18	2240.05	-33.48	39.44	13.70	97.35	16 35 38	1640.1	-32.10	30.48
110.00	8 10 17	3816.06	3.56	141.27	4.79	55.98	9 13 53	3216.1	-.93	135.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0453 TRA -.5412 TC3 2.5308 BAU .5913 SGT 2256.0 SGR 612.6 SG3 437.3 ST 252.5 SR 572.6 SS 438.1
RDE -.4158 RRA -.1072 RC3 .1904 FAU .11969 RRT .3063 RRF -.3455 RTF -.8661 CRT -.1671 CRS .9106 CST -.4501
FDE .5010 FRA -.4861 FC3-5.9458 BSP 7622 SGB 2337.7 R23 -.0644 R13 -.8678 LSA 709.7 MSA 266.8 SSA 93.0
BDE .4182 BRA .5517 BC3 2.5380 FSP 1328 SG1 2264.3 SG2 581.0 THA 5.09 EL1 574.5 EL2 248.1 ALF 95.18

LAUNCH DATE DEC 16 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 409.600 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.847 GAL 3.37 AZL 89.26 HCA 126.61 SMA 201.87 ECC .27662 INC .7353 V1 30.263
RP 238.63 LAP .59 LOP 210.69 VP 21.328 GAP 12.23 AZP 90.44 TAL 15.65 TAP 142.26 RCA 146.03 APO 257.72 V2 23.024
RC 178.086 GL 6.00 GP 4.07 ZAL 58.82 ZAP 161.27 ETS 166.40 ZAE 158.28 ETE 10.97 ZAC 94.38 ETC 255.80 CLP 161.70

PLANETOCENTRIC CONIC

C3 17.206 VHL 4.148 DLA 19.61 RAL 147.13 RAD 6567.7 VEL 11.772 PTH 2.08 VHP 6.734 DPA -.17 RAP 193.51 ECC 1.2832

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 44 22	2840.60	-28.29	84.79	12.94	91.33	13 31 43	2240.6	-27.80	76.16
90.00	6 16 34	4161.61	-1.20	169.84	6.30	61.71	7 25 56	3561.6	-4.97	163.19
100.00	14 18 3	2538.52	-29.76	62.51	12.88	92.96	15 0 22	1938.5	-29.03	53.78
100.00	7 25 35	3938.92	.08	152.76	5.58	60.11	8 31 14	3338.9	-3.89	146.23
110.00	15 52 52	2241.89	-33.49	39.58	12.49	97.26	16 30 14	1641.9	-32.13	30.62
110.00	8 7 15	3808.31	3.27	140.87	3.60	55.95	9 10 44	3208.3	-1.22	134.66

DIFFERENTIAL CORRECTIONS
TDE .0346 TRA -.5120 TC3 2.5864 BAU .5969
RDE -.4111 RRA -.0994 RC3 .2117 FAU .12485
FDE .5309 FRA -.5675 FC3-6.2821 BSP 7719
BDE .4125 BRA .5215 BC3 2.5950 FSP 1405

MID-COURSE EXECUTION ACCURACY
SGT 2273.7 SGR 612.0 SG3 460.4
RRT .3300 RRF -.3712 RTF -.8686
SGB 2354.6 R23 -.0689 R13 -.8704
SG1 2283.3 SG2 575.3 THA 5.42

ORBIT DETERMINATION ACCURACY
ST 239.1 SR 569.5 SS 459.8
CRT -.1246 CRS .9027 CST -.4299
LSA 717.6 MSA 262.8 SSA 94.7
EL1 570.5 EL2 236.8 ALF 93.62

LAUNCH DATE DEC 16 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 412.983 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.793 GAL 3.46 AZL 89.29 HCA 127.56 SMA 200.78 ECC .27303 INC .7076 V1 30.263
RP 238.31 LAP .56 LOP 211.64 VP 21.280 GAP 11.69 AZP 90.43 TAL 16.22 TAP 143.79 RCA 145.96 APO 255.60 V2 23.056
RC 180.373 GL 5.80 GP 4.23 ZAL 57.85 ZAP 160.43 ETS 166.52 ZAE 158.94 ETE 11.90 ZAC 94.56 ETC 255.80 CLP 160.88

PLANETOCENTRIC CONIC

C3 17.007 VHL 4.124 DLA 19.74 RAL 146.10 RAD 6567.7 VEL 11.764 PTH 2.08 VHP 6.571 DPA -.08 RAP 193.70 ECC 1.2799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 38 46	2843.37	-28.29	84.99	11.75	91.23	13 26 9	2243.4	-27.82	76.36
90.00	6 13 55	4153.46	-1.46	169.39	5.14	61.72	7 23 8	3553.5	-5.23	162.73
100.00	14 12 36	2540.80	-29.77	62.67	11.69	92.87	14 54 57	1940.8	-29.05	53.94
100.00	7 22 46	3931.27	-.17	152.34	4.42	60.11	8 28 17	3331.3	-4.15	145.81
110.00	15 47 42	2243.26	-33.51	39.69	11.30	97.20	16 25 5	1643.3	-32.15	30.72
110.00	8 4 9	3801.57	3.01	140.51	2.44	55.93	9 7 31	3201.6	-1.48	134.31

DIFFERENTIAL CORRECTIONS
TDE .0254 TRA -.4828 TC3 2.6397 BAU .6026
RDE -.4066 RRA -.0913 RC3 .2346 FAU .13030
FDE .5610 FRA -.6545 FC3-6.6331 BSP 7793
BDE .4074 BRA .4914 BC3 2.6501 FSP 1487

MID-COURSE EXECUTION ACCURACY
SGT 2291.2 SGR 612.1 SG3 484.7
RRT .3546 RRF -.3985 RTF -.8710
SGB 2371.5 R23 -.0741 R13 -.8731
SG1 2302.1 SG2 569.6 THA 5.77

ORBIT DETERMINATION ACCURACY
ST 226.3 SR 566.4 SS 481.2
CRT -.0851 CRS .8947 CST -.4105
LSA 725.9 MSA 259.6 SSA 96.1
EL1 566.7 EL2 225.4 ALF 92.31

LAUNCH DATE DEC 16 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 416.396 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.743 GAL 3.54 AZL 89.32 HCA 128.52 SMA 199.74 ECC .26964 INC .6792 V1 30.263
RP 237.98 LAP .53 LOP 212.60 VP 21.235 GAP 11.16 AZP 90.42 TAL 16.78 TAP 145.30 RCA 145.88 APO 253.60 V2 23.089
RC 182.651 GL 5.59 GP 4.39 ZAL 56.90 ZAP 159.58 ETS 166.62 ZAE 159.62 ETE 12.93 ZAC 94.74 ETC 255.79 CLP 160.04

PLANETOCENTRIC CONIC

C3 16.828 VHL 4.102 DLA 19.85 RAL 145.08 RAD 6567.7 VEL 11.756 PTH 2.08 VHP 6.413 DPA .02 RAP 193.87 ECC 1.2769

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 33 31	2845.43	-28.30	85.14	10.59	91.15	13 20 56	2245.4	-27.84	76.51
90.00	6 11 5	4146.53	-1.69	169.00	4.02	61.73	7 20 11	3546.5	-5.45	162.34
100.00	14 7 28	2542.44	-29.77	62.80	10.54	92.81	14 49 51	1942.4	-29.06	54.06
100.00	7 19 48	3924.75	-.40	151.98	3.30	60.11	8 25 13	3324.8	-4.37	145.45
110.00	15 42 49	2244.15	-33.51	39.76	10.15	97.16	16 20 13	1644.1	-32.16	30.79
110.00	8 0 57	3795.81	2.79	140.21	1.31	55.92	9 4 13	3195.8	-1.70	134.01

DIFFERENTIAL CORRECTIONS
TDE .0227 TRA -.4486 TC3 2.6994 BAU .6101
RDE -.4022 RRA -.0829 RC3 .2590 FAU .13606
FDE .5890 FRA -.7489 FC3-6.9996 BSP 7740
BDE .4028 BRA .4562 BC3 2.7118 FSP 1570

MID-COURSE EXECUTION ACCURACY
SGT 2312.9 SGR 613.0 SG3 510.4
RRT .3772 RRF -.4268 RTF -.8748
SGB 2392.8 R23 -.0819 R13 -.8772
SG1 2325.2 SG2 564.8 THA 6.07

ORBIT DETERMINATION ACCURACY
ST 213.0 SR 562.9 SS 501.1
CRT -.0836 CRS .8856 CST -.4224
LSA 734.0 MSA 254.9 SSA 97.8
EL1 563.3 EL2 212.1 ALF 92.11

LAUNCH DATE DEC 16 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 419.837 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.695 GAL 3.62 AZL 89.35 HCA 129.48 SMA 198.77 ECC .26644 INC .6499 V1 30.263
RP 237.65 LAP .50 LOP 213.56 VP 21.195 GAP 10.63 AZP 90.41 TAL 17.33 TAP 146.81 RCA 145.81 APO 251.73 V2 23.123
RC 184.919 GL 5.36 GP 4.55 ZAL 55.98 ZAP 158.71 ETS 166.71 ZAE 160.33 ETE 14.09 ZAC 94.93 ETC 255.79 CLP 159.18

PLANETOCENTRIC CONIC

C3 16.667 VHL 4.082 DLA 19.93 RAL 144.10 RAD 6567.7 VEL 11.749 PTH 2.07 VHP 6.259 DPA .13 RAP 194.03 ECC 1.2743

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 28 39	2846.67	-28.30	85.23	9.47	91.10	13 16 5	2246.7	-27.84	76.60
90.00	6 8 5	4140.87	-1.87	168.68	2.93	61.74	7 17 6	3540.9	-5.63	162.02
100.00	14 2 42	2543.37	-29.78	62.87	9.41	92.77	14 45 6	1943.4	-29.07	54.13
100.00	7 16 43	3919.40	-.58	151.69	2.21	60.11	8 22 2	3319.4	-4.55	145.15
110.00	15 38 14	2244.50	-33.52	39.78	9.03	97.15	16 15 39	1644.5	-32.17	30.81
110.00	7 57 40	3791.04	2.61	139.96	.22	55.90	9 0 51	3191.0	-1.88	133.76

DIFFERENTIAL CORRECTIONS
TDE .0104 TRA -.4262 TC3 2.7302 BAU .6116
RDE -.3980 RRA -.0743 RC3 .2850 FAU .14197
FDE .6203 FRA -.8457 FC3-7.3746 BSP 7922
BDE .3981 BRA .4326 BC3 2.7450 FSP 1663

MID-COURSE EXECUTION ACCURACY
SGT 2318.2 SGR 615.1 SG3 536.9
RRT .4075 RRF -.4571 RTF -.8752
SGB 2398.5 R23 -.0859 R13 -.8779
SG1 2332.6 SG2 558.3 THA 6.55

ORBIT DETERMINATION ACCURACY
ST 202.8 SR 559.6 SS 522.7
CRT -.0116 CRS .8782 CST -.3720
LSA 743.2 MSA 256.2 SSA 97.4
EL1 559.6 EL2 202.8 ALF 90.28

LAUNCH DATE DEC 16 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 423.306 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.649	GAL	3.70	AZL	89.38	HCA	130.44	SMA	197.85	ECC	.26342	INC	.6198	V1	30.263
RP	237.31	LAP	.47	LOP	214.52	VP	21.159	GAP	10.11	AZP	90.40	TAL	17.87	TAP	148.30	RCA	145.74	APO	249.97	V2	23.157
RC	187.176	GL	5.13	GP	4.73	ZAL	55.10	ZAP	157.82	ETS	166.79	ZAE	161.06	ETE	15.38	ZAC	95.12	ETC	255.78	CLP	158.30

PLANETOCENTRIC CONIC

C3	16.522	VHL	4.065	DLA	19.99	RAL	143.14	RAD	6567.7	VEL	11.743	PTH	2.07	VHP	6.110	DPA	.26	RAP	194.18	ECC	1.2719

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 24 9	2847.14	-28.30	85.27	8.38	91.09	13 11 37	2247.1	-27.85	76.63
90.00	6 4 56	4136.41	-2.01	168.43	1.87	61.75	7 13 52	3536.4	-5.78	161.77
100.00	13 58 17	2543.60	-29.78	62.88	8.32	92.77	14 40 41	1943.6	-29.07	54.15
100.00	7 13 29	3915.18	-.72	151.45	1.15	60.12	8 18 44	3315.2	-4.69	144.92
110.00	15 33 57	2244.31	-33.52	39.77	7.94	97.16	16 11 21	1644.3	-32.16	30.80
110.00	7 54 19	3787.23	2.46	139.77	359.16	55.89	8 57 26	3187.2	-2.03	133.56

DIFFERENTIAL CORRECTIONS

TDE	.0046	TRA	-.3996	TC3	2.7672	BAU	.6151
RDE	-.3938	RRA	-.0653	RC3	.3127	FAU	.14821
FDE	.6497	FRA	-.9496	FC3	-7.7657	BSP	7976
BDE	.3938	BRA	.4049	BC3	2.7848	FSP	1759

MID-COURSE EXECUTION ACCURACY

SGT	2328.1	SGR	618.4	SG3	564.7		
RRT	.4355	RRF	-.4883	RTF	-.8768		
SGB	2408.8	R23	-.0929	R13	-.8799		
SG1	2344.5	SG2	552.7	THA	6.99		

ORBIT DETERMINATION ACCURACY

ST	192.2	SR	556.0	SS	542.8		
CRT	.0206	CRS	.8699	CST	-.3542		
LSA	752.0	MSA	256.1	SSA	97.4		
EL1	556.0	EL2	192.1	ALF	89.54		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 426.800 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.605	GAL	3.77	AZL	89.41	HCA	131.40	SMA	196.99	ECC	.26056	INC	.5887	V1	30.263
RP	236.98	LAP	.44	LOP	215.48	VP	21.127	GAP	9.60	AZP	90.39	TAL	18.39	TAP	149.79	RCA	145.66	APO	248.32	V2	23.191
RC	189.421	GL	4.88	GP	4.92	ZAL	54.25	ZAP	156.90	ETS	166.86	ZAE	161.81	ETE	16.84	ZAC	95.31	ETC	255.78	CLP	157.40

PLANETOCENTRIC CONIC

C3	16.393	VHL	4.049	DLA	20.03	RAL	142.21	RAD	6567.7	VEL	11.738	PTH	2.07	VHP	5.964	DPA	.40	RAP	194.31	ECC	1.2698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 20 3	2846.77	-28.30	85.24	7.32	91.10	13 7 30	2246.8	-27.84	76.61
90.00	6 1 36	4133.17	-2.12	168.25	.84	61.76	7 10 29	3533.2	-5.88	161.59
100.00	13 54 14	2543.10	-29.77	62.85	7.27	92.79	14 36 37	1943.1	-29.07	54.11
100.00	7 10 7	3912.07	-.83	151.28	.12	60.12	8 15 19	3312.1	-4.80	144.75
110.00	15 29 58	2243.57	-33.51	39.71	6.88	97.19	16 7 22	1643.6	-32.15	30.75
110.00	7 50 52	3784.37	2.35	139.62	358.13	55.89	8 53 56	3184.4	-2.14	133.41

DIFFERENTIAL CORRECTIONS

TDE	.0000	TRA	-.3734	TC3	2.8007	BAU	.6183
RDE	-.3898	RRA	-.0559	RC3	.3423	FAU	.15477
FDE	.6786	FRA	-1.0601	FC3	-8.1739	BSP	8018
BDE	.3898	BRA	.3775	BC3	2.8215	FSP	1860

MID-COURSE EXECUTION ACCURACY

SGT	2336.5	SGR	623.0	SG3	594.1		
RRT	.4643	RRF	-.5205	RTF	-.8784		
SGB	2418.2	R23	-.1004	R13	-.8819		
SG1	2355.4	SG2	547.4	THA	7.46		

ORBIT DETERMINATION ACCURACY

ST	181.9	SR	552.2	SS	562.4		
CRT	.0477	CRS	.8616	CST	-.3393		
LSA	761.0	MSA	256.6	SSA	97.0		
EL1	552.3	EL2	181.7	ALF	88.99		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 430.319 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.563	GAL	3.84	AZL	89.44	HCA	132.37	SMA	196.18	ECC	.25786	INC	.5566	V1	30.263
RP	236.64	LAP	.41	LOP	216.45	VP	21.099	GAP	9.10	AZP	90.38	TAL	18.90	TAP	151.26	RCA	145.59	APO	246.76	V2	23.226
RC	191.655	GL	4.63	GP	5.12	ZAL	53.42	ZAP	155.96	ETS	166.92	ZAE	162.58	ETE	18.49	ZAC	95.52	ETC	255.77	CLP	156.48

PLANETOCENTRIC CONIC

C3	16.276	VHL	4.034	DLA	20.04	RAL	141.31	RAD	6567.7	VEL	11.733	PTH	2.07	VHP	5.822	DPA	.57	RAP	194.43	ECC	1.2679

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 16 20	2845.56	-28.30	85.15	6.30	91.15	13 3 46	2245.6	-27.84	76.52
90.00	5 58 7	4131.14	-2.18	168.14	359.84	61.76	7 6 58	3531.1	-5.94	161.48
100.00	13 50 32	2541.85	-29.77	62.75	6.24	92.83	14 32 53	1941.9	-29.06	54.02
100.00	7 6 37	3910.08	-.89	151.17	359.13	60.12	8 11 47	3310.1	-4.86	144.64
110.00	15 26 17	2242.25	-33.50	39.61	5.86	97.25	16 3 39	1642.3	-32.13	30.65
110.00	7 47 20	3782.44	2.28	139.52	357.14	55.88	8 50 23	3182.4	-2.21	133.31

DIFFERENTIAL CORRECTIONS

TDE	-.0021	TRA	-.3473	TC3	2.8309	BAU	.6214
RDE	-.3857	RRA	-.0460	RC3	.3740	FAU	.16167
FDE	.7058	FRA	-1.1777	FC3	-8.5991	BSP	8026
BDE	.3857	BRA	.3503	BC3	2.8555	FSP	1964

MID-COURSE EXECUTION ACCURACY

SGT	2343.7	SGR	629.2	SG3	624.9		
RRT	.4932	RRF	-.5535	RTF	-.8799		
SGB	2426.7	R23	-.1090	R13	-.8839		
SG1	2365.3	SG2	542.4	THA	7.96		

ORBIT DETERMINATION ACCURACY

ST	171.8	SR	548.2	SS	580.8		
CRT	.0585	CRS	.8527	CST	-.3374		
LSA	769.4	MSA	257.4	SSA	96.5		
EL1	548.3	EL2	171.5	ALF	88.84		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 433.861 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.524	GAL	3.91	AZL	89.48	HCA	133.34	SMA	195.41	ECC	.25531	INC	.5232	V1	30.263
RP	236.29	LAP	.38	LOP	217.42	VP	21.075	GAP	8.61	AZP	90.36	TAL	19.39	TAP	152.73	RCA	145.52	APO	245.30	V2	23.261
RC	193.877	GL	4.36	GP	5.33	ZAL	52.63	ZAP	154.99	ETS	166.97	ZAE	163.36	ETE	20.38	ZAC	95.73	ETC	255.77	CLP	155.53

PLANETOCENTRIC CONIC

C3	16.172	VHL	4.021	DLA	20.02	RAL	140.43	RAD	6567.6	VEL	11.728	PTH	2.07	VHP	5.684	DPA	.75	RAP	194.54	ECC	1.2662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 13 1	2843.49	-28.29	85.00	5.31	91.22	13 0 24	2243.5	-27.82	76.37
90.00	5 54 28	4130.28	-2.21	168.09	358.87	61.76	7 3 18	3530.3	-5.97	161.43
100.00	13 47 11	2539.84	-29.76	62.60	5.25	92.91	14 29 31	1939.8	-29.04	53.87
100.00	7 2 59	3909.17	-.92	151.12	358.16	60.12	8 8 8	3309.2	-4.89	144.59
110.00	15 22 55	2240.34	-33.48	39.47	4.85	97.33	16 0 15	1640.3	-32.11	30.50
110.00	7 43 44	3781.43	2.24	139.46	356.18	55.88	8 46 46	3181.4	-2.25	133.26

DIFFERENTIAL CORRECTIONS

TDE	.0012	TRA	-.3182	TC3	2.8663	BAU	.6260
RDE	-.3816	RRA	-.0355	RC3	.4081	FAU	.16901
FDE	.7296	FRA	-1.3048	FC3	-9.0475	BSP	7914
BDE	.3816	BRA	.3202	BC3	2.8952	FSP	2067

MID-COURSE EXECUTION ACCURACY

SGT	2355.3	SGR	637.3	SG3	657.7		
RRT	.5208	RRF	-.5869	RTF	-.8823		
SGB	2440.0	R23	-.1195	R13	-.8868		
SG1	2379.8	SG2	538.5	THA	8.46		

ORBIT DETERMINATION ACCURACY

ST	160.4	SR	544.0	SS	597.5		
CRT	.0237	CRS	.8426	CST	-.3721		
LSA	776.6	MSA	257.4	SSA	96.3		
EL1	544.0	EL2	160.4	ALF	89.56		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 437.424 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.486 GAL 3.97 AZL 89.51 HCA 134.31 SMA 194.68 ECC .25291 INC .4888 V1 30.263
RP 235.94 LAP .35 LOP 218.39 VP 21.054 GAP 8.12 AZP 90.34 TAL 19.87 TAP 154.18 RCA 145.45 APO 243.92 V2 23.297
RC 196.086 GL 4.08 GP 5.55 ZAL 51.87 ZAP 154.00 ETS 167.02 ZAE 164.16 ETE 22.53 ZAC 95.94 ETC 255.76 CLP 154.56

PLANETOCENTRIC CONIC

C3 16.079 VHL 4.010 DLA 19.98 RAL 139.59 RAD 6567.6 VEL 11.724 PTH 2.07 VHP 5.550 DPA .95 RAP 194.63 ECC 1.2646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 10 6	2840.50	-28.29	84.78	4.35	91.33	12 57 27	2240.5	-27.80	76.15
90.00	5 50 39	4130.63	-2.20	168.11	357.94	61.76	6 59 29	3530.6	-5.96	161.45
100.00	13 44 13	2537.00	-29.75	62.39	4.28	93.02	14 26 30	1937.0	-29.02	53.67
100.00	6 59 13	3909.36	-.92	151.13	357.23	60.12	8 4 22	3309.4	-4.89	144.60
110.00	15 19 52	2237.79	-33.46	39.27	3.88	97.45	15 57 9	1637.8	-32.07	30.32
110.00	7 40 4	3781.34	2.24	139.46	355.26	55.88	8 43 5	3181.3	-2.25	133.25

DIFFERENTIAL CORRECTIONS
TDE -.0074 TRA -.3031 TC3 2.8630 BAU .6228
RDE -.3778 RRA -.0247 RC3 .4436 FAU .17630
FDE .7598 FRA-1.4314 FC3-9.4927 BSP 8100
BDE .3779 BRA .3041 BC3 2.8971 FSP 2192

MID-COURSE EXECUTION ACCURACY
SGT 2341.8 SGR 647.6 SG3 690.5
RRT .5538 RRF -.6207 RTF -.8810
SGB 2429.7 R23 -.1275 R13 -.8862
SG1 2370.6 SG2 532.7 THA 9.17

ORBIT DETERMINATION ACCURACY
ST 154.8 SR 540.0 SS 617.3
CRT .0956 CRS .8359 CST -.3165
LSA 786.8 MSA 262.1 SSA 94.1
EL1 540.3 EL2 154.0 ALF 88.29

LAUNCH DATE DEC 16 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 441.008 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.450 GAL 4.03 AZL 89.55 HCA 135.28 SMA 194.00 ECC .25063 INC .4532 V1 30.263
RP 235.59 LAP .32 LOP 219.37 VP 21.037 GAP 7.64 AZP 90.32 TAL 20.33 TAP 155.62 RCA 145.38 APO 242.62 V2 23.333
RC 198.280 GL 3.79 GP 5.78 ZAL 51.15 ZAP 152.98 ETS 167.05 ZAE 164.95 ETE 25.01 ZAC 96.16 ETC 255.76 CLP 153.56

PLANETOCENTRIC CONIC

C3 15.995 VHL 3.999 DLA 19.92 RAL 138.77 RAD 6567.6 VEL 11.721 PTH 2.07 VHP 5.420 DPA 1.17 RAP 194.71 ECC 1.2632

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 7 35	2836.63	-28.28	84.50	3.41	91.47	12 54 51	2236.6	-27.78	75.87
90.00	5 46 40	4132.12	-2.15	168.19	357.03	61.76	6 55 32	3532.1	-5.91	161.53
100.00	13 41 37	2533.38	-29.74	62.12	3.35	93.16	14 23 50	1933.4	-28.98	53.40
100.00	6 55 19	3910.60	-.88	151.20	356.32	60.12	8 0 29	3310.6	-4.85	144.66
110.00	15 17 7	2234.62	-33.43	39.03	2.94	97.59	15 54 21	1634.6	-32.02	30.08
110.00	7 36 18	3782.13	2.27	139.50	354.36	55.88	8 39 20	3182.1	-2.22	133.29

DIFFERENTIAL CORRECTIONS
TDE -.0074 TRA -.2828 TC3 2.8722 BAU .6228
RDE -.3738 RRA -.0132 RC3 .4820 FAU .18414
FDE .7841 FRA-1.5682 FC3-9.9666 BSP 8106
BDE .3739 BRA .2831 BC3 2.9124 FSP 2313

MID-COURSE EXECUTION ACCURACY
SGT 2337.5 SGR 660.2 SG3 725.6
RRT .5833 RRF -.6542 RTF -.8812
SGB 2428.9 R23 -.1385 R13 -.8872
SG1 2370.7 SG2 528.7 THA 9.85

ORBIT DETERMINATION ACCURACY
ST 146.9 SR 535.7 SS 634.0
CRT .0919 CRS .8273 CST -.3235
LSA 794.9 MSA 264.6 SSA 92.8
EL1 535.8 EL2 146.2 ALF 88.44

LAUNCH DATE DEC 16 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 444.612 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.416 GAL 4.09 AZL 89.58 HCA 136.26 SMA 193.36 ECC .24849 INC .4162 V1 30.263
RP 235.24 LAP .29 LOP 220.34 VP 21.023 GAP 7.16 AZP 90.30 TAL 20.78 TAP 157.04 RCA 145.31 APO 241.40 V2 23.369
RC 200.460 GL 3.48 GP 6.03 ZAL 50.45 ZAP 151.94 ETS 167.08 ZAE 165.74 ETE 27.88 ZAC 96.39 ETC 255.75 CLP 152.54

PLANETOCENTRIC CONIC

C3 15.919 VHL 3.990 DLA 19.83 RAL 137.99 RAD 6567.6 VEL 11.718 PTH 2.06 VHP 5.293 DPA 1.41 RAP 194.77 ECC 1.2620

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 5 26	2831.85	-28.27	84.15	2.51	91.65	12 52 38	2231.8	-27.75	75.52
90.00	5 42 31	4134.76	-2.07	168.35	356.15	61.75	6 51 25	3534.8	-5.83	161.68
100.00	13 39 23	2528.95	-29.72	61.80	2.44	93.34	14 21 31	1928.9	-28.94	53.08
100.00	6 51 17	3912.89	-.80	151.33	355.45	60.12	7 56 29	3312.9	-4.77	144.79
110.00	15 14 40	2230.81	-33.40	38.73	2.02	97.76	15 51 51	1630.8	-31.96	29.80
110.00	7 32 28	3783.80	2.33	139.59	353.49	55.89	8 35 32	3183.8	-2.16	133.38

DIFFERENTIAL CORRECTIONS
TDE -.0061 TRA -.2627 TC3 2.8754 BAU .6220
RDE -.3698 RRA -.0009 RC3 .5230 FAU .19230
FDE .8070 FRA-1.7147 FC-10.4578 BSP 8103
BDE .3698 BRA .2627 BC3 2.9226 FSP 2441

MID-COURSE EXECUTION ACCURACY
SGT 2329.3 SGR 675.4 SG3 762.3
RRT .6121 RRF -.6872 RTF -.8812
SGB 2425.3 R23 -.1503 R13 -.8882
SG1 2367.7 SG2 525.5 THA 10.59

ORBIT DETERMINATION ACCURACY
ST 138.9 SR 531.1 SS 650.4
CRT .0754 CRS .8184 CST -.3396
LSA 802.9 MSA 267.3 SSA 91.4
EL1 531.2 EL2 138.5 ALF 88.79

LAUNCH DATE DEC 16 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 448.236 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.384 GAL 4.15 AZL 89.62 HCA 137.24 SMA 192.75 ECC .24646 INC .3777 V1 30.263
RP 234.89 LAP .26 LOP 221.32 VP 21.012 GAP 6.70 AZP 90.28 TAL 21.21 TAP 158.45 RCA 145.24 APO 240.25 V2 23.405
RC 202.623 GL 3.16 GP 6.29 ZAL 49.79 ZAP 150.86 ETS 167.10 ZAE 166.52 ETE 31.21 ZAC 96.63 ETC 255.74 CLP 151.49

PLANETOCENTRIC CONIC

C3 15.852 VHL 3.981 DLA 19.71 RAL 137.23 RAD 6567.6 VEL 11.715 PTH 2.06 VHP 5.171 DPA 1.67 RAP 194.82 ECC 1.2609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 3 42	2826.15	-28.26	83.73	1.63	91.86	12 50 48	2226.2	-27.70	75.11
90.00	5 38 13	4138.52	-1.95	168.55	355.30	61.74	6 47 12	3538.5	-5.71	161.89
100.00	13 37 30	2523.68	-29.70	61.41	1.55	93.54	14 19 33	1923.7	-28.89	52.69
100.00	6 47 7	3916.23	-.69	151.51	354.60	60.11	7 52 23	3316.2	-4.66	144.98
110.00	15 12 32	2226.33	-33.35	38.39	1.12	97.96	15 49 38	1626.3	-31.90	29.47
110.00	7 28 33	3786.34	2.43	139.72	352.65	55.89	8 31 40	3186.3	-2.06	133.51

DIFFERENTIAL CORRECTIONS
TDE -.0016 TRA -.2432 TC3 2.8782 BAU .6217
RDE -.3655 RRA .0122 RC3 .5672 FAU .20091
FDE .8253 FRA-1.8685 FC-10.9726 BSP 8032
BDE .3656 BRA .2435 BC3 2.9335 FSP 2569

MID-COURSE EXECUTION ACCURACY
SGT 2321.8 SGR 693.6 SG3 800.8
RRT .6392 RRF -.7193 RTF -.8813
SGB 2423.2 R23 -.1634 R13 -.8894
SG1 2366.0 SG2 523.4 THA 11.37

ORBIT DETERMINATION ACCURACY
ST 131.0 SR 526.3 SS 664.6
CRT .0224 CRS .8086 CST -.3834
LSA 809.3 MSA 269.7 SSA 90.3
EL1 526.3 EL2 131.0 ALF 89.66

LAUNCH DATE DEC 16 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 451.878 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.353	GAL	4.20	AZL	89.66	HCA	138.23	SMA	192.18	ECC	.24455	INC	.3379	V1	30.263
RP	234.53	LAP	.22	LOP	222.31	VP	21.004	GAP	6.24	AZP	90.25	TAL	21.63	TAP	159.85	RCA	145.18	APO	239.17	V2	23.442
RC	204.770	GL	2.83	GP	6.56	ZAL	49.16	ZAP	149.76	ETS	167.12	ZAE	167.27	ETE	35.08	ZAC	96.88	ETC	255.74	CLP	150.41

PLANETOCENTRIC CONIC

C3	15.791	VHL	3.974	DLA	19.57	RAL	136.50	RAD	6567.6	VEL	11.712	PTH	2.06	VHP	5.051	DPA	1.96	RAP	194.85	ECC	1.2599

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 2 20	2819.51	-28.25	83.25	.78	92.10	12 49 20	2219.5	-27.66	74.63
90.00	5 33 46	4143.41	-1.79	168.82	354.47	61.73	6 42 49	3543.4	-5.55	162.17
100.00	13 35 59	2517.56	-29.67	60.95	.69	93.78	14 17 56	1917.6	-28.84	52.25
100.00	6 42 49	3920.59	-.54	151.75	353.78	60.11	7 48 9	3320.6	-4.51	145.22
110.00	15 10 43	2221.17	-33.30	38.00	.25	98.19	15 47 44	1621.2	-31.82	29.09
110.00	7 24 34	3789.75	2.56	139.90	351.84	55.90	8 27 44	3189.7	-1.93	133.69

DIFFERENTIAL CORRECTIONS

TDE	-.0006	TRA	-.2295	TC3	2.8619	BAU	.6179
RDE	-.3615	RRA	.0259	RC3	.6136	FAU	.20962
FDE	.8459	FRA	-2.0265	FC	-11.4925	BSP	8069
BDE	.3615	BRA	.2310	BC3	2.9269	FSP	2715

MID-COURSE EXECUTION ACCURACY

SGT	2301.4	SGR	714.9	SG3	840.0		
RRT	.6660	RRF	-.7500	RTF	-.8798		
SGB	2409.9	R23	-.1772	R13	-.8894		
SG1	2352.8	SG2	521.6	THA	12.30		

ORBIT DETERMINATION ACCURACY

ST	125.5	SR	521.5	SS	680.1
CRT	.0026	CRS	.8007	CST	-.4005
LSA	817.3	MSA	272.8	SSA	88.6
EL1	521.5	EL2	125.5	ALF	89.96

LAUNCH DATE DEC 16 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 455.537 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.324	GAL	4.25	AZL	89.70	HCA	139.21	SMA	191.64	ECC	.24275	INC	.2958	V1	30.263
RP	234.17	LAP	.19	LOP	223.29	VP	20.999	GAP	5.79	AZP	90.22	TAL	22.02	TAP	161.24	RCA	145.12	APO	238.16	V2	23.479
RC	206.900	GL	2.48	GP	6.85	ZAL	48.56	ZAP	148.62	ETS	167.14	ZAE	167.97	ETE	39.60	ZAC	97.14	ETC	255.73	CLP	149.31

PLANETOCENTRIC CONIC

C3	15.736	VHL	3.967	DLA	19.41	RAL	135.80	RAD	6567.6	VEL	11.710	PTH	2.06	VHP	4.936	DPA	2.28	RAP	194.86	ECC	1.2590

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 1 22	2811.94	-28.23	82.70	359.95	92.38	12 48 14	2211.9	-27.60	74.09
90.00	5 29 8	4149.41	-1.59	169.16	353.68	61.72	6 38 18	3549.4	-5.36	162.51
100.00	13 34 49	2510.59	-29.64	60.44	359.86	94.05	14 16 40	1910.6	-28.77	51.74
100.00	6 38 23	3925.98	-.35	152.05	352.99	60.11	7 43 49	3326.0	-4.33	145.51
110.00	15 9 12	2215.32	-33.25	37.55	359.40	98.44	15 46 7	1615.3	-31.72	28.65
110.00	7 20 29	3794.02	2.72	140.12	351.06	55.91	8 23 43	3194.0	-1.77	133.92

DIFFERENTIAL CORRECTIONS

TDE	.0045	TRA	-.2154	TC3	2.8466	BAU	.6149
RDE	-.3571	RRA	.0406	RC3	.6639	FAU	.21887
FDE	.8597	FRA	-2.1952	FC	-12.0416	BSP	8015
BDE	.3571	BRA	.2192	BC3	2.9230	FSP	2857

MID-COURSE EXECUTION ACCURACY

SGT	2282.4	SGR	739.8	SG3	881.6		
RRT	.6904	RRF	-.7792	RTF	-.8785		
SGB	2399.3	R23	-.1922	R13	-.8898		
SG1	2341.9	SG2	521.6	THA	13.28		

ORBIT DETERMINATION ACCURACY

ST	120.1	SR	516.3	SS	693.1
CRT	-.0662	CRS	.7910	CST	-.4529
LSA	823.3	MSA	275.7	SSA	87.2
EL1	516.4	EL2	119.8	ALF	90.93

LAUNCH DATE DEC 16 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 459.214 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.296	GAL	4.30	AZL	89.75	HCA	140.20	SMA	191.13	ECC	.24104	INC	.2520	V1	30.263
RP	233.80	LAP	.16	LOP	224.28	VP	20.998	GAP	5.35	AZP	90.19	TAL	22.40	TAP	162.61	RCA	145.06	APO	237.20	V2	23.517
RC	209.011	GL	2.12	GP	7.16	ZAL	47.99	ZAP	147.46	ETS	167.15	ZAE	168.61	ETE	44.84	ZAC	97.41	ETC	255.72	CLP	148.17

PLANETOCENTRIC CONIC

C3	15.686	VHL	3.961	DLA	19.22	RAL	135.13	RAD	6567.6	VEL	11.708	PTH	2.06	VHP	4.824	DPA	2.62	RAP	194.86	ECC	1.2581

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 0 47	2803.40	-28.20	82.07	359.14	92.69	12 47 30	2203.4	-27.53	73.47
90.00	5 24 21	4156.50	-1.37	169.56	352.90	61.71	6 33 38	3556.5	-5.14	162.90
100.00	13 34 1	2502.74	-29.60	59.86	359.04	94.35	14 15 44	1902.7	-28.69	51.17
100.00	6 33 48	3932.39	-.14	152.40	352.22	60.11	7 39 21	3332.4	-4.11	145.87
110.00	15 7 59	2208.75	-33.18	37.05	358.56	98.73	15 44 48	1608.8	-31.62	28.17
110.00	7 16 20	3799.15	2.92	140.39	350.31	55.93	8 19 39	3199.2	-1.57	134.18

DIFFERENTIAL CORRECTIONS

TDE	.0102	TRA	-.2032	TC3	2.8240	BAU	.6110
RDE	-.3526	RRA	.0564	RC3	.7175	FAU	.22840
FDE	.8716	FRA	-2.3715	FC	-12.6058	BSP	7952
BDE	.3527	BRA	.2109	BC3	2.9138	FSP	3006

MID-COURSE EXECUTION ACCURACY

SGT	2258.5	SGR	768.6	SG3	924.5		
RRT	.7126	RRF	-.8065	RTF	-.8767		
SGB	2385.7	R23	-.2082	R13	-.8901		
SG1	2327.6	SG2	523.2	THA	14.37		

ORBIT DETERMINATION ACCURACY

ST	115.9	SR	511.0	SS	705.8
CRT	-.1492	CRS	.7818	CST	-.5112
LSA	829.4	MSA	278.5	SSA	85.8
EL1	511.3	EL2	114.6	ALF	92.04

LAUNCH DATE DEC 16 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 462.907 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.270	GAL	4.34	AZL	89.79	HCA	141.20	SMA	190.65	ECC	.23944	INC	.2063	V1	30.263
RP	233.44	LAP	.13	LOP	225.28	VP	20.998	GAP	4.91	AZP	90.16	TAL	22.77	TAP	163.96	RCA	145.00	APO	236.30	V2	23.555
RC	211.104	GL	1.73	GP	7.49	ZAL	47.46	ZAP	146.26	ETS	167.15	ZAE	169.15	ETE	50.87	ZAC	97.69	ETC	255.71	CLP	147.00

PLANETOCENTRIC CONIC

C3	15.640	VHL	3.955	DLA	19.00	RAL	134.48	RAD	6567.6	VEL	11.706	PTH	2.06	VHP	4.716	DPA	2.99	RAP	194.83	ECC	1.2574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 0 34	2793.89	-28.17	81.38	358.36	93.03	12 47 8	2193.9	-27.45	72.79
90.00	5 19 24	4164.70	-1.10	170.01	352.15	61.70	6 28 49	3564.7	-4.88	163.37
100.00	13 33 34	2494.00	-29.56	59.21	358.25	94.69	14 15 8	1894.0	-28.59	50.54
100.00	6 29 6	3939.83	.12	152.81	351.48	60.11	7 34 45	3339.8	-3.86	146.28
110.00	15 7 5	2201.44	-33.10	36.49	357.75	99.06	15 43 46	1601.4	-31.50	27.63
110.00	7 12 4	3805.15	3.15	140.70	349.58	55.94	8 15 29	3205.2	-1.34	134.50

DIFFERENTIAL CORRECTIONS

TDE	.0171	TRA	-.1935	TC3	2.7929	BAU	.6060
RDE	-.3478	RRA	.0732	RC3	.7749	FAU	.23825
FDE	.8784	FRA	-2.5556	FC	-13.1875	BSP	7895
BDE	.3483	BRA	.2068	BC3	2.8984	FSP	3163

MID-COURSE EXECUTION ACCURACY

SGT	2229.0	SGR	801.4	SG3	968.9		
RRT	.7324	RRF	-.8317	RTF	-.8741		
SGB	2368.7	R23	-.2252	R13	-.8902		
SG1	2309.4	SG2	526.7	THA	15.58		

ORBIT DETERMINATION ACCURACY

ST	113.6	SR	505.4	SS	717.2
CRT	-.2486	CRS	.7719	CST	-.5765
LSA	834.5	MSA	281.3	SSA	84.4
EL1	506.2	EL2	109.9	ALF	93.36

LAUNCH DATE DEC 16 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 466.616 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.245 GAL 4.38 AZL 89.84 HCA 142.19 SMA 190.20 ECC .23792 INC .1583 V1 30.263
RP 233.07 LAP .10 LOP 226.27 VP 21.002 GAP 4.48 AZP 90.13 TAL 23.11 TAP 165.30 RCA 144.94 APO 235.45 V2 23.593
RC 213.179 GL 1.33 GP 7.84 ZAL 46.95 ZAP 145.03 ETS 167.16 ZAE 169.56 ETE 57.69 ZAC 97.99 ETC 255.71 CLP 145.81

PLANETOCENTRIC CONIC

C3 15.599 VHL 3.950 DLA 18.75 RAL 133.86 RAD 6567.6 VEL 11.704 PTH 2.06 VHP 4.612 DPA 3.39 RAP 194.80 ECC 1.2567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 0 45	2783.39	-28.13	80.61	357.59	93.42	12 47 8	2183.4	-27.36	72.03
90.00	5 14 17	4174.01	-.80	170.53	351.43	61.69	6 23 51	3574.0	-4.58	163.89
100.00	13 33 29	2484.34	-29.50	58.50	357.47	95.06	14 14 53	1884.3	-28.49	49.84
100.00	6 24 14	3948.29	.40	153.27	350.76	60.11	7 30 2	3348.3	-3.58	146.74
110.00	15 6 29	2193.36	-33.02	35.88	356.95	99.41	15 43 2	1593.4	-31.36	27.04
110.00	7 7 43	3812.04	3.41	141.06	348.88	55.97	8 11 15	3212.0	-1.08	134.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0248 TRA -.1860 TC3 2.7534 BAU .6001 SGT 2193.8 SGR 838.6 SG3 1014.7 ST 113.4 SR 499.5 SS 727.9
RDE -.3429 RRA .0913 RC3 .8362 FAU .24838 RRT .7495 RRF -.8547 RTF -.8708 CRT -.3567 CRS .7621 CST -.6405
FDE .8814 FRA-2.7483 FC-13.7849 BSP 7828 SGB 2348.6 R23 -.2428 R13 -.8902 LSA 839.5 MSA 284.0 SSA 82.9
BDE .3438 BRA .2072 BC3 2.8776 FSP 3327 SG1 2287.5 SG2 532.4 THA 16.93 EL1 501.3 EL2 105.6 ALF 94.84

LAUNCH DATE DEC 16 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 470.340 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.221 GAL 4.42 AZL 89.89 HCA 143.19 SMA 189.77 ECC .23649 INC .1081 V1 30.263
RP 232.70 LAP .07 LOP 227.27 VP 21.008 GAP 4.06 AZP 90.09 TAL 23.44 TAP 166.63 RCA 144.89 APO 234.65 V2 23.631
RC 215.236 GL .91 GP 8.21 ZAL 46.48 ZAP 143.76 ETS 167.16 ZAE 169.82 ETE 65.22 ZAC 98.30 ETC 255.70 CLP 144.58

PLANETOCENTRIC CONIC

C3 15.561 VHL 3.945 DLA 18.48 RAL 133.26 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 4.511 DPA 3.82 RAP 194.74 ECC 1.2561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 1 17	2771.87	-28.08	79.77	356.84	93.83	12 47 29	2171.9	-27.25	71.21
90.00	5 9 0	4184.43	-.46	171.11	350.73	61.69	6 18 44	3584.4	-4.25	164.47
100.00	13 33 45	2473.74	-29.43	57.72	356.72	95.46	14 14 58	1873.7	-28.37	49.08
100.00	6 19 14	3957.80	.73	153.79	350.06	60.12	7 25 11	3357.8	-3.26	147.27
110.00	15 6 12	2184.49	-32.91	35.21	356.17	99.79	15 42 36	1584.5	-31.21	26.40
110.00	7 3 16	3819.81	3.70	141.47	348.20	55.99	8 6 56	3219.8	-.78	135.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0335 TRA -.1811 TC3 2.7076 BAU .5937 SGT 2154.7 SGR 880.7 SG3 1062.1 ST 115.8 SR 493.4 SS 737.6
RDE -.3376 RRA .1106 RC3 .9020 FAU .25887 RRT .7638 RRF -.8754 RTF -.8668 CRT -.4683 CRS .7521 CST -.6986
FDE .8792 FRA-2.9476 FC-14.4018 BSP 7748 SGB 2327.7 R23 -.2607 R13 -.8903 LSA 843.8 MSA 286.7 SSA 81.5
BDE .3392 BRA .2122 BC3 2.8539 FSP 3496 SG1 2264.0 SG2 540.9 THA 18.43 EL1 496.5 EL2 101.6 ALF 96.55

LAUNCH DATE DEC 16 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 474.079 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.199 GAL 4.46 AZL 89.94 HCA 144.19 SMA 189.37 ECC .23514 INC .0564 V1 30.263
RP 232.32 LAP .03 LOP 228.27 VP 21.016 GAP 3.65 AZP 90.05 TAL 23.75 TAP 167.94 RCA 144.84 APO 233.90 V2 23.670
RC 217.275 GL .47 GP 8.60 ZAL 46.03 ZAP 142.45 ETS 167.16 ZAE 169.88 ETE 73.26 ZAC 98.62 ETC 255.69 CLP 143.31

PLANETOCENTRIC CONIC

C3 15.526 VHL 3.940 DLA 18.17 RAL 132.69 RAD 6567.6 VEL 11.701 PTH 2.06 VHP 4.414 DPA 4.29 RAP 194.67 ECC 1.2555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 2 13	2759.32	-28.02	78.86	356.11	94.29	12 48 12	2159.3	-27.13	70.31
90.00	5 3 32	4195.97	-.09	171.76	350.05	61.68	6 13 28	3596.0	-3.88	165.12
100.00	13 34 22	2462.16	-29.36	56.87	355.97	95.90	14 15 24	1862.2	-28.23	48.24
100.00	6 14 4	3968.36	1.08	154.37	349.39	60.13	7 20 12	3368.4	-2.90	147.85
110.00	15 6 13	2174.79	-32.80	34.47	355.40	100.21	15 42 28	1574.8	-31.04	25.69
110.00	6 58 42	3828.50	4.04	141.92	347.55	56.03	8 2 31	3228.5	-.45	135.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0432 TRA -.1787 TC3 2.6544 BAU .5868 SGT 2110.6 SGR 927.8 SG3 1110.8 ST 120.9 SR 486.9 SS 746.4
RDE -.3319 RRA .1313 RC3 .9726 FAU .26964 RRT .7752 RRF -.8939 RTF -.8618 CRT -.5745 CRS .7420 CST -.7444
FDE .8714 FRA-3.1546 FC-15.0346 BSP 7659 SGB 2305.5 R23 -.2786 R13 -.8905 LSA 847.7 MSA 289.3 SSA 80.1
BDE .3347 BRA .2218 BC3 2.8269 FSP 3671 SG1 2238.3 SG2 552.7 THA 20.10 EL1 492.1 EL2 97.9 ALF 98.46

LAUNCH DATE DEC 16 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 477.832 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.178 GAL 4.49 AZL 90.00 HCA 145.20 SMA 188.99 ECC .23387 INC .0000 V1 30.263
RP 231.95 LAP .00 LOP 229.28 VP 21.027 GAP 3.24 AZP 90.00 TAL 24.04 TAP 169.24 RCA 144.80 APO 233.19 V2 23.709
RC 219.295 GL .01 GP 9.02 ZAL 45.62 ZAP 141.11 ETS 167.17 ZAE 169.73 ETE 81.50 ZAC 98.97 ETC 255.68 CLP 142.01

PLANETOCENTRIC CONIC

C3 15.494 VHL 3.936 DLA 17.83 RAL 132.15 RAD 6567.6 VEL 11.700 PTH 2.06 VHP 4.321 DPA 4.79 RAP 194.58 ECC 1.2550

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 3 31	2745.69	-27.94	77.87	355.38	94.78	12 49 16	2145.7	-26.99	69.33
90.00	4 57 52	4208.67	.32	172.46	349.39	61.68	6 8 1	3608.7	-3.47	165.83
100.00	13 35 20	2449.58	-29.26	55.94	355.24	96.38	14 16 10	1849.6	-28.07	47.34
100.00	6 8 44	3980.01	1.48	155.01	348.74	60.14	7 15 4	3380.0	-2.51	148.49
110.00	15 6 32	2164.23	-32.67	33.68	354.64	100.67	15 42 37	1564.2	-30.85	24.93
110.00	6 54 1	3838.13	4.40	142.43	346.92	56.07	7 57 59	3238.1	-.08	136.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0540 TRA -.1788 TC3 2.5926 BAU .5793 SGT 2060.8 SGR 980.4 SG3 1161.0 ST 129.1 SR 479.9 SS 753.9
RDE -.3257 RRA .1538 RC3 1.0483 FAU .28069 RRT .7835 RRF -.9103 RTF -.8556 CRT -.6705 CRS .7309 CST -.7751
FDE .8551 FRA-3.3710 FC-15.6831 BSP 7553 SGB 2282.1 R23 -.2958 R13 -.8909 LSA 850.7 MSA 292.4 SSA 78.6
BDE .3301 BRA .2358 BC3 2.7965 FSP 3847 SG1 2210.3 SG2 568.0 THA 21.97 EL1 488.0 EL2 94.2 ALF 100.62

LAUNCH DATE DEC 16 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 481.599 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.158 GAL 4.52 AZL 90.06 HCA 146.21 SMA 188.64 ECC .23267 INC .0551 V1 30.263
RP 231.57 LAP -.03 LOP 230.29 VP 21.040 GAP 2.85 AZP 89.95 TAL 24.32 TAP 170.52 RCA 144.75 APO 232.53 V2 23.748
RC 221.297 GL -.49 GP 9.46 ZAL 45.24 ZAP 139.73 ETS 167.17 ZAE 169.36 ETE 89.58 ZAC 99.33 ETC 255.67 CLP 140.68

PLANETOCENTRIC CONIC

C3 15.465 VHL 3.933 DLA 17.46 RAL 131.62 RAD 6567.6 VEL 11.698 PTH 2.06 VHP 4.232 DPA 5.32 RAP 194.47 ECC 1.2545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 5 11	2730.95	-27.86	76.80	354.67	95.31	12 50 42	2131.0	-26.83	68.29
90.00	4 52 1	4222.55	.77	173.24	348.75	61.69	6 2 23	3622.6	-3.02	166.61
100.00	13 36 40	2435.95	-29.16	54.94	354.52	96.90	14 17 16	1836.0	-27.90	46.37
100.00	6 3 13	3992.78	1.91	155.71	348.12	60.16	7 9 46	3392.8	-2.07	149.19
110.00	15 7 11	2152.77	-32.52	32.81	353.89	101.16	15 43 4	1552.8	-30.64	24.10
110.00	6 49 12	3848.74	4.80	142.99	346.31	56.12	7 53 20	3248.7	.32	136.77

DIFFERENTIAL CORRECTIONS
TDE .0657 TRA -.1821 TC3 2.5214 BAU .5712
RDE -.3189 RRA .1778 RC3 1.1293 FAU .29191
FDE .8304 FRA-3.5937 FC-16.3412 BSP 7453
BDE .3256 BRA .2545 BC3 2.7628 FSP 4031

MID-COURSE EXECUTION ACCURACY
SGT 2004.8 SGR 1038.5 SG3 1212.0
RRT .7884 RRF -.9245 RTF -.8479
SGB 2257.9 R23 -.3119 R13 -.8916
SG1 2180.1 SG2 587.5 THA 24.07

ORBIT DETERMINATION ACCURACY
ST 140.2 SR 472.4 SS 760.3
CRT -.7498 CRS .7192 CST -.7897
LSA 852.9 MSA 295.8 SSA 77.0
EL1 484.4 EL2 90.5 ALF 103.01

LAUNCH DATE DEC 16 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 485.380 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.140 GAL 4.55 AZL 90.12 HCA 147.22 SMA 188.31 ECC .23153 INC .1181 V1 30.263
RP 231.20 LAP -.06 LOP 231.30 VP 21.055 GAP 2.46 AZP 89.90 TAL 24.57 TAP 171.79 RCA 144.71 APO 231.91 V2 23.788
RC 223.281 GL -1.01 GP 9.94 ZAL 44.89 ZAP 138.32 ETS 167.18 ZAE 168.76 ETE 97.18 ZAC 99.71 ETC 255.66 CLP 139.31

PLANETOCENTRIC CONIC

C3 15.438 VHL 3.929 DLA 17.05 RAL 131.12 RAD 6567.6 VEL 11.697 PTH 2.06 VHP 4.146 DPA 5.90 RAP 194.34 ECC 1.2541

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 7 15	2715.06	-27.75	75.65	353.97	95.88	12 52 30	2115.1	-26.65	67.16
90.00	4 45 56	4237.66	1.25	174.08	348.14	61.71	5 56 34	3637.7	-2.54	167.45
100.00	13 38 22	2421.23	-29.03	53.87	353.80	97.45	14 18 43	1821.2	-27.70	45.32
100.00	5 57 31	4006.72	2.38	156.48	347.51	60.19	7 4 17	3406.7	-1.60	149.96
110.00	15 8 8	2140.35	-32.35	31.88	353.15	101.69	15 43 49	1540.3	-30.41	23.21
110.00	6 44 14	3860.37	5.25	143.60	345.73	56.17	7 48 34	3260.4	.77	137.38

DIFFERENTIAL CORRECTIONS
TDE .0779 TRA -.1879 TC3 2.4436 BAU .5634
RDE -.3114 RRA .2039 RC3 1.2166 FAU .30344
FDE .7974 FRA-3.8247 FC-17.0165 BSP 7336
BDE .3210 BRA .2773 BC3 2.7297 FSP 4214

MID-COURSE EXECUTION ACCURACY
SGT 1944.8 SGR 1103.2 SG3 1264.5
RRT .7901 RRF -.9369 RTF -.8387
SGB 2235.9 R23 -.3255 R13 -.8931
SG1 2150.7 SG2 611.5 THA 26.44

ORBIT DETERMINATION ACCURACY
ST 153.7 SR 464.5 SS 766.3
CRT -.8120 CRS .7074 CST -.7893
LSA 855.1 MSA 299.6 SSA 75.2
EL1 481.5 EL2 86.5 ALF 105.55

LAUNCH DATE DEC 16 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 489.174 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.122 GAL 4.57 AZL 90.19 HCA 148.24 SMA 188.00 ECC .23046 INC .1840 V1 30.263
RP 230.82 LAP -.10 LOP 232.32 VP 21.072 GAP 2.07 AZP 89.84 TAL 24.81 TAP 173.05 RCA 144.67 APO 231.32 V2 23.827
RC 225.247 GL -1.56 GP 10.44 ZAL 44.58 ZAP 136.86 ETS 167.19 ZAE 167.94 ETE 104.08 ZAC 100.12 ETC 255.65 CLP 137.90

PLANETOCENTRIC CONIC

C3 15.414 VHL 3.926 DLA 16.60 RAL 130.64 RAD 6567.6 VEL 11.696 PTH 2.06 VHP 4.064 DPA 6.52 RAP 194.21 ECC 1.2537

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 9 42	2697.95	-27.62	74.41	353.28	96.48	12 54 40	2098.0	-26.44	65.95
90.00	4 39 39	4254.07	1.78	175.00	347.54	61.73	5 50 33	3654.1	-2.01	168.37
100.00	13 40 25	2405.36	-28.89	52.71	353.10	98.04	14 20 31	1805.4	-27.47	44.19
100.00	5 51 36	4021.87	2.90	157.31	346.92	60.24	6 58 38	3421.9	-1.09	150.79
110.00	15 9 25	2126.92	-32.16	30.88	352.41	102.25	15 44 52	1526.9	-30.14	22.25
110.00	6 39 6	3873.08	5.73	144.27	345.17	56.24	7 43 39	3273.1	1.25	138.04

DIFFERENTIAL CORRECTIONS
TDE .0912 TRA -.1969 TC3 2.3559 BAU .5555
RDE -.3030 RRA .2320 RC3 1.3102 FAU .31507
FDE .7530 FRA-4.0623 FC-17.6965 BSP 7223
BDE .3164 BRA .3043 BC3 2.6957 FSP 4400

MID-COURSE EXECUTION ACCURACY
SGT 1878.7 SGR 1174.2 SG3 1317.6
RRT .7880 RRF -.9475 RTF -.8273
SGB 2215.5 R23 -.3362 R13 -.8955
SG1 2120.9 SG2 640.4 THA 29.13

ORBIT DETERMINATION ACCURACY
ST 170.0 SR 455.8 SS 771.4
CRT -.8608 CRS .6947 CST -.7769
LSA 856.6 MSA 304.2 SSA 73.3
EL1 479.4 EL2 82.2 ALF 108.36

LAUNCH DATE DEC 16 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 492.981 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.105 GAL 4.59 AZL 90.26 HCA 149.25 SMA 187.71 ECC .22945 INC .2548 V1 30.263
RP 230.43 LAP -.13 LOP 233.34 VP 21.091 GAP 1.70 AZP 89.78 TAL 25.03 TAP 174.28 RCA 144.64 APO 230.77 V2 23.867
RC 227.193 GL -2.15 GP 10.98 ZAL 44.29 ZAP 135.37 ETS 167.20 ZAE 166.94 ETE 110.18 ZAC 100.55 ETC 255.64 CLP 136.46

PLANETOCENTRIC CONIC

C3 15.392 VHL 3.923 DLA 16.11 RAL 130.17 RAD 6567.6 VEL 11.695 PTH 2.06 VHP 3.987 DPA 7.18 RAP 194.05 ECC 1.2533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 12 32	2679.57	-27.48	73.09	352.59	97.13	12 57 11	2079.6	-26.20	64.65
90.00	4 33 6	4271.79	2.35	175.99	346.97	61.77	5 44 18	3671.8	-1.44	169.36
100.00	13 42 52	2388.28	-28.72	51.47	352.39	98.68	14 22 40	1788.3	-27.22	42.99
100.00	5 45 28	4038.32	3.45	158.21	346.36	60.29	6 52 46	3438.3	-.53	151.69
110.00	15 11 2	2112.42	-31.95	29.81	351.68	102.85	15 46 14	1512.4	-29.85	21.22
110.00	6 33 47	3886.94	6.25	145.00	344.62	56.32	7 38 34	3286.9	1.78	138.76

DIFFERENTIAL CORRECTIONS
TDE .1045 TRA -.2098 TC3 2.2574 BAU .5477
RDE -.2938 RRA .2622 RC3 1.4099 FAU .32664
FDE .6998 FRA-4.3029 FC-18.3726 BSP 7136
BDE .3118 BRA .3358 BC3 2.6615 FSP 4597

MID-COURSE EXECUTION ACCURACY
SGT 1806.2 SGR 1251.7 SG3 1370.6
RRT .7815 RRF -.9565 RTF -.8129
SGB 2197.5 R23 -.3429 R13 -.8991
SG1 2091.5 SG2 674.4 THA 32.18

ORBIT DETERMINATION ACCURACY
ST 187.8 SR 446.6 SS 776.5
CRT -.8960 CRS .6828 CST -.7576
LSA 858.6 MSA 309.2 SSA 71.1
EL1 478.2 EL2 77.9 ALF 111.24

LAUNCH DATE DEC 16 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 496.800 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.090	GAL	4.61	AZL	90.33	HCA	150.28	SMA	187.43	ECC	.22850	INC	.3291	V1	30.263
RP	230.05	LAP	-.16	LOP	234.36	VP	21.112	GAP	1.33	AZP	89.71	TAL	25.23	TAP	175.51	RCA	144.60	APO	230.26	V2	23.907
RC	229.120	GL	-2.77	GP	11.56	ZAL	44.04	ZAP	133.83	ETS	167.23	ZAE	165.76	ETE	115.48	ZAC	101.01	ETC	255.63	CLP	134.98

PLANETOCENTRIC CONIC

C3	15.372	VHL	3.921	DLA	15.58	RAL	129.73	RAD	6567.6	VEL	11.694	PTH	2.06	VHP	3.913	DPA	7.89	RAP	193.88	ECC	1.2530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 15 46	2659.84	-27.30	71.67	351.90	97.82	13 0 6	2059.8	-25.94	63.27
90.00	4 26 18	4290.96	2.97	177.06	346.41	61.83	5 37 49	3691.0	-.82	170.43
100.00	13 45 41	2369.90	-28.52	50.14	351.69	99.35	14 25 11	1769.9	-26.93	41.69
100.00	5 39 5	4056.13	4.05	159.20	345.81	60.36	6 46 41	3456.1	.07	152.67
110.00	15 12 58	2096.78	-31.71	28.65	350.95	103.50	15 47 55	1496.8	-29.53	20.12
110.00	6 28 17	3902.02	6.82	145.80	344.10	56.42	7 33 19	3302.0	2.36	139.55

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1182	TRA	-.2259	TC3	2.1498	BAU	.5408	SGT	1728.9	SGR	1336.8	SG3	1424.2	ST	207.3	SR	436.7	SS	781.6
RDE	-.2833	RRA	.2950	RC3	1.5172	FAU	.33830	RRT	.7705	RRF	-.9642	RTF	-.7951	CRT	-.9226	CRS	.6704	CST	-.7303
FDE	.6326	FRA	-4.5503	FC	-19.0521	BSP	7060	SGB	2185.4	R23	-.3440	R13	-.9044	LSA	860.5	MSA	315.4	SSA	68.7
BDE	.3070	BRA	.3716	BC3	2.6312	FSP	4791	SG1	2065.8	SG2	713.2	THA	35.67	EL1	477.8	EL2	73.1	ALF	114.26

LAUNCH DATE DEC 16 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 500.632 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.075	GAL	4.63	AZL	90.41	HCA	151.30	SMA	187.18	ECC	.22760	INC	.4089	V1	30.263
RP	229.67	LAP	-.20	LOP	235.38	VP	21.135	GAP	.97	AZP	89.64	TAL	25.42	TAP	176.72	RCA	144.57	APO	229.78	V2	23.948
RC	231.027	GL	-3.44	GP	12.17	ZAL	43.83	ZAP	132.25	ETS	167.25	ZAE	164.43	ETE	120.03	ZAC	101.50	ETC	255.61	CLP	133.46

PLANETOCENTRIC CONIC

C3	15.357	VHL	3.919	DLA	14.99	RAL	129.30	RAD	6567.6	VEL	11.694	PTH	2.06	VHP	3.844	DPA	8.65	RAP	193.70	ECC	1.2527

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST. TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 19 26	2638.68	-27.10	70.16	351.21	98.55	13 3 25	2038.7	-25.63	61.79
90.00	4 19 12	4311.66	3.64	178.22	345.88	61.90	5 31 4	3711.7	-.15	171.58
100.00	13 48 54	2350.15	-28.29	48.71	350.99	100.07	14 28 4	1750.2	-26.61	40.31
100.00	5 32 25	4075.41	4.70	160.26	345.29	60.45	6 40 21	3475.4	.73	153.72
110.00	15 15 16	2079.91	-31.43	27.41	350.22	104.18	15 49 56	1479.9	-29.16	18.94
110.00	6 22 32	3918.42	7.44	146.67	343.60	56.54	7 27 51	3318.4	2.98	140.41

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1322	TRA	-.2457	TC3	2.0323	BAU	.5351	SGT	1647.0	SGR	1429.7	SG3	1477.6	ST	228.3	SR	425.9	SS	787.1
RDE	-.2713	RRA	.3304	RC3	1.6323	FAU	.34990	RRT	.7538	RRF	-.9706	RTF	-.7727	CRT	-.9423	CRS	.6584	CST	-.6966
FDE	.5511	FRA	-4.8009	FC	-19.7257	BSP	7000	SGB	2181.0	R23	-.3381	R13	-.9120	LSA	862.8	MSA	323.0	SSA	66.0
BDE	.3018	BRA	.4118	BC3	2.6066	FSP	4983	SG1	2045.6	SG2	756.5	THA	39.67	EL1	478.4	EL2	68.1	ALF	117.40

LAUNCH DATE DEC 16 1964 FLIGHT TIME 228.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 504.476 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.061	GAL	4.65	AZL	90.49	HCA	152.33	SMA	186.94	ECC	.22675	INC	.4938	V1	30.263
RP	229.28	LAP	-.23	LOP	236.41	VP	21.159	GAP	.61	AZP	89.56	TAL	25.58	TAP	177.91	RCA	144.55	APO	229.32	V2	23.988
RC	232.913	GL	-4.16	GP	12.83	ZAL	43.65	ZAP	130.63	ETS	167.29	ZAE	162.96	ETE	123.92	ZAC	102.03	ETC	255.60	CLP	131.91

PLANETOCENTRIC CONIC

C3	15.344	VHL	3.917	DLA	14.36	RAL	128.88	RAD	6567.6	VEL	11.693	PTH	2.06	VHP	3.779	DPA	9.47	RAP	193.51	ECC	1.2525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 23 31	2615.97	-26.86	68.54	350.53	99.33	13 7 7	2016.0	-25.29	60.22
90.00	4 11 47	4334.01	4.35	179.47	345.36	61.99	5 24 1	3734.0	.57	172.83
100.00	13 52 32	2328.93	-28.03	47.19	350.29	100.83	14 31 21	1728.9	-26.25	38.84
100.00	5 25 28	4096.28	5.40	161.41	344.79	60.55	6 33 44	3496.3	1.44	154.87
110.00	15 17 56	2061.71	-31.12	26.09	349.48	104.91	15 52 18	1461.7	-28.76	17.68
110.00	6 16 33	3936.26	8.10	147.61	343.12	56.68	7 22 9	3336.3	3.66	141.34

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1464	TRA	-.2691	TC3	1.9056	BAU	.5315	SGT	1561.9	SGR	1531.1	SG3	1530.7	ST	250.4	SR	414.1	SS	793.8
RDE	-.2575	RRA	.3689	RC3	1.7558	FAU	.36138	RRT	.7304	RRF	-.9760	RTF	-.7446	CRT	-.9563	CRS	.6470	CST	-.6555
FDE	.4517	FRA	-5.0558	FC	-20.3889	BSP	6967	SGB	2187.2	R23	-.3237	R13	-.9219	LSA	865.9	MSA	332.4	SSA	62.9
BDE	.2962	BRA	.4566	BC3	2.5911	FSP	5171	SG1	2034.5	SG2	802.9	THA	44.22	EL1	479.8	EL2	63.2	ALF	120.63

LAUNCH DATE DEC 16 1964 FLIGHT TIME 230.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 508.332 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.049	GAL	4.66	AZL	90.59	HCA	153.36	SMA	186.71	ECC	.22595	INC	.5851	V1	30.263
RP	228.89	LAP	-.26	LOP	237.44	VP	21.186	GAP	.26	AZP	89.48	TAL	25.73	TAP	179.09	RCA	144.53	APO	228.90	V2	24.029
RC	234.778	GL	-4.93	GP	13.54	ZAL	43.50	ZAP	128.98	ETS	167.34	ZAE	161.38	ETE	127.23	ZAC	102.59	ETC	255.58	CLP	130.31

PLANETOCENTRIC CONIC

C3	15.337	VHL	3.916	DLA	13.66	RAL	128.47	RAD	6567.6	VEL	11.693	PTH	2.06	VHP	3.719	DPA	10.34	RAP	193.31	ECC	1.2524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 28 4	2591.61	-26.58	66.81	349.84	100.15	13 11 16	1991.6	-24.90	58.54
90.00	4 4 0	4358.15	5.12	180.82	344.87	62.11	5 16 38	3758.2	1.35	174.17
100.00	13 56 36	2306.10	-27.73	45.56	349.59	101.63	14 35 2	1706.1	-25.84	37.27
100.00	5 18 10	4118.89	6.15	162.67	344.30	60.69	6 26 49	3518.9	2.20	156.11
110.00	15 20 58	2042.09	-30.77	24.67	348.74	105.68	15 55 0	1442.1	-28.31	16.33
110.00	6 10 16	3955.67	8.83	148.65	342.67	56.84	7 16 12	3355.7	4.40	142.36

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1601	TRA	-.2965	TC3	1.7668	BAU	.5301	SGT	1472.9	SGR	1641.1	SG3	1582.3	ST	273.0	SR	401.7	SS	802.7
RDE	-.2417	RRA	.4107	RC3	1.8875	FAU	.37247	RRT	.6980	RRF	-.9804	RTF	-.7082	CRT	-.9649	CRS	.6388	CST	-.6103
FDE	.3367	FRA	-5.3113	FC	-21.0249	BSP	6987	SGB	2205.1	R23	-.2993	R13	-.9342	LSA	871.1	MSA	343.3	SSA	59.5
BDE	.2899	BRA	.5066	BC3	2.5855	FSP	5357	SG1	2034.3	SG2	850.9	THA	49.41	EL1	482.0	EL2	59.8	ALF	123.84

LAUNCH DATE DEC 16 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 512.201 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.037 GAL 4.67 AZL 90.68 HCA 154.40 SMA 186.51 ECC .22519 INC .6840 V1 30.263
RP 228.51 LAP -.30 LOP 238.48 VP 21.213 GAP -.08 AZP 89.38 TAL 25.86 TAP 180.26 RCA 144.51 APO 228.51 V2 24.070
RC 236.623 GL -5.76 GP 14.29 ZAL 43.40 ZAP 127.27 ETS 167.40 ZAE 159.68 ETE 130.06 ZAC 103.20 ETC 255.57 CLP 128.68

PLANETOCENTRIC CONIC

C3 15.336 VHL 3.916 DLA 12.91 RAL 128.08 RAD 6567.6 VEL 11.693 PTH 2.06 VHP 3.663 DPA 11.27 RAP 193.11 ECC 1.2524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 33 4	2565.48	-26.25	64.97	349.14	101.02	13 15 50	1965.5	-24.46	56.75
90.00	3 55 49	4384.26	5.95	182.29	344.40	62.26	5 8 54	3784.3	2.19	175.63
100.00	14 1 6	2281.59	-27.38	43.82	348.87	102.49	14 39 7	1681.6	-25.39	35.59
100.00	5 10 29	4143.38	6.97	164.03	343.84	60.86	6 19 32	3543.4	3.03	157.46
110.00	15 24 24	2020.94	-30.37	23.15	347.99	106.50	15 58 5	1420.9	-27.81	14.89
110.00	6 3 40	3976.80	9.61	149.78	342.24	57.04	7 9 57	3376.8	5.20	143.47

DIFFERENTIAL CORRECTIONS
TDE .1859 TRA -.3156 TC3 1.6511 BAU .5380
RDE -.2190 RRA .4603 RC3 2.0391 FAU .38521
FDE .1555 FRA-5.6116 FC-21.7449 BSP 6820
BDE .2872 BRA .5581 BC3 2.6237 FSP 5444

MID-COURSE EXECUTION ACCURACY
SGT 1403.9 SGR 1769.3 SG3 1641.7
RRT .6646 RRF -.9843 RTF -.6738
SGB 2258.6 R23 -.2628 R13 -.9489
SG1 2073.8 SG2 894.9 THA 54.68

ORBIT DETERMINATION ACCURACY
ST 309.3 SR 384.6 SS 819.0
CRT -.9645 CRS .6240 CST -.5013
LSA 879.2 MSA 372.0 SSA 53.6
EL1 489.3 EL2 64.2 ALF 128.58

LAUNCH DATE DEC 16 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 516.079 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.025 GAL 4.68 AZL 90.79 HCA 155.44 SMA 186.31 ECC .22448 INC .7905 V1 30.263
RP 228.12 LAP -.33 LOP 239.52 VP 21.243 GAP -.41 AZP 89.28 TAL 25.97 TAP 181.41 RCA 144.49 APO 228.14 V2 24.111
RC 238.446 GL -6.66 GP 15.10 ZAL 43.34 ZAP 125.54 ETS 167.47 ZAE 157.89 ETE 132.48 ZAC 103.86 ETC 255.55 CLP 127.02

PLANETOCENTRIC CONIC

C3 15.342 VHL 3.917 DLA 12.08 RAL 127.69 RAD 6567.6 VEL 11.693 PTH 2.06 VHP 3.612 DPA 12.26 RAP 192.90 ECC 1.2525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 38 36	2537.33	-25.87	62.99	348.43	101.94	13 20 53	1937.3	-23.96	54.84
90.00	3 47 12	4412.56	6.85	183.89	343.95	62.46	5 0 44	3812.6	3.10	177.21
100.00	14 6 6	2255.13	-26.98	41.96	348.16	103.39	14 43 41	1655.1	-24.87	33.79
100.00	5 2 23	4170.00	7.85	165.52	343.41	61.06	6 11 53	3570.0	3.93	158.92
110.00	15 28 16	1998.04	-29.92	21.52	347.24	107.37	16 1 34	1398.0	-27.25	13.34
110.00	5 56 43	3999.85	10.46	151.03	341.83	57.27	7 3 22	3399.9	6.08	144.68

DIFFERENTIAL CORRECTIONS
TDE .1933 TRA -.3563 TC3 1.4791 BAU .5415
RDE -.1989 RRA .5086 RC3 2.1868 FAU .39473
FDE .0152 FRA-5.8517 FC-22.2751 BSP 7060
BDE .2773 BRA .6210 BC3 2.6400 FSP 5645

MID-COURSE EXECUTION ACCURACY
SGT 1306.4 SGR 1896.8 SG3 1686.7
RRT .6041 RRF -.9873 RTF -.6096
SGB 2303.2 R23 -.2198 R13 -.9626
SG1 2103.1 SG2 938.9 THA 61.14

ORBIT DETERMINATION ACCURACY
ST 326.7 SR 373.3 SS 835.7
CRT -.9591 CRS .6330 CST -.4664
LSA 892.8 MSA 380.6 SSA 50.4
EL1 491.1 EL2 70.3 ALF 131.03

LAUNCH DATE DEC 16 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 519.968 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.015 GAL 4.68 AZL 90.91 HCA 156.48 SMA 186.13 ECC .22381 INC .9063 V1 30.263
RP 227.73 LAP -.36 LOP 240.56 VP 21.273 GAP -.73 AZP 89.17 TAL 26.07 TAP 182.55 RCA 144.48 APO 227.79 V2 24.152
RC 240.248 GL -7.63 GP 15.98 ZAL 43.33 ZAP 123.76 ETS 167.56 ZAE 156.00 ETE 134.55 ZAC 104.56 ETC 255.53 CLP 125.31

PLANETOCENTRIC CONIC

C3 15.356 VHL 3.919 DLA 11.16 RAL 127.30 RAD 6567.6 VEL 11.694 PTH 2.06 VHP 3.566 DPA 13.32 RAP 192.70 ECC 1.2527

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 44 40	2507.03	-25.42	60.89	347.72	102.91	13 26 27	1907.0	-23.39	52.80
90.00	3 38 4	4443.29	7.81	185.64	343.54	62.69	4 52 7	3843.3	4.09	178.93
100.00	14 11 38	2226.59	-26.51	39.97	347.43	104.34	14 48 44	1626.6	-24.28	31.88
100.00	4 53 47	4198.97	8.80	167.14	343.00	61.32	6 3 46	3599.0	4.90	160.52
110.00	15 32 35	1973.27	-29.40	19.77	346.47	108.28	16 5 28	1373.3	-26.62	11.69
110.00	5 49 20	4025.05	11.39	152.39	341.45	57.55	6 56 25	3425.1	7.03	146.02

DIFFERENTIAL CORRECTIONS
TDE .2015 TRA -.3999 TC3 1.3004 BAU .5504
RDE -.1745 RRA .5617 RC3 2.3447 FAU .40366
FDE -.1545 FRA-6.0905 FC-22.7568 BSP 7343
BDE .2666 BRA .6895 BC3 2.6812 FSP 5827

MID-COURSE EXECUTION ACCURACY
SGT 1216.9 SGR 2035.4 SG3 1729.2
RRT .5244 RRF -.9897 RTF -.5270
SGB 2371.4 R23 -.1696 R13 -.9751
SG1 2161.4 SG2 975.8 THA 67.85

ORBIT DETERMINATION ACCURACY
ST 346.0 SR 362.2 SS 857.9
CRT -.9446 CRS .6501 CST -.4193
LSA 911.5 MSA 392.4 SSA 46.7
EL1 494.0 EL2 83.2 ALF 133.61

LAUNCH DATE DEC 16 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 523.869 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.006 GAL 4.68 AZL 91.03 HCA 157.53 SMA 185.97 ECC .22317 INC 1.0328 V1 30.263
RP 227.34 LAP -.39 LOP 241.61 VP 21.305 GAP -1.05 AZP 89.05 TAL 26.15 TAP 183.67 RCA 144.47 APO 227.47 V2 24.193
RC 242.030 GL -8.70 GP 16.92 ZAL 43.37 ZAP 121.95 ETS 167.67 ZAE 154.03 ETE 136.33 ZAC 105.33 ETC 255.50 CLP 123.58

PLANETOCENTRIC CONIC

C3 15.383 VHL 3.922 DLA 10.16 RAL 126.92 RAD 6567.6 VEL 11.695 PTH 2.06 VHP 3.526 DPA 14.45 RAP 192.50 ECC 1.2532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 51 20	2474.35	-24.91	58.63	347.00	103.93	13 32 34	1874.3	-22.75	50.63
90.00	3 28 20	4476.76	8.85	187.55	343.15	62.99	4 42 57	3876.8	5.16	180.81
100.00	14 17 42	2195.77	-25.97	37.83	346.69	105.34	14 54 18	1595.8	-23.62	29.83
100.00	4 44 39	4230.57	9.83	168.93	342.63	61.63	5 55 10	3630.6	5.96	162.27
110.00	15 31 23	1946.43	-28.81	17.91	345.70	109.24	16 9 50	1346.4	-25.92	9.92
110.00	5 41 28	4052.68	12.39	153.90	341.10	57.88	6 49 0	3452.7	8.06	147.48

DIFFERENTIAL CORRECTIONS
TDE .2084 TRA -.4479 TC3 1.1121 BAU .5651
RDE -.1458 RRA .6197 RC3 2.5128 FAU .41170
FDE -.3482 FRA-6.3224 FC-23.1701 BSP 7703
BDE .2543 BRA .7646 BC3 2.7479 FSP 5993

MID-COURSE EXECUTION ACCURACY
SGT 1138.2 SGR 2185.5 SG3 1767.8
RRT .4195 RRF -.9917 RTF -.4197
SGB 2464.1 R23 -.1174 R13 -.9847
SG1 2250.6 SG2 1003.3 THA 74.53

ORBIT DETERMINATION ACCURACY
ST 364.8 SR 353.5 SS 887.3
CRT -.9172 CRS .6804 CST -.3692
LSA 937.9 MSA 404.7 SSA 42.9
EL1 497.4 EL2 103.3 ALF 135.98

LAUNCH DATE DEC 16 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 527.780 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 32.997 GAL 4.68 AZL 91.17 HCA 158.58 SMA 185.82 ECC .22257 INC 1.1716 V1 30.263
RP 226.95 LAP -.43 LOP 242.66 VP 21.339 GAP -1.37 AZP 88.91 TAL 26.21 TAP 184.79 RCA 144.46 APO 227.17 V2 24.235
RC 243.792 GL -9.86 GP 17.94 ZAL 43.46 ZAP 120.10 ETS 167.80 ZAE 151.96 ETE 137.86 ZAC 106.17 ETC 255.47 CLP 121.81

PLANETOCENTRIC CONIC

C3 15.425 VHL 3.927 DLA 9.06 RAL 126.53 RAD 6567.6 VEL 11.697 PTH 2.06 VHP 3.493 DPA 15.67 RAP 192.31 ECC 1.2539

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 58 38	2439.01	-24.31	56.22	346.27	104.99	13 39 17	1839.0	-22.01	48.30
90.00	3 17 57	4513.33	9.97	189.65	342.80	63.36	4 33 11	3913.3	6.32	182.87
100.00	14 24 24	2162.39	-25.35	35.55	345.94	106.39	15 0 26	1562.4	-22.86	27.63
100.00	4 34 52	4265.19	10.94	170.89	342.29	62.01	5 45 58	3665.2	7.11	164.20
110.00	15 42 43	1917.29	-28.14	15.90	344.91	110.26	16 14 40	1317.3	-25.12	8.03
110.00	5 33 2	4083.04	13.49	155.58	340.79	58.29	6 41 5	3483.0	9.20	149.11

DIFFERENTIAL CORRECTIONS
TDE .2145 TRA -.4993 TC3 .9169 BAU .5862
RDE -.1114 RRA .6836 RC3 2.6908 FAU .41865
FDE -.5717 FRA-6.5478 FC-23.4964 BSP 8146
BDE .2417 BRA .8465 BC3 2.8427 FSP 6138

MID-COURSE EXECUTION ACCURACY
SGT 1077.3 SGR 2348.1 SG3 1801.8
RRT .2872 RRF -.9934 RTF -.2857
SGB 2583.4 R23 -.0689 R13 -.9910
SG1 2373.1 SG2 1021.1 THA 80.77

ORBIT DETERMINATION ACCURACY
ST 383.8 SR 349.6 SS 926.3
CRT -.8684 CRS .7256 CST -.3134
LSA 975.3 MSA 418.2 SSA 38.7
EL1 502.0 EL2 132.6 ALF 138.07

LAUNCH DATE DEC 16 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 531.702 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 32.988 GAL 4.68 AZL 91.32 HCA 159.63 SMA 185.68 ECC .22200 INC 1.3239 V1 30.263
RP 226.56 LAP -.46 LOP 243.71 VP 21.373 GAP -1.67 AZP 88.76 TAL 26.25 TAP 185.88 RCA 144.46 APO 226.90 V2 24.277
RC 245.534 GL -11.13 GP 19.04 ZAL 43.63 ZAP 118.21 ETS 167.95 ZAE 149.82 ETE 139.17 ZAC 107.08 ETC 255.44 CLP 120.01

PLANETOCENTRIC CONIC

C3 15.487 VHL 3.935 DLA 7.84 RAL 126.14 RAD 6567.6 VEL 11.699 PTH 2.06 VHP 3.465 DPA 16.97 RAP 192.15 ECC 1.2549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 6 38	2400.71	-23.61	53.63	345.52	106.11	13 46 39	1800.7	-21.17	45.80
90.00	3 6 48	4553.44	11.19	191.97	342.49	63.82	4 22 41	3953.4	7.58	185.15
100.00	14 31 46	2126.16	-24.63	33.10	345.18	107.49	15 7 12	1526.2	-22.01	25.28
100.00	4 24 22	4303.22	12.15	173.07	341.99	62.48	5 36 5	3703.2	8.36	166.32
110.00	15 48 38	1885.59	-27.38	13.76	344.11	111.32	16 20 3	1285.6	-24.23	6.00
110.00	5 23 59	4116.56	14.68	157.44	340.53	58.78	6 32 35	3516.6	10.43	150.91

DIFFERENTIAL CORRECTIONS
TDE .2177 TRA -.5555 TC3 .7129 BAU .6145
RDE -.0696 RRA .7548 RC3 2.8811 FAU .42464
FDE -.8307 FRA-6.7692 FC-23.7375 BSP 8662
BDE .2286 BRA .9372 BC3 2.9680 FSP 6243

MID-COURSE EXECUTION ACCURACY
SGT 1040.1 SGR 2526.5 SG3 1831.8
RRT .1273 RRF -.9947 RTF -.1245
SGB 2732.2 R23 -.0276 R13 -.9943
SG1 2530.7 SG2 1029.9 THA 86.40

ORBIT DETERMINATION ACCURACY
ST 400.9 SR 354.5 SS 978.6
CRT -.7914 CRS .7844 CST -.2580
LSA 1028.3 MSA 430.6 SSA 34.6
EL1 507.0 EL2 171.4 ALF 139.43

LAUNCH DATE DEC 16 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 535.634 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 32.981 GAL 4.68 AZL 91.49 HCA 160.69 SMA 185.55 ECC .22146 INC 1.4932 V1 30.263
RP 226.17 LAP -.49 LOP 244.77 VP 21.409 GAP -1.97 AZP 88.59 TAL 26.28 TAP 186.97 RCA 144.46 APO 226.64 V2 24.318
RC 247.256 GL -12.54 GP 20.23 ZAL 43.87 ZAP 116.29 ETS 168.13 ZAE 147.60 ETE 140.31 ZAC 108.08 ETC 255.39 CLP 118.17

PLANETOCENTRIC CONIC

C3 15.575 VHL 3.947 DLA 6.50 RAL 125.73 RAD 6567.6 VEL 11.703 PTH 2.06 VHP 3.445 DPA 18.36 RAP 192.01 ECC 1.2563

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 15 26	2359.05	-22.79	50.85	344.78	107.27	13 54 45	1759.1	-20.21	43.12
90.00	2 54 45	4597.66	12.50	194.55	342.23	64.38	4 11 22	3997.7	8.95	187.67
100.00	14 39 52	2086.72	-23.80	30.46	344.42	108.64	15 14 39	1486.7	-21.04	22.76
100.00	4 13 0	4345.22	13.45	175.50	341.75	63.05	5 25 25	3745.2	9.73	168.69
110.00	15 55 11	1851.00	-26.50	11.45	343.30	112.43	16 26 2	1251.0	-23.22	3.82
110.00	5 14 10	4153.70	15.98	159.54	340.32	59.37	6 23 24	3553.7	11.79	152.93

DIFFERENTIAL CORRECTIONS
TDE .2185 TRA -.6165 TC3 .5021 BAU .6500
RDE -.0194 RRA .8337 RC3 3.0808 FAU .42905
FDE-1.1209 FRA-6.9753 FC-23.8485 BSP 9275
BDE .2193 BRA 1.0368 BC3 3.1215 FSP 6319

MID-COURSE EXECUTION ACCURACY
SGT 1033.9 SGR 2719.9 SG3 1854.8
RRT -.0507 RRF -.9958 RTF .0543
SGB 2909.8 R23 .0047 R13 -.9958
SG1 2720.5 SG2 1032.4 THA 91.29

ORBIT DETERMINATION ACCURACY
ST 416.9 SR 373.7 SS 1044.6
CRT -.6855 CRS .8485 CST -.2073
LSA 1099.4 MSA 441.6 SSA 30.5
EL1 514.7 EL2 220.4 ALF 139.54

LAUNCH DATE DEC 16 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 539.577 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 32.974 GAL 4.67 AZL 91.68 HCA 161.75 SMA 185.43 ECC .22096 INC 1.6820 V1 30.263
RP 225.78 LAP -.53 LOP 245.83 VP 21.446 GAP -2.26 AZP 88.40 TAL 26.29 TAP 188.04 RCA 144.46 APO 226.40 V2 24.360
RC 248.959 GL -14.09 GP 21.53 ZAL 44.19 ZAP 114.35 ETS 168.35 ZAE 145.29 ETE 141.29 ZAC 109.17 ETC 255.34 CLP 116.31

PLANETOCENTRIC CONIC

C3 15.697 VHL 3.962 DLA 5.00 RAL 125.30 RAD 6567.6 VEL 11.708 PTH 2.06 VHP 3.433 DPA 19.86 RAP 191.91 ECC 1.2583

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 25 8	2313.58	-21.84	47.85	344.02	108.48	14 3 42	1713.6	-19.11	40.24
90.00	2 41 38	4646.64	13.93	197.44	342.04	65.09	3 59 5	4046.6	10.45	190.48
100.00	14 48 50	2043.62	-22.84	27.62	343.65	109.83	15 22 54	1443.6	-19.93	20.04
100.00	4 0 37	4391.84	14.87	178.24	341.57	63.77	5 13 49	3791.8	11.23	171.34
110.00	16 2 28	1813.15	-25.49	8.97	342.49	113.59	16 32 42	1213.2	-22.08	1.48
110.00	5 3 28	4195.07	17.40	161.90	340.18	60.10	6 13 23	3595.1	13.29	155.20

DIFFERENTIAL CORRECTIONS
TDE .2142 TRA -.6838 TC3 .2809 BAU .6919
RDE .0399 RRA .9202 RC3 3.2851 FAU .43107
FDE-1.4334 FRA-7.1544 FC-23.7751 BSP 10019
BDE .2178 BRA 1.1465 BC3 3.2971 FSP 6381

MID-COURSE EXECUTION ACCURACY
SGT 1063.5 SGR 2926.4 SG3 1867.3
RRT -.2342 RRF -.9966 RTF .2382
SGB 3113.6 R23 .0290 R13 -.9962
SG1 2938.5 SG2 1029.6 THA 95.55

ORBIT DETERMINATION ACCURACY
ST 429.7 SR 412.3 SS 1122.5
CRT -.5698 CRS .9050 CST -.1735
LSA 1188.5 MSA 448.8 SSA 26.7
EL1 527.8 EL2 275.9 ALF 137.07

LAUNCH DATE DEC 16 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 543.529 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.968	GAL	4.66	AZL	91.89	HCA	162.81	SMA	185.33	ECC	.22048	INC	1.8937	V1	30.263		
RP	225.38	LAP	-.56	LOP	246.90	VP	21.484	GAP	-2.55	AZP	88.19	TAL	26.29	TAP	189.10	RCA	144.47	APO	226.19	V2	24.402		
RC	250.643	GL	-15.82	GP	22.95	ZAL	44.62	ZAP	112.38	ETS	168.60	ZAE	142.91	ETE	142.14	ZAC	110.37	ETC	255.28	CLP	114.42		

PLANETOCENTRIC CONIC

C3	15.863	VHL	3.983	DLA	3.33	RAL	124.85	RAD	6567.6	VEL	11.715	PTH	2.06	VHP	3.430	DPA	21.47	RAP	191.86	ECC	1.2611		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 35 52	2263.75	-20.73	44.62	343.27	109.73	14 13 36	1663.7	-17.85	37.13
90.00	2 27 16	4701.26	15.47	200.71	341.94	65.98	3 45 37	4101.3	12.09	193.66
100.00	14 58 46	1996.36	-21.71	24.56	342.88	111.07	15 32 3	1396.4	-18.65	17.10
100.00	3 47 3	4443.87	16.42	181.33	341.49	64.66	5 1 7	3843.9	12.87	174.34
110.00	16 10 35	1771.61	-24.33	6.30	341.68	114.79	16 40 7	1171.6	-20.78	358.95
110.00	4 51 44	4241.40	18.95	164.60	340.12	61.00	6 2 25	3641.4	14.94	157.78

DIFFERENTIAL CORRECTIONS

TDE	.2050	TRA	-.7566	TC3	.0560	BAU	.7421
RDE	.1130	RRA	1.0185	RC3	3.4987	FAU	.43135
FDE	-1.7871	FRA	-7.3207	FC	-23.5405	BSP	10831
BDE	.2341	BRA	1.2688	BC3	3.4991	FSP	6382

MID-COURSE EXECUTION ACCURACY

SGT	1130.3	SGR	3154.0	SG3	1872.2		
RRT	-.4005	RRF	-.9974	RTF	.4044		
SGB	3350.4	R23	.0458	R13	-.9963		
SG1	3190.1	SG2	1024.0	THA	99.11		

ORBIT DETERMINATION ACCURACY

ST	440.4	SR	476.7	SS	1219.7
CRT	-.4569	CRS	.9471	CST	-.1523
LSA	1304.8	MSA	453.8	SSA	23.1
EL1	555.0	EL2	336.5	ALF	130.08

LAUNCH DATE DEC 16 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 547.492 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.962	GAL	4.65	AZL	92.13	HCA	163.88	SMA	185.23	ECC	.22003	INC	2.1337	V1	30.263		
RP	224.99	LAP	-.59	LOP	247.97	VP	21.523	GAP	-2.83	AZP	87.95	TAL	26.27	TAP	190.14	RCA	144.47	APO	225.99	V2	24.444		
RC	252.307	GL	-17.76	GP	24.50	ZAL	45.17	ZAP	110.39	ETS	168.89	ZAE	140.44	ETE	142.87	ZAC	111.70	ETC	255.19	CLP	112.51		

PLANETOCENTRIC CONIC

C3	16.090	VHL	4.011	DLA	1.46	RAL	124.36	RAD	6567.6	VEL	11.725	PTH	2.07	VHP	3.437	DPA	23.20	RAP	191.87	ECC	1.2648		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 47 50	2208.86	-19.43	41.12	342.54	111.01	14 24 38	1608.9	-16.40	33.75
90.00	2 11 23	4762.58	17.13	204.45	341.95	67.10	3 30 46	4162.6	13.88	197.27
100.00	15 9 51	1944.30	-20.40	21.25	342.13	112.34	15 42 15	1344.3	-17.19	13.93
100.00	3 32 3	4502.37	18.09	184.87	341.51	65.79	4 47 5	3902.4	14.66	177.75
110.00	16 19 39	1725.82	-22.99	3.42	340.88	116.02	16 48 25	1125.8	-19.31	356.22
110.00	4 38 44	4293.61	20.64	167.70	340.19	62.13	5 50 18	3693.6	16.75	160.74

DIFFERENTIAL CORRECTIONS

TDE	.1880	TRA	-.8372	TC3	-.1751	BAU	.7989
RDE	.1994	RRA	1.1266	RC3	3.7098	FAU	.42841
FDE	-2.1547	FRA	-7.4426	FC	-23.0517	BSP	11785
BDE	.2741	BRA	1.4037	BC3	3.7140	FSP	6363

MID-COURSE EXECUTION ACCURACY

SGT	1234.1	SGR	3395.6	SG3	1862.2		
RRT	-.5411	RRF	-.9979	RTF	.5449		
SGB	3612.9	R23	.0572	R13	-.9963		
SG1	3467.0	SG2	1016.5	THA	102.19		

ORBIT DETERMINATION ACCURACY

ST	448.3	SR	567.7	SS	1326.8
CRT	-.3819	CRS	.9726	CST	-.1601
LSA	1441.0	MSA	455.0	SSA	19.9
EL1	613.4	EL2	383.5	ALF	119.01

LAUNCH DATE DEC 16 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 551.463 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.957	GAL	4.64	AZL	92.41	HCA	164.95	SMA	185.14	ECC	.21960	INC	2.4077	V1	30.263		
RP	224.60	LAP	-.63	LOP	249.04	VP	21.563	GAP	-3.11	AZP	87.67	TAL	26.23	TAP	191.18	RCA	144.49	APO	225.80	V2	24.486		
RC	253.951	GL	-19.93	GP	26.21	ZAL	45.87	ZAP	108.38	ETS	169.24	ZAE	137.89	ETE	143.49	ZAC	113.18	ETC	255.09	CLP	110.58		

PLANETOCENTRIC CONIC

C3	16.396	VHL	4.049	DLA	-.64	RAL	123.81	RAD	6567.7	VEL	11.738	PTH	2.07	VHP	3.458	DPA	25.07	RAP	191.96	ECC	1.2698		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 1 14	2148.05	-17.90	37.31	341.84	112.31	14 37 2	1548.0	-14.72	30.08
90.00	1 53 39	4832.00	18.91	208.76	342.11	68.53	3 14 11	4232.0	15.83	201.44
100.00	15 22 17	1886.63	-18.87	17.66	341.41	113.63	15 53 43	1286.6	-15.51	10.47
100.00	3 15 18	4568.65	19.89	188.97	341.69	67.21	4 31 26	3968.7	16.63	181.69
110.00	16 29 50	1675.16	-21.45	.30	340.10	117.28	16 57 45	1075.2	-17.62	353.26
110.00	4 24 14	4352.89	22.48	171.32	340.41	63.55	5 36 46	3752.9	18.75	164.17

DIFFERENTIAL CORRECTIONS

TDE	.1612	TRA	-.9276	TC3	-.4118	BAU	.8617
RDE	.3024	RRA	1.2457	RC3	3.9095	FAU	.42155
FDE	-2.5342	FRA	-7.5085	FC	-22.2581	BSP	12910
BDE	.3427	BRA	1.5531	BC3	3.9312	FSP	6332

MID-COURSE EXECUTION ACCURACY

SGT	1373.4	SGR	3648.9	SG3	1834.2		
RRT	-.6529	RRF	-.9983	RTF	.6565		
SGB	3898.8	R23	.0648	R13	-.9963		
SG1	3766.3	SG2	1007.8	THA	104.90		

ORBIT DETERMINATION ACCURACY

ST	455.2	SR	686.9	SS	1442.3
CRT	-.3568	CRS	.9865	CST	-.2014
LSA	1598.0	MSA	453.2	SSA	17.1
EL1	715.9	EL2	408.0	ALF	110.07

LAUNCH DATE DEC 16 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 555.445 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.953	GAL	4.62	AZL	92.72	HCA	166.02	SMA	185.07	ECC	.21920	INC	2.7241	V1	30.263		
RP	224.21	LAP	-.66	LOP	250.12	VP	21.604	GAP	-3.37	AZP	87.36	TAL	26.18	TAP	192.20	RCA	144.50	APO	225.63	V2	24.527		
RC	255.576	GL	-22.38	GP	28.08	ZAL	46.74	ZAP	106.37	ETS	169.63	ZAE	135.25	ETE	144.03	ZAC	114.82	ETC	254.95	CLP	108.63		

PLANETOCENTRIC CONIC

C3	16.814	VHL	4.101	DLA	-3.02	RAL	123.20	RAD	6567.7	VEL	11.756	PTH	2.07	VHP	3.493	DPA	27.09	RAP	192.17	ECC	1.2767		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 16 24	2080.26	-16.10	33.15	341.20	113.61	14 51 5	1480.3	-12.77	26.06
90.00	1 33 37	4911.33	20.81	213.80	342.46	70.35	2 55 28	4311.3	17.95	206.30
100.00	15 36 21	1822.41	-17.07	13.74	340.74	114.92	16 6 43	1222.4	-13.57	6.69
100.00	2 56 22	4644.42	21.81	193.78	342.06	69.03	4 13 46	4044.4	18.76	186.31
110.00	16 41 22	1618.88	-19.65	356.92	339.37	118.55	17 8 20	1018.9	-15.69	350.04
110.00	4 7 50	4420.71	24.48	175.58	340.84	65.36	5 21 31	3820.7	20.94	168.21

DIFFERENTIAL CORRECTIONS

TDE	.1293	TRA	-1.0213	TC3	-.6319	BAU	.9344
RDE	.4342	RRA	1.3866	RC3	4.1082	FAU	.41234
FDE	-2.9612	FRA	-7.5579	FC	-21.2307	BSP	14056
BDE	.4531	BRA	1.7221	BC3	4.1566	FSP	6186

MID-COURSE EXECUTION ACCURACY

SGT	1530.8	SGR	3934.9	SG3	1796.0		
RRT	-.7319	RRF	-.9987	RTF	.7350		
SGB	4222.2	R23	.0681	R13	-.9964		
SG1	4101.9	SG2	1000.6	THA	106.93		

ORBIT DETERMINATION ACCURACY

ST	465.5	SR	846.8	SS	1581.3
CRT	-.3590	CRS	.9938	CST	-.2546
LSA	1796.8	MSA	453.3	SSA	14.4
EL1	868.5	EL2	423.6	ALF	104.74

LAUNCH DATE DEC 16 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 559.436 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.949	GAL	4.60	AZL	93.09	HCA	167.10	SMA	185.00	ECC	.21882	INC	3.0928	V1	30.263
RP	223.82	LAP	-.69	LOP	251.20	VP	21.645	GAP	-3.64	AZP	86.99	TAL	26.11	TAP	193.21	RCA	144.52	APO	225.48	V2	24.569
RC	257.180	GL	-25.15	GP	30.16	ZAL	47.83	ZAP	104.35	ETS	170.10	ZAE	132.52	ETE	144.49	ZAC	116.65	ETC	254.78	CLP	106.66

PLANETOCENTRIC CONIC

C3	17.388	VHL	4.170	DLA	-5.70	RAL	122.51	RAD	6567.7	VEL	11.780	PTH	2.08	VHP	3.547	DPA	29.29	RAP	192.50	ECC	1.2862

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 49	2004.02	-13.97	28.57	340.67	114.89	15 7 13	1404.0	-10.50	21.61
90.00	1 10 38	5003.04	22.79	219.80	343.08	72.73	2 34 1	4403.0	20.21	212.07
100.00	15 52 28	1750.31	-14.95	9.43	340.18	116.19	16 21 38	1150.3	-11.31	2.53
100.00	2 34 40	4731.98	23.83	199.50	342.71	71.40	3 53 32	4132.0	21.07	191.79
110.00	16 54 32	1555.98	-17.56	353.23	338.73	119.81	17 20 28	956.0	-13.47	346.52
110.00	3 49 5	4499.07	26.60	180.67	341.57	67.70	5 4 5	3899.1	23.34	173.03

DIFFERENTIAL CORRECTIONS

TDE	.0842	TRA	-1.1260	TC3	-.8437	BAU	1.0165
RDE	.5997	RRA	1.5515	RC3	4.2908	FAU	.39968
FDE	-3.4116	FRA	-7.5645	FC	-19.8999	BSP	15239
BDE	.6056	BRA	1.9170	BC3	4.3730	FSP	5949

MID-COURSE EXECUTION ACCURACY

SGT	1710.6	SGR	4251.3	SG3	1742.0		
RRT	-.7912	RRF	-.9990	RTF	.7938		
SGB	4582.6	R23	.0690	R13	-.9966		
SG1	4473.4	SG2	994.3	THA	108.61		

ORBIT DETERMINATION ACCURACY

ST	481.1	SR	1050.6	SS	1734.6
CRT	-.4090	CRS	.9973	CST	-.3414
LSA	2034.6	MSA	451.9	SSA	12.1
EL1	1072.5	EL2	430.0	ALF	102.68

LAUNCH DATE DEC 16 1964 FLIGHT TIME 258.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 563.436 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.945	GAL	4.58	AZL	93.53	HCA	168.18	SMA	184.94	ECC	.21846	INC	3.5290	V1	30.263
RP	223.44	LAP	-.72	LOP	252.28	VP	21.687	GAP	-3.89	AZP	86.55	TAL	26.03	TAP	194.21	RCA	144.54	APO	225.35	V2	24.611
RC	258.763	GL	-28.30	GP	32.46	ZAL	49.18	ZAP	102.35	ETS	170.64	ZAE	129.70	ETE	144.89	ZAC	118.69	ETC	254.56	CLP	104.68

PLANETOCENTRIC CONIC

C3	18.183	VHL	4.264	DLA	-8.75	RAL	121.69	RAD	6567.7	VEL	11.814	PTH	2.09	VHP	3.625	DPA	31.67	RAP	193.01	ECC	1.2992

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 54 11	1917.26	-11.42	23.47	340.31	116.09	15 26 8	1317.3	-7.82	16.64
90.00	0 43 47	5110.61	24.78	227.05	344.05	75.84	2 8 57	4510.6	22.59	219.07
100.00	16 11 16	1668.57	-12.44	4.66	339.78	117.40	16 39 5	1068.6	-8.67	357.90
100.00	2 9 23	4834.53	25.88	206.42	343.73	74.49	3 29 57	4234.5	23.50	198.43
110.00	17 9 49	1485.25	-15.12	349.20	338.24	121.03	17 34 34	885.2	-10.90	342.64
110.00	3 27 19	4590.62	28.82	186.87	342.69	70.76	4 43 50	3990.6	25.92	178.89

DIFFERENTIAL CORRECTIONS

TDE	.0225	TRA	-1.2444	TC3	-1.0420	BAU	1.1071
RDE	.8055	RRA	1.7432	RC3	4.4334	FAU	.38214
FDE	-3.8566	FRA	-7.5008	FC	-18.1943	BSP	16519
BDE	.8058	BRA	2.1418	BC3	4.5542	FSP	5648

MID-COURSE EXECUTION ACCURACY

SGT	1911.2	SGR	4591.6	SG3	1665.5		
RRT	-.8360	RRF	-.9992	RTF	.8383		
SGB	4973.5	R23	.0684	R13	-.9969		
SG1	4874.4	SG2	987.9	THA	110.05		

ORBIT DETERMINATION ACCURACY

ST	509.1	SR	1299.9	SS	1890.1
CRT	-.5002	CRS	.9988	CST	-.4582
LSA	2306.4	MSA	449.3	SSA	10.0
EL1	1327.6	EL2	431.6	ALF	102.42

LAUNCH DATE DEC 16 1964 FLIGHT TIME 260.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 567.444 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.942	GAL	4.56	AZL	94.05	HCA	169.26	SMA	184.89	ECC	.21813	INC	4.0541	V1	30.263
RP	223.05	LAP	-.75	LOP	253.37	VP	21.731	GAP	-4.14	AZP	86.02	TAL	25.93	TAP	195.19	RCA	144.56	APO	225.22	V2	24.653
RC	260.326	GL	-31.90	GP	35.01	ZAL	50.84	ZAP	100.37	ETS	171.26	ZAE	126.77	ETE	145.24	ZAC	120.99	ETC	254.27	CLP	102.69

PLANETOCENTRIC CONIC

C3	19.305	VHL	4.394	DLA	-12.22	RAL	120.72	RAD	6567.8	VEL	11.861	PTH	2.10	VHP	3.734	DPA	34.26	RAP	193.74	ECC	1.3177

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 38	1816.84	-8.36	17.68	340.23	117.15	15 48 55	1216.8	-4.65	10.97
90.00	0 11 35	5239.18	26.62	236.01	345.48	79.96	1 38 54	4639.2	24.96	227.74
100.00	16 33 44	1574.56	-9.44	359.29	339.65	118.50	16 59 58	974.6	-5.56	352.65
100.00	1 39 11	4956.69	27.82	214.98	345.22	78.60	3 1 47	4356.7	25.96	206.67
110.00	17 27 52	1405.01	-12.26	344.75	337.97	122.16	17 51 17	805.0	-7.93	338.34
110.00	3 1.31	4699.01	31.00	194.55	344.36	74.82	4 19 50	4099.0	28.61	186.17

DIFFERENTIAL CORRECTIONS

TDE	-.0549	TRA	-1.3757	TC3	-1.2066	BAU	1.2049
RDE	1.0599	RRA	1.9654	RC3	4.5101	FAU	.35880
FDE	-4.2606	FRA	-7.3374	FC	-16.0907	BSP	17986
BDE	1.0613	BRA	2.3990	BC3	4.6687	FSP	5292

MID-COURSE EXECUTION ACCURACY

SGT	2121.0	SGR	4949.2	SG3	1561.5		
RRT	-.8683	RRF	-.9994	RTF	.8703		
SGB	5304.5	R23	.0667	R13	-.9972		
SG1	5293.9	SG2	983.6	THA	111.18		

ORBIT DETERMINATION ACCURACY

ST	556.2	SR	1594.8	SS	2032.0
CRT	-.6043	CRS	.9995	CST	-.5791
LSA	2604.1	MSA	447.6	SSA	8.3
EL1	1632.6	EL2	432.9	ALF	102.82

LAUNCH DATE DEC 16 1964 FLIGHT TIME 262.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 571.459 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.940	GAL	4.54	AZL	94.70	HCA	170.35	SMA	184.85	ECC	.21782	INC	4.6975	V1	30.263
RP	222.66	LAP	-.79	LOP	254.46	VP	21.774	GAP	-4.39	AZP	85.37	TAL	25.82	TAP	196.17	RCA	144.59	APO	225.11	V2	24.695
RC	261.869	GL	-36.01	GP	37.86	ZAL	52.88	ZAP	98.43	ETS	171.98	ZAE	123.74	ETE	145.55	ZAC	123.56	ETC	253.88	CLP	100.70

PLANETOCENTRIC CONIC

C3	20.923	VHL	4.574	DLA	-16.17	RAL	119.54	RAD	6567.9	VEL	11.929	PTH	2.12	VHP	3.886	DPA	37.08	RAP	194.77	ECC	1.3443

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 49 16	1697.14	-4.58	10.92	340.64	117.97	16 17 33	1097.1	-.80	4.27
90.00	23 27 35	5397.23	27.99	247.37	347.45	85.49	24 57 32	4797.2	27.07	238.82
100.00	17 1 34	1463.82	-5.79	353.10	339.98	119.38	17 25 58	863.8	-1.83	346.55
100.00	1 1 53	5105.78	29.35	225.79	347.31	84.08	2 26 59	4505.8	28.22	217.17
110.00	17 49 48	1312.74	-8.87	339.76	338.09	123.15	18 11 41	712.7	-4.44	333.46
110.00	2 30 9	4829.62	32.93	204.24	346.73	80.25	3 50 39	4229.6	31.23	195.43

DIFFERENTIAL CORRECTIONS

TDE	-.1558	TRA	-1.5272	TC3	-1.3332	BAU	1.3134
RDE	1.3838	RRA	2.2341	RC3	4.5023	FAU	.32990
FDE	-4.6110	FRA	-7.0788	FC	-13.6503	BSP	19511
BDE	1.3926	BRA	2.7062	BC3	4.6956	FSP	4837

MID-COURSE EXECUTION ACCURACY

SGT	2343.6	SGR	5334.7	SG3	1431.6		
RRT	-.8930	RRF	-.9995	RTF	.8948		
SGB	5826.8	R23	.0641	R13	-.9974		
SG1	5743.9	SG2	979.6	THA	112.10		

ORBIT DETERMINATION ACCURACY

ST	629.7	SR	1945.2	SS	2154.1
CRT	-.7063	CRS	.9998	CST	-.6920
LSA	2936.2	MSA	446.3	SSA	6.8
EL1	1998.0	EL2	434.0	ALF	103.53

LAUNCH DATE DEC 16 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 575.482 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 32.938 GAL 4.51 AZL 95.51 HCA 171.43 SMA 184.82 ECC .21752 INC 5.5051 V1 30.263
RP 222.28 LAP -.82 LOP 255.55 VP 21.819 GAP -4.62 AZP 84.56 TAL 25.70 TAP 197.13 RCA 144.61 APO 225.02 V2 24.737
RC 263.392 GL -40.71 GP 41.02 ZAL 55.36 ZAP 96.56 ETS 172.81 ZAE 120.60 ETE 145.84 ZAC 126.44 ETC 253.37 CLP 98.72

PLANETOCENTRIC CONIC

C3 23.328 VHL 4.830 DLA -20.66 RAL 118.06 RAD 6567.9 VEL 12.029 PTH 2.15 VHP 4.097 DPA 40.13 RAP 196.16 ECC 1.3839

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 43	1545.42	.30	2.44	341.92	118.32	16 56 28	945.4	4.09	355.80
90.00	22 34 20	5601.61	28.17	262.30	349.88	92.96	24 7 41	5001.6	28.29	253.63
100.00	17 38 24	1326.95	-1.17	345.56	341.10	119.87	18 0 31	727.0	2.81	339.04
100.00	0 13 15	5295.31	29.86	239.84	349.95	91.44	1 41 30	4695.3	29.74	231.03
110.00	18 17 39	1203.95	-4.78	333.99	338.86	123.89	18 37 43	604.0	-.29	327.78
110.00	1 50 30	4991.07	34.10	216.68	349.91	87.52	3 13 41	4391.1	33.38	207.52

DIFFERENTIAL CORRECTIONS
TDE -.2838 TRA-1.7049 TC3-1.4052 BAU 1.4356
RDE 1.8013 RRA 2.5660 RC3 4.3836 FAU .29533
FDE-4.8633 FRA-6.7025 FC-10.9604 BSP 21046
BDE 1.8235 BRA 3.0808 BC3 4.6033 FSP 4273

MID-COURSE EXECUTION ACCURACY
SGT 2574.5 SGR 5751.6 SG3 1274.5
RRT -.9116 RRF -.9996 RTF .9132
SGB 6301.5 R23 .0610 R13 -.9977
SG1 6225.2 SG2 977.6 THA 112.79

ORBIT DETERMINATION ACCURACY
ST 731.8 SR 2352.6 SS 2235.8
CRT -.7885 CRS .9999 CST -.7807
LSA 3296.8 MSA 446.9 SSA 5.5
EL1 2424.8 EL2 436.7 ALF 104.25

LAUNCH DATE DEC 16 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 579.511 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 32.936 GAL 4.48 AZL 96.55 HCA 172.52 SMA 184.79 ECC .21725 INC 6.5504 V1 30.263
RP 221.89 LAP -.85 LOP 256.65 VP 21.864 GAP -4.86 AZP 83.50 TAL 25.56 TAP 198.09 RCA 144.64 APO 224.94 V2 24.779
RC 264.895 GL -46.08 GP 44.53 ZAL 58.34 ZAP 94.80 ETS 173.77 ZAE 117.37 ETE 146.14 ZAC 129.65 ETC 252.69 CLP 96.74

PLANETOCENTRIC CONIC

C3 27.044 VHL 5.200 DLA -25.75 RAL 116.15 RAD 6568.1 VEL 12.183 PTH 2.19 VHP 4.398 DPA 43.41 RAP 198.04 ECC 1.4451

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 23	1313.38	7.71	349.41	345.14	117.33	18 1 17	713.4	11.32	342.59
90.00	21 10 26	618.46	25.18	306.14	351.87	103.41	21 20 45	18.5	26.77	297.83
100.00	18 34 50	1134.34	5.34	334.97	343.85	119.46	18 53 45	534.3	9.22	328.34
100.00	22 57 41	5560.77	27.81	259.25	352.52	101.43	24 30 21	4960.8	29.10	250.69
110.00	18 56 2	1067.85	.42	326.88	340.80	124.18	19 13 49	467.9	4.90	320.66
110.00	0 56 54	5200.02	33.53	232.94	353.60	97.10	2 23 34	4600.0	34.14	223.75

DIFFERENTIAL CORRECTIONS
TDE -.4367 TRA-1.9124 TC3-1.3990 BAU 1.5665
RDE 2.3281 RRA 2.9732 RC3 4.1007 FAU .25348
FDE-4.9172 FRA-6.1518 FC3-8.1144 BSP 22947
BDE 2.3687 BRA 3.5351 BC3 4.3328 FSP 3664

MID-COURSE EXECUTION ACCURACY
SGT 2796.6 SGR 6164.2 SG3 1083.3
RRT -.9251 RRF -.9996 RTF .9266
SGB 6769.0 R23 .0579 R13 -.9980
SG1 6698.0 SG2 977.3 THA 113.29

ORBIT DETERMINATION ACCURACY
ST 852.0 SR 2790.4 SS 2232.0
CRT -.8435 CRS 1.0000 CST -.8395
LSA 3645.7 MSA 450.7 SSA 4.5
EL1 2883.8 EL2 442.8 ALF 104.80

LAUNCH DATE DEC 16 1964 FLIGHT TIME 268.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 583.544 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 32.935 GAL 4.45 AZL 97.95 HCA 173.61 SMA 184.77 ECC .21700 INC 7.9542 V1 30.263
RP 221.51 LAP -.88 LOP 257.76 VP 21.909 GAP -5.09 AZP 82.09 TAL 25.42 TAP 199.03 RCA 144.68 APO 224.87 V2 24.820
RC 266.379 GL -52.16 GP 48.37 ZAL 61.86 ZAP 93.18 ETS 174.84 ZAE 114.06 ETE 146.48 ZAC 133.18 ETC 251.79 CLP 94.79

PLANETOCENTRIC CONIC

C3 33.103 VHL 5.754 DLA -31.46 RAL 113.61 RAD 6568.3 VEL 12.429 PTH 2.25 VHP 4.834 DPA 46.87 RAP 200.55 ECC 1.5448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.69	17 21 54	1378.78	18.14	359.59	351.21	116.15	17 44 53	778.8	21.50	352.29
104.31	21 7 36	654.34	18.16	306.04	351.22	116.14	21 18 31	54.3	21.52	298.74
75.69	17 21 54	1378.78	18.14	359.59	351.21	116.15	17 44 53	778.8	21.50	352.29
104.31	21 7 36	654.34	18.16	306.04	351.22	116.14	21 18 31	54.3	21.52	298.74
110.00	20 1 40	859.94	8.31	315.95	345.45	123.28	20 16 0	259.9	12.63	309.52
110.00	23 27 1	5509.22	28.58	255.59	356.00	109.60	24 58 50	4909.2	30.98	247.22

DIFFERENTIAL CORRECTIONS
TDE -.6268 TRA-2.1764 TC3-1.3209 BAU 1.7272
RDE 3.0278 RRA 3.5218 RC3 3.6726 FAU .20736
FDE-4.7379 FRA-5.4521 FC3-5.4232 BSP 24498
BDE 3.0920 BRA 4.1400 BC3 3.9029 FSP 2905

MID-COURSE EXECUTION ACCURACY
SGT 3025.8 SGR 6622.3 SG3 871.4
RRT -.9358 RRF -.9997 RTF .9373
SGB 7280.8 R23 .0543 R13 -.9982
SG1 7214.7 SG2 979.0 THA 113.61

ORBIT DETERMINATION ACCURACY
ST 986.3 SR 3260.2 SS 2127.5
CRT -.8795 CRS 1.0000 CST -.8777
LSA 3989.6 MSA 459.0 SSA 3.6
EL1 3375.8 EL2 453.2 ALF 105.18

LAUNCH DATE DEC 16 1964 FLIGHT TIME 294.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 637.337 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 32.952 GAL 3.78 AZL 81.36 HCA 188.45 SMA 185.06 ECC .21445 INC 8.6390 V1 30.263
RP 216.74 LAP -1.27 LOP 272.44 VP 22.528 GAP -7.53 AZP 98.55 TAL 21.70 TAP 210.15 RCA 145.37 APO 224.74 V2 25.346
RC 284.057 GL 56.77 GP -40.76 ZAL 66.76 ZAP 77.37 ETS 167.80 ZAE 101.27 ETE 188.03 ZAC 45.02 ETC 252.59 CLP 73.22

PLANETOCENTRIC CONIC

C3 34.860 VHL 5.904 DLA 69.92 RAL 169.38 RAD 6568.4 VEL 12.499 PTH 2.26 VHP 4.286 DPA -29.91 RAP 149.86 ECC 1.5737

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
11.37	9 25 57	4315.58	-52.11	242.88	127.46	16.42	10 37 53	3715.6	-59.71	238.83
11.37	1 17 57	4829.80	-17.96	250.55	14.94	10.52	2 38 27	4229.8	-25.82	249.35
21.37	7 10 13	4445.27	-40.39	233.62	84.71	24.91	8 24 19	3845.3	-47.54	229.05
21.37	4 14 6	4663.08	-26.72	239.64	47.49	21.05	5 31 49	4063.1	-34.14	236.60
22.95	5 45 34	4550.00	-33.29	235.20	65.51	24.25	7 1 24	3950.0	-40.51	231.31
157.05	16 12 53	2797.27	-33.28	85.25	65.49	24.25	16 59 30	2197.3	-40.50	81.35

DIFFERENTIAL CORRECTIONS
TDE 6.1130 TRA -.0157 TC3-3.0781 BAU 1.9484
RDE 4.1645 RRA .3609 RC3-2.8289 FAU .27935
FDE 9.3512 FRA .8437 FC3-6.9376 BSP 29387
BDE 7.3968 BRA .3612 BC3 4.1806 FSP 3855

MID-COURSE EXECUTION ACCURACY
SGT 6957.3 SGR 5341.5 SG3 1076.2
RRT .9706 RRF .9991 RTF .9636
SGB 8771.3 R23 .1780 R13 .9834
SG1 8711.0 SG2 1026.6 THA 37.30

ORBIT DETERMINATION ACCURACY
ST 5933.2 SR 4054.1 SS 3371.9
CRT .9970 CRS-1.0000 CST -.9967
LSA 7931.6 MSA 313.0 SSA 5.2
EL1 7181.2 EL2 261.2 ALF 34.32

LAUNCH DATE DEC 16 1964 FLIGHT TIME 296.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 641.503 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.956	GAL	3.72	AZL	82.23	HCA	189.60	SMA	185.12	ECC	.21437	INC	7.7708
RP	216.39	LAP	-1.29	LOP	273.60	VP	22.576	GAP	-7.69	AZP	97.66	TAL	21.35	TAP	210.95	RCA	145.43	APO	224.80
RC	285.296	GL	53.72	GP	-37.35	ZAL	65.41	ZAP	75.39	ETS	167.53	ZAE	100.21	ETE	186.20	ZAC	48.18	ETC	253.58

V1	30.263	V2	25.385	CLP	71.50														

PLANETOCENTRIC CONIC

C3	30.428	VHL	5.516	DLA	67.14	RAL	165.27	RAD	6568.2	VEL	12.321	PTH	2.22	VHP	4.072	DPA	-26.67	RAP	151.17
ECC	1.5008																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
26.18	5 36 11	4506.25	-34.64	230.57	58.34	28.17	6 51 18	3906.2	-41.59	225.95
153.82	15 49 24	2772.53	-34.63	84.07	58.33	28.17	16 35 37	2172.5	-41.59	79.45
26.18	5 36 11	4506.25	-34.64	230.57	58.34	28.17	6 51 18	3906.2	-41.59	225.95
153.82	15 49 24	2772.53	-34.63	84.07	58.33	28.17	16 35 37	2172.5	-41.59	79.45
26.18	5 36 11	4506.25	-34.64	230.57	58.34	28.17	6 51 18	3906.2	-41.59	225.95
153.82	15 49 24	2772.53	-34.63	84.07	58.33	28.17	16 35 37	2172.5	-41.59	79.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	5.7404	TRA	-.1790	TC3	-3.6016	BAU	1.8864	SGT	7181.0	SGR	4932.9	SG3	1217.9	ST	5965.4	SR	3688.1	SS	3559.4
RDE	3.5449	RRA	.2341	RC3	-2.9209	FAU	.30821	RRT	.9728	RRF	.9990	RTF	.9663	CRT	.9972	CRS	-1.0000	CST	-.9970
FDE	9.7225	FRA	.6603	FC3	-8.7691	BSP	29219	SGB	8712.1	R23	.1824	R13	.9825	LSA	7859.4	MSA	295.7	SSA	6.0
BDE	6.7467	BRA	.2947	BC3	4.6372	FSP	4341	SG1	8660.4	SG2	948.2	THA	34.22	EL1	7009.4	EL2	236.0	ALF	31.69

LAUNCH DATE DEC 16 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 645.680 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.959	GAL	3.66	AZL	82.92	HCA	190.75	SMA	185.18	ECC	.21430	INC	7.0848
RP	216.05	LAP	-1.32	LOP	274.76	VP	22.624	GAP	-7.85	AZP	96.96	TAL	20.98	TAP	211.73	RCA	145.49	APO	224.86
RC	286.520	GL	51.04	GP	-34.31	ZAL	64.34	ZAP	73.47	ETS	167.38	ZAE	98.99	ETE	184.61	ZAC	51.01	ETC	254.34

V1	30.263	V2	25.423	CLP	69.85														

PLANETOCENTRIC CONIC

C3	27.215	VHL	5.217	DLA	64.62	RAL	162.50	RAD	6568.1	VEL	12.190	PTH	2.19	VHP	3.924	DPA	-23.76	RAP	152.25
ECC	1.4479																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
29.13	5 31 52	4468.26	-35.49	226.21	52.74	31.76	6 46 20	3868.3	-42.17	220.95
150.87	15 31 40	2754.74	-35.49	82.99	52.73	31.76	16 17 35	2154.7	-42.16	77.74
29.13	5 31 52	4468.26	-35.49	226.21	52.74	31.76	6 46 20	3868.3	-42.17	220.95
150.87	15 31 40	2754.74	-35.49	82.99	52.73	31.76	16 17 35	2154.7	-42.16	77.74
29.13	5 31 52	4468.26	-35.49	226.21	52.74	31.76	6 46 20	3868.3	-42.17	220.95
150.87	15 31 40	2754.74	-35.49	82.99	52.73	31.76	16 17 35	2154.7	-42.16	77.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	5.4399	TRA	-.3035	TC3	-4.1172	BAU	1.8426	SGT	7309.6	SGR	4553.6	SG3	1331.5	ST	5980.6	SR	3337.3	SS	3656.6
RDE	3.0355	RRA	.1535	RC3	-2.9488	FAU	.32978	RRT	.9743	RRF	.9988	RTF	.9680	CRT	.9972	CRS	-1.0000	CST	-.9972
FDE	9.8085	FRA	.4987	FC3	-10.4907	BSP	29340	SGB	8688.5	R23	.1871	R13	.9814	LSA	7758.5	MSA	285.5	SSA	6.8
BDE	6.2296	BRA	.3401	BC3	5.0642	FSP	4749	SG1	8644.0	SG2	877.8	THA	31.31	EL1	6845.3	EL2	217.4	ALF	29.13

LAUNCH DATE DEC 16 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 649.867 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.963	GAL	3.59	AZL	83.47	HCA	191.91	SMA	185.24	ECC	.21424	INC	6.5283
RP	215.71	LAP	-1.34	LOP	275.92	VP	22.672	GAP	-8.00	AZP	96.39	TAL	20.59	TAP	212.51	RCA	145.56	APO	224.93
RC	287.729	GL	48.70	GP	-31.61	ZAL	63.51	ZAP	71.62	ETS	167.30	ZAE	97.66	ETE	183.26	ZAC	53.54	ETC	254.94

V1	30.263	V2	25.461	CLP	68.27														

PLANETOCENTRIC CONIC

C3	24.791	VHL	4.979	DLA	62.34	RAL	160.60	RAD	6568.0	VEL	12.090	PTH	2.16	VHP	3.822	DPA	-21.17	RAP	153.15
ECC	1.4080																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
31.83	5 30 39	4434.68	-35.99	222.15	48.24	35.01	6 44 34	3834.7	-42.39	216.36
148.17	15 17 42	2742.16	-35.98	82.04	48.22	35.00	16 3 24	2142.2	-42.37	76.26
31.83	5 30 39	4434.68	-35.99	222.15	48.24	35.01	6 44 34	3834.7	-42.39	216.36
148.17	15 17 42	2742.16	-35.98	82.04	48.22	35.00	16 3 24	2142.2	-42.37	76.26
31.83	5 30 39	4434.68	-35.99	222.15	48.24	35.01	6 44 34	3834.7	-42.39	216.36
148.17	15 17 42	2742.16	-35.98	82.04	48.22	35.00	16 3 24	2142.2	-42.37	76.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	5.1842	TRA	-.4148	TC3	-4.6459	BAU	1.8229	SGT	7619.0	SGR	4206.2	SG3	1420.4	ST	5975.2	SR	3009.2	SS	3681.7
RDE	2.6131	RRA	.0938	RC3	-2.9441	FAU	.34683	RRT	.9756	RRF	.9986	RTF	.9693	CRT	.9972	CRS	-1.0000	CST	-.9972
FDE	9.6812	FRA	.3320	FC3	-12.1120	BSP	29234	SGB	8702.9	R23	.1913	R13	.9804	LSA	7631.3	MSA	277.6	SSA	7.8
BDE	5.8055	BRA	.4253	BC3	5.5002	FSP	5011	SG1	8664.9	SG2	812.7	THA	28.58	EL1	6687.1	EL2	201.7	ALF	26.69

LAUNCH DATE DEC 16 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 654.064 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.967	GAL	3.52	AZL	83.93	HCA	193.08	SMA	185.31	ECC	.21419	INC	6.0684
RP	215.38	LAP	-1.37	LOP	277.09	VP	22.720	GAP	-8.15	AZP	95.91	TAL	20.20	TAP	213.27	RCA	145.62	APO	225.00
RC	288.924	GL	46.63	GP	-29.21	ZAL	62.87	ZAP	69.84	ETS	167.29	ZAE	96.24	ETE	182.11	ZAC	55.80	ETC	255.42

V1	30.263	V2	25.498	CLP	66.74														

PLANETOCENTRIC CONIC

C3	22.900	VHL	4.785	DLA	60.27	RAL	159.27	RAD	6567.9	VEL	12.012	PTH	2.14	VHP	3.752	DPA	-18.86	RAP	153.93
ECC	1.3769																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.28	5 31 25	4404.58	-36.22	218.41	44.56	37.93	6 44 50	3804.6	-42.36	212.18
145.72	15 6 23	2733.43	-36.21	81.24	44.55	37.92	15 51 56	2133.4	-42.35	75.01
34.28	5 31 25	4404.58	-36.22	218.41	44.56	37.93	6 44 50	3804.6	-42.36	212.18
145.72	15 6 23	2733.43	-36.21	81.24	44.55	37.92	15 51 56	2133.4	-42.35	75.01
34.28	5 31 25	4404.58	-36.22	218.41	44.56	37.93	6 44 50	3804.6	-42.36	212.18
145.72	15 6 23	2733.43	-36.21	81.24	44.55	37.92	15 51 56	2133.4	-42.35	75.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.9871	TRA	-.4939	TC3	-5.1506	BAU	1.8089	SGT	7834.3	SGR	3886.3	SG3	1486.0	ST	5983.6	SR	2722.6	SS	3671.5
RDE	2.2725	RRA	.0607	RC3	-2.8953	FAU	.35762	RRT	.9765	RRF	.9983	RTF	.9703	CRT	.9971	CRS	-1.0000	CST	-.9972
FDE	9.4524	FRA	.2184	FC3	-13.5199	BSP	29578	SGB	8745.2	R23	.1948	R13	.9794	LSA	7524.7	MSA	272.4	SSA	8.7
BDE	5.4805	BRA	.4976	BC3	5.9086	FSP	5244	SG1	8712.8	SG2	752.6	THA	26.06	EL1	6571.2	EL2	188.7	ALF	24.42

LAUNCH DATE DEC 16 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 658.267 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.971	GAL	3.45	AZL	84.32	HCA	194.24	SMA	185.38	ECC	.21414	INC	5.6810	V1	30.263
RP	215.05	LAP	-1.40	LOP	278.26	VP	22.768	GAP	-8.29	AZP	95.51	TAL	19.78	TAP	214.02	RCA	145.68	APO	225.08	V2	25.535
RC	290.105	GL	44.79	GP	-27.07	ZAL	62.42	ZAP	68.12	ETS	167.32	ZAE	94.79	ETE	181.13	ZAC	57.81	ETC	255.80	CLP	65.26

PLANETOCENTRIC CONIC

C3	21.383	VHL	4.624	DLA	58.39	RAL	158.37	RAD	6567.9	VEL	11.948	PTH	2.13	VHP	3.706	DPA	-16.80	RAP	154.60	ECC	1.3519

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.53	5 33 36	4377.14	-36.28	214.95	41.53	40.55	6 46 33	3777.1	-42.16	208.36
143.47	14 57 1	2727.69	-36.27	80.58	41.52	40.54	15 42 29	2127.7	-42.15	73.99
36.53	5 33 36	4377.14	-36.28	214.95	41.53	40.55	6 46 33	3777.1	-42.16	208.36
143.47	14 57 1	2727.69	-36.27	80.58	41.52	40.54	15 42 29	2127.7	-42.15	73.99
36.53	5 33 36	4377.14	-36.28	214.95	41.53	40.55	6 46 33	3777.1	-42.16	208.36
143.47	14 57 1	2727.69	-36.27	80.58	41.52	40.54	15 42 29	2127.7	-42.15	73.99

DIFFERENTIAL CORRECTIONS

TDE	4.8346	TRA	-.5476	TC3	-5.6333	BAU	1.7991
RDE	2.0003	RRA	.0501	RC3	-2.8059	FAU	.36202
FDE	9.1886	FRA	.1812	FC	-14.6570	BSP	30300
BDE	5.2321	BRA	.5499	BC3	6.2934	FSP	5507

MID-COURSE EXECUTION ACCURACY

SGT	8043.8	SGR	3590.4	SG3	1529.9		
RRT	.9769	RRF	.9979	RTF	.9707		
SGB	8808.7	R23	.1979	R13	.9783		
SG1	8780.6	SG2	702.9	THA	23.72		

ORBIT DETERMINATION ACCURACY

ST	6004.8	SR	2480.0	SS	3648.2
CRT	.9969	CRS	-1.0000	CST	-.9971
LSA	7445.9	MSA	275.2	SSA	9.5
EL1	6494.2	EL2	181.5	ALF	22.40

LAUNCH DATE DEC 16 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 662.483 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.976	GAL	3.38	AZL	84.65	HCA	195.41	SMA	185.46	ECC	.21411	INC	5.3501	V1	30.263
RP	214.72	LAP	-1.42	LOP	279.43	VP	22.816	GAP	-8.43	AZP	95.16	TAL	19.36	TAP	214.77	RCA	145.75	APO	225.17	V2	25.572
RC	291.272	GL	43.15	GP	-25.16	ZAL	62.11	ZAP	66.47	ETS	167.38	ZAE	93.30	ETE	180.29	ZAC	59.62	ETC	256.11	CLP	63.83

PLANETOCENTRIC CONIC

C3	20.140	VHL	4.488	DLA	56.68	RAL	157.78	RAD	6567.8	VEL	11.896	PTH	2.11	VHP	3.678	DPA	-14.97	RAP	155.19	ECC	1.3315

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.61	5 36 44	4351.90	-36.21	211.75	39.02	42.91	6 49 15	3751.9	-41.85	204.86
141.39	14 49 8	2724.23	-36.20	80.06	39.00	42.90	15 34 32	2124.2	-41.85	73.17
38.61	5 36 44	4351.90	-36.21	211.75	39.02	42.91	6 49 15	3751.9	-41.85	204.86
141.39	14 49 8	2724.23	-36.20	80.06	39.00	42.90	15 34 32	2124.2	-41.85	73.17
38.61	5 36 44	4351.90	-36.21	211.75	39.02	42.91	6 49 15	3751.9	-41.85	204.86
141.39	14 49 8	2724.23	-36.20	80.06	39.00	42.90	15 34 32	2124.2	-41.85	73.17

DIFFERENTIAL CORRECTIONS

TDE	4.6804	TRA	-.6144	TC3	-6.1567	BAU	1.8144
RDE	1.7576	RRA	.0289	RC3	-2.7398	FAU	.36793
FDE	8.7872	FRA	.0707	FC	-15.8159	BSP	30300
BDE	4.9995	BRA	.6151	BC3	6.7388	FSP	5508

MID-COURSE EXECUTION ACCURACY

SGT	8263.2	SGR	3329.8	SG3	1563.3		
RRT	.9777	RRF	.9974	RTF	.9714		
SGB	8908.9	R23	.1987	R13	.9776		
SG1	8885.2	SG2	649.8	THA	21.63		

ORBIT DETERMINATION ACCURACY

ST	5993.1	SR	2245.3	SS	3568.0
CRT	.9967	CRS	-1.0000	CST	-.9971
LSA	7322.4	MSA	268.0	SSA	10.6
EL1	6397.7	EL2	169.5	ALF	20.49

LAUNCH DATE DEC 16 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 666.707 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.980	GAL	3.30	AZL	84.94	HCA	196.59	SMA	185.54	ECC	.21410	INC	5.0643	V1	30.263
RP	214.40	LAP	-1.44	LOP	280.61	VP	22.863	GAP	-8.56	AZP	94.85	TAL	18.91	TAP	215.50	RCA	145.81	APO	225.26	V2	25.608
RC	292.426	GL	41.69	GP	-23.45	ZAL	61.93	ZAP	64.89	ETS	167.47	ZAE	91.80	ETE	179.58	ZAC	61.24	ETC	256.36	CLP	62.45

PLANETOCENTRIC CONIC

C3	19.098	VHL	4.370	DLA	55.10	RAL	157.42	RAD	6567.8	VEL	11.852	PTH	2.10	VHP	3.664	DPA	-13.33	RAP	155.73	ECC	1.3143

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.53	5 40 37	4328.34	-36.05	208.79	36.93	45.04	6 52 45	3728.3	-41.47	201.65
139.47	14 42 25	2722.59	-36.04	79.66	36.91	45.03	15 27 48	2122.6	-41.46	72.53
40.53	5 40 37	4328.34	-36.05	208.79	36.93	45.04	6 52 45	3728.3	-41.47	201.65
139.47	14 42 25	2722.59	-36.04	79.66	36.91	45.03	15 27 48	2122.6	-41.46	72.53
40.53	5 40 37	4328.34	-36.05	208.79	36.93	45.04	6 52 45	3728.3	-41.47	201.65
139.47	14 42 25	2722.59	-36.04	79.66	36.91	45.03	15 27 48	2122.6	-41.46	72.53

DIFFERENTIAL CORRECTIONS

TDE	4.5584	TRA	-.6588	TC3	-6.6569	BAU	1.8294
RDE	1.5596	RRA	.0215	RC3	-2.6503	FAU	.36946
FDE	8.3889	FRA	.0193	FC	-16.7481	BSP	30657
BDE	4.8178	BRA	.6591	BC3	7.1651	FSP	5528

MID-COURSE EXECUTION ACCURACY

SGT	8476.4	SGR	3090.2	SG3	1582.0		
RRT	.9782	RRF	.9968	RTF	.9719		
SGB	9022.1	R23	.1987	R13	.9769		
SG1	9001.9	SG2	603.7	THA	19.72		

ORBIT DETERMINATION ACCURACY

ST	5996.1	SR	2045.9	SS	3485.0
CRT	.9966	CRS	-1.0000	CST	-.9970
LSA	7225.9	MSA	264.4	SSA	11.6
EL1	6333.5	EL2	160.5	ALF	18.79

LAUNCH DATE DEC 16 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 670.939 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.985	GAL	3.23	AZL	85.19	HCA	197.77	SMA	185.62	ECC	.21409	INC	4.8147	V1	30.263
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.910	GAP	-8.70	AZP	94.59	TAL	18.46	TAP	216.23	RCA	145.88	APO	225.36	V2	25.644
RC	293.566	GL	40.37	GP	-21.92	ZAL	61.87	ZAP	63.36	ETS	167.57	ZAE	90.29	ETE	178.97	ZAC	62.70	ETC	256.57	CLP	61.10

PLANETOCENTRIC CONIC

C3	18.210	VHL	4.267	DLA	53.65	RAL	157.26	RAD	6567.7	VEL	11.815	PTH	2.09	VHP	3.662	DPA	-11.86	RAP	156.22	ECC	1.2997

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.32	5 45 6	4306.14	-35.82	206.02	35.19	46.97	6 56 52	3706.1	-41.04	198.68
137.68	14 36 38	2722.42	-35.81	79.37	35.17	46.96	15 22 0	2122.4	-41.03	72.04
42.32	5 45 6	4306.14	-35.82	206.02	35.19	46.97	6 56 52	3706.1	-41.04	198.68
137.68	14 36 38	2722.42	-35.81	79.37	35.17	46.96	15 22 0	2122.4	-41.03	72.04
42.32	5 45 6	4306.14	-35.82	206.02	35.19	46.97	6 56 52	3706.1	-41.04	198.68
137.68	14 36 38	2722.42	-35.81	79.37	35.17	46.96	15 22 0	2122.4	-41.03	72.04

DIFFERENTIAL CORRECTIONS

TDE	4.4542	TRA	-.6920	TC3	-7.1510	BAU	1.8485
RDE	1.3932	RRA	.0194	RC3	-2.5534	FAU	.36860
FDE	7.9827	FRA	-.0071	FC	-17.5240	BSP	31088
BDE	4.6670	BRA	.6923	BC3	7.5932	FSP	5515

MID-COURSE EXECUTION ACCURACY

SGT	8687.4	SGR	2872.3	SG3	1589.8		
RRT	.9786	RRF	.9960	RTF	.9722		
SGB	9149.9	R23	.1975	R13	.9763		
SG1	9132.6	SG2	562.7	THA	18.00		

ORBIT DETERMINATION ACCURACY

ST	6001.7	SR	1871.8	SS	3393.7
CRT	.9963	CRS	-.9999	CST	-.9969
LSA	7139.5	MSA	261.6	SSA	12.7
EL1	6285.0	EL2	152.8	ALF	17.27

LAUNCH DATE DEC 16 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 675.178 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.990	GAL	3.14	AZL	85.41	HCA	198.95	SMA	185.70	ECC	.21409	INC	4.5945
RP	213.77	LAP	-1.49	LOP	282.97	VP	22.956	GAP	-8.82	AZP	94.35	TAL	17.99	TAP	216.94	RCA	145.95	APO	225.46
RC	294.693	GL	39.19	GP	-20.53	ZAL	61.92	ZAP	61.90	ETS	167.68	ZAE	88.80	ETE	178.45	ZAC	64.03	ETC	256.74

PLANETOCENTRIC CONIC

C3	17.441	VHL	4.176	DLA	52.30	RAL	157.25	RAD	6567.7	VEL	11.782	PTH	2.08	VHP	3.667	DPA	-10.55	RAP	156.68

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.00	5 50 3	4285.05	-35.55	203.42	33.74	48.73	7 1 28	3685.0	-40.58	195.92
136.00	14 31 37	2723.43	-35.54	79.18	33.73	48.72	15 17 1	2123.4	-40.56	71.68
44.00	5 50 3	4285.05	-35.55	203.42	33.74	48.73	7 1 28	3685.0	-40.58	195.92
136.00	14 31 37	2723.43	-35.54	79.18	33.73	48.72	15 17 1	2123.4	-40.56	71.68
44.00	5 50 3	4285.05	-35.55	203.42	33.74	48.73	7 1 28	3685.0	-40.58	195.92
136.00	14 31 37	2723.43	-35.54	79.18	33.73	48.72	15 17 1	2123.4	-40.56	71.68

DIFFERENTIAL CORRECTIONS

TDE	4.3630	TRA	-.7150	TC3	-7.6401	BAU	1.8709
RDE	1.2525	RRA	.0218	RC3	-2.4511	FAU	.36565
FDE	7.5788	FRA	-.0073	FC	-18.1500	BSP	31584
BDE	4.5392	BRA	.7153	BC3	8.0237	FSP	5487

MID-COURSE EXECUTION ACCURACY

SGT	8895.2	SGR	2673.3	SG3	1588.3		
RRT	.9787	RRF	.9951	RTF	.9724		
SGB	9288.3	R23	.1952	R13	.9758		
SG1	9273.3	SG2	527.1	THA	16.44		

ORBIT DETERMINATION ACCURACY

ST	6008.2	SR	1719.6	SS	3297.8
CRT	.9961	CRS	-.9999	CST	-.9968
LSA	7061.4	MSA	260.3	SSA	13.8
EL1	6247.7	EL2	146.6	ALF	15.92

LAUNCH DATE DEC 16 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 679.426 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	32.995	GAL	3.06	AZL	85.60	HCA	200.14	SMA	185.79	ECC	.21411	INC	4.3988
RP	213.46	LAP	-1.51	LOP	284.16	VP	23.003	GAP	-8.95	AZP	94.13	TAL	17.51	TAP	217.65	RCA	146.01	APO	225.57
RC	295.805	GL	38.11	GP	-19.29	ZAL	62.06	ZAP	60.48	ETS	167.80	ZAE	87.32	ETE	178.00	ZAC	65.24	ETC	256.88

PLANETOCENTRIC CONIC

C3	16.766	VHL	4.095	DLA	51.04	RAL	157.38	RAD	6567.7	VEL	11.754	PTH	2.07	VHP	3.680	DPA	-9.38	RAP	157.12

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.58	5 55 26	4264.82	-35.25	200.96	32.55	50.35	7 6 30	3664.8	-40.09	193.33
134.42	14 27 15	2725.46	-35.23	79.07	32.53	50.34	15 12 40	2125.5	-40.08	71.44
45.58	5 55 26	4264.82	-35.25	200.96	32.55	50.35	7 6 30	3664.8	-40.09	193.33
134.42	14 27 15	2725.46	-35.23	79.07	32.53	50.34	15 12 40	2125.5	-40.08	71.44
45.58	5 55 26	4264.82	-35.25	200.96	32.55	50.35	7 6 30	3664.8	-40.09	193.33
134.42	14 27 15	2725.46	-35.23	79.07	32.53	50.34	15 12 40	2125.5	-40.08	71.44

DIFFERENTIAL CORRECTIONS

TDE	4.2841	TRA	-.7278	TC3	-8.1222	BAU	1.8950
RDE	1.1329	RRA	.0266	RC3	-2.3466	FAU	.36108
FDE	7.1828	FRA	.0105	FC	-18.6446	BSP	32130
BDE	4.4314	BRA	.7283	BC3	8.4543	FSP	5435

MID-COURSE EXECUTION ACCURACY

SGT	9099.6	SGR	2491.9	SG3	1579.4		
RRT	.9786	RRF	.9940	RTF	.9726		
SGB	9434.6	R23	.1914	R13	.9754		
SG1	9421.6	SG2	495.5	THA	15.04		

ORBIT DETERMINATION ACCURACY

ST	6017.7	SR	1586.4	SS	3199.4
CRT	.9958	CRS	-.9999	CST	-.9966
LSA	6992.7	MSA	258.9	SSA	14.8
EL1	6221.6	EL2	141.1	ALF	14.72

LAUNCH DATE DEC 16 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 683.681 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.001	GAL	2.98	AZL	85.78	HCA	201.33	SMA	185.88	ECC	.21414	INC	4.2235
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.049	GAP	-9.07	AZP	93.94	TAL	17.01	TAP	218.34	RCA	146.08	APO	225.69
RC	296.904	GL	37.13	GP	-18.15	ZAL	62.28	ZAP	59.12	ETS	167.93	ZAE	85.85	ETE	177.62	ZAC	66.34	ETC	257.00

PLANETOCENTRIC CONIC

C3	16.168	VHL	4.021	DLA	49.86	RAL	157.62	RAD	6567.6	VEL	11.728	PTH	2.07	VHP	3.699	DPA	-8.32	RAP	157.54

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.08	6 1 8	4245.32	-34.91	198.63	31.57	51.83	7 11 53	3645.3	-39.59	190.89
132.92	14 23 26	2728.32	-34.90	79.04	31.56	51.82	15 8 54	2128.3	-39.58	71.30
47.08	6 1 8	4245.32	-34.91	198.63	31.57	51.83	7 11 53	3645.3	-39.59	190.89
132.92	14 23 26	2728.32	-34.90	79.04	31.56	51.82	15 8 54	2128.3	-39.58	71.30
47.08	6 1 8	4245.32	-34.91	198.63	31.57	51.83	7 11 53	3645.3	-39.59	190.89
132.92	14 23 26	2728.32	-34.90	79.04	31.56	51.82	15 8 54	2128.3	-39.58	71.30

DIFFERENTIAL CORRECTIONS

TDE	4.2117	TRA	-.7338	TC3	-8.6047	BAU	1.9221
RDE	1.0297	RRA	.0331	RC3	-2.2440	FAU	.35558
FDE	6.7933	FRA	.0428	FC	-19.0403	BSP	32673
BDE	4.3358	BRA	.7346	BC3	8.8925	FSP	5364

MID-COURSE EXECUTION ACCURACY

SGT	9302.2	SGR	2326.9	SG3	1565.2		
RRT	.9782	RRF	.9926	RTF	.9726		
SGB	9588.8	R23	.1867	R13	.9749		
SG1	9577.4	SG2	469.1	THA	13.78		

ORBIT DETERMINATION ACCURACY

ST	6024.8	SR	1468.5	SS	3097.6
CRT	.9954	CRS	-.9999	CST	-.9964
LSA	6926.9	MSA	258.5	SSA	15.9
EL1	6199.6	EL2	136.5	ALF	13.64

LAUNCH DATE DEC 16 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 687.943 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.006	GAL	2.89	AZL	85.93	HCA	202.52	SMA	185.98	ECC	.21418	INC	4.0656
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.094	GAP	-9.19	AZP	93.76	TAL	16.50	TAP	219.03	RCA	146.15	APO	225.81
RC	297.989	GL	36.24	GP	-17.12	ZAL	62.59	ZAP	57.81	ETS	168.06	ZAE	84.41	ETE	177.29	ZAC	67.34	ETC	257.10

PLANETOCENTRIC CONIC

C3	15.630	VHL	3.954	DLA	48.74	RAL	157.95	RAD	6567.6	VEL	11.705	PTH	2.06	VHP	3.723	DPA	-7.38	RAP	157.96

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.52	6 7 12	4226.29	-34.57	196.40	30.78	53.21	7 17 38	3626.3	-39.08	188.56
131.48	14 20 2	2732.02	-34.55	79.09	30.77	53.20	15 5 34	2132.0	-39.07	71.25
48.52	6 7 12	4226.29	-34.57	196.40	30.78	53.21	7 17 38	3626.3	-39.08	188.56
131.48	14 20 2	2732.02	-34.55	79.09	30.77	53.20	15 5 34	2132.0	-39.07	71.25
48.52	6 7 12	4226.29	-34.57	196.40	30.78	53.21	7 17 38	3626.3	-39.08	188.56
131.48	14 20 2	2732.02	-34.55	79.09	30.77	53.20	15 5 34	2132.0	-39.07	71.25

DIFFERENTIAL CORRECTIONS

TDE	4.1492	TRA	-.7282	TC3	-9.0760	BAU	1.9485
RDE	.9413	RRA	.0415	RC3	-2.1396	FAU	.34868
FDE	6.4217	FRA	.0950	FC	-19.3125	BSP	33321
BDE	4.2546	BRA	.7294	BC3	9.3248	FSP	5290

MID-COURSE EXECUTION ACCURACY

SGT	9498.4	SGR	2175.2	SG3	1545.2		
RRT	.9776	RRF	.9909	RTF	.9726		
SGB	9744.3	R23	.1807	R13	.9745		
SG1	9734.0	SG2	446.7	THA	12.65		

ORBIT DETERMINATION ACCURACY

ST	6036.1	SR	1365.4	SS	2997.7
CRT	.9950	CRS	-.9998	CST	-.9962
LSA	6871.5	MSA	258.6	SSA	16.9
EL1	6187.2	EL2	132.5	ALF	12.69

LAUNCH DATE DEC 16 1964 FLIGHT TIME 320.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 692.213 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.012	GAL	2.80	AZL	86.08	HCA	203.72	SMA	186.08	ECC	.21424	INC	3.9224	V1	30.263
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.139	GAP	-9.31	AZP	93.59	TAL	15.98	TAP	219.70	RCA	146.21	APO	225.94	V2	25.815
RC	299.061	GL	35.42	GP	-16.18	ZAL	62.97	ZAP	56.54	ETS	168.18	ZAE	82.99	ETE	177.01	ZAC	68.27	ETC	257.18	CLP	54.96

PLANETOCENTRIC CONIC

C3	15.145	VHL	3.892	DLA	47.68	RAL	158.37	RAD	6567.6	VEL	11.685	PTH	2.06	VHP	3.752	DPA	-6.53	RAP	158.37	ECC	1.2492

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.89	6 13 34	4207.68	-34.20	194.25	30.15	54.50	7 23 41	3607.7	-38.57	186.34
130.11	14 17 1	2736.41	-34.19	79.19	30.14	54.49	15 2 38	2136.4	-38.56	71.28
49.89	6 13 34	4207.68	-34.20	194.25	30.15	54.50	7 23 41	3607.7	-38.57	186.34
130.11	14 17 1	2736.41	-34.19	79.19	30.14	54.49	15 2 38	2136.4	-38.56	71.28
49.89	6 13 34	4207.68	-34.20	194.25	30.15	54.50	7 23 41	3607.7	-38.57	186.34
130.11	14 17 1	2736.41	-34.19	79.19	30.14	54.49	15 2 38	2136.4	-38.56	71.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.0879	TRA	-.7181	TC3	-9.5535	BAU	1.9779	SGT	9694.2	SGR	2037.1	SG3	1522.2	ST	6041.0	SR	1273.1	SS	2894.7
RDE	.8638	RRA	.0499	RC3	-2.0398	FAU	.34141	RRT	.9767	RRF	.9890	RTF	.9725	CRT	.9946	CRS	-.9998	CST	-.9959
FDE	6.0571	FRA	.1519	FC	-19.5167	BSP	33892	SGB	9905.9	R23	.1735	R13	.9741	LSA	6813.7	MSA	258.9	SSA	17.9
BDE	4.1781	BRA	.7199	BC3	9.7688	FSP	5192	SG1	9896.7	SG2	428.4	THA	11.62	EL1	6172.4	EL2	129.1	ALF	11.84

LAUNCH DATE DEC 16 1964 FLIGHT TIME 322.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 696.490 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.017	GAL	2.71	AZL	86.21	HCA	204.92	SMA	186.18	ECC	.21430	INC	3.7918	V1	30.263
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.184	GAP	-9.42	AZP	93.44	TAL	15.45	TAP	220.36	RCA	146.28	APO	226.07	V2	25.847
RC	300.120	GL	34.67	GP	-15.32	ZAL	63.41	ZAP	55.31	ETS	168.31	ZAE	81.60	ETE	176.77	ZAC	69.13	ETC	257.24	CLP	53.84

PLANETOCENTRIC CONIC

C3	14.702	VHL	3.834	DLA	46.66	RAL	158.87	RAD	6567.6	VEL	11.666	PTH	2.05	VHP	3.784	DPA	-5.77	RAP	158.78	ECC	1.2419

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.22	6 20 12	4189.36	-33.82	192.18	29.66	55.70	7 30 2	3589.4	-38.05	184.20
128.78	14 14 20	2741.46	-33.81	79.36	29.65	55.69	15 0 2	2141.5	-38.04	71.39
51.22	6 20 12	4189.36	-33.82	192.18	29.66	55.70	7 30 2	3589.4	-38.05	184.20
128.78	14 14 20	2741.46	-33.81	79.36	29.65	55.69	15 0 2	2141.5	-38.04	71.39
51.22	6 20 12	4189.36	-33.82	192.18	29.66	55.70	7 30 2	3589.4	-38.05	184.20
128.78	14 14 20	2741.46	-33.81	79.36	29.65	55.69	15 0 2	2141.5	-38.04	71.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.0316	TRA	-.6998	TC	-10.0242	BAU	2.0068	SGT	9884.7	SGR	1910.0	SG3	1495.5	ST	6046.1	SR	1191.3	SS	2792.5
RDE	.7963	RRA	.0589	RC3	-1.9412	FAU	.33338	RRT	.9754	RRF	.9867	RTF	.9725	CRT	.9942	CRS	-.9998	CST	-.9956
FDE	5.7077	FRA	.2184	FC	-19.6320	BSP	34521	SGB	10067.5	R23	.1653	R13	.9738	LSA	6760.6	MSA	259.5	SSA	18.9
BDE	4.1094	BRA	.7023	BC3	10.2105	FSP	5094	SG1	10059.0	SG2	413.6	THA	10.69	EL1	6161.1	EL2	126.0	ALF	11.09

LAUNCH DATE DEC 16 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 700.773 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.023	GAL	2.61	AZL	86.33	HCA	206.12	SMA	186.28	ECC	.21439	INC	3.6722	V1	30.263
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.228	GAP	-9.53	AZP	93.30	TAL	14.90	TAP	221.02	RCA	146.34	APO	226.21	V2	25.879
RC	301.167	GL	33.98	GP	-14.53	ZAL	63.92	ZAP	54.13	ETS	168.44	ZAE	80.23	ETE	176.57	ZAC	69.92	ETC	257.29	CLP	52.75

PLANETOCENTRIC CONIC

C3	14.295	VHL	3.781	DLA	45.69	RAL	159.43	RAD	6567.6	VEL	11.648	PTH	2.04	VHP	3.819	DPA	-5.09	RAP	159.19	ECC	1.2353

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.52	6 27 11	4171.13	-33.44	190.15	29.31	56.84	7 36 42	3571.1	-37.53	182.12
127.48	14 11 53	2747.25	-33.43	79.60	29.30	56.83	14 57 41	2147.3	-37.52	71.57
52.52	6 27 11	4171.13	-33.44	190.15	29.31	56.84	7 36 42	3571.1	-37.53	182.12
127.48	14 11 53	2747.25	-33.43	79.60	29.30	56.83	14 57 41	2147.3	-37.52	71.57
52.52	6 27 11	4171.13	-33.44	190.15	29.31	56.84	7 36 42	3571.1	-37.53	182.12
127.48	14 11 53	2747.25	-33.43	79.60	29.30	56.83	14 57 41	2147.3	-37.52	71.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.9771	TRA	-.6762	TC	-10.4982	BAU	2.0371	SGT	10074.4	SGR	1794.2	SG3	1467.2	ST	6047.6	SR	1118.5	SS	2691.0
RDE	.7370	RRA	.0677	RC3	-1.8467	FAU	.32513	RRT	.9738	RRF	.9839	RTF	.9724	CRT	.9937	CRS	-.9997	CST	-.9953
FDE	5.3726	FRA	.2884	FC	-19.6907	BSP	35108	SGB	10233.0	R23	.1562	R13	.9734	LSA	6708.1	MSA	260.3	SSA	19.9
BDE	4.0448	BRA	.6796	BC3	10.6594	FSP	4982	SG1	10225.1	SG2	402.1	THA	9.85	EL1	6149.0	EL2	123.2	ALF	10.42

LAUNCH DATE DEC 16 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 705.064 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.029	GAL	2.52	AZL	86.44	HCA	207.33	SMA	186.38	ECC	.21448	INC	3.5621	V1	30.263
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.271	GAP	-9.64	AZP	93.17	TAL	14.34	TAP	221.66	RCA	146.41	APO	226.36	V2	25.911
RC	302.203	GL	33.33	GP	-13.81	ZAL	64.49	ZAP	52.98	ETS	168.56	ZAE	78.89	ETE	176.39	ZAC	70.66	ETC	257.32	CLP	51.69

PLANETOCENTRIC CONIC

C3	13.920	VHL	3.731	DLA	44.75	RAL	160.07	RAD	6567.5	VEL	11.632	PTH	2.04	VHP	3.857	DPA	-4.48	RAP	159.61	ECC	1.2291

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.78	6 34 27	4152.93	-33.04	188.17	29.07	57.91	7 43 40	3552.9	-37.01	180.09
126.22	14 9 39	2753.72	-33.03	79.89	29.06	57.90	14 55 33	2153.7	-37.00	71.82
53.78	6 34 27	4152.93	-33.04	188.17	29.07	57.91	7 43 40	3552.9	-37.01	180.09
126.22	14 9 39	2753.72	-33.03	79.89	29.06	57.90	14 55 33	2153.7	-37.00	71.82
53.78	6 34 27	4152.93	-33.04	188.17	29.07	57.91	7 43 40	3552.9	-37.01	180.09
126.22	14 9 39	2753.72	-33.03	79.89	29.06	57.90	14 55 33	2153.7	-37.00	71.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.9241	TRA	-.6449	TC	-10.9684	BAU	2.0671	SGT	10258.9	SGR	1687.1	SG3	1436.5	ST	6045.8	SR	1053.0	SS	2588.8
RDE	.6845	RRA	.0767	RC3	-1.7544	FAU	.31645	RRT	.9717	RRF	.9807	RTF	.9722	CRT	.9932	CRS	-.9997	CST	-.9949
FDE	5.0485	FRA	.3640	FC	-19.6817	BSP	35704	SGB	10396.7	R23	.1463	R13	.9731	LSA	6655.3	MSA	261.1	SSA	20.9
BDE	3.9834	BRA	.6494	BC3	11.1078	FSP	4862	SG1	10389.2	SG2	393.5	THA	9.09	EL1	6135.6	EL2	120.7	ALF	9.82

LAUNCH DATE DEC 16 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 709.361 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.036	GAL	2.42	AZL	86.54	HCA	208.54	SMA	186.49	ECC	.21460	INC	3.4605	V1	30.263
RP	211.47	LAP	-1.65	LOP	292.57	VP	23.314	GAP	-9.74	AZP	93.04	TAL	13.76	TAP	222.30	RCA	146.47	APO	226.51	V2	25.941
RC	303.228	GL	32.74	GP	-13.14	ZAL	65.12	ZAP	51.88	ETS	168.68	ZAE	77.57	ETE	176.24	ZAC	71.35	ETC	257.35	CLP	50.66

PLANETOCENTRIC CONIC

C3	13.572	VHL	3.684	DLA	43.83	RAL	160.76	RAD	6567.5	VEL	11.617	PTH	2.04	VHP	3.897	DPA	-3.93	RAP	160.04	ECC	1.2234

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.03	6 42 2	4134.65	-32.63	186.21	28.94	58.94	7 50 57	3534.7	-36.48	178.10
124.97	14 7 35	2760.93	-32.62	80.25	28.93	58.92	14 53 36	2160.9	-36.47	72.14
55.03	6 42 2	4134.65	-32.63	186.21	28.94	58.94	7 50 57	3534.7	-36.48	178.10
124.97	14 7 35	2760.93	-32.62	80.25	28.93	58.92	14 53 36	2160.9	-36.47	72.14
55.03	6 42 2	4134.65	-32.63	186.21	28.94	58.94	7 50 57	3534.7	-36.48	178.10
124.97	14 7 35	2760.93	-32.62	80.25	28.93	58.92	14 53 36	2160.9	-36.47	72.14

DIFFERENTIAL CORRECTIONS

TDE	3.8736	TRA	-.6065	TC-11.4360	BAU	2.0969	
RDE	.6383	RRA	.0856	RC3-1.6654	FAU	.30760	
FDE	4.7420	FRA	.4443	FC-19.6217	BSP	36333	
BDE	3.9259	BRA	.6125	BC311.5567	FSP	4748	

MID-COURSE EXECUTION ACCURACY

SGT10440.4	SGR	1589.1	SG3	1404.7			
RRT	.9691	RRF	.9769	RTF	.9721		
SGB10560.7	R23	.1360	R13	.9728			
SG110553.6	SG2	387.7	THA	8.40			

ORBIT DETERMINATION ACCURACY

ST	6042.6	SR	995.0	SS	2489.4		
CRT	.9927	CRS	-.9996	CST	-.9945		
LSA	6605.3	MSA	262.3	SSA	21.8		
EL1	6122.8	EL2	118.3	ALF	9.29		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 713.664 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.042	GAL	2.32	AZL	86.63	HCA	209.75	SMA	186.60	ECC	.21472	INC	3.3662	V1	30.263
RP	211.20	LAP	-1.67	LOP	293.79	VP	23.356	GAP	-9.84	AZP	92.92	TAL	13.17	TAP	222.92	RCA	146.53	APO	226.67	V2	25.971
RC	304.242	GL	32.18	GP	-12.52	ZAL	65.80	ZAP	50.81	ETS	168.80	ZAE	76.28	ETE	176.11	ZAC	72.00	ETC	257.37	CLP	49.66

PLANETOCENTRIC CONIC

C3	13.248	VHL	3.640	DLA	42.94	RAL	161.50	RAD	6567.5	VEL	11.603	PTH	2.03	VHP	3.940	DPA	-3.45	RAP	160.47	ECC	1.2180

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.26	6 49 59	4116.13	-32.22	184.26	28.90	59.91	7 58 35	3516.1	-35.94	176.12
123.74	14 5 36	2768.95	-32.20	80.67	28.89	59.90	14 51 45	2169.0	-35.93	72.54
56.26	6 49 59	4116.13	-32.22	184.26	28.90	59.91	7 58 35	3516.1	-35.94	176.12
123.74	14 5 36	2768.95	-32.20	80.67	28.89	59.90	14 51 45	2169.0	-35.93	72.54
56.26	6 49 59	4116.13	-32.22	184.26	28.90	59.91	7 58 35	3516.1	-35.94	176.12
123.74	14 5 36	2768.95	-32.20	80.67	28.89	59.90	14 51 45	2169.0	-35.93	72.54

DIFFERENTIAL CORRECTIONS

TDE	3.8217	TRA	-.5632	TC-11.9084	BAU	2.1276	
RDE	.5970	RRA	.0943	RC3-1.5802	FAU	.29876	
FDE	4.4458	FRA	.5260	FC-19.5232	BSP	36907	
BDE	3.8680	BRA	.5710	BC312.0128	FSP	4622	

MID-COURSE EXECUTION ACCURACY

SGT10621.0	SGR	1499.2	SG3	1372.2			
RRT	.9659	RRF	.9725	RTF	.9718		
SGB10726.2	R23	.1257	R13	.9725			
SG110719.4	SG2	384.5	THA	7.77			

ORBIT DETERMINATION ACCURACY

ST	6032.4	SR	942.4	SS	2389.3		
CRT	.9922	CRS	-.9996	CST	-.9940		
LSA	6551.1	MSA	263.9	SSA	22.8		
EL1	6104.5	EL2	116.1	ALF	8.81		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 717.973 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.048	GAL	2.21	AZL	86.72	HCA	210.97	SMA	186.71	ECC	.21487	INC	3.2784	V1	30.263
RP	210.95	LAP	-1.69	LOP	295.01	VP	23.398	GAP	-9.94	AZP	92.81	TAL	12.57	TAP	223.54	RCA	146.59	APO	226.83	V2	26.001
RC	305.247	GL	31.66	GP	-11.95	ZAL	66.54	ZAP	49.77	ETS	168.91	ZAE	75.01	ETE	175.99	ZAC	72.61	ETC	257.38	CLP	48.69

PLANETOCENTRIC CONIC

C3	12.946	VHL	3.598	DLA	42.07	RAL	162.30	RAD	6567.5	VEL	11.590	PTH	2.03	VHP	3.984	DPA	-3.02	RAP	160.92	ECC	1.2131

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.49	6 58 15	4097.32	-31.79	182.31	28.95	60.85	8 6 33	3497.3	-35.40	174.15
122.51	14 3 41	2777.80	-31.78	81.17	28.94	60.84	14 49 59	2177.8	-35.39	73.01
57.49	6 58 15	4097.32	-31.79	182.31	28.95	60.85	8 6 33	3497.3	-35.40	174.15
122.51	14 3 41	2777.80	-31.78	81.17	28.94	60.84	14 49 59	2177.8	-35.39	73.01
57.49	6 58 15	4097.32	-31.79	182.31	28.95	60.85	8 6 33	3497.3	-35.40	174.15
122.51	14 3 41	2777.80	-31.78	81.17	28.94	60.84	14 49 59	2177.8	-35.39	73.01

DIFFERENTIAL CORRECTIONS

TDE	3.7700	TRA	-.5119	TC-12.3755	BAU	2.1575	
RDE	.5601	RRA	.1029	RC3-1.4971	FAU	.28970	
FDE	4.1621	FRA	.6108	FC-19.3732	BSP	37505	
BDE	3.8114	BRA	.5222	BC312.4658	FSP	4496	

MID-COURSE EXECUTION ACCURACY

SGT10796.0	SGR	1415.9	SG3	1338.5			
RRT	.9621	RRF	.9674	RTF	.9716		
SGB10888.5	R23	.1153	R13	.9721			
SG110881.8	SG2	383.3	THA	7.20			

ORBIT DETERMINATION ACCURACY

ST	6018.4	SR	895.0	SS	2290.0		
CRT	.9917	CRS	-.9995	CST	-.9934		
LSA	6495.7	MSA	265.7	SSA	23.7		
EL1	6083.5	EL2	113.9	ALF	8.39		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 722.289 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.055	GAL	2.11	AZL	86.80	HCA	212.19	SMA	186.82	ECC	.21503	INC	3.1965	V1	30.263
RP	210.70	LAP	-1.70	LOP	296.23	VP	23.439	GAP	-10.04	AZP	92.71	TAL	11.95	TAP	224.14	RCA	146.65	APO	227.00	V2	26.029
RC	306.243	GL	31.17	GP	-11.42	ZAL	67.33	ZAP	48.76	ETS	169.02	ZAE	73.76	ETE	175.90	ZAC	73.18	ETC	257.38	CLP	47.74

PLANETOCENTRIC CONIC

C3	12.663	VHL	3.559	DLA	41.20	RAL	163.15	RAD	6567.5	VEL	11.578	PTH	2.02	VHP	4.031	DPA	-2.63	RAP	161.37	ECC	1.2084

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.72	7 6 55	4078.06	-31.35	180.35	29.08	61.76	8 14 53	3478.1	-34.85	172.18
121.28	14 1 48	2787.59	-31.34	81.73	29.07	61.74	14 48 15	2187.6	-34.84	73.56
58.72	7 6 55	4078.06	-31.35	180.35	29.08	61.76	8 14 53	3478.1	-34.85	172.18
121.28	14 1 48	2787.59	-31.34	81.73	29.07	61.74	14 48 15	2187.6	-34.84	73.56
58.72	7 6 55	4078.06	-31.35	180.35	29.08	61.76	8 14 53	3478.1	-34.85	172.18
121.28	14 1 48	2787.59	-31.34	81.73	29.07	61.74	14 48 15	2187.6	-34.84	73.56

DIFFERENTIAL CORRECTIONS

TDE	3.7175	TRA	-.4559	TC-12.8421	BAU	2.1873	
RDE	.5271	RRA	.1108	RC3-1.4171	FAU	.28067	
FDE	3.8908	FRA	.6916	FC-19.1881	BSP	38098	
BDE	3.7547	BRA	.4692	BC312.9201	FSP	4373	

MID-COURSE EXECUTION ACCURACY

SGT10968.8	SGR	1339.3	SG3	1304.4			
RRT	.9575	RRF	.9615	RTF	.9714		
SGB11050.3	R23	.1046	R13	.9719			
SG111043.6	SG2	383.5	THA	6.68			

ORBIT DETERMINATION ACCURACY

ST	5999.0	SR	852.2	SS	2191.7		
CRT	.9912	CRS	-.9995	CST	-.9927		
LSA	6437.8	MSA	267.0	SSA	24.6		
EL1	6058.2	EL2	111.7	ALF	8.02		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 726.607 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.062	GAL	2.00	AZL	86.88	HCA	213.41	SMA	186.94	ECC	.21521	INC	3.1197	V1	30.263
RP	210.46	LAP	-1.72	LOP	297.45	VP	23.479	GAP	-10.14	AZP	92.60	TAL	11.33	TAP	224.73	RCA	146.71	APO	227.17	V2	26.057
RC	307.229	GL	30.71	GP	-10.93	ZAL	68.17	ZAP	47.79	ETS	169.12	ZAE	72.55	ETE	175.81	ZAC	73.73	ETC	257.37	CLP	46.82

PLANETOCENTRIC CONIC

C3	12.398	VHL	3.521	DLA	40.35	RAL	164.05	RAD	6567.5	VEL	11.567	PTH	2.02	VHP	4.079	DPA	-2.30	RAP	161.84	ECC	1.2040

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.96	7 16 0	4058.19	-30.89	178.37	29.29	62.63	8 23 38	3458.2	-34.29	170.19
120.04	13 59 52	2798.43	-30.88	82.38	29.29	62.62	14 46 31	2198.4	-34.28	74.20
59.96	7 16 0	4058.19	-30.89	178.37	29.29	62.63	8 23 38	3458.2	-34.29	170.19
120.04	13 59 52	2798.43	-30.88	82.38	29.29	62.62	14 46 31	2198.4	-34.28	74.20
59.96	7 16 0	4058.19	-30.89	178.37	29.29	62.63	8 23 38	3458.2	-34.29	170.19
120.04	13 59 52	2798.43	-30.88	82.38	29.29	62.62	14 46 31	2198.4	-34.28	74.20

DIFFERENTIAL CORRECTIONS

TDE	3.6837	TRA	-.3737	TC-13.2463	BAU	2.2066	
RDE	.5005	RRA	.1219	RC3-1.3287	FAU	.26970	
FDE	3.6676	FRA	.8150	FC-18.8326	BSP	39153	
BDE	3.7175	BRA	.3930	BC313.3128	FSP	4327	

MID-COURSE EXECUTION ACCURACY

SGT11116.8	SGR	1267.5	SG3	1265.5			
RRT	.9512	RRF	.9546	RTF	.9710		
SGB11188.9	R23	.0970	R13	.9713			
SG111182.1	SG2	388.9	THA	6.20			

ORBIT DETERMINATION ACCURACY

ST	6005.5	SR	818.7	SS	2115.7		
CRT	.9908	CRS	-.9995	CST	-.9918		
LSA	6413.8	MSA	273.2	SSA	25.0		
EL1	6060.0	EL2	109.9	ALF	7.69		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 730.935 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.068	GAL	1.89	AZL	86.95	HCA	214.63	SMA	187.06	ECC	.21541	INC	3.0476	V1	30.263
RP	210.22	LAP	-1.73	LOP	298.68	VP	23.519	GAP	-10.23	AZP	92.51	TAL	10.68	TAP	225.32	RCA	146.76	APO	227.35	V2	26.085
RC	308.206	GL	30.27	GP	-10.47	ZAL	69.07	ZAP	46.84	ETS	169.22	ZAE	71.35	ETE	175.74	ZAC	74.24	ETC	257.36	CLP	45.93

PLANETOCENTRIC CONIC

C3	12.150	VHL	3.486	DLA	39.50	RAL	164.99	RAD	6567.5	VEL	11.556	PTH	2.02	VHP	4.128	DPA	-2.01	RAP	162.32	ECC	1.2000

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.22	7 25 31	4037.61	-30.42	176.35	29.58	63.48	8 32 49	3437.6	-33.71	168.16
118.78	13 57 51	2810.44	-30.41	83.12	29.57	63.47	14 44 41	2210.4	-33.71	74.93
61.22	7 25 31	4037.61	-30.42	176.35	29.58	63.48	8 32 49	3437.6	-33.71	168.16
118.78	13 57 51	2810.44	-30.41	83.12	29.57	63.47	14 44 41	2210.4	-33.71	74.93
61.22	7 25 31	4037.61	-30.42	176.35	29.58	63.48	8 32 49	3437.6	-33.71	168.16
118.78	13 57 51	2810.44	-30.41	83.12	29.57	63.47	14 44 41	2210.4	-33.71	74.93

DIFFERENTIAL CORRECTIONS

TDE	3.6206	TRA	-.3113	TC-13.7291	BAU	2.2395	
RDE	.4724	RRA	.1282	RC3-1.2579	FAU	.26145	
FDE	3.4034	FRA	.8837	FC-18.6291	BSP	39549	
BDE	3.6513	BRA	.3367	BC313.7866	FSP	4168	

MID-COURSE EXECUTION ACCURACY

SGT11290.0	SGR	1202.8	SG3	1232.5			
RRT	.9451	RRF	.9469	RTF	.9707		
SGB11353.9	R23	.0868	R13	.9711			
SG111347.2	SG2	391.1	THA	5.76			

ORBIT DETERMINATION ACCURACY

ST	5961.5	SR	781.3	SS	2010.3		
CRT	.9903	CRS	-.9994	CST	-.9908		
LSA	6333.6	MSA	274.0	SSA	26.1		
EL1	6011.5	EL2	107.5	ALF	7.40		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 735.268 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.075	GAL	1.77	AZL	87.02	HCA	215.86	SMA	187.18	ECC	.21562	INC	2.9796	V1	30.263
RP	209.99	LAP	-1.75	LOP	299.90	VP	23.558	GAP	-10.32	AZP	92.42	TAL	10.03	TAP	225.89	RCA	146.82	APO	227.54	V2	26.111
RC	309.174	GL	29.85	GP	-10.04	ZAL	70.01	ZAP	45.92	ETS	169.32	ZAE	70.18	ETE	175.68	ZAC	74.73	ETC	257.34	CLP	45.05

PLANETOCENTRIC CONIC

C3	11.918	VHL	3.452	DLA	38.66	RAL	165.97	RAD	6567.5	VEL	11.546	PTH	2.02	VHP	4.179	DPA	-1.75	RAP	162.81	ECC	1.1961

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.50	7 35 33	4016.06	-29.94	174.28	29.93	64.31	8 42 29	3416.1	-33.13	166.08
117.50	13 55 39	2823.86	-29.93	83.97	29.92	64.30	14 42 43	2223.9	-33.12	75.78
62.50	7 35 33	4016.06	-29.94	174.28	29.93	64.31	8 42 29	3416.1	-33.13	166.08
117.50	13 55 39	2823.86	-29.93	83.97	29.92	64.30	14 42 43	2223.9	-33.12	75.78
62.50	7 35 33	4016.06	-29.94	174.28	29.93	64.31	8 42 29	3416.1	-33.13	166.08
117.50	13 55 39	2823.86	-29.93	83.97	29.92	64.30	14 42 43	2223.9	-33.12	75.78

DIFFERENTIAL CORRECTIONS

TDE	3.5586	TRA	-.2424	TC-14.2089	BAU	2.2718	
RDE	.4478	RRA	.1344	RC3-1.1893	FAU	.25328	
FDE	3.1590	FRA	.9524	FC-18.3987	BSP	39962	
BDE	3.5866	BRA	.2771	BC314.2586	FSP	4020	

MID-COURSE EXECUTION ACCURACY

SGT11462.6	SGR	1143.7	SG3	1200.2			
RRT	.9380	RRF	.9382	RTF	.9706		
SGB11519.6	R23	.0769	R13	.9709			
SG111512.8	SG2	394.6	THA	5.35			

ORBIT DETERMINATION ACCURACY

ST	5915.4	SR	748.5	SS	1910.8		
CRT	.9900	CRS	-.9992	CST	-.9898		
LSA	6255.1	MSA	275.0	SSA	27.1		
EL1	5961.6	EL2	105.0	ALF	7.14		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 739.606 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.082	GAL	1.66	AZL	87.08	HCA	217.09	SMA	187.30	ECC	.21586	INC	2.9155	V1	30.263
RP	209.77	LAP	-1.76	LOP	301.14	VP	23.596	GAP	-10.41	AZP	92.33	TAL	9.36	TAP	226.45	RCA	146.87	APO	227.73	V2	26.137
RC	310.132	GL	29.45	GP	-9.64	ZAL	71.00	ZAP	45.03	ETS	169.41	ZAE	69.03	ETE	175.63	ZAC	75.20	ETC	257.32	CLP	44.21

PLANETOCENTRIC CONIC

C3	11.700	VHL	3.421	DLA	37.81	RAL	166.99	RAD	6567.4	VEL	11.536	PTH	2.01	VHP	4.232	DPA	-1.54	RAP	163.32	ECC	1.1926

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.82	7 46 10	3993.31	-29.44	172.13	30.34	65.12	8 52 43	3393.3	-32.53	163.94
116.18	13 53 12	2838.88	-29.43	84.94	30.34	65.11	14 40 31	2238.9	-32.52	76.74
63.82	7 46 10	3993.31	-29.44	172.13	30.34	65.12	8 52 43	3393.3	-32.53	163.94
116.18	13 53 12	2838.88	-29.43	84.94	30.34	65.11	14 40 31	2238.9	-32.52	76.74
63.82	7 46 10	3993.31	-29.44	172.13	30.34	65.12	8 52 43	3393.3	-32.53	163.94
116.18	13 53 12	2838.88	-29.43	84.94	30.34	65.11	14 40 31	2238.9	-32.52	76.74

DIFFERENTIAL CORRECTIONS

TDE	3.4965	TRA	-.1633	TC-14.6704	BAU	2.3015	
RDE	.4255	RRA	.1408	RC3-1.1203	FAU	.24473	
FDE	2.9261	FRA	1.0270	FC-18.1082	BSP	40476	
BDE	3.5223	BRA	.2156	BC314.7131	FSP	3887	

MID-COURSE EXECUTION ACCURACY

SGT11625.4	SGR	1088.4	SG3	1166.3			
RRT	.9297	RRF	.9282	RTF	.9704		
SGB11676.2	R23	.0680	R13	.9706			
SG111669.4	SG2	399.4	THA	4.98			

ORBIT DETERMINATION ACCURACY

ST	5865.4	SR	718.7	SS	1812.9		
CRT	.9897	CRS	-.9990	CST	-.9885		
LSA	6174.9	MSA	276.9	SSA	28.0		
EL1	5908.4	EL2	102.3	ALF	6.92		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 743.948 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.089 GAL 1.54 AZL 87.15 HCA 218.32 SMA 187.42 ECC .21612 INC 2.8547 V1 30.263
RP 209.55 LAP -1.77 LOP 302.37 VP 23.634 GAP -10.50 AZP 92.24 TAL 8.68 TAP 227.01 RCA 146.92 APO 227.93 V2 26.162
RC 311.080 GL 29.07 GP -9.27 ZAL 72.05 ZAP 44.17 ETS 169.50 ZAE 67.90 ETE 175.59 ZAC 75.65 ETC 257.30 CLP 43.38

PLANETOCENTRIC CONIC

C3 11.497 VHL 3.391 DLA 36.96 RAL 168.05 RAD 6567.4 VEL 11.528 PTH 2.01 VHP 4.285 DPA -1.36 RAP 163.84 ECC 1.1892

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.18	7 57 24	3969.19	-28.92	169.89	30.82	65.91	9 3 33	3369.2	-31.91	161.70
114.82	13 50 27	2855.70	-28.91	86.04	30.82	65.90	14 38 3	2255.7	-31.90	77.85
65.18	7 57 24	3969.19	-28.92	169.89	30.82	65.91	9 3 33	3369.2	-31.91	161.70
114.82	13 50 27	2855.70	-28.91	86.04	30.82	65.90	14 38 3	2255.7	-31.90	77.85
65.18	7 57 24	3969.19	-28.92	169.89	30.82	65.91	9 3 33	3369.2	-31.91	161.70
114.82	13 50 27	2855.70	-28.91	86.04	30.82	65.90	14 38 3	2255.7	-31.90	77.85

DIFFERENTIAL CORRECTIONS
TDE 3.4316 TRA -.0786 TC-15.1291 BAU 2.3311
RDE .4055 RRA .1471 RC3-1.0532 FAU .23629
FDE 2.7042 FRA 1.1013 FC-17.7922 BSP 40968
BDE 3.4554 BRA .1668 BC315.1657 FSP 3761

MID-COURSE EXECUTION ACCURACY
SGT11786.2 SGR 1037.4 SG3 1132.8
RRT .9200 RRF .9170 RTF .9701
SGB11831.8 R23 .0600 R13 .9703
SG111824.9 SG2 405.4 THA 4.63

ORBIT DETERMINATION ACCURACY
ST 5806.9 SR 691.8 SS 1716.8
CRT .9894 CRS -.9988 CST -.9869
LSA 6088.3 MSA 279.5 SSA 28.9
EL1 5847.1 EL2 99.6 ALF 6.72

LAUNCH DATE DEC 16 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 748.295 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.096 GAL 1.42 AZL 87.20 HCA 219.56 SMA 187.55 ECC .21639 INC 2.7971 V1 30.263
RP 209.34 LAP -1.78 LOP 303.61 VP 23.671 GAP -10.59 AZP 92.16 TAL 7.99 TAP 227.55 RCA 146.96 APO 228.13 V2 26.186
RC 312.019 GL 28.69 GP -8.92 ZAL 73.14 ZAP 43.33 ETS 169.58 ZAE 66.79 ETE 175.55 ZAC 76.08 ETC 257.26 CLP 42.58

PLANETOCENTRIC CONIC

C3 11.308 VHL 3.363 DLA 36.10 RAL 169.16 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 4.340 DPA -1.21 RAP 164.37 ECC 1.1861

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.60	8 9 22	3943.32	-28.39	167.54	31.36	66.69	9 15 5	3343.3	-31.28	159.36
113.40	13 47 16	2874.68	-28.37	87.30	31.36	66.67	14 35 10	2274.7	-31.27	79.11
66.60	8 9 22	3943.32	-28.39	167.54	31.36	66.69	9 15 5	3343.3	-31.28	159.36
113.40	13 47 16	2874.68	-28.37	87.30	31.36	66.67	14 35 10	2274.7	-31.27	79.11
66.60	8 9 22	3943.32	-28.39	167.54	31.36	66.69	9 15 5	3343.3	-31.28	159.36
113.40	13 47 16	2874.68	-28.37	87.30	31.36	66.67	14 35 10	2274.7	-31.27	79.11

DIFFERENTIAL CORRECTIONS
TDE 3.3675 TRA .0151 TC-15.5772 BAU 2.3597
RDE .3877 RRA .1531 RC3 -.9882 FAU .22802
FDE 2.4972 FRA 1.1745 FC-17.4567 BSP 41517
BDE 3.3897 BRA .1539 BC315.6085 FSP 3640

MID-COURSE EXECUTION ACCURACY
SGT11944.8 SGR 991.1 SG3 1100.0
RRT .9091 RRF .9045 RTF .9699
SGB11985.8 R23 .0521 R13 .9700
SG111978.8 SG2 411.6 THA 4.32

ORBIT DETERMINATION ACCURACY
ST 5746.3 SR 667.9 SS 1625.1
CRT .9894 CRS -.9983 CST -.9851
LSA 6002.2 MSA 282.0 SSA 29.7
EL1 5784.1 EL2 96.5 ALF 6.56

LAUNCH DATE DEC 16 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 752.646 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.103 GAL 1.29 AZL 87.26 HCA 220.80 SMA 187.67 ECC .21670 INC 2.7423 V1 30.263
RP 209.14 LAP -1.79 LOP 304.84 VP 23.706 GAP -10.68 AZP 92.08 TAL 7.28 TAP 228.08 RCA 147.00 APO 228.34 V2 26.209
RC 312.950 GL 28.33 GP -8.59 ZAL 74.28 ZAP 42.51 ETS 169.66 ZAE 65.70 ETE 175.52 ZAC 76.49 ETC 257.23 CLP 41.80

PLANETOCENTRIC CONIC

C3 11.133 VHL 3.337 DLA 35.24 RAL 170.29 RAD 6567.4 VEL 11.512 PTH 2.01 VHP 4.396 DPA -1.09 RAP 164.91 ECC 1.1832

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.09	8 22 12	3915.26	-27.83	165.04	31.96	67.45	9 27 27	3315.3	-30.63	156.87
111.91	13 43 30	2896.27	-27.82	88.75	31.96	67.44	14 31 46	2296.3	-30.62	80.58
68.09	8 22 12	3915.26	-27.83	165.04	31.96	67.45	9 27 27	3315.3	-30.63	156.87
111.91	13 43 30	2896.27	-27.82	88.75	31.96	67.44	14 31 46	2296.3	-30.62	80.58
68.09	8 22 12	3915.26	-27.83	165.04	31.96	67.45	9 27 27	3315.3	-30.63	156.87
111.91	13 43 30	2896.27	-27.82	88.75	31.96	67.44	14 31 46	2296.3	-30.62	80.58

DIFFERENTIAL CORRECTIONS
TDE 3.2991 TRA .1145 TC-16.0136 BAU 2.3873
RDE .3714 RRA .1590 RC3 -.9238 FAU .21967
FDE 2.2969 FRA 1.2473 FC-17.0826 BSP 42032
BDE 3.3200 BRA .1959 BC316.0403 FSP 3517

MID-COURSE EXECUTION ACCURACY
SGT12097.3 SGR 947.9 SG3 1066.5
RRT .8966 RRF .8905 RTF .9696
SGB12134.4 R23 .0454 R13 .9697
SG112127.2 SG2 418.7 THA 4.02

ORBIT DETERMINATION ACCURACY
ST 5674.9 SR 645.8 SS 1533.2
CRT .9894 CRS -.9976 CST -.9828
LSA 5906.8 MSA 285.3 SSA 30.5
EL1 5710.8 EL2 93.2 ALF 6.43

LAUNCH DATE DEC 16 1964 FLIGHT TIME 350.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 757.001 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.111 GAL 1.17 AZL 87.31 HCA 222.04 SMA 187.80 ECC .21702 INC 2.6900 V1 30.263
RP 208.94 LAP -1.80 LOP 306.09 VP 23.742 GAP -10.76 AZP 92.00 TAL 6.56 TAP 228.60 RCA 147.04 APO 228.56 V2 26.232
RC 313.871 GL 27.97 GP -8.28 ZAL 75.46 ZAP 41.72 ETS 169.73 ZAE 64.63 ETE 175.49 ZAC 76.89 ETC 257.19 CLP 41.03

PLANETOCENTRIC CONIC

C3 10.970 VHL 3.312 DLA 34.36 RAL 171.46 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 4.453 DPA -.99 RAP 165.47 ECC 1.1805

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.67	8 36 2	3884.56	-27.25	162.36	32.62	68.20	9 40 46	3284.6	-29.96	154.20
110.33	13 39 1	2920.94	-27.24	90.42	32.61	68.19	14 27 42	2320.9	-29.95	82.26
69.67	8 36 2	3884.56	-27.25	162.36	32.62	68.20	9 40 46	3284.6	-29.96	154.20
110.33	13 39 1	2920.94	-27.24	90.42	32.61	68.19	14 27 42	2320.9	-29.95	82.26
69.67	8 36 2	3884.56	-27.25	162.36	32.62	68.20	9 40 46	3284.6	-29.96	154.20
110.33	13 39 1	2920.94	-27.24	90.42	32.61	68.19	14 27 42	2320.9	-29.95	82.26

DIFFERENTIAL CORRECTIONS
TDE 3.2273 TRA .2182 TC-16.4428 BAU 2.4149
RDE .3567 RRA .1642 RC3 -.8611 FAU .21145
FDE 2.1064 FRA 1.3131 FC-16.6866 BSP 42538
BDE 3.2469 BRA .2731 BC316.4653 FSP 3400

MID-COURSE EXECUTION ACCURACY
SGT12248.1 SGR 908.0 SG3 1033.3
RRT .8825 RRF .8748 RTF .9694
SGB12281.7 R23 .0389 R13 .9695
SG112274.4 SG2 426.0 THA 3.75

ORBIT DETERMINATION ACCURACY
ST 5594.0 SR 625.8 SS 1443.2
CRT .9896 CRS -.9965 CST -.9801
LSA 5803.7 MSA 288.2 SSA 31.3
EL1 5628.1 EL2 89.5 ALF 6.32

LAUNCH DATE DEC 16 1964 FLIGHT TIME 352.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 761.360 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.118	GAL	1.04	AZL	87.36	HCA	223.28	SMA	187.93	ECC	.21737	INC	2.6402	V1	30.263
RP	208.76	LAP	-1.81	LOP	307.33	VP	23.776	GAP	-10.85	AZP	91.92	TAL	5.83	TAP	229.11	RCA	147.08	APO	228.78	V2	26.254
RC	314.784	GL	27.62	GP	-7.99	ZAL	76.70	ZAP	40.94	ETS	169.80	ZAE	63.58	ETE	175.47	ZAC	77.28	ETC	257.15	CLP	40.29

PLANETOCENTRIC CONIC

C3	10.822	VHL	3.290	DLA	33.47	RAL	172.67	RAD	6567.4	VEL	11.498	PTH	2.00	VHP	4.512	DPA	-.93	RAP	166.04	ECC	1.1781

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.36	8 51 7	3850.35	-26.65	159.43	33.33	68.95	9 55 17	3250.3	-29.26	151.28
108.64	13 33 33	2949.57	-26.63	92.39	33.32	68.93	14 22 42	2349.6	-29.25	84.24
71.36	8 51 7	3850.35	-26.65	159.43	33.33	68.95	9 55 17	3250.3	-29.26	151.28
108.64	13 33 33	2949.57	-26.63	92.39	33.32	68.93	14 22 42	2349.6	-29.25	84.24
110.00	14 34 35	2762.62	-30.71	79.41	34.87	74.19	15 20 38	2162.6	-32.57	70.69
110.00	12 49 15	3085.30	-22.71	101.03	31.43	63.74	13 40 40	2485.3	-26.05	93.46

DIFFERENTIAL CORRECTIONS

TDE	3.1527	TRA	.3310	TC-16.8598	BAU	2.4420	
RDE	.3434	RRA	.1696	RC3 -.8002	FAU	.20343	
FDE	1.9256	FRA	1.3832	FC-16.2746	BSP	43075	
BDE	3.1714	BRA	.3719	BC316.8788	FSP	3289	

MID-COURSE EXECUTION ACCURACY

SGT12396.5	SGR	871.9	SG3	1001.0			
RRT	.8668	RRF	.8578	RTF	.9691		
SGB12427.2	R23	.0337	R13	.9691			
SG112419.6	SG2	434.1	THA	3.49			

ORBIT DETERMINATION ACCURACY

ST	5505.0	SR	607.7	SS	1356.0		
CRT	.9899	CRS	-.9948	CST	-.9766		
LSA	5694.5	MSA	292.6	SSA	32.1		
EL1	5537.8	EL2	85.6	ALF	6.24		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 765.723 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.126	GAL	.91	AZL	87.41	HCA	224.52	SMA	188.06	ECC	.21774	INC	2.5925	V1	30.263
RP	208.58	LAP	-1.82	LOP	308.58	VP	23.809	GAP	-10.93	AZP	91.85	TAL	5.08	TAP	229.61	RCA	147.11	APO	229.01	V2	26.274
RC	315.690	GL	27.28	GP	-7.72	ZAL	77.98	ZAP	40.19	ETS	169.87	ZAE	62.55	ETE	175.45	ZAC	77.65	ETC	257.11	CLP	39.57

PLANETOCENTRIC CONIC

C3	10.687	VHL	3.269	DLA	32.57	RAL	173.90	RAD	6567.4	VEL	11.492	PTH	2.00	VHP	4.571	DPA	-.89	RAP	166.63	ECC	1.1759

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.19	9 7 44	3811.66	-26.02	156.19	34.09	69.68	10 11 16	3211.7	-28.54	148.06
106.81	13 26 46	2983.13	-26.01	94.71	34.09	69.67	14 16 30	2383.1	-28.53	86.58
73.19	9 7 44	3811.66	-26.02	156.19	34.09	69.68	10 11 16	3211.7	-28.54	148.06
106.81	13 26 46	2983.13	-26.01	94.71	34.09	69.67	14 16 30	2383.1	-28.53	86.58
110.00	15 6 3	2677.06	-32.13	73.15	36.14	77.65	15 50 40	2077.1	-33.50	64.19
110.00	12 27 38	3165.73	-20.20	105.93	31.24	61.82	13 20 24	2565.7	-23.81	98.64

DIFFERENTIAL CORRECTIONS

TDE	3.0749	TRA	.4487	TC-17.2624	BAU	2.4686	
RDE	.3313	RRA	.1741	RC3 -.7408	FAU	.19559	
FDE	1.7508	FRA	1.4427	FC-15.8445	BSP	43590	
BDE	3.0927	BRA	.4813	BC317.2783	FSP	3175	

MID-COURSE EXECUTION ACCURACY

SGT12541.8	SGR	838.4	SG3	968.8			
RRT	.8496	RRF	.8388	RTF	.9689		
SGB12569.8	R23	.0277	R13	.9689			
SG112562.0	SG2	441.5	THA	3.25			

ORBIT DETERMINATION ACCURACY

ST	5407.2	SR	591.0	SS	1268.8		
CRT	.9905	CRS	-.9924	CST	-.9725		
LSA	5577.5	MSA	295.9	SSA	32.9		
EL1	5438.8	EL2	81.0	ALF	6.18		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 770.088 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.133	GAL	.77	AZL	87.45	HCA	225.77	SMA	188.19	ECC	.21814	INC	2.5467	V1	30.263
RP	208.40	LAP	-1.82	LOP	309.82	VP	23.842	GAP	-11.01	AZP	91.78	TAL	4.32	TAP	230.09	RCA	147.14	APO	229.25	V2	26.294
RC	316.588	GL	26.93	GP	-7.46	ZAL	79.30	ZAP	39.46	ETS	169.93	ZAE	61.54	ETE	175.44	ZAC	78.01	ETC	257.06	CLP	38.86

PLANETOCENTRIC CONIC

C3	10.565	VHL	3.250	DLA	31.65	RAL	175.17	RAD	6567.4	VEL	11.487	PTH	2.00	VHP	4.631	DPA	-.87	RAP	167.22	ECC	1.1739

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.23	9 26 28	3766.70	-25.37	152.50	34.91	70.41	10 29 14	3166.7	-27.80	144.39
104.77	13 18 9	3023.45	-25.36	97.52	34.90	70.39	14 8 33	2423.5	-27.79	89.41
75.23	9 26 28	3766.70	-25.37	152.50	34.91	70.41	10 29 14	3166.7	-27.80	144.39
104.77	13 18 9	3023.45	-25.36	97.52	34.90	70.39	14 8 33	2423.5	-27.79	89.41
110.00	15 30 54	2611.53	-32.98	68.23	37.17	80.45	16 14 26	2011.5	-33.95	59.12
110.00	12 12 53	3226.62	-18.20	109.52	31.39	60.55	13 6 39	2626.6	-21.98	102.43

DIFFERENTIAL CORRECTIONS

TDE	2.9930	TRA	.5727	TC-17.6520	BAU	2.4952	
RDE	.3205	RRA	.1786	RC3 -.6831	FAU	.18793	
FDE	1.5846	FRA	1.5025	FC-15.3994	BSP	44065	
BDE	3.0101	BRA	.5999	BC317.6652	FSP	3060	

MID-COURSE EXECUTION ACCURACY

SGT12685.6	SGR	808.2	SG3	937.4			
RRT	.8305	RRF	.8182	RTF	.9686		
SGB12711.3	R23	.0229	R13	.9687			
SG112703.3	SG2	449.5	THA	3.03			

ORBIT DETERMINATION ACCURACY

ST	5298.9	SR	575.9	SS	1184.5		
CRT	.9911	CRS	-.9887	CST	-.9672		
LSA	5451.7	MSA	300.5	SSA	33.7		
EL1	5329.6	EL2	76.1	ALF	6.15		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 774.457 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.141	GAL	.64	AZL	87.50	HCA	227.02	SMA	188.33	ECC	.21857	INC	2.5029	V1	30.263
RP	208.24	LAP	-1.83	LOP	311.07	VP	23.873	GAP	-11.09	AZP	91.71	TAL	3.55	TAP	230.57	RCA	147.17	APO	229.49	V2	26.314
RC	317.480	GL	26.58	GP	-7.22	ZAL	80.68	ZAP	38.75	ETS	169.99	ZAE	60.54	ETE	175.43	ZAC	78.37	ETC	257.02	CLP	38.17

PLANETOCENTRIC CONIC

C3	10.458	VHL	3.234	DLA	30.71	RAL	176.46	RAD	6567.4	VEL	11.482	PTH	2.00	VHP	4.692	DPA	-.87	RAP	167.83	ECC	1.1721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.58	9 48 10	3712.50	-24.69	148.15	35.78	71.13	10 50 2	3112.5	-27.04	140.07
102.42	13 6 46	3073.52	-24.68	101.03	35.77	71.11	13 58 0	2473.5	-27.03	92.95
77.58	9 48 10	3712.50	-24.69	148.15	35.78	71.13	10 50 2	3112.5	-27.04	140.07
102.42	13 6 46	3073.52	-24.68	101.03	35.77	71.11	13 58 0	2473.5	-27.03	92.95
110.00	15 52 40	2555.38	-33.53	63.94	38.10	82.93	16 35 16	1955.4	-34.15	54.75
110.00	12 1 26	3278.63	-16.44	112.52	31.74	59.60	12 56 5	2678.6	-20.35	105.58

DIFFERENTIAL CORRECTIONS

TDE	2.9058	TRA	.7021	TC-18.0334	BAU	2.5228	
RDE	.3106	RRA	.1826	RC3 -.6287	FAU	.18084	
FDE	1.4231	FRA	1.5560	FC-14.9705	BSP	44596	
BDE	2.9223	BRA	.7255	BC318.0444	FSP	2963	

MID-COURSE EXECUTION ACCURACY

SGT12831.1	SGR	780.8	SG3	907.8			
RRT	.8105	RRF	.7961	RTF	.9684		
SGB12854.8	R23	.0175	R13	.9684			
SG112846.7	SG2	456.8	THA	2.83			

ORBIT DETERMINATION ACCURACY

ST	5178.4	SR	561.8	SS	1100.3		
CRT	.9920	CRS	-.9833	CST	-.9605		
LSA	5314.8	MSA	305.1	SSA	34.5		
EL1	5208.3	EL2	70.6	ALF	6.14		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 778.829 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.148 GAL .50 AZL 87.54 HCA 228.27 SMA 188.46 ECC .21902 INC 2.4607 V1 30.263
RP 208.08 LAP -1.84 LOP 312.33 VP 23.904 GAP -11.17 AZP 91.64 TAL 2.76 TAP 231.03 RCA 147.19 APO 229.74 V2 26.332
RC 318.367 GL 26.23 GP -6.99 ZAL 82.09 ZAP 38.06 ETS 170.04 ZAE 59.56 ETE 175.42 ZAC 78.71 ETC 256.97 CLP 37.50

PLANETOCENTRIC CONIC

C3 10.365 VHL 3.219 DLA 29.76 RAL 177.78 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 4.754 DPA -.90 RAP 168.45 ECC 1.1706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.44	10 14 49	3642.62	-23.99	142.68	36.69	71.84	11 15 32	3042.6	-26.25	134.62
99.56	12 50 38	3139.78	-23.98	105.72	36.69	71.83	13 42 58	2539.8	-26.24	97.66
100.00	13 17 36	3053.61	-25.60	99.86	37.24	74.01	14 8 30	2453.6	-27.54	91.60
100.00	12 30 32	3204.02	-22.40	109.88	36.09	69.67	13 23 56	2604.0	-24.96	102.03
110.00	16 12 35	2504.90	-33.89	60.04	38.99	85.21	16 54 20	1904.9	-34.18	50.81
110.00	11 52 3	3325.50	-14.80	115.17	32.23	58.83	12 47 28	2725.5	-18.82	108.36

DIFFERENTIAL CORRECTIONS
TDE 2.8179 TRA .8385 TC-18.3762 BAU 2.5476
RDE .3020 RRA .1863 RC3 -.5720 FAU .17315
FDE 1.2747 FRA 1.6067 FC-14.4625 BSP 45029
BDE 2.8341 BRA .8589 BC318.3851 FSP 2840

MID-COURSE EXECUTION ACCURACY
SGT12965.5 SGR 755.3 SG3 875.6
RRT .7873 RRF .7717 RTF .9682
SGB12987.5 R23 .0137 R13 .9682
SG112979.2 SG2 465.1 THA 2.63

ORBIT DETERMINATION ACCURACY
ST 5053.9 SR 549.7 SS 1022.9
CRT .9930 CRS -.9758 CST -.9524
LSA 5176.2 MSA 310.0 SSA 35.2
EL1 5083.3 EL2 64.6 ALF 6.17

LAUNCH DATE DEC 16 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 783.202 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.156 GAL .35 AZL 87.58 HCA 229.52 SMA 188.60 ECC .21951 INC 2.4200 V1 30.263
RP 207.93 LAP -1.84 LOP 313.58 VP 23.934 GAP -11.25 AZP 91.57 TAL 1.96 TAP 231.49 RCA 147.20 APO 230.00 V2 26.349
RC 319.247 GL 25.88 GP -6.77 ZAL 83.55 ZAP 37.38 ETS 170.10 ZAE 58.60 ETE 175.41 ZAC 79.05 ETC 256.92 CLP 36.85

PLANETOCENTRIC CONIC

C3 10.286 VHL 3.207 DLA 28.79 RAL 179.13 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 4.817 DPA -.94 RAP 169.08 ECC 1.1693

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.58	10 53 3	3535.44	-23.26	134.51	37.66	72.55	11 51 59	2935.4	-25.43	126.48
95.42	12 23 8	3243.90	-23.25	113.15	37.66	72.53	13 17 12	2643.9	-25.43	105.11
100.00	14 7 34	2908.19	-27.93	89.69	38.98	78.88	14 56 2	2308.2	-29.18	81.11
100.00	11 51 18	3346.38	-18.75	118.89	35.85	66.29	12 47 5	2746.4	-21.80	111.42
110.00	16 31 16	2458.28	-34.09	56.41	39.85	87.35	17 12 14	1858.3	-34.08	47.17
110.00	11 44 6	3369.06	-13.25	117.59	32.84	58.20	12 40 15	2769.1	-17.36	110.89

DIFFERENTIAL CORRECTIONS
TDE 2.7237 TRA .9817 TC-18.7057 BAU 2.5733
RDE .2942 RRA .1897 RC3 -.5193 FAU .16615
FDE 1.1288 FRA 1.6544 FC-13.9840 BSP 45511
BDE 2.7395 BRA .9999 BC318.7129 FSP 2734

MID-COURSE EXECUTION ACCURACY
SGT13101.4 SGR 732.6 SG3 846.1
RRT .7634 RRF .7459 RTF .9680
SGB13121.9 R23 .0093 R13 .9680
SG113113.3 SG2 472.7 THA 2.45

ORBIT DETERMINATION ACCURACY
ST 4915.8 SR 538.4 SS 945.7
CRT .9941 CRS -.9647 CST -.9415
LSA 5024.8 MSA 316.0 SSA 35.9
EL1 4944.9 EL2 58.2 ALF 6.21

LAUNCH DATE DEC 16 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 787.578 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.164 GAL .21 AZL 87.62 HCA 230.78 SMA 188.74 ECC .22003 INC 2.3808 V1 30.263
RP 207.79 LAP -1.84 LOP 314.83 VP 23.963 GAP -11.33 AZP 91.51 TAL 1.15 TAP 231.93 RCA 147.21 APO 230.27 V2 26.366
RC 320.122 GL 25.52 GP -6.57 ZAL 85.05 ZAP 36.72 ETS 170.14 ZAE 57.65 ETE 175.40 ZAC 79.38 ETC 256.87 CLP 36.21

PLANETOCENTRIC CONIC

C3 10.223 VHL 3.197 DLA 27.80 RAL 180.49 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 4.881 DPA -1.01 RAP 169.72 ECC 1.1682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 31 10	3233.58	-25.62	113.09	39.57	77.50	13 25 3	2633.6	-27.08	104.73
90.00	10 55 56	3543.27	-19.46	133.66	37.57	69.02	11 54 59	2943.3	-22.15	126.02
100.00	14 38 38	2822.66	-28.89	83.52	40.24	81.99	15 25 40	2222.7	-29.70	74.81
100.00	11 31 9	3429.42	-16.40	123.93	36.19	64.65	12 28 18	2829.4	-19.68	116.68
110.00	16 49 3	2414.49	-34.18	53.00	40.71	89.37	17 29 17	1814.5	-33.89	43.76
110.00	11 37 13	3410.36	-11.76	119.86	33.56	57.67	12 34 4	2810.4	-15.94	113.25

DIFFERENTIAL CORRECTIONS
TDE 2.6207 TRA 1.1293 TC-19.0192 BAU 2.6001
RDE .2866 RRA .1926 RC3 -.4678 FAU .15930
FDE .9758 FRA 1.6960 FC-13.4911 BSP 46013
BDE 2.6364 BRA 1.1456 BC319.0250 FSP 2645

MID-COURSE EXECUTION ACCURACY
SGT13236.5 SGR 711.0 SG3 816.4
RRT .7378 RRF .7174 RTF .9674
SGB13255.5 R23 .0041 R13 .9674
SG113246.9 SG2 479.6 THA 2.27

ORBIT DETERMINATION ACCURACY
ST 4760.3 SR 526.8 SS 863.0
CRT .9951 CRS -.9471 CST -.9254
LSA 4855.5 MSA 324.0 SSA 36.7
EL1 4789.1 EL2 51.7 ALF 6.29

LAUNCH DATE DEC 16 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 791.956 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.172 GAL .06 AZL 87.66 HCA 232.03 SMA 188.88 ECC .22057 INC 2.3429 V1 30.263
RP 207.66 LAP -1.85 LOP 316.09 VP 23.990 GAP -11.41 AZP 91.44 TAL .32 TAP 232.36 RCA 147.22 APO 230.54 V2 26.381
RC 320.992 GL 25.16 GP -6.38 ZAL 86.58 ZAP 36.08 ETS 170.19 ZAE 56.72 ETE 175.39 ZAC 79.70 ETC 256.82 CLP 35.59

PLANETOCENTRIC CONIC

C3 10.175 VHL 3.190 DLA 26.79 RAL 181.88 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 4.946 DPA -1.09 RAP 170.38 ECC 1.1675

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 10 42	3120.42	-27.04	105.11	41.03	81.26	14 2 42	2520.4	-27.97	96.57
90.00	10 27 28	3654.55	-16.61	140.58	37.81	66.73	11 28 23	3054.6	-19.62	133.20
100.00	15 4 24	2753.85	-29.44	78.48	41.37	84.58	15 50 18	2153.8	-29.88	69.70
100.00	11 16 27	3496.35	-14.41	127.91	36.76	63.52	12 14 43	2896.4	-17.85	120.80
110.00	17 6 9	2372.89	-34.16	49.75	41.57	91.29	17 45 42	1772.9	-33.61	40.55
110.00	11 31 11	3450.08	-10.31	122.01	34.37	57.23	12 28 41	2850.1	-14.55	115.49

DIFFERENTIAL CORRECTIONS
TDE 2.5295 TRA 1.2989 TC-19.3208 BAU 2.6288
RDE .2825 RRA .1970 RC3 -.4218 FAU .15349
FDE .8765 FRA 1.7663 FC-13.0595 BSP 46320
BDE 2.5452 BRA 1.3137 BC319.3255 FSP 2511

MID-COURSE EXECUTION ACCURACY
SGT13394.1 SGR 697.8 SG3 794.3
RRT .7123 RRF .6935 RTF .9675
SGB13412.3 R23 .0049 R13 .9675
SG113403.3 SG2 489.4 THA 2.13

ORBIT DETERMINATION ACCURACY
ST 4625.5 SR 521.2 SS 819.5
CRT .9962 CRS -.9280 CST -.9110
LSA 4714.3 MSA 334.2 SSA 37.2
EL1 4654.5 EL2 45.3 ALF 6.40

LAUNCH DATE DEC 16 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 796.334 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.179	GAL	-.09	AZL	87.69	HCA	233.29	SMA	189.02	ECC	.22116	INC	2.3062	V1	30.263
RP	207.54	LAP	-1.85	LOP	317.35	VP	24.017	GAP	-11.49	AZP	91.38	TAL	359.49	TAP	232.78	RCA	147.21	APO	230.82	V2	26.396
RC	321.856	GL	24.79	GP	-6.19	ZAL	88.16	ZAP	35.46	ETS	170.23	ZAE	55.80	ETE	175.39	ZAC	80.02	ETC	256.76	CLP	34.98

PLANETOCENTRIC CONIC

C3	10.143	VHL	3.185	DLA	25.76	RAL	183.29	RAD	6567.4	VEL	11.469	PTH	1.99	VHP	5.012	DPA	-1.18	RAP	171.04	ECC	1.1669

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 40 9	3039.63	-27.74	99.30	42.27	84.09	14 30 49	2439.6	-28.27	90.68
90.00	10 9 14	3734.09	-14.41	145.38	38.38	65.36	11 11 28	3134.1	-17.61	138.17
100.00	15 27 24	2693.85	-29.75	74.04	42.45	86.90	16 12 18	2093.8	-29.86	65.24
100.00	11 4 40	3555.10	-12.60	131.33	37.47	62.67	12 3 55	2955.1	-16.16	124.35
110.00	17 22 43	2333.04	-34.06	46.64	42.45	93.13	18 1 36	1733.0	-33.25	37.49
110.00	11 25 51	3488.67	-8.88	124.09	35.26	56.85	12 23 59	2888.7	-13.18	117.63

DIFFERENTIAL CORRECTIONS

TDE	2.4273	TRA	1.4539	TC-19.5257	BAU	2.6482	
RDE	.2778	RRA	.1987	RC3 -.3648	FAU	.14510	
FDE	.7588	FRA	1.7897	FC-12.3845	BSP	47224	
BDE	2.4431	BRA	1.4675	BC319.5291	FSP	2528	

MID-COURSE EXECUTION ACCURACY

SGT	13497.6	SGR	679.2	SG3	757.5		
RRT	.6790	RRF	.6606	RTF	.9671		
SGB	13514.7	R23	.0041	R13	.9671		
SG1	13505.5	SG2	498.3	THA	1.96		

ORBIT DETERMINATION ACCURACY

ST	4468.5	SR	513.8	SS	758.7		
CRT	.9969	CRS	-.9015	CST	-.8920		
LSA	4548.7	MSA	339.1	SSA	37.9		
EL1	4497.7	EL2	40.4	ALF	6.54		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 800.714 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.187	GAL	-.25	AZL	87.73	HCA	234.55	SMA	189.16	ECC	.22177	INC	2.2708	V1	30.263
RP	207.42	LAP	-1.85	LOP	318.61	VP	24.043	GAP	-11.57	AZP	91.32	TAL	358.63	TAP	233.19	RCA	147.21	APO	231.11	V2	26.409
RC	322.714	GL	24.40	GP	-6.02	ZAL	89.78	ZAP	34.85	ETS	170.26	ZAE	54.90	ETE	175.38	ZAC	80.33	ETC	256.71	CLP	34.39

PLANETOCENTRIC CONIC

C3	10.128	VHL	3.182	DLA	24.71	RAL	184.71	RAD	6567.4	VEL	11.468	PTH	1.99	VHP	5.079	DPA	-1.30	RAP	171.72	ECC	1.1667

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 5 28	2972.12	-28.12	94.40	43.44	86.51	14 55 1	2372.1	-28.31	85.74
90.00	9 55 17	3801.00	-12.47	149.34	39.12	64.37	10 58 38	3201.0	-15.82	142.27
100.00	15 48 38	2639.50	-29.88	70.01	43.51	89.02	16 32 38	2039.5	-29.69	61.21
100.00	10 54 48	3608.86	-10.90	134.41	38.31	61.99	11 54 57	3008.9	-14.56	127.54
110.00	17 38 52	2294.66	-33.87	43.66	43.35	94.88	18 17 6	1694.7	-32.83	34.58
110.00	11 21 4	3526.46	-7.46	126.10	36.24	56.54	12 19 50	2926.5	-11.81	119.71

DIFFERENTIAL CORRECTIONS

TDE	2.3153	TRA	1.6257	TC-19.7235	BAU	2.6709	
RDE	.2731	RRA	.2011	RC3 -.3156	FAU	.13824	
FDE	.6308	FRA	1.8277	FC-11.8164	BSP	47552	
BDE	2.3313	BRA	1.6381	BC319.7260	FSP	2394	

MID-COURSE EXECUTION ACCURACY

SGT	13614.5	SGR	664.0	SG3	727.9		
RRT	.6477	RRF	.6279	RTF	.9662		
SGB	13630.7	R23	.0016	R13	.9662		
SG1	13621.3	SG2	505.6	THA	1.81		

ORBIT DETERMINATION ACCURACY

ST	4295.5	SR	506.0	SS	696.8		
CRT	.9971	CRS	-.8582	CST	-.8605		
LSA	4366.7	MSA	351.6	SSA	38.5		
EL1	4325.0	EL2	38.5	ALF	6.70		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 805.094 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.195	GAL	-.41	AZL	87.76	HCA	235.81	SMA	189.30	ECC	.22243	INC	2.2363	V1	30.263
RP	207.31	LAP	-1.85	LOP	319.87	VP	24.068	GAP	-11.65	AZP	91.26	TAL	357.77	TAP	233.58	RCA	147.20	APO	231.41	V2	26.422
RC	323.566	GL	24.01	GP	-5.85	ZAL	91.42	ZAP	34.25	ETS	170.30	ZAE	54.01	ETE	175.38	ZAC	80.63	ETC	256.66	CLP	33.81

PLANETOCENTRIC CONIC

C3	10.131	VHL	3.183	DLA	23.64	RAL	186.15	RAD	6567.4	VEL	11.468	PTH	1.99	VHP	5.146	DPA	-1.43	RAP	172.40	ECC	1.1667

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 28 24	2912.33	-28.29	90.04	44.57	88.70	15 16 57	2312.3	-28.17	81.37
90.00	9 43 50	3860.89	-10.68	152.83	39.99	63.62	10 48 10	3260.9	-14.14	145.86
100.00	16 8 38	2589.16	-29.88	66.27	44.57	90.99	16 51 47	1989.2	-29.42	57.49
100.00	10 46 17	3659.29	-9.27	137.27	39.24	61.46	11 47 16	3059.3	-13.02	130.48
110.00	17 54 38	2257.52	-33.62	40.79	44.28	96.56	18 32 16	1657.5	-32.35	31.79
110.00	11 16 46	3563.69	-6.06	128.07	37.29	56.29	12 16 10	2963.7	-10.45	121.73

DIFFERENTIAL CORRECTIONS

TDE	2.2040	TRA	1.8018	TC-19.9157	BAU	2.6975	
RDE	.2698	RRA	.2028	RC3 -.2718	FAU	.13239	
FDE	.5192	FRA	1.8561	FC-11.3141	BSP	47978	
BDE	2.2204	BRA	1.8132	BC319.9175	FSP	2290	

MID-COURSE EXECUTION ACCURACY

SGT	13747.8	SGR	651.6	SG3	702.2		
RRT	.6174	RRF	.5955	RTF	.9660		
SGB	13763.2	R23	-.0023	R13	.9660		
SG1	13753.7	SG2	512.3	THA	1.68		

ORBIT DETERMINATION ACCURACY

ST	4124.8	SR	500.2	SS	647.0		
CRT	.9964	CRS	-.8049	CST	-.8251		
LSA	4189.2	MSA	363.1	SSA	39.0		
EL1	4154.8	EL2	41.9	ALF	6.89		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 809.474 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.203	GAL	-.57	AZL	87.80	HCA	237.07	SMA	189.44	ECC	.22312	INC	2.2028	V1	30.263
RP	207.21	LAP	-1.85	LOP	321.13	VP	24.092	GAP	-11.73	AZP	91.20	TAL	356.89	TAP	233.97	RCA	147.18	APO	231.71	V2	26.434
RC	324.413	GL	23.61	GP	-5.69	ZAL	93.10	ZAP	33.67	ETS	170.33	ZAE	53.13	ETE	175.38	ZAC	80.93	ETC	256.61	CLP	33.24

PLANETOCENTRIC CONIC

C3	10.151	VHL	3.186	DLA	22.56	RAL	187.60	RAD	6567.4	VEL	11.469	PTH	1.99	VHP	5.215	DPA	-1.57	RAP	173.10	ECC	1.1671

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 49 45	2857.73	-28.31	86.04	45.70	90.70	15 37 22	2257.7	-27.91	77.40
90.00	9 34 4	3916.31	-8.99	156.02	40.96	63.03	10 39 21	3316.3	-12.54	149.14
100.00	16 27 42	2541.87	-29.77	62.75	45.64	92.83	17 10 4	1941.9	-29.06	54.02
100.00	10 38 48	3707.40	-7.70	139.98	40.27	61.03	11 40 35	3107.4	-11.51	133.26
110.00	18 10 6	2221.50	-33.31	38.02	45.25	98.17	18 47 8	1621.5	-31.82	29.11
110.00	11 12 53	3600.53	-4.67	130.01	38.41	56.10	12 12 53	3000.5	-9.09	123.71

DIFFERENTIAL CORRECTIONS

TDE	2.0865	TRA	1.9828	TC-20.0665	BAU	2.7234	
RDE	.2672	RRA	.2039	RC3 -.2288	FAU	.12653	
FDE	.4124	FRA	1.8750	FC-10.7908	BSP	48418	
BDE	2.1036	BRA	1.9933	BC320.0678	FSP	2197	

MID-COURSE EXECUTION ACCURACY

SGT	13874.0	SGR	640.1	SG3	675.7		
RRT	.5855	RRF	.5610	RTF	.9659		
SGB	13888.7	R23	-.0066	R13	.9659		
SG1	13879.0	SG2	518.7	THA	1.55		

ORBIT DETERMINATION ACCURACY

ST	3945.7	SR	495.1	SS	603.2		
CRT	.9945	CRS	-.7358	CST	-.7820		
LSA	4004.3	MSA	375.3	SSA	39.7		
EL1	3976.3	EL2	51.5	ALF	7.1		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 813.855 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.211	GAL	-.73	AZL	87.83	HCA	238.34	SMA	189.59	ECC	.22385	INC	2.1702	V1	30.263
RP	207.12	LAP	-1.85	LOP	322.40	VP	24.115	GAP	-11.81	AZP	91.14	TAL	356.00	TAP	234.34	RCA	147.15	APO	232.03	V2	26.444
RC	325.253	GL	23.20	GP	-5.55	ZAL	94.81	ZAP	33.11	ETS	170.35	ZAE	52.27	ETE	175.37	ZAC	81.23	ETC	256.55	CLP	32.69

PLANETOCENTRIC CONIC

C3	10.191	VHL	3.192	DLA	21.46	RAL	189.07	RAD	6567.4	VEL	11.471	PTH	1.99	VHP	5.285	DPA	-1.72	RAP	173.81	ECC	1.1677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 55	2806.95	-28.21	82.33	46.83	92.56	15 56 42	2206.9	-27.56	73.73
90.00	9 25 34	3968.65	-7.36	159.01	42.03	62.58	10 31 42	3368.7	-10.98	152.19
100.00	16 46 2	2497.02	-29.57	59.43	46.73	94.57	17 27 39	1897.0	-28.63	50.76
100.00	10 32 8	3753.81	-6.16	142.56	41.38	60.69	11 34 42	3153.8	-10.02	135.90
110.00	18 25 18	2186.48	-32.94	35.36	46.24	99.71	19 1 44	1586.5	-31.25	26.54
110.00	11 9 22	3637.12	-3.27	131.93	39.59	55.95	12 9 59	3037.1	-7.72	125.67

DIFFERENTIAL CORRECTIONS

TDE	1.9685	TRA	2.1735	TC-20.1620	BAU	2.7470	
RDE	.2657	RRA	.2051	RC3 -.1852	FAU	.12026	
FDE	.3165	FRA	1.8990	FC-10.2161	BSP	48877	
BDE	1.9864	BRA	2.1832	BC320.1628	FSP	2114	

MID-COURSE EXECUTION ACCURACY

SGT13991.3	SGR	630.7	SG3	648.2			
RRT	.5513	RRF	.5264	RTF	.9653		
SGB14005.5	R23	-.0078	R13	.9653			
SG113995.6	SG2	526.1	THA	1.43			

ORBIT DETERMINATION ACCURACY

ST	3770.0	SR	491.4	SS	571.8		
CRT	.9907	CRS	-.6532	CST	-.7338		
LSA	3824.6	MSA	390.5	SSA	39.7		
EL1	3801.4	EL2	66.4	ALF	7.36		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 818.234 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.219	GAL	-.90	AZL	87.86	HCA	239.60	SMA	189.73	ECC	.22462	INC	2.1385	V1	30.263
RP	207.04	LAP	-1.84	LOP	323.66	VP	24.137	GAP	-11.90	AZP	91.08	TAL	355.10	TAP	234.70	RCA	147.12	APO	232.35	V2	26.454
RC	326.088	GL	22.78	GP	-5.40	ZAL	96.55	ZAP	32.55	ETS	170.38	ZAE	51.42	ETE	175.37	ZAC	81.53	ETC	256.50	CLP	32.15

PLANETOCENTRIC CONIC

C3	10.250	VHL	3.202	DLA	20.34	RAL	190.54	RAD	6567.4	VEL	11.473	PTH	1.99	VHP	5.355	DPA	-1.89	RAP	174.52	ECC	1.1687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 12	2759.15	-28.02	78.85	47.98	94.29	16 15 11	2159.1	-27.13	70.30
90.00	9 18 1	4018.79	-5.78	161.84	43.19	62.23	10 25 0	3418.8	-9.45	155.09
100.00	17 3 46	2454.21	-29.30	56.28	47.85	96.21	17 44 40	1854.2	-28.13	47.67
100.00	10 26 8	3798.96	-4.65	145.06	42.57	60.44	11 29 27	3199.0	-8.55	138.45
110.00	18 40 15	2152.39	-32.52	32.79	47.27	101.18	19 16 7	1552.4	-30.64	24.07
110.00	11 6 9	3673.54	-1.88	133.83	40.85	55.86	12 7 23	3073.5	-6.35	127.60

DIFFERENTIAL CORRECTIONS

TDE	1.8472	TRA	2.3711	TC-20.2255	BAU	2.7717	
RDE	.2650	RRA	.2059	RC3 -.1448	FAU	.11444	
FDE	.2260	FRA	1.9177	FC3-9.6658	BSP	49313	
BDE	1.8661	BRA	2.3801	BC320.2260	FSP	2026	

MID-COURSE EXECUTION ACCURACY

SGT14111.5	SGR	622.7	SG3	622.2			
RRT	.5173	RRF	.4913	RTF	.9649		
SGB14125.2	R23	-.0099	R13	.9648			
SG114115.2	SG2	532.8	THA	1.31			

ORBIT DETERMINATION ACCURACY

ST	3594.7	SR	488.6	SS	548.2		
CRT	.9842	CRS	-.5557	CST	-.6809		
LSA	3646.1	MSA	407.6	SSA	39.9		
EL1	3626.8	EL2	85.9	ALF	7.62		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 380.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 822.612 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.227	GAL	-1.07	AZL	87.89	HCA	240.87	SMA	189.88	ECC	.22543	INC	2.1076	V1	30.263
RP	206.96	LAP	-1.84	LOP	324.93	VP	24.157	GAP	-11.98	AZP	91.03	TAL	354.18	TAP	235.05	RCA	147.08	APO	232.69	V2	26.463
RC	326.917	GL	22.34	GP	-5.27	ZAL	98.30	ZAP	32.02	ETS	170.40	ZAE	50.58	ETE	175.36	ZAC	81.82	ETC	256.45	CLP	31.63

PLANETOCENTRIC CONIC

C3	10.331	VHL	3.214	DLA	19.21	RAL	192.02	RAD	6567.4	VEL	11.477	PTH	1.99	VHP	5.427	DPA	-2.08	RAP	175.25	ECC	1.1700

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 47 46	2713.79	-27.74	75.56	49.16	95.92	16 33 0	2113.8	-26.63	67.07
90.00	9 11 15	4067.28	-4.23	164.57	44.42	61.98	10 19 2	3467.3	-7.95	157.86
100.00	17 21 0	2413.15	-28.96	53.28	48.99	97.75	18 1 13	1813.2	-27.58	44.74
100.00	10 20 42	3843.15	-3.16	147.50	43.82	60.26	11 24 45	3243.2	-7.10	140.92
110.00	18 54 58	2119.19	-32.05	30.31	48.35	102.57	19 30 17	1519.2	-29.99	21.70
110.00	11 3 14	3709.88	-.49	135.73	42.16	55.82	12 5 3	3109.9	-4.98	129.51

DIFFERENTIAL CORRECTIONS

TDE	1.7230	TRA	2.5768	TC-20.2443	BAU	2.7960	
RDE	.2649	RRA	.2063	RC3 -.1060	FAU	.10873	
FDE	.1391	FRA	1.9322	FC3-9.1122	BSP	49793	
BDE	1.7432	BRA	2.5850	BC320.2445	FSP	1948	

MID-COURSE EXECUTION ACCURACY

SGT14228.4	SGR	615.9	SG3	596.6			
RRT	.4829	RRF	.4555	RTF	.9642		
SGB14241.7	R23	-.0124	R13	.9642			
SG114231.5	SG2	539.2	THA	1.20			

ORBIT DETERMINATION ACCURACY

ST	3422.8	SR	486.4	SS	532.5		
CRT	.9739	CRS	-.4440	CST	-.6244		
LSA	3471.5	MSA	427.6	SSA	39.9		
EL1	3455.5	EL2	109.3	ALF	7.89		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 382.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 826.989 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.236	GAL	-1.24	AZL	87.92	HCA	242.13	SMA	190.03	ECC	.22629	INC	2.0774	V1	30.263
RP	206.89	LAP	-1.84	LOP	326.20	VP	24.177	GAP	-12.06	AZP	90.97	TAL	353.25	TAP	235.38	RCA	147.03	APO	233.03	V2	26.471
RC	327.742	GL	21.90	GP	-5.14	ZAL	100.08	ZAP	31.49	ETS	170.42	ZAE	49.76	ETE	175.35	ZAC	82.10	ETC	256.40	CLP	31.11

PLANETOCENTRIC CONIC

C3	10.433	VHL	3.230	DLA	18.07	RAL	193.50	RAD	6567.4	VEL	11.481	PTH	2.00	VHP	5.499	DPA	-2.27	RAP	175.98	ECC	1.1717

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 5 44	2670.52	-27.40	72.44	50.36	97.45	16 50 15	2070.5	-26.08	64.02
90.00	9 5 6	4114.52	-2.72	167.21	45.72	61.80	10 13 41	3514.5	-6.47	160.54
100.00	17 37 48	2373.66	-28.56	50.41	50.17	99.21	18 17 21	1773.7	-26.99	41.96
100.00	10 15 44	3886.61	-1.69	149.89	45.15	60.15	11 20 30	3286.6	-5.65	143.34
110.00	19 9 28	2086.85	-31.55	27.92	49.46	103.90	19 44 15	1486.9	-29.32	19.43
110.00	11 0 33	3746.18	.89	137.62	43.53	55.83	12 2 59	3146.2	-3.60	131.42

DIFFERENTIAL CORRECTIONS

TDE	1.5970	TRA	2.7895	TC-20.2154	BAU	2.8196	
RDE	.2657	RRA	.2063	RC3 -.0690	FAU	.10310	
FDE	.0605	FRA	1.9422	FC3-8.5560	BSP	50254	
BDE	1.6190	BRA	2.7971	BC320.2156	FSP	1867	

MID-COURSE EXECUTION ACCURACY

SGT14340.7	SGR	610.3	SG3	571.1			
RRT	.4481	RRF	.4196	RTF	.9636		
SGB14353.7	R23	-.0144	R13	.9636			
SG114343.3	SG2	545.5	THA	1.09			

ORBIT DETERMINATION ACCURACY

ST	3258.4	SR	485.3	SS	525.0		
CRT	.9588	CRS	-.3290	CST	-.5741		
LSA	3305.3	MSA	449.2	SSA	39.8		
EL1	3291.6	EL2	136.5	ALF	8.14		

LAUNCH DATE DEC 16 1964 FLIGHT TIME 384.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 831.364 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.244 GAL -1.42 AZL 87.95 HCA 243.40 SMA 190.18 ECC .22719 INC 2.0479 V1 30.263
RP 206.84 LAP -1.83 LOP 327.46 VP 24.196 GAP -12.15 AZP 90.92 TAL 352.31 TAP 235.71 RCA 146.97 APO 233.38 V2 26.477
RC 328.562 GL 21.44 GP -5.01 ZAL 101.88 ZAP 30.98 ETS 170.43 ZAE 48.94 ETE 175.35 ZAC 82.39 ETC 256.35 CLP 30.61

PLANETOCENTRIC CONIC

C3 10.557 VHL 3.249 DLA 16.93 RAL 194.98 RAD 6567.4 VEL 11.487 PTH 2.00 VHP 5.572 DPA -2.47 RAP 176.73 ECC 1.1737

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 11	2629.06	-27.00	69.47	51.59	98.88	17 7 0	2029.1	-25.49	61.13
90.00	8 59 30	4160.78	-1.23	169.79	47.09	61.71	10 8 51	3560.8	-5.00	163.15
100.00	17 54 12	2335.58	-28.12	47.67	51.38	100.59	18 33 7	1735.6	-26.37	39.30
100.00	10 11 11	3929.50	-.23	152.24	46.54	60.11	11 16 40	3329.5	-4.21	145.71
110.00	19 23 45	2055.36	-31.01	25.62	50.62	105.16	19 58 1	1455.4	-28.62	17.24
110.00	10 58 6	3782.48	2.28	139.52	44.97	55.88	12 1 9	3182.5	-2.21	133.31

DIFFERENTIAL CORRECTIONS
TDE 1.4670 TRA 3.0083 TC-20.1493 BAU 2.8439
RDE .2673 RRA .2061 RC3 -.0342 FAU .09763
FDE -.0126 FRA 1.9496 FC3-8.0055 BSP 50700
BDE 1.4912 BRA 3.0153 BC320.1493 FSP 1791

MID-COURSE EXECUTION ACCURACY
SGT14452.9 SGR 605.8 SG3 546.3
RRT .4130 RRF .3838 RTF .9628
SGB14465.6 R23 -.0159 R13 .9628
SG114455.1 SG2 551.7 THA .99

ORBIT DETERMINATION ACCURACY
ST 3100.6 SR 485.0 SS 524.6
CRT .9372 CRS -.2130 CST -.5320
LSA 3146.2 MSA 473.3 SSA 39.6
EL1 3133.8 EL2 167.3 ALF 8.36

LAUNCH DATE DEC 16 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 835.736 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.252 GAL -1.60 AZL 87.98 HCA 244.67 SMA 190.33 ECC .22814 INC 2.0190 V1 30.263
RP 206.79 LAP -1.82 LOP 328.73 VP 24.213 GAP -12.23 AZP 90.86 TAL 351.35 TAP 236.02 RCA 146.91 APO 233.75 V2 26.483
RC 329.378 GL 20.97 GP -4.90 ZAL 103.69 ZAP 30.48 ETS 170.45 ZAE 48.14 ETE 175.34 ZAC 82.67 ETC 256.30 CLP 30.12

PLANETOCENTRIC CONIC

C3 10.706 VHL 3.272 DLA 15.77 RAL 196.47 RAD 6567.4 VEL 11.493 PTH 2.00 VHP 5.647 DPA -2.69 RAP 177.48 ECC 1.1762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 11	2589.26	-26.55	66.64	52.86	100.23	17 23 21	1989.3	-24.86	58.38
90.00	8 54 21	4206.27	.24	172.33	48.53	61.68	10 4 27	3606.3	-3.55	165.70
100.00	18 10 15	2298.83	-27.63	45.04	52.63	101.89	18 48 34	1698.8	-25.71	36.77
100.00	10 6 59	3971.93	1.20	154.57	47.99	60.13	11 13 11	3371.9	-2.78	148.04
110.00	19 37 51	2024.72	-30.44	23.42	51.82	106.36	20 11 36	1424.7	-27.90	15.14
110.00	10 55 52	3818.81	3.67	141.42	46.45	55.99	11 59 30	3218.8	-.82	135.21

DIFFERENTIAL CORRECTIONS
TDE 1.3362 TRA 3.2351 TC-20.0359 BAU 2.8677
RDE .2697 RRA .2055 RC3 -.0013 FAU .09225
FDE -.0813 FRA 1.9523 FC3-7.4598 BSP 51160
BDE 1.3632 BRA 3.2416 BC320.0359 FSP 1716

MID-COURSE EXECUTION ACCURACY
SGT14561.5 SGR 602.3 SG3 521.8
RRT .3782 RRF .3478 RTF .9619
SGB14574.0 R23 -.0178 R13 .9618
SG114563.3 SG2 557.5 THA .90

ORBIT DETERMINATION ACCURACY
ST 2957.7 SR 485.3 SS 529.4
CRT .9077 CRS -.0993 CST -.5005
LSA 3002.1 MSA 499.9 SSA 39.2
EL1 2990.5 EL2 201.5 ALF 8.51

LAUNCH DATE DEC 16 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 840.105 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.260 GAL -1.79 AZL 88.01 HCA 245.93 SMA 190.48 ECC .22914 INC 1.9907 V1 30.263
RP 206.75 LAP -1.82 LOP 330.00 VP 24.230 GAP -12.32 AZP 90.81 TAL 350.39 TAP 236.32 RCA 146.83 APO 234.12 V2 26.488
RC 330.190 GL 20.49 GP -4.79 ZAL 105.50 ZAP 29.99 ETS 170.46 ZAE 47.35 ETE 175.33 ZAC 82.95 ETC 256.26 CLP 29.64

PLANETOCENTRIC CONIC

C3 10.880 VHL 3.298 DLA 14.61 RAL 197.95 RAD 6567.4 VEL 11.501 PTH 2.00 VHP 5.722 DPA -2.92 RAP 178.24 ECC 1.1791

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 56 47	2550.97	-26.06	63.95	54.17	101.50	17 39 18	1951.0	-24.21	55.77
90.00	8 49 36	4251.12	1.69	174.83	50.03	61.73	10 0 27	3651.1	-2.10	168.20
100.00	18 25 58	2263.35	-27.11	42.54	53.91	103.11	19 3 42	1663.3	-25.03	34.35
100.00	10 3 6	4013.99	2.63	156.88	49.50	60.21	11 10 0	3414.0	-1.35	150.35
110.00	19 51 45	1994.94	-29.85	21.30	53.06	107.48	20 25 0	1394.9	-27.17	13.14
110.00	10 53 48	3855.16	5.05	143.32	48.00	56.15	11 58 3	3255.2	.57	137.10

DIFFERENTIAL CORRECTIONS
TDE 1.2022 TRA 3.4689 TC-19.8837 BAU 2.8922
RDE .2728 RRA .2045 RC3 .0293 FAU .08702
FDE -.1440 FRA 1.9514 FC3-6.9240 BSP 51591
BDE 1.2327 BRA 3.4749 BC319.8838 FSP 1641

MID-COURSE EXECUTION ACCURACY
SGT14669.5 SGR 599.6 SG3 497.8
RRT .3435 RRF .3123 RTF .9608
SGB14681.8 R23 -.0194 R13 .9608
SG114671.0 SG2 563.1 THA .81

ORBIT DETERMINATION ACCURACY
ST 2829.4 SR 486.4 SS 538.4
CRT .8682 CRS .0055 CST -.4851
LSA 2872.6 MSA 527.5 SSA 38.7
EL1 2860.9 EL2 238.7 ALF 8.55

LAUNCH DATE DEC 16 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 844.471 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.269 GAL -1.98 AZL 88.04 HCA 247.20 SMA 190.63 ECC .23019 INC 1.9630 V1 30.263
RP 206.71 LAP -1.81 LOP 331.27 VP 24.245 GAP -12.41 AZP 90.76 TAL 349.41 TAP 236.61 RCA 146.75 APO 234.51 V2 26.492
RC 331.000 GL 20.01 GP -4.68 ZAL 107.33 ZAP 29.51 ETS 170.47 ZAE 46.57 ETE 175.32 ZAC 83.23 ETC 256.21 CLP 29.17

PLANETOCENTRIC CONIC

C3 11.080 VHL 3.329 DLA 13.45 RAL 199.43 RAD 6567.4 VEL 11.509 PTH 2.00 VHP 5.799 DPA -3.15 RAP 179.01 ECC 1.1823

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 13 0	2514.12	-25.53	61.38	55.51	102.68	17 54 54	1914.1	-23.53	53.28
90.00	8 45 12	4295.46	3.12	177.31	51.58	61.84	9 56 47	3695.5	-.67	170.68
100.00	18 41 23	2229.08	-26.55	40.14	55.24	104.26	19 18 32	1629.1	-24.33	32.04
100.00	9 59 30	4055.74	4.04	159.17	51.07	60.36	11 7 6	3455.7	.06	152.64
110.00	20 5 27	1966.02	-29.24	19.27	54.34	108.54	20 38 13	1366.0	-26.43	11.21
110.00	10 51 55	3891.55	6.42	145.24	49.60	56.35	11 56 47	3291.6	1.96	139.00

DIFFERENTIAL CORRECTIONS
TDE 1.0686 TRA 3.7121 TC-19.6831 BAU 2.9156
RDE .2767 RRA .2031 RC3 .0577 FAU .08189
FDE -.2000 FRA 1.9462 FC3-6.3987 BSP 52050
BDE 1.1038 BRA 3.7177 BC319.6832 FSP 1571

MID-COURSE EXECUTION ACCURACY
SGT14773.3 SGR 597.9 SG3 474.2
RRT .3095 RRF .2774 RTF .9596
SGB14785.4 R23 -.0211 R13 .9596
SG114774.5 SG2 568.5 THA .72

ORBIT DETERMINATION ACCURACY
ST 2724.4 SR 488.3 SS 549.4
CRT .8179 CRS .0983 CST -.4866
LSA 2766.5 MSA 554.8 SSA 38.0
EL1 2753.8 EL2 278.0 ALF 8.43

LAUNCH DATE DEC 16 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 848.832 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.277	GAL	-2.17	AZL	88.06	HCA	248.47	SMA	190.78	ECC	.23130	INC	1.9357
RP	206.69	LAP	-1.80	LOP	332.54	VP	24.260	GAP	-12.50	AZP	90.71	TAL	348.41	TAP	236.88	RCA	146.65	APO	234.91
RC	331.806	GL	19.51	GP	-4.58	ZAL	109.16	ZAP	29.05	ETS	170.48	ZAE	45.80	ETE	175.31	ZAC	83.50	ETC	256.17

V1	30.263	V2	26.494	CLP	28.71														

PLANETOCENTRIC CONIC

C3	11.308	VHL	3.363	DLA	12.29	RAL	200.91	RAD	6567.4	VEL	11.519	PTH	2.01	VHP	5.877	DPA	-3.40	RAP	179.79

ECC	1.1861	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	17 28 52	2478.63	-24.98	58.93	56.89	103.79	18 10 11	1878.6	-22.83	50.91							
		90.00	8 41 6	4339.35	4.52	179.77	53.20	62.02	9 53 25	3739.3	.74	173.12							
		100.00	18 56 31	2195.99	-25.98	37.85	56.60	105.33	19 33 7	1596.0	-23.62	29.84							
		100.00	9 56 9	4097.21	5.43	161.47	52.70	60.56	11 4 26	3497.2	1.47	154.92							
		110.00	20 18 58	1938.00	-28.62	17.32	55.66	109.54	20 51 16	1338.0	-25.69	9.37							
		110.00	10 50 11	3927.97	7.79	147.17	51.25	56.61	11 55 39	3328.0	3.35	140.91							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9311	TRA	3.9606	TC	-19.4519	BAU	2.9406	SGT	14878.1	SGR	596.8	SG3	451.5	ST	2639.0	SR	490.7	SS	562.6
RDE	.2813	RRA	.2014	RC3	.0837	FAU	.07695	RRT	.2759	RRF	.2429	RTF	.9581	CRT	.7552	CRS	.1835	CST	-.5008
FDE	-.2527	FRA	1.9384	FC3	-5.8916	BSP	52470	SGB	14890.1	R23	-.0227	R13	.9581	LSA	2679.8	MSA	582.4	SSA	37.3
BDE	.9727	BRA	3.9657	BC	319.4521	FSP	1498	SG	114879.0	SG2	573.6	THA	.63	EL1	2665.3	EL2	318.5	ALF	8.11

LAUNCH DATE DEC 16 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 853.189 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.285	GAL	-2.37	AZL	88.09	HCA	249.74	SMA	190.93	ECC	.23246	INC	1.9089
RP	206.68	LAP	-1.79	LOP	333.81	VP	24.273	GAP	-12.60	AZP	90.66	TAL	347.41	TAP	237.15	RCA	146.55	APO	235.31
RC	332.609	GL	19.01	GP	-4.48	ZAL	110.98	ZAP	28.59	ETS	170.48	ZAE	45.04	ETE	175.30	ZAC	83.78	ETC	256.13

V1	30.263	V2	26.496	CLP	28.27														

PLANETOCENTRIC CONIC

C3	11.564	VHL	3.401	DLA	11.13	RAL	202.38	RAD	6567.4	VEL	11.530	PTH	2.01	VHP	5.955	DPA	-3.65	RAP	180.58

ECC	1.1903	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	17 44 25	2444.46	-24.40	56.59	58.30	104.83	18 25 9	1844.5	-22.13	48.65							
		90.00	8 37 17	4382.84	5.91	182.21	54.87	62.26	9 50 20	3782.8	2.15	175.55							
		100.00	19 11 21	2164.08	-25.39	35.66	58.00	106.34	19 47 25	1564.1	-22.90	27.74							
		100.00	9 53 2	4138.45	6.80	163.76	54.38	60.82	11 2 0	3538.5	2.86	157.19							
		110.00	20 32 16	1910.89	-27.99	15.47	57.03	110.48	21 4 7	1310.9	-24.95	7.62							
		110.00	10 48 36	3964.41	9.15	149.12	52.95	56.92	11 54 41	3364.4	4.73	142.82							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7944	TRA	4.2176	TC	-19.1782	BAU	2.9651	SGT	14979.3	SGR	596.4	SG3	429.0	ST	2581.7	SR	493.8	SS	575.3
RDE	.2867	RRA	.1992	RC3	.1075	FAU	.07210	RRT	.2430	RRF	.2089	RTF	.9565	CRT	.6813	CRS	.2576	CST	-.5273
FDE	-.2995	FRA	1.9249	FC3	-5.3974	BSP	52915	SGB	14991.1	R23	-.0246	R13	.9565	LSA	2621.2	MSA	606.7	SSA	36.4
BDE	.8446	BRA	4.2223	BC	319.1785	FSP	1429	SG	114980.0	SG2	578.5	THA	.56	EL1	2604.0	EL2	358.3	ALF	7.57

LAUNCH DATE DEC 16 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 857.541 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.294	GAL	-2.57	AZL	88.12	HCA	251.01	SMA	191.08	ECC	.23367	INC	1.8826
RP	206.67	LAP	-1.78	LOP	335.08	VP	24.285	GAP	-12.69	AZP	90.61	TAL	346.39	TAP	237.40	RCA	146.43	APO	235.74
RC	333.409	GL	18.51	GP	-4.38	ZAL	112.80	ZAP	28.15	ETS	170.48	ZAE	44.29	ETE	175.29	ZAC	84.05	ETC	256.09

V1	30.263	V2	26.497	CLP	27.83														

PLANETOCENTRIC CONIC

C3	11.851	VHL	3.443	DLA	9.98	RAL	203.84	RAD	6567.5	VEL	11.543	PTH	2.01	VHP	6.035	DPA	-3.91	RAP	181.38

ECC	1.1950	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	17 59 39	2411.58	-23.81	54.36	59.76	105.80	18 39 50	1811.6	-21.41	46.51							
		90.00	8 33 42	4425.98	7.27	184.65	56.59	62.56	9 47 28	3826.0	3.53	177.96							
		100.00	19 25 55	2133.33	-24.78	33.58	59.44	107.28	20 1 29	1533.3	-22.18	25.75							
		100.00	9 50 7	4179.46	8.16	166.05	56.11	61.14	10 59 46	3579.5	4.25	159.44							
		110.00	20 45 22	1884.71	-27.35	13.70	58.44	111.35	21 16 47	1284.7	-24.21	5.94							
		110.00	10 47 9	4000.85	10.50	151.08	54.70	57.28	11 53 50	3400.8	6.11	144.74							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6563	TRA	4.4825	TC	-18.8695	BAU	2.9898	SGT	15078.7	SGR	596.5	SG3	407.0	ST	2551.4	SR	497.4	SS	587.1
RDE	.2928	RRA	.1967	RC3	.1290	FAU	.06736	RRT	.2107	RRF	.1758	RTF	.9547	CRT	.5972	CRS	.3220	CST	-.5632
FDE	-.3409	FRA	1.9078	FC3	-4.9204	BSP	53332	SGB	15090.5	R23	-.0263	R13	.9547	LSA	2589.8	MSA	626.9	SSA	35.5
BDE	.7187	BRA	4.4868	BC	318.8700	FSP	1361	SG	115079.2	SG2	583.1	THA	.48	EL1	2569.0	EL2	396.3	ALF	6.80

LAUNCH DATE DEC 16 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 861.887 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.302	GAL	-2.77	AZL	88.14	HCA	252.28	SMA	191.24	ECC	.23495	INC	1.8566
RP	206.67	LAP	-1.77	LOP	336.35	VP	24.297	GAP	-12.79	AZP	90.57	TAL	345.36	TAP	237.64	RCA	146.31	APO	236.17
RC	334.204	GL	17.99	GP	-4.29	ZAL	114.62	ZAP	27.71	ETS	170.48	ZAE	43.55	ETE	175.28	ZAC	84.32	ETC	256.05

V1	30.263	V2	26.497	CLP	27.40														

PLANETOCENTRIC CONIC

C3	12.171	VHL	3.489	DLA	8.84	RAL	205.29	RAD	6567.5	VEL	11.557	PTH	2.02	VHP	6.116	DPA	-4.18	RAP	182.18

ECC	1.2003	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 14 34	2379.98	-23.21	52.24	61.24	106.70	18 54 14	1780.0	-20.70	44.46							
		90.00	8 30 21	4468.79	8.60	187.09	58.37	62.92	9 44 50	3868.8	4.90	180.36							
		100.00	19 40 13	2103.74	-24.17	31.59	60.92	108.15	20 15 17	1503.7	-21.46	23.84							
		100.00	9 47 23	4220.25	9.49	168.34	57.89	61.52	10 57 44	3620.3	5.62	161.70							
		110.00	20 58 16	1859.49	-26.72	12.01	59.88	112.16	21 29 16	1259.5	-23.47	4.35							
		110.00	10 45 50	4037.27	11.83	153.06	56.50	57.69	11 53 7	3437.3	7.49	146.66							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5170	TRA	4.7555	TC	-18.5289	BAU	3.0149	SGT	15176.7	SGR	597.2	SG3	385.7	ST	2548.3	SR	501.5	SS	597.9
RDE	.2996	RRA	.1938	RC3	.1483	FAU	.06275	RRT	.1794	RRF	.1435	RTF	.9525	CRT	.5052	CRS	.3789	CST	-.6037
FDE	-.3782	FRA	1.8874	FC3	-4.4634	BSP	53750	SGB	15188.4	R23	-.0281	R13	.9525	LSA	2586.3	MSA	642.4	SSA	34.5
BDE	.5975	BRA	4.7595	BC	318.5295	FSP	1296	SG	115177.1	SG2	587.5	THA	.40	EL1	2561.3	EL2	430.6	ALF	5.84

LAUNCH DATE DEC 16 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 866.226 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.310	GAL	-2.98	AZL	88.17	HCA	253.55	SMA	191.39	ECC	.23629	INC	1.8310
RP	206.68	LAP	-1.76	LOP	337.62	VP	24.307	GAP	-12.89	AZP	90.52	TAL	344.32	TAP	237.87	RCA	146.17	APO	236.62
RC	334.996	GL	17.48	GP	-4.21	ZAL	116.42	ZAP	27.29	ETS	170.48	ZAE	42.82	ETE	175.26	ZAC	84.59	ETC	256.01

V1	30.263	V2	26.495	CLP	26.99														

PLANETOCENTRIC CONIC

C3	12.523	VHL	3.539	DLA	7.71	RAL	206.73	RAD	6567.5	VEL	11.572	PTH	2.02	VHP	6.198	DPA	-4.46	RAP	182.99
ECC	1.2061																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 13	2349.63	-22.60	50.22	62.77	107.53	19 8 22	1749.6	-19.99	42.52
90.00	8 27 12	4511.28	9.91	189.53	60.19	63.34	9 42 23	3911.3	6.25	182.76
100.00	19 54 16	2075.31	-23.55	29.71	62.43	108.96	20 28 51	1475.3	-20.75	22.03
100.00	9 44 50	4260.83	10.80	170.64	59.72	61.96	10 55 51	3660.8	6.97	163.95
110.00	21 10 58	1835.25	-26.08	10.41	61.36	112.92	21 41 33	1235.3	-22.75	2.84
110.00	10 44 37	4073.65	13.15	155.06	58.34	58.16	11 52 31	3473.7	8.85	148.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3783	TRA	5.0371	TC-18.1562	BAU	3.0400	SGT15272.0	SGR	598.2	SG3	364.6	ST	2572.8	SR	506.0	SS	606.7
RDE	.3072	RRA	.1904	RC3 .1656	FAU	.05818	RRT .1488	RRF	.1118	RTF	.9499	CRT	.4099	CRS	.4291	CST	-.6448
FDE	-.4109	FRA	1.8625	FC3-4.0223	BSP	54168	SGB15283.8	R23	-.0300	R13	.9499	LSA	2610.8	MSA	652.5	SSA	33.6
BDE	.4873	BRA	5.0407	BC318.1569	FSP	1230	SG115272.3	SG2	591.6	THA	.33	EL1	2581.4	EL2	460.0	ALF	4.76

LAUNCH DATE DEC 16 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 870.558 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.319	GAL	-3.19	AZL	88.19	HCA	254.82	SMA	191.55	ECC	.23769	INC	1.8057
RP	206.70	LAP	-1.74	LOP	338.89	VP	24.316	GAP	-12.99	AZP	90.47	TAL	343.27	TAP	238.08	RCA	146.02	APO	237.08
RC	335.784	GL	16.96	GP	-4.13	ZAL	118.21	ZAP	26.88	ETS	170.48	ZAE	42.10	ETE	175.24	ZAC	84.86	ETC	255.98

V1	30.263	V2	26.493	CLP	26.58														

PLANETOCENTRIC CONIC

C3	12.912	VHL	3.593	DLA	6.59	RAL	208.16	RAD	6567.5	VEL	11.589	PTH	2.03	VHP	6.282	DPA	-4.75	RAP	183.81
ECC	1.2125																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 33	2320.53	-21.99	48.31	64.33	108.30	19 22 14	1720.5	-19.29	40.68
90.00	8 24 14	4553.46	11.19	191.97	62.07	63.82	9 40 8	3953.5	7.58	185.15
100.00	20 8 2	2048.05	-22.94	27.91	63.98	109.71	20 42 10	1448.0	-20.04	20.32
100.00	9 42 27	4301.17	12.08	172.95	61.60	62.45	10 54 8	3701.2	8.30	166.21
110.00	21 23 28	1812.01	-25.46	8.90	62.88	113.62	21 53 40	1212.0	-22.05	1.41
110.00	10 43 31	4109.97	14.44	157.07	60.23	58.68	11 52 1	3510.0	10.19	150.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2385	TRA	5.3251	TC-17.7623	BAU	3.0663	SGT15367.1	SGR	599.6	SG3	344.2	ST	2620.4	SR	510.9	SS	613.1
RDE	.3154	RRA	.1867	RC3 .1804	FAU	.05382	RRT .1191	RRF	.0808	RTF	.9471	CRT	.3139	CRS	.4734	CST	-.6848
FDE	-.4393	FRA	1.8331	FC3-3.6089	BSP	54561	SGB15378.8	R23	-.0323	R13	.9471	LSA	2659.0	MSA	657.3	SSA	32.5
BDE	.3954	BRA	5.3283	BC317.7632	FSP	1167	SG115367.3	SG2	595.4	THA	.27	EL1	2625.5	EL2	484.2	ALF	3.63

LAUNCH DATE DEC 16 1964 .LIGHT TIME 404.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 874.882 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.327	GAL	-3.41	AZL	88.22	HCA	256.08	SMA	191.70	ECC	.23916	INC	1.7808
RP	206.73	LAP	-1.73	LOP	340.16	VP	24.324	GAP	-13.10	AZP	90.43	TAL	342.20	TAP	238.28	RCA	145.86	APO	237.55
RC	336.567	GL	16.44	GP	-4.05	ZAL	119.99	ZAP	26.48	ETS	170.48	ZAE	41.39	ETE	175.22	ZAC	85.13	ETC	255.95

V1	30.263	V2	26.490	CLP	26.19														

PLANETOCENTRIC CONIC

C3	13.337	VHL	3.652	DLA	5.48	RAL	209.57	RAD	6567.5	VEL	11.607	PTH	2.03	VHP	6.367	DPA	-5.04	RAP	184.63
ECC	1.2195																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 38	2292.66	-21.38	46.49	65.92	109.02	19 35 50	1692.7	-18.59	38.93
90.00	8 21 27	4595.34	12.43	194.41	63.99	64.35	9 38 2	3995.3	8.88	187.53
100.00	20 21 34	2021.94	-22.33	26.21	65.56	110.41	20 55 16	1421.9	-19.35	18.69
100.00	9 40 12	4341.29	13.33	175.28	63.53	63.00	10 52 33	3741.3	9.61	168.47
110.00	21 35 44	1789.79	-24.85	7.46	64.43	114.27	22 5 34	1189.8	-21.36	.05
110.00	10 42 31	4146.20	15.72	159.11	62.17	59.25	11 51 37	3546.2	11.52	152.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0989	TRA	5.6213	TC-17.3430	BAU	3.0926	SGT15459.0	SGR	601.4	SG3	324.4	ST	2689.4	SR	516.1	SS	617.3
RDE	.3243	RRA	.1826	RC3 .1934	FAU	.04951	RRT .0902	RRF	.0509	RTF	.9437	CRT	.2210	CRS	.5129	CST	-.7213
FDE	-.4638	FRA	1.8007	FC3-3.2138	BSP	54935	SGB15470.7	R23	-.0346	R13	.9436	LSA	2728.9	MSA	657.8	SSA	31.6
BDE	.3391	BRA	5.6242	BC317.3441	FSP	1103	SG115459.1	SG2	598.9	THA	.20	EL1	2691.9	EL2	502.9	ALF	2.52

LAUNCH DATE DEC 16 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 879.198 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.336	GAL	-3.63	AZL	88.24	HCA	257.35	SMA	191.86	ECC	.24070	INC	1.7561
RP	206.77	LAP	-1.71	LOP	341.43	VP	24.331	GAP	-13.21	AZP	90.38	TAL	341.12	TAP	238.47	RCA	145.68	APO	238.04
RC	337.346	GL	15.93	GP	-3.97	ZAL	121.74	ZAP	26.08	ETS	170.47	ZAE	40.69	ETE	175.20	ZAC	85.40	ETC	255.92

V1	30.263	V2	26.485	CLP	25.80														

PLANETOCENTRIC CONIC

C3	13.802	VHL	3.715	DLA	4.40	RAL	210.97	RAD	6567.5	VEL	11.627	PTH	2.04	VHP	6.453	DPA	-5.34	RAP	185.47
ECC	1.2271																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 25	2266.03	-20.78	44.77	67.55	109.68	19 49 11	1666.0	-17.91	37.27
90.00	8 18 49	4636.91	13.65	196.86	65.95	64.95	9 36 6	4036.9	10.16	189.92
100.00	20 34 50	1997.00	-21.73	24.61	67.17	111.05	21 8 7	1397.0	-18.67	17.14
100.00	9 38 6	4381.16	14.55	177.61	65.50	63.60	10 51 7	3781.2	10.89	170.73
110.00	21 47 48	1768.61	-24.25	6.11	66.01	114.87	22 17 17	1168.6	-20.69	358.77
110.00	10 41 37	4182.32	16.96	161.17	64.15	59.87	11 51 19	3582.3	12.83	154.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0420	TRA	5.9248	TC-16.9090	BAU	3.1203	SGT15551.1	SGR	603.4	SG3	304.9	ST	2775.8	SR	521.6	SS	618.3
RDE	.3359	RRA	.1780	RC3 .2044	FAU	.04532	RRT .0620	RRF	.0215	RTF	.9398	CRT	.1326	CRS	.5479	CST	-.7541
FDE	-.4837	FRA	1.7630	FC3-2.8426	BSP	55279	SGB15562.8	R23	-.0369	R13	.9398	LSA	2816.1	MSA	654.3	SSA	30.6
BDE	.3366	BRA	5.9274	BC316.9102	FSP	1041	SG115551.1	SG2	602.3	THA	.14	EL1	2776.7	EL2	516.8	ALF	1.48

LAUNCH DATE DEC 16 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 883.505 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.344	GAL	-3.86	AZL	88.27	HCA	258.62	SMA	192.02	ECC	.24231	INC	1.7317
RP	206.81	LAP	-1.70	LOP	342.70	VP	24.336	GAP	-13.32	AZP	90.34	TAL	340.03	TAP	238.65	RCA	145.49	APO	238.55
RC	338.120	GL	15.41	GP	-3.90	ZAL	123.47	ZAP	25.70	ETS	170.46	ZAE	40.00	ETE	175.18	ZAC	85.66	ETC	255.90

V1	30.263	V2	26.480	CLP	25.42														

PLANETOCENTRIC CONIC

C3	14.308	VHL	3.783	DLA	3.33	RAL	212.35	RAD	6567.6	VEL	11.649	PTH	2.04	VHP	6.540	DPA	-5.65	RAP	186.31
ECC	1.2355																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 57	2240.62	-20.19	43.14	69.20	110.28	20 2 17	1640.6	-17.25	35.70
90.00	8 16 20	4678.17	14.82	199.32	67.96	65.59	9 34 18	4078.2	11.40	192.31
100.00	20 47 50	1973.23	-21.14	23.09	68.81	111.64	21 20 44	1373.2	-18.01	15.69
100.00	9 36 7	4420.78	15.74	179.95	67.51	64.25	10 49 48	3820.8	12.15	173.00
110.00	21 59 39	1748.48	-23.66	4.83	67.62	115.42	22 28 48	1148.5	-20.04	357.56
110.00	10 40 48	4218.30	18.18	163.25	66.18	60.54	11 51 6	3618.3	14.12	156.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1793	TRA	6.2389	TC-16.4531	BAU	3.1475	SGT15640.0	SGR	605.6	SG3	286.0	ST	2877.1	SR	527.3	SS	616.8
RDE	.3442	RRA	.1730	RC3 .2135	FAU	.04121	RRT .0352	RRF	-.0067	RTF	.9352	CRT	.0529	CRS	.5793	CST	-.7811
FDE	-.5000	FRA	1.7222	FC3-2.4937	BSP	55668	SGB15651.8	R23	-.0397	R13	.9352	LSA	2917.9	MSA	648.9	SSA	29.6
BDE	.3881	BRA	6.2413	BC316.4544	FSP	980	SG115640.0	SG2	605.3	THA	.08	EL1	2877.3	EL2	526.5	ALF	.58

LAUNCH DATE DEC 16 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 887.802 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.353	GAL	-4.09	AZL	88.29	HCA	259.89	SMA	192.18	ECC	.24400	INC	1.7075
RP	206.87	LAP	-1.68	LOP	343.96	VP	24.341	GAP	-13.44	AZP	90.30	TAL	338.93	TAP	238.82	RCA	145.29	APO	239.07
RC	338.890	GL	14.90	GP	-3.83	ZAL	125.18	ZAP	25.33	ETS	170.45	ZAE	39.32	ETE	175.16	ZAC	85.93	ETC	255.88

V1	30.263	V2	26.474	CLP	25.05														

PLANETOCENTRIC CONIC

C3	14.857	VHL	3.855	DLA	2.28	RAL	213.72	RAD	6567.6	VEL	11.672	PTH	2.05	VHP	6.629	DPA	-5.96	RAP	187.18
ECC	1.2445																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 12	2216.42	-19.61	41.60	70.88	110.84	20 15 8	1616.4	-16.60	34.22
90.00	8 13 58	4719.10	15.96	201.79	70.01	66.29	9 32 38	4119.1	12.62	194.71
100.00	21 0 36	1950.63	-20.56	21.65	70.49	112.19	21 33 7	1350.6	-17.37	14.31
100.00	9 34 15	4460.13	16.89	182.31	69.57	64.96	10 48 35	3860.1	13.37	175.28
110.00	22 11 17	1729.40	23.10	3.64	69.26	115.93	22 40 6	1129.4	-19.42	356.43
110.00	10 40 4	4254.15	19.37	165.35	68.25	61.27	11 50 58	3654.1	15.38	158.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3186	TRA	6.5594	TC-15.9895	BAU	3.1763	SGT15728.5	SGR	608.0	SG3	267.6	ST	2988.4	SR	533.1	SS	612.5
RDE	.3551	RRA	.1676	RC3 .2208	FAU	.03721	RRT .0089	RRF	-.0346	RTF	.9298	CRT	-.0206	CRS	.6082	CST	-.8041
FDE	-.5129	FRA	1.6764	FC3-2.1684	BSP	55993	SGB15740.2	R23	-.0429	R13	.9298	LSA	3029.4	MSA	641.8	SSA	28.7
BDE	.4770	BRA	6.5616	BC315.9910	FSP	920	SG115728.5	SG2	608.0	THA	.02	EL1	2988.4	EL2	533.0	ALF	179.78

LAUNCH DATE DEC 16 1964 FLIGHT TIME 412.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 892.088 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.361	GAL	-4.32	AZL	88.32	HCA	261.15	SMA	192.33	ECC	.24576	INC	1.6836
RP	206.93	LAP	-1.66	LOP	345.23	VP	24.345	GAP	-13.56	AZP	90.26	TAL	337.82	TAP	238.97	RCA	145.07	APO	239.60
RC	339.657	GL	14.40	GP	-3.76	ZAL	126.86	ZAP	24.96	ETS	170.45	ZAE	38.64	ETE	175.13	ZAC	86.19	ETC	255.86

V1	30.263	V2	26.466	CLP	24.69														

PLANETOCENTRIC CONIC

C3	15.453	VHL	3.931	DLA	1.26	RAL	215.07	RAD	6567.6	VEL	11.698	PTH	2.06	VHP	6.719	DPA	-6.28	RAP	188.01
ECC	1.2543																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 11	2193.44	-19.05	40.15	72.59	111.36	20 27 45	1593.4	-15.98	32.82
90.00	8 11 45	4759.70	17.05	204.27	72.10	67.05	9 31 5	4159.7	13.80	197.10
100.00	21 13 7	1929.18	-20.01	20.30	72.18	112.69	21 45 16	1329.2	-16.76	13.01
100.00	9 32 31	4499.19	18.00	184.68	71.66	65.72	10 47 30	3899.2	14.57	177.56
110.00	22 22 42	1711.38	-22.56	2.52	70.93	116.39	22 51 13	1111.4	-18.83	355.37
110.00	10 39 25	4289.76	20.52	167.47	70.36	62.04	11 50 55	3689.8	16.62	160.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4558	TRA	6.8886	TC-15.5152	BAU	3.2056	SGT15814.3	SGR	610.6	SG3	249.8	ST	3106.9	SR	539.0	SS	605.3
RDE	.3666	RRA	.1618	RC3 .2265	FAU	.03330	RRT -.0164	RRF	-.0612	RTF	.9235	CRT	-.0858	CRS	.6340	CST	-.8230
FDE	-.5219	FRA	1.6273	FC3-1.8656	BSP	56329	SGB15826.0	R23	.0460	R13	-.9235	LSA	3147.5	MSA	633.9	SSA	27.8
BDE	.5849	BRA	6.8905	BC315.5169	FSP	860	SG115814.3	SG2	610.5	THA	179.96	EL1	3107.2	EL2	537.0	ALF	179.12

LAUNCH DATE DEC 16 1964 FLIGHT TIME 414.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 896.362 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.370	GAL	-4.56	AZL	88.34	HCA	262.42	SMA	192.49	ECC	.24760	INC	1.6598
RP	207.00	LAP	-1.65	LOP	346.50	VP	24.348	GAP	-13.68	AZP	90.22	TAL	336.70	TAP	239.11	RCA	144.83	APO	240.15
RC	340.420	GL	13.90	GP	-3.70	ZAL	128.52	ZAP	24.61	ETS	170.43	ZAE	37.98	ETE	175.10	ZAC	86.46	ETC	255.84

V1	30.263	V2	26.458	CLP	24.34														

PLANETOCENTRIC CONIC

C3	16.096	VHL	4.012	DLA	.25	RAL	216.40	RAD	6567.6	VEL	11.725	PTH	2.07	VHP	6.811	DPA	-6.60	RAP	188.87
ECC	1.2649																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 55	2171.65	-18.50	38.78	74.33	111.82	20 40 7	1571.6	-15.38	31.50
90.00	8 9 39	4799.97	18.10	206.76	74.23	67.85	9 29 38	4200.0	14.94	199.51
100.00	21 25 23	1908.88	-19.47	19.04	73.91	113.14	21 57 12	1308.9	-16.17	11.80
100.00	9 30 52	4537.96	19.07	187.06	73.80	66.53	10 46 30	3938.0	15.73	179.86
110.00	22 33 54	1694.42	-22.04	1.47	72.62	116.81	23 2 8	1094.4	-18.27	354.38
110.00	10 38 50	4325.19	21.63	169.62	72.50	62.86	11 50 56	3725.2	17.82	162.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5926	TRA	7.2255	TC-15.0358	BAU	3.2359	SGT15898.2	SGR	613.3	SG3	232.4	ST	3229.6	SR	544.9	SS	595.6
RDE	.3787	RRA	.1556	RC3 .2307	FAU	.02948	RRT -.0409	RRF	-.0873	RTF	.9160	CRT	-.1440	CRS	.6582	CST	-.8379
FDE	-.5280	FRA	1.5736	FC3-1.5855	BSP	56615	SGB15910.1	R23	.0498	R13	-.9160	LSA	3269.5	MSA	625.9	SSA	27.0
BDE	.7032	BRA	7.2272	BC315.0375	FSP	802	SG115898.2	SG2	612.8	THA	179.91	EL1	3230.6	EL2	539.1	ALF	178.57

LAUNCH DATE DEC 16 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 900.623 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.378 GAL -4.81 AZL 88.36 HCA 263.68 SMA 192.65 ECC .24952 INC 1.6361 V1 30.263
RP 207.08 LAP -1.63 LOP 347.76 VP 24.349 GAP -13.81 AZP 90.18 TAL 335.56 TAP 239.24 RCA 144.58 APO 240.72 V2 26.449
RC 341.179 GL 13.40 GP -3.64 ZAL 130.15 ZAP 24.26 ETS 170.42 ZAE 37.33 ETE 175.07 ZAC 86.72 ETC 255.83 CLP 24.00

PLANETOCENTRIC CONIC

C3 16.790 VHL 4.098 DLA -.72 RAL 217.71 RAD 6567.7 VEL 11.755 PTH 2.07 VHP 6.904 DPA -6.93 RAP 189.74 ECC 1.2763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 16 24	2151.03	-17.98	37.50	76.09	112.25	20 52 15	1551.0	-14.80	30.26
90.00	8 7 39	4839.88	19.11	209.25	76.39	68.70	9 28 19	4239.9	16.05	201.92
100.00	21 37 24	1889.73	-18.95	17.85	75.65	113.56	22 8 54	1289.7	-15.60	10.65
100.00	9 29 19	4576.42	20.09	189.46	75.97	67.39	10 45 36	3976.4	16.85	182.16
110.00	22 44 53	1678.52	-21.55	.50	74.34	117.20	23 12 51	1078.5	-17.73	353.45
110.00	10 38 20	4360.39	22.71	171.78	74.69	63.74	11 51 1	3760.4	19.00	164.61

DIFFERENTIAL CORRECTIONS
TDE -.7276 TRA 7.5717 TC-14.5529 BAU 3.2670
RDE .3914 RRA .1489 RC3 .2335 FAU .02573
FDE -.5306 FRA 1.5158 FC3-1.3267 BSP 56900
BDE .8262 BRA 7.5732 BC314.5548 FSP 744

MID-COURSE EXECUTION ACCURACY
SGT15980.8 SGR 616.0 SG3 215.6
RRT -.0645 RRF -.1125 RTF .9070
SGB15992.6 R23 .0540 R13 -.9070
SG115980.8 SG2 614.7 THA 179.86

ORBIT DETERMINATION ACCURACY
ST 3354.6 SR 550.9 SS 583.2
CRT -.1951 CRS .6805 CST -.8496
LSA 3393.3 MSA 618.0 SSA 26.2
EL1 3356.4 EL2 540.0 ALF 178.12

LAUNCH DATE DEC 16 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 7 1966

HELIOCENTRIC CONIC DISTANCE 904.872 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.387 GAL -5.06 AZL 88.39 HCA 264.95 SMA 192.81 ECC .25153 INC 1.6126 V1 30.263
RP 207.17 LAP -1.61 LOP 349.03 VP 24.350 GAP -13.94 AZP 90.14 TAL 334.42 TAP 239.36 RCA 144.31 APO 241.31 V2 26.438
RC 341.936 GL 12.91 GP -3.58 ZAL 131.75 ZAP 23.92 ETS 170.41 ZAE 36.68 ETE 175.04 ZAC 86.98 ETC 255.82 CLP 23.67

PLANETOCENTRIC CONIC

C3 17.537 VHL 4.188 DLA -1.68 RAL 219.01 RAD 6567.7 VEL 11.786 PTH 2.08 VHP 6.999 DPA -7.26 RAP 190.62 ECC 1.2886

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 28 37	2131.58	-17.47	36.29	77.87	112.64	21 4 9	1531.6	-14.25	29.10
90.00	8 5 45	4879.44	20.07	211.76	78.59	69.59	9 27 5	4279.4	17.11	204.33
100.00	21 49 11	1871.71	-18.46	16.74	77.42	113.94	22 20 23	1271.7	-15.07	9.59
100.00	9 27 53	4614.55	21.07	191.87	78.17	68.29	10 44 47	4014.6	17.94	184.47
110.00	22 55 39	1663.68	-21.09	359.60	76.07	117.55	23 23 22	1063.7	-17.23	352.60
110.00	10 37 55	4395.35	23.75	173.97	76.91	64.66	11 51 10	3795.3	20.14	166.69

DIFFERENTIAL CORRECTIONS
TDE -.8618 TRA 7.9266 TC-14.0716 BAU 3.2996
RDE .4047 RRA .1417 RC3 .2351 FAU .02206
FDE -.5308 FRA 1.4538 FC3-1.0892 BSP 57167
BDE .9521 BRA 7.9278 BC314.0735 FSP 688

MID-COURSE EXECUTION ACCURACY
SGT16062.5 SGR 618.8 SG3 199.3
RRT -.0874 RRF -.1370 RTF .8961
SGB16074.4 R23 .0589 R13 -.8961
SG116062.6 SG2 616.4 THA 179.81

ORBIT DETERMINATION ACCURACY
ST 3479.9 SR 556.7 SS 568.7
CRT -.2402 CRS .7018 CST -.8583
LSA 3517.0 MSA 610.5 SSA 25.5
EL1 3482.5 EL2 540.0 ALF 177.74

LAUNCH DATE DEC 16 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 9 1966

HELIOCENTRIC CONIC DISTANCE 909.105 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.396 GAL -5.32 AZL 88.41 HCA 266.21 SMA 192.97 ECC .25363 INC 1.5892 V1 30.263
RP 207.27 LAP -1.59 LOP 350.29 VP 24.349 GAP -14.08 AZP 90.11 TAL 333.26 TAP 239.47 RCA 144.03 APO 241.92 V2 26.427
RC 342.690 GL 12.44 GP -3.52 ZAL 133.32 ZAP 23.60 ETS 170.40 ZAE 36.04 ETE 175.00 ZAC 87.24 ETC 255.82 CLP 23.35

PLANETOCENTRIC CONIC

C3 18.341 VHL 4.283 DLA -2.60 RAL 220.29 RAD 6567.7 VEL 11.820 PTH 2.09 VHP 7.096 DPA -7.60 RAP 191.51 ECC 1.3018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 40 36	2113.28	-16.99	35.17	79.66	113.00	21 15 49	1513.3	-13.73	28.01
90.00	8 3 58	4918.63	20.98	214.27	80.81	70.53	9 25 56	4318.6	18.13	206.75
100.00	22 0 44	1854.79	-17.99	15.70	79.21	114.29	22 31 38	1254.8	-14.56	8.59
100.00	9 26 31	4652.35	22.00	194.29	80.41	69.24	10 44 3	4052.4	18.98	186.80
110.00	23 6 11	1649.87	-20.65	358.77	77.83	117.87	23 33 41	1049.9	-16.76	351.80
110.00	10 37 33	4430.04	24.74	176.17	79.17	65.62	11 51 23	3830.0	21.24	168.77

DIFFERENTIAL CORRECTIONS
TDE -.9940 TRA 8.2897 TC-13.5920 BAU 3.3333
RDE .4185 RRA .1342 RC3 .2355 FAU .01848
FDE -.5276 FRA 1.3879 FC3 -.8722 BSP 57397
BDE 1.0785 BRA 8.2908 BC313.5941 FSP 632

MID-COURSE EXECUTION ACCURACY
SGT16141.8 SGR 621.6 SG3 183.5
RRT -.1094 RRF -.1604 RTF .8829
SGB16153.7 R23 .0641 R13 -.8830
SG116141.9 SG2 617.9 THA 179.76

ORBIT DETERMINATION ACCURACY
ST 3603.2 SR 562.5 SS 551.7
CRT -.2798 CRS .7217 CST -.8647
LSA 3638.6 MSA 603.4 SSA 24.8
EL1 3606.8 EL2 539.5 ALF 177.44

LAUNCH DATE DEC 16 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 11 1966

HELIOCENTRIC CONIC DISTANCE 913.324 EARTH TO MARS

RL 147.22 LAL .00 LOL 84.08 VL 33.404 GAL -5.58 AZL 88.43 HCA 267.47 SMA 193.14 ECC .25582 INC 1.5659 V1 30.263
RP 207.37 LAP -1.56 LOP 351.55 VP 24.348 GAP -14.22 AZP 90.07 TAL 332.09 TAP 239.56 RCA 143.73 APO 242.54 V2 26.415
RC 343.441 GL 11.97 GP -3.47 ZAL 134.85 ZAP 23.28 ETS 170.38 ZAE 35.41 ETE 174.97 ZAC 87.50 ETC 255.82 CLP 23.03

PLANETOCENTRIC CONIC

C3 19.204 VHL 4.382 DLA -3.50 RAL 221.54 RAD 6567.8 VEL 11.857 PTH 2.10 VHP 7.194 DPA -7.94 RAP 192.40 ECC 1.3161

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 52 20	2096.09	-16.53	34.12	81.48	113.32	21 27 16	1496.1	-13.23	26.99
90.00	8 2 16	4957.45	21.84	216.80	83.07	71.51	9 24 53	4357.5	19.11	209.18
100.00	22 12 2	1838.97	-17.54	14.74	81.01	114.60	22 42 41	1239.0	-14.08	7.66
100.00	9 25 15	4689.80	22.89	196.72	82.68	70.23	10 43 25	4089.8	19.98	189.13
110.00	23 16 31	1637.08	-20.24	358.00	79.60	118.15	23 43 48	1037.1	-16.32	351.07
110.00	10 37 15	4464.46	25.69	178.40	81.47	66.63	11 51 39	3864.5	22.30	170.88

DIFFERENTIAL CORRECTIONS
TDE-1.1259 TRA 8.6630 TC-13.1147 BAU 3.3676
RDE .4328 RRA .1262 RC3 .2349 FAU .01494
FDE -.5217 FRA 1.3176 FC3 -.6735 BSP 57606
BDE 1.2063 BRA 8.6640 BC313.1168 FSP 578

MID-COURSE EXECUTION ACCURACY
SGT16219.1 SGR 624.5 SG3 168.3
RRT -.1307 RRF -.1827 RTF .8667
SGB16231.1 R23 .0699 R13 -.8667
SG116219.3 SG2 619.1 THA 179.71

ORBIT DETERMINATION ACCURACY
ST 3725.0 SR 568.1 SS 532.4
CRT -.3149 CRS .7407 CST -.8691
LSA 3758.3 MSA 596.7 SSA 24.1
EL1 3729.3 EL2 538.6 ALF 177.19

LAUNCH DATE DEC 16 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 13 1966

HELIOCENTRIC CONIC DISTANCE 917.526 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.413	GAL	-5.85	AZL	88.46	HCA	268.73	SMA	193.30	ECC	.25810	INC	1.5427	V1	30.263
RP	207.48	LAP	-1.54	LOP	352.81	VP	24.345	GAP	-14.37	AZP	90.03	TAL	330.91	TAP	239.64	RCA	143.41	APO	243.19	V2	26.402
RC	344.188	GL	11.50	GP	-3.41	ZAL	136.36	ZAP	22.97	ETS	170.37	ZAE	34.79	ETE	174.93	ZAC	87.76	ETC	255.82	CLP	22.73

PLANETOCENTRIC CONIC

C3	20.130	VHL	4.487	DLA	-4.37	RAL	222.78	RAD	6567.8	VEL	11.896	PTH	2.11	VHP	7.294	DPA	-8.28	RAP	193.29	ECC	1.3313

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 3 49	2080.00	-16.09	33.14	83.31	113.62	21 38 29	1480.0	-12.76	26.04
90.00	8 0 39	4995.89	22.65	219.32	85.36	72.53	9 23 55	4395.9	20.04	211.62
100.00	22 23 6	1824.22	-17.12	13.84	82.83	114.88	22 53 31	1224.2	-13.62	6.80
100.00	9 24 3	4726.90	23.72	199.16	84.98	71.25	10 42 50	4126.9	20.94	191.47
110.00	23 26 38	1625.31	-19.86	357.30	81.38	118.41	23 53 44	1025.3	-15.91	350.40
110.00	10 37 0	4498.57	26.59	180.64	83.79	67.68	11 51 59	3898.6	23.33	173.00

DIFFERENTIAL CORRECTIONS

TDE	-1.2542	TRA	9.0454	TC	-12.6442	BAU	3.4033	SGT	16294.4	SGR	627.3
RDE	.4477	RRA	.1178	RC3	.2334	FAU	.01149				
FDE	-.5134	FRA	1.2434	FC3	-.4942	BSP	57831				
BDE	1.3317	BRA	9.0461	BC312	.6463	FSP	524				

MID-COURSE EXECUTION ACCURACY

SG3	153.6						
RRT	-.1511	RRF	-.2040	RTF	.8465		
SGB16306.5		R23	.0767	R13	-.8466		
SG116294.7		SG2	620.1	THA	179.67		

ORBIT DETERMINATION ACCURACY

ST	3841.9	SR	573.5	SS	511.3
CRT	-.3452	CRS	.7592	CST	-.8710
LSA	3873.1	MSA	590.8	SSA	23.5
EL1	3847.1	EL2	537.6	ALF	176.99

LAUNCH DATE DEC 16 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 15 1966

HELIOCENTRIC CONIC DISTANCE 921.710 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.422	GAL	-6.12	AZL	88.48	HCA	269.99	SMA	193.46	ECC	.26049	INC	1.5195	V1	30.263
RP	207.61	LAP	-1.52	LOP	354.07	VP	24.342	GAP	-14.52	AZP	90.00	TAL	329.73	TAP	239.72	RCA	143.07	APO	243.86	V2	26.387
RC	344.932	GL	11.05	GP	-3.36	ZAL	137.83	ZAP	22.67	ETS	170.35	ZAE	34.18	ETE	174.89	ZAC	88.02	ETC	255.83	CLP	22.43

PLANETOCENTRIC CONIC

C3	21.122	VHL	4.596	DLA	-5.22	RAL	224.00	RAD	6567.9	VEL	11.937	PTH	2.12	VHP	7.396	DPA	-8.63	RAP	194.20	ECC	1.3476

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 15 4	2064.97	-15.68	32.23	85.16	113.88	21 49 29	1465.0	-12.32	25.16
90.00	7 59 8	5033.93	23.40	221.86	87.67	73.58	9 23 2	4433.9	20.93	214.06
100.00	22 33 57	1810.51	-16.73	13.02	84.67	115.14	23 4 7	1210.5	-13.20	6.00
100.00	9 22 56	4763.62	24.50	201.61	87.30	72.32	10 42 20	4163.6	21.85	193.81
110.00	23 36 33	1614.52	-19.51	356.66	83.18	118.64	24 3 28	1014.5	-15.54	349.79
110.00	10 36 50	4532.38	27.44	182.90	86.14	68.77	11 52 22	3932.4	24.31	175.13

DIFFERENTIAL CORRECTIONS

TDE	-1.3829	TRA	9.4346	TC	-12.1843	BAU	3.4412	SGT	16367.6	SGR	630.0
RDE	.4630	RRA	.1089	RC3	.2311	FAU	.00811				
FDE	-.5030	FRA	1.1644	FC3	-.3324	BSP	57966				
BDE	1.4584	BRA	9.4352	BC312	.1865	FSP	471				

MID-COURSE EXECUTION ACCURACY

SG3	139.6						
RRT	-.1710	RRF	-.2242	RTF	.8212		
SGB16379.7		R23	.0848	R13	-.8212		
SG116368.0		SG2	620.7	THA	179.62		

ORBIT DETERMINATION ACCURACY

ST	3954.8	SR	578.8	SS	488.6
CRT	-.3725	CRS	.7778	CST	-.8710
LSA	3983.8	MSA	585.3	SSA	22.9
EL1	3960.8	EL2	536.3	ALF	176.82

LAUNCH DATE DEC 16 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 17 1966

HELIOCENTRIC CONIC DISTANCE 925.875 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.430	GAL	-6.40	AZL	88.50	HCA	271.25	SMA	193.62	ECC	.26297	INC	1.4963	V1	30.263
RP	207.74	LAP	-1.50	LOP	355.33	VP	24.337	GAP	-14.68	AZP	89.97	TAL	328.53	TAP	239.77	RCA	142.71	APO	244.54	V2	26.372
RC	345.671	GL	10.61	GP	-3.31	ZAL	139.28	ZAP	22.37	ETS	170.34	ZAE	33.57	ETE	174.84	ZAC	88.28	ETC	255.83	CLP	22.14

PLANETOCENTRIC CONIC

C3	22.183	VHL	4.710	DLA	-6.04	RAL	225.20	RAD	6567.9	VEL	11.982	PTH	2.14	VHP	7.500	DPA	-8.98	RAP	195.11	ECC	1.3651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 26 5	2050.99	-15.29	31.38	87.02	114.13	22 0 16	1451.0	-11.91	24.34
90.00	7 57 41	5071.58	24.10	224.39	90.00	74.67	9 22 13	4471.6	21.76	216.50
100.00	22 44 34	1797.82	-16.36	12.26	86.51	115.37	23 14 32	1197.8	-12.81	5.26
100.00	9 21 54	4799.97	25.23	204.06	89.65	73.41	10 41 54	4200.0	22.72	196.17
110.00	23 46 15	1604.69	-19.19	356.08	84.99	118.85	24 13 0	1004.7	-15.19	349.24
110.00	10 36 42	4565.87	28.25	185.17	88.53	69.90	11 52 48	3965.9	25.25	177.28

DIFFERENTIAL CORRECTIONS

TDE	-1.5080	TRA	9.8350	TC	-11.7319	BAU	3.4800	SGT	16439.0	SGR	632.7
RDE	.4789	RRA	.0996	RC3	.2281	FAU	.00477				
FDE	-.4903	FRA	1.0818	FC3	-.1861	BSP	58120				
BDE	1.5822	BRA	9.8355	BC311	.7341	FSP	419				

MID-COURSE EXECUTION ACCURACY

SG3	126.3						
RRT	-.1901	RRF	-.2420	RTF	.7885		
SGB16451.1		R23	.0936	R13	-.7886		
SG116439.4		SG2	621.2	THA	179.58		

ORBIT DETERMINATION ACCURACY

ST	4062.3	SR	583.7	SS	464.3
CRT	-.3960	CRS	.7961	CST	-.8688
LSA	4089.2	MSA	580.3	SSA	22.3
EL1	4069.0	EL2	535.1	ALF	176.69

LAUNCH DATE DEC 16 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 19 1966

HELIOCENTRIC CONIC DISTANCE 930.021 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.439	GAL	-6.68	AZL	88.53	HCA	272.50	SMA	193.79	ECC	.26556	INC	1.4732	V1	30.263
RP	207.87	LAP	-1.47	LOP	356.58	VP	24.332	GAP	-14.84	AZP	89.94	TAL	327.32	TAP	239.82	RCA	142.33	APO	245.25	V2	26.356
RC	346.405	GL	10.18	GP	-3.27	ZAL	140.69	ZAP	22.09	ETS	170.32	ZAE	32.98	ETE	174.80	ZAC	88.54	ETC	255.85	CLP	21.86

PLANETOCENTRIC CONIC

C3	23.318	VHL	4.829	DLA	-6.83	RAL	226.38	RAD	6567.9	VEL	12.029	PTH	2.15	VHP	7.606	DPA	-9 34	RAP	196.03	ECC	1.3838

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 36 53	2038.01	-14.93	30.60	88.89	114.34	22 10 51	1438.0	-11.52	23.58
90.00	7 56 20	5108.82	24.75	226.93	92.35	75.78	9 21 28	4508.8	22.55	218.95
100.00	22 54 58	1786.12	-16.01	11.56	88.37	115.58	23 24 44	1186.1	-12.44	4.59
100.00	9 20 56	4835.94	25.91	206.52	92.01	74.54	10 41 32	4235.9	23.53	198.53
110.00	23 55 45	1595.80	-18.90	355.55	86.81	119.03	24 22 21	995.8	-14.88	348.74
110.00	10 36 38	4599.03	29.00	187.45	90.93	71.06	11 53 17	3999.0	26.14	179.44

DIFFERENTIAL CORRECTIONS

TDE	-1.6313	TRA	10.2447	TC	-11.2913	BAU	3.5207	SGT	16508.9	SGR	635.3
RDE	.4951	RRA	.0898	RC3	.2245	FAU	.00150				
FDE	-.4753	FRA	.9947	FC3	-.0556	BSP	58230				
BDE	1.7048	BRA	10.2451	BC311	.2936	FSP	368				

MID-COURSE EXECUTION ACCURACY

SG3	113.8						
RRT	-.2085	RRF	-.2574	RTF	.7466		
SGB16521.1		R23	.1038	R13	-.7466		
SG116509.5		SG2	621.4	THA	179.54		

ORBIT DETERMINATION ACCURACY

ST	4164.5	SR	588.4	SS	438.4
CRT	-.4167	CRS	.8146	CST	-.8644
LSA	4189.2	MSA	575.8	SSA	21.8
EL1	4171.8	EL2	533.9	ALF	176.57

LAUNCH DATE DEC 16 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 21 1966

HELIOCENTRIC CONIC DISTANCE 934.145 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.448	GAL	-6.98	AZL	88.55	HCA	273.75	SMA	193.95	ECC	.26826	INC	1.4500	V1	30.263
RP	208.02	LAP	-1.45	LOP	357.84	VP	24.326	GAP	-15.01	AZP	89.90	TAL	326.10	TAP	239.86	RCA	141.92	APO	245.98	V2	26.339
RC	347.135	GL	9.77	GP	-3.22	ZAL	142.07	ZAP	21.82	ETS	170.31	ZAE	32.39	ETE	174.75	ZAC	88.80	ETC	255.87	CLP	21.59

PLANETOCENTRIC CONIC

C3	24.531	VHL	4.953	DLA	-7.60	RAL	227.55	RAD	6568.0	VEL	12.079	PTH	2.16	VHP	7.713	DPA	-9.70	RAP	196.96	ECC	1.4037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 27	2026.01	-14.59	29.88	90.78	114.54	22 21 13	1426.0	-11.16	22.89
90.00	7 55 2	5145.66	25.34	229.47	94.72	76.92	9 20 48	4545.7	23.29	221.40
100.00	23 5 9	1775.38	-15.70	10.92	90.24	115.77	23 34 44	1175.4	-12.10	3.97
100.00	9 20 2	4871.52	26.53	208.98	94.40	75.69	10 41 13	4271.5	24.30	200.89
110.00	0 8 59	1587.82	-18.63	355.09	88.64	119.19	0 35 27	987.8	-14.60	348.29
110.00	10 36 37	4631.84	29.71	189.75	93.36	72.25	11 53 49	4031.8	26.99	181.61

DIFFERENTIAL CORRECTIONS

TDE	-1.7523	TRA	10.6644	TC-	10.8599	BAU	3.5623	SGT	16575.3	SGR	637.8	SG3	102.1	ST	4260.8	SR	592.8	SS	411.6
RDE	.5118	RRA	.0797	RC3	.2204	FAU-	.00174	RRT	-.2262	RRF	-.2690	RTF	.6913	CRT	-.4348	CRS	.8338	CST	-.8572
FDE	-.4585	FRA	.9032	FC3	.0615	BSP	58331	SGB	16587.6	R23	.1154	R13	-.6914	LSA	4283.5	MSA	571.8	SSA	21.3
BDE	1.8255	BRA	10.6647	BC3	10.8622	FSP	318	SG1	16576.0	SG2	621.3	THA	179.50	EL1	4268.8	EL2	532.8	ALF	176.48

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 16 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 23 1966

HELIOCENTRIC CONIC DISTANCE 938.247 EARTH TO MARS

RL	147.22	LAL	.00	LOL	84.08	VL	33.456	GAL	-7.28	AZL	88.57	HCA	275.01	SMA	194.12	ECC	.27107	INC	1.4268	V1	30.263
RP	208.17	LAP	-1.42	LOP	359.09	VP	24.318	GAP	-15.18	AZP	89.88	TAL	324.87	TAP	239.88	RCA	141.50	APO	246.74	V2	26.322
RC	347.858	GL	9.36	GP	-3.18	ZAL	143.42	ZAP	21.55	ETS	170.29	ZAE	31.81	ETE	174.69	ZAC	89.05	ETC	255.89	CLP	21.32

PLANETOCENTRIC CONIC

C3	25.826	VHL	5.082	DLA	-8.34	RAL	228.69	RAD	6568.0	VEL	12.133	PTH	2.17	VHP	7.823	DPA	-10.06	RAP	197.89	ECC	1.4250

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 49	2014.94	-14.28	29.22	92.66	114.72	22 31 24	1414.9	-10.83	22.24
90.00	7 53 49	5182.08	25.88	232.00	97.10	78.08	9 20 11	4582.1	23.98	223.84
100.00	23 15 7	1765.56	-15.41	10.33	92.11	115.94	23 44 32	1165.6	-11.79	3.40
100.00	9 19 12	4906.70	27.10	211.44	96.79	76.87	10 40 59	4306.7	25.02	203.26
110.00	0 18 5	1580.72	-18.39	354.67	90.48	119.33	0 44 25	980.7	-14.35	347.89
110.00	10 36 39	4664.30	30.36	192.05	95.81	73.47	11 54 24	4064.3	27.79	183.80

DIFFERENTIAL CORRECTIONS

TDE	-1.8719	TRA	11.0934	TC-	10.4431	BAU	3.6064	SGT	16640.5	SGR	640.3	SG3	91.5	ST	4351.7	SR	596.8	SS	383.7
RDE	.5289	RRA	.0691	RC3	.2159	FAU-	.00493	RRT	-.2433	RRF	-.2751	RTF	.6184	CRT	-.4509	CRS	.8536	CST	-.8469
FDE	-.4399	FRA	.8075	FC3	.1653	BSP	58398	SGB	16652.8	R23	.1282	R13	-.6185	LSA	4372.3	MSA	568.0	SSA	20.8
BDE	1.9452	BRA	11.0936	BC3	10.4453	FSP	270	SG1	16641.2	SG2	621.0	THA	179.46	EL1	4360.1	EL2	531.7	ALF	176.41

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 17 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 355.551 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	35.336	GAL	1.63	AZL	88.88	HCA	109.29	SMA	239.34	ECC	.38585	INC	1.1216
RP	243.63	LAP	1.06	LOP	194.39	VP	23.130	GAP	22.67	AZP	90.37	TAL	5.84	TAP	115.13	RCA	146.99	APO	331.68
RC	137.915	GL	7.60	GP	2.35	ZAL	77.29	ZAP	173.29	ETS	158.20	ZAE	152.03	ETE	2.74	ZAC	91.76	ETC	255.93

V1	30.266	V2	22.522	CLP	173.71														

PLANETOCENTRIC CONIC

C3	27.300	VHL	5.225	DLA	13.98	RAL	166.63	RAD	6568.1	VEL	12.193	PTH	2.19	VHP	10.410	DPA	-.04	RAP	188.90
ECC	1.4493																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 53 37	2739.86	-27.91	77.45	38.56	94.99	15 39 16	2139.9	-26.93	68.92
90.00	6 35 3	4484.71	9.09	188.00	31.43	63.07	7 49 48	3884.7	5.41	181.26
100.00	16 22 21	2453.67	-29.30	56.24	38.41	96.23	17 3 15	1853.7	-28.12	47.63
100.00	7 49 0	4246.12	10.33	169.81	30.77	61.79	8 59 46	3646.1	6.48	163.14
110.00	17 47 11	2188.23	-32.96	35.49	37.81	99.63	18 23 39	1588.2	-31.28	26.67
110.00	8 40 39	4084.33	13.53	155.65	28.89	58.31	9 48 43	3484.3	9.24	149.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3096	TRA	-1.0427	TC3	1.1908	BAU	.4346	SGT	1747.0	SGR	654.8	SG3	181.8	ST	491.6	SR	607.8	SS	135.3
RDE	-.5498	RRA	-.2261	RC3	.0015	FAU	.06285	RRT	.0860	RRF	-.1012	RTF	-.7831	CRT	-.5945	CRS	.7900	CST	-.0770
FDE	.0997	FRA	.2429	FC3	-1.9931	BSP	5571	SGB	1865.7	R23	-.0230	R13	-.7835	LSA	707.7	MSA	355.3	SSA	47.9
BDE	.6310	BRA	1.0670	BC3	1.1908	FSP	490	SG1	1748.1	SG2	652.0	THA	2.14	EL1	703.0	EL2	341.7	ALF	125.11

LAUNCH DATE DEC 17 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 357.820 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	35.214	GAL	1.76	AZL	88.90	HCA	110.20	SMA	235.67	ECC	.37647	INC	1.1021
RP	243.38	LAP	1.03	LOP	195.30	VP	22.967	GAP	22.04	AZP	90.38	TAL	6.45	TAP	116.66	RCA	146.95	APO	324.39
RC	140.134	GL	7.60	GP	2.42	ZAL	76.09	ZAP	172.70	ETS	159.34	ZAE	152.08	ETE	3.01	ZAC	91.89	ETC	255.92

V1	30.266	V2	22.547	CLP	173.11														

PLANETOCENTRIC CONIC

C3	26.234	VHL	5.122	DLA	14.44	RAL	165.49	RAD	6568.1	VEL	12.149	PTH	2.18	VHP	10.151	DPA	-.03	RAP	189.22
ECC	1.4317																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 57	2746.08	-27.95	77.90	36.87	94.76	15 30 43	2146.1	-26.99	69.36
90.00	6 34 35	4458.70	8.29	186.51	29.72	62.83	7 48 54	3858.7	4.58	179.80
100.00	16 14 1	2458.86	-29.33	56.62	36.72	96.03	16 54 59	1858.9	-28.19	48.01
100.00	7 48 13	4221.15	9.52	168.39	29.06	61.53	8 58 34	3621.2	5.65	161.75
110.00	17 39 32	2191.28	-32.99	35.72	36.14	99.50	18 16 3	1591.3	-31.33	26.89
110.00	8 39 11	4061.49	12.71	154.39	27.16	58.00	9 46 53	3461.5	8.39	147.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2896	TRA	-1.0111	TC3	1.2707	BAU	.4457	SGT	1778.5	SGR	653.3	SG3	191.7	ST	478.7	SR	607.2	SS	145.6
RDE	-.5386	RRA	-.2186	RC3	.0064	FAU	.06509	RRT	.0931	RRF	-.1087	RTF	-.7894	CRT	-.5800	CRS	.8477	CST	-.1744
FDE	.1183	FRA	.2176	FC3	-2.1479	BSP	5720	SGB	1894.7	R23	-.0239	R13	-.7898	LSA	701.2	MSA	353.5	SSA	50.1
BDE	.6115	BRA	1.0344	BC3	1.2707	FSP	522	SG1	1779.7	SG2	650.0	THA	2.26	EL1	693.8	EL2	341.3	ALF	123.76

LAUNCH DATE DEC 17 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 360.208 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	35.097	GAL	1.90	AZL	88.92	HCA	111.12	SMA	232.29	ECC	.36759	INC	1.0823
RP	243.12	LAP	1.01	LOP	196.22	VP	22.813	GAP	21.41	AZP	90.39	TAL	7.07	TAP	118.19	RCA	146.90	APO	317.68
RC	142.373	GL	7.58	GP	2.49	ZAL	74.88	ZAP	172.11	ETS	160.32	ZAE	152.17	ETE	3.30	ZAC	92.03	ETC	255.91

V1	30.266	V2	22.572	CLP	172.51														

PLANETOCENTRIC CONIC

C3	25.259	VHL	5.026	DLA	14.89	RAL	164.33	RAD	6568.0	VEL	12.109	PTH	2.17	VHP	9.899	DPA	-.09	RAP	189.53
ECC	1.4157																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 15	2752.66	-27.98	78.38	35.20	94.53	15 22 8	2152.7	-27.06	69.83
90.00	6 34 2	4433.39	7.50	185.07	28.03	62.61	7 47 56	3833.4	3.77	178.38
100.00	16 5 38	2464.40	-29.37	57.03	35.05	95.82	16 46 43	1864.4	-28.26	48.40
100.00	7 47 20	4196.89	8.73	167.03	27.37	61.30	8 57 17	3596.9	4.83	160.41
110.00	17 31 51	2194.68	-33.03	35.98	34.48	99.35	18 8 25	1594.7	-31.39	27.14
110.00	8 37 37	4039.38	11.91	153.17	25.47	57.72	9 44 57	3439.4	7.57	146.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2700	TRA	-.9804	TC3	1.3545	BAU	.4574	SGT	1812.7	SGR	651.5	SG3	202.3	ST	465.6	SR	606.5	SS	157.8
RDE	-.5280	RRA	-.2112	RC3	.0119	FAU	.06749	RRT	.1008	RRF	-.1170	RTF	-.7960	CRT	-.5642	CRS	.8890	CST	-.2556
FDE	.1376	FRA	.1912	FC3	-2.3130	BSP	5855	SGB	1926.2	R23	-.0251	R13	-.7964	LSA	695.3	MSA	351.3	SSA	52.4
BDE	.5930	BRA	1.0029	BC3	1.3545	FSP	554	SG1	1814.1	SG2	647.7	THA	2.38	EL1	684.6	EL2	340.6	ALF	122.32

LAUNCH DATE DEC 17 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 362.703 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	34.986	GAL	2.03	AZL	88.94	HCA	112.04	SMA	229.16	ECC	.35918	INC	1.0622
RP	242.87	LAP	.98	LOP	197.14	VP	22.667	GAP	20.78	AZP	90.40	TAL	7.70	TAP	119.74	RCA	146.85	APO	311.47
RC	144.629	GL	7.55	GP	2.56	ZAL	73.66	ZAP	171.50	ETS	161.16	ZAE	152.31	ETE	3.61	ZAC	92.17	ETC	255.90

V1	30.266	V2	22.598	CLP	171.89														

PLANETOCENTRIC CONIC

C3	24.368	VHL	4.936	DLA	15.32	RAL	163.16	RAD	6568.0	VEL	12.073	PTH	2.16	VHP	9.654	DPA	-.15	RAP	189.83
ECC	1.4010																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 27 33	2759.55	-28.02	78.88	33.54	94.28	15 13 32	2159.5	-27.13	70.32
90.00	6 33 24	4408.85	6.73	183.68	26.38	62.43	7 46 53	3808.8	2.98	177.00
100.00	15 57 16	2470.23	-29.41	57.46	33.41	95.60	16 38 26	1870.2	-28.33	48.82
100.00	7 46 22	4173.40	7.96	165.71	25.71	61.09	8 55 55	3573.4	4.04	159.11
110.00	17 24 9	2198.36	-33.07	36.26	32.85	99.19	18 0 48	1598.4	-31.45	27.41
110.00	8 35 58	4018.03	11.13	152.01	23.80	57.47	9 42 56	3418.0	6.76	145.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2504	TRA	-.9482	TC3	1.4381	BAU	.4685	SGT	1844.6	SGR	649.6	SG3	213.3	ST	451.1	SR	605.7	SS	172.3
RDE	-.5180	RRA	-.2039	RC3	.0181	FAU	.06998	RRT	.1090	RRF	-.1261	RTF	-.8022	CRT	-.5472	CRS	.9186	CST	-.3255
FDE	.1585	FRA	.1618	FC3	-2.4860	BSP	5975	SGB	1955.6	R23	-.0266	R13	-.8027	LSA	689.9	MSA	347.9	SSA	54.8
BDE	.5753	BRA	.9699	BC3	1.4382	FSP	589	SG1	1846.1	SG2	645.2	THA	2.50	EL1	675.0	EL2	338.8	ALF	120.68

LAUNCH DATE DEC 17 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 365.296 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 34.880 GAL 2.16 AZL 88.96 HCA 112.96 SMA 226.26 ECC .35121 INC 1.0419 V1 30.266
RP 242.60 LAP .96 LOP 198.06 VP 22.529 GAP 20.16 AZP 90.41 TAL 8.33 TAP 121.29 RCA 146.80 APO 305.73 V2 22.624
RC 146.900 GL 7.50 GP 2.64 ZAL 72.45 ZAP 170.88 ETS 161.88 ZAE 152.48 ETE 3.93 ZAC 92.31 ETC 255.89 CLP 171.27

PLANETOCENTRIC CONIC

C3 23.556 VHL 4.853 DLA 15.75 RAL 161.98 RAD 6568.0 VEL 12.039 PTH 2.15 VHP 9.415 DPA -.20 RAP 190.13 ECC 1.3877

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 18 52	2766.66	-28.05	79.39	31.91	94.02	15 4 59	2166.7	-27.20	70.83
90.00	6 32 39	4385.12	5.98	182.34	24.75	62.27	7 45 44	3785.1	2.22	175.68
100.00	15 48 54	2476.28	-29.45	57.91	31.78	95.37	16 30 11	1876.3	-28.40	49.26
100.00	7 45 18	4150.73	7.21	164.44	24.08	60.91	8 54 29	3550.7	3.28	157.86
110.00	17 16 29	2202.27	-33.11	36.56	31.24	99.02	17 53 11	1602.3	-31.51	27.69
110.00	8 34 13	3997.50	10.38	150.90	22.16	57.25	9 40 50	3397.5	5.99	144.56

DIFFERENTIAL CORRECTIONS

TDE .2308 TRA -.9160 TC3 1.5237 BAU .4799
RDE -.5086 RRA -.1966 RC3 .0250 FAU .07262
FDE .1807 FRA .1296 FC3-2.6690 BSP 6092
BDE .5585 BRA .9369 BC3 1.5239 FSP 626

MID-COURSE EXECUTION ACCURACY

SGT 1877.3 SGR 647.5 SG3 225.0
RRT .1179 RRF -.1360 RTF -.8084
SGB 1985.8 R23 -.0283 R13 -.8089
SG1 1879.0 SG2 642.4 THA 2.64

ORBIT DETERMINATION ACCURACY

ST 435.7 SR 604.8 SS 188.7
CRT -.5283 CRS .9379 CST -.3820
LSA 685.5 MSA 343.6 SSA 57.4
EL1 665.2 EL2 336.4 ALF 118.86

LAUNCH DATE DEC 17 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 367.979 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 34.779 GAL 2.29 AZL 88.98 HCA 113.88 SMA 223.58 ECC .34365 INC 1.0212 V1 30.266
RP 242.34 LAP .93 LOP 198.98 VP 22.399 GAP 19.54 AZP 90.41 TAL 8.96 TAP 122.84 RCA 146.74 APO 300.41 V2 22.651
RC 149.184 GL 7.45 GP 2.72 ZAL 71.23 ZAP 170.25 ETS 162.52 ZAE 152.69 ETE 4.26 ZAC 92.45 ETC 255.88 CLP 170.63

PLANETOCENTRIC CONIC

C3 22.814 VHL 4.776 DLA 16.16 RAL 160.79 RAD 6567.9 VEL 12.008 PTH 2.14 VHP 9.182 DPA -.25 RAP 190.43 ECC 1.3755

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 10 14	2773.93	-28.09	79.92	30.31	93.76	14 56 28	2173.9	-27.27	71.35
90.00	6 31 49	4362.26	5.25	181.05	23.16	62.13	7 44 31	3762.3	1.48	174.40
100.00	15 40 36	2482.50	-29.49	58.36	30.18	95.13	16 21 58	1882.5	-28.47	49.71
100.00	7 44 8	4128.92	6.49	163.23	22.48	60.76	8 52 56	3528.9	2.54	156.66
110.00	17 8 51	2206.36	-33.16	36.87	29.66	98.84	17 45 38	1606.4	-31.58	28.00
110.00	8 32 22	3977.82	9.65	149.84	20.55	57.05	9 38 39	3377.8	5.24	143.52

DIFFERENTIAL CORRECTIONS

TDE .2123 TRA -.8837 TC3 1.6085 BAU .4907
RDE -.4997 RRA -.1895 RC3 .0327 FAU .07539
FDE .2029 FRA .0947 FC3-2.8609 BSP 6229
BDE .5429 BRA .9038 BC3 1.6088 FSP 666

MID-COURSE EXECUTION ACCURACY

SGT 1908.9 SGR 645.2 SG3 237.3
RRT .1271 RRF -.1464 RTF -.8141
SGB 2015.0 R23 -.0300 R13 -.8147
SG1 1910.9 SG2 639.3 THA 2.77

ORBIT DETERMINATION ACCURACY

ST 420.2 SR 603.6 SS 205.7
CRT -.5090 CRS .9488 CST -.4264
LSA 682.1 MSA 338.3 SSA 60.1
EL1 655.8 EL2 332.9 ALF 116.99

LAUNCH DATE DEC 17 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 370.743 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 34.682 GAL 2.41 AZL 89.00 HCA 114.80 SMA 221.08 ECC .33650 INC 1.0002 V1 30.266
RP 242.06 LAP .91 LOP 199.90 VP 22.276 GAP 18.92 AZP 90.42 TAL 9.60 TAP 124.40 RCA 146.68 APO 295.47 V2 22.678
RC 151.478 GL 7.39 GP 2.81 ZAL 70.02 ZAP 169.61 ETS 163.07 ZAE 152.95 ETE 4.61 ZAC 92.60 ETC 255.87 CLP 169.99

PLANETOCENTRIC CONIC

C3 22.139 VHL 4.705 DLA 16.56 RAL 159.60 RAD 6567.9 VEL 11.980 PTH 2.14 VHP 8.956 DPA -.29 RAP 190.72 ECC 1.3644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 1 40	2781.28	-28.12	80.46	28.73	93.49	14 48 1	2181.3	-27.34	71.88
90.00	6 30 51	4340.32	4.55	179.82	21.59	62.02	7 43 12	3740.3	.77	173.18
100.00	15 32 22	2488.80	-29.53	58.83	28.61	94.89	16 13 51	1888.8	-28.54	50.16
100.00	7 42 51	4108.03	5.79	162.07	20.91	60.62	8 51 19	3508.0	1.83	155.51
110.00	17 1 17	2210.57	-33.20	37.19	28.10	98.65	17 38 8	1610.6	-31.65	28.30
110.00	8 30 25	3959.03	8.95	148.83	18.98	56.87	9 36 24	3359.0	4.53	142.53

DIFFERENTIAL CORRECTIONS

TDE .1937 TRA -.8516 TC3 1.6922 BAU .5010
RDE -.4914 RRA -.1824 RC3 .0412 FAU .07829
FDE .2266 FRA .0570 FC3-3.0614 BSP 6364
BDE .5282 BRA .8709 BC3 1.6927 FSP 708

MID-COURSE EXECUTION ACCURACY

SGT 1939.5 SGR 642.8 SG3 250.1
RRT .1374 RRF -.1578 RTF -.8194
SGB 2043.3 R23 -.0319 R13 -.8200
SG1 1941.8 SG2 636.0 THA 2.92

ORBIT DETERMINATION ACCURACY

ST 404.0 SR 602.4 SS 224.4
CRT -.4869 CRS .9545 CST -.4601
LSA 679.7 MSA 332.3 SSA 63.0
EL1 646.5 EL2 328.8 ALF 114.95

LAUNCH DATE DEC 17 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 373.581 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 34.590 GAL 2.53 AZL 89.02 HCA 115.73 SMA 218.75 ECC .32973 INC .9788 V1 30.266
RP 241.79 LAP .88 LOP 200.83 VP 22.160 GAP 18.31 AZP 90.43 TAL 10.24 TAP 125.97 RCA 146.62 APO 290.88 V2 22.706
RC 153.781 GL 7.31 GP 2.89 ZAL 68.82 ZAP 168.95 ETS 163.56 ZAE 153.23 ETE 4.98 ZAC 92.74 ETC 255.87 CLP 169.33

PLANETOCENTRIC CONIC

C3 21.524 VHL 4.639 DLA 16.94 RAL 158.41 RAD 6567.9 VEL 11.954 PTH 2.13 VHP 8.736 DPA -.32 RAP 191.00 ECC 1.3542

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 53 13	2788.65	-28.15	81.00	27.18	93.22	14 39 41	2188.6	-27.40	72.41
90.00	6 29 48	4319.34	3.88	178.65	20.06	61.93	7 41 47	3719.3	.10	172.01
100.00	15 24 14	2495.13	-29.56	59.29	27.07	94.64	16 5 49	1895.1	-28.61	50.62
100.00	7 41 27	4088.09	5.13	160.96	19.38	60.51	8 49 36	3488.1	1.16	154.42
110.00	16 53 49	2214.83	-33.24	37.51	26.57	98.47	17 30 44	1614.8	-31.72	28.62
110.00	8 28 22	3941.15	8.29	147.88	17.43	56.72	9 34 3	3341.2	3.85	141.60

DIFFERENTIAL CORRECTIONS

TDE .1753 TRA -.8192 TC3 1.7769 BAU .5115
RDE -.4835 RRA -.1753 RC3 .0506 FAU .08137
FDE .2512 FRA .0161 FC3-3.2728 BSP 6488
BDE .5143 BRA .8377 BC3 1.7777 FSP 752

MID-COURSE EXECUTION ACCURACY

SGT 1970.7 SGR 640.4 SG3 263.7
RRT .1486 RRF -.1701 RTF -.8248
SGB 2072.1 R23 -.0338 R13 -.8255
SG1 1973.3 SG2 632.4 THA 3.08

ORBIT DETERMINATION ACCURACY

ST 387.2 SR 601.0 SS 244.0
CRT -.4625 CRS .9560 CST -.4844
LSA 678.5 MSA 325.6 SSA 66.0
EL1 637.5 EL2 323.7 ALF 112.77

LAUNCH DATE DEC 17 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 376.489 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	34.502	GAL	2.65	AZL	89.04	HCA	116.66	SMA	216.58	ECC	.32331	INC	.9570	V1	30.266
RP	241.51	LAP	.86	LOP	201.76	VP	22.052	GAP	17.71	AZP	90.43	TAL	10.87	TAP	127.53	RCA	146.56	APO	286.60	V2	22.734
RC	156.092	GL	7.22	GP	2.99	ZAL	67.62	ZAP	168.28	ETS	163.99	ZAE	153.56	ETE	5.38	ZAC	92.89	ETC	255.86	CLP	168.67

PLANETOCENTRIC CONIC

C3	20.965	VHL	4.579	DLA	17.30	RAL	157.21	RAD	6567.9	VEL	11.931	PTH	2.12	VHP	8.521	DPA	-.34	RAP	191.28	ECC	1.3450

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 44 52	2795.99	-28.17	81.53	25.65	92.96	14 31 28	2196.0	-27.47	72.94
90.00	6 28 36	4299.33	3.24	177.53	18.56	61.85	7 40 16	3699.3	-.55	170.89
100.00	15 16 12	2501.44	-29.60	59.76	25.55	94.40	15 57 54	1901.4	-28.67	51.08
100.00	7 39 57	4069.11	4.49	159.91	17.87	60.42	8 47 46	3469.1	.51	153.38
110.00	16 46 26	2219.13	-33.28	37.84	25.07	98.28	17 23 25	1619.1	-31.78	28.93
110.00	8 26 13	3924.19	7.65	146.97	15.92	56.58	9 31 37	3324.2	3.20	140.71

DIFFERENTIAL CORRECTIONS

TDE	.1707	TRA	-.7740	TC3	1.8836	BAU	.5282
RDE	-.4763	RRA	-.1684	RC3	.0606	FAU	.08449
FDE	.2783	FRA	-.0262	FC3	-3.4891	BSP	6295
BDE	.5060	BRA	.7921	BC3	1.8846	FSP	802

MID-COURSE EXECUTION ACCURACY

SGT	2012.4	SGR	638.0	SG3	277.7		
RRT	.1498	RRF	-.1840	RTF	-.8351		
SGB	2111.1	R23	-.0458	R13	-.8360		
SG1	2015.0	SG2	630.0	THA	3.01		

ORBIT DETERMINATION ACCURACY

ST	375.4	SR	599.7	SS	266.0
CRT	-.4757	CRS	.9554	CST	-.5350
LSA	684.6	MSA	312.7	SSA	69.0
EL1	635.1	EL2	311.8	ALF	112.20

LAUNCH DATE DEC 17 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 379.459 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	34.418	GAL	2.76	AZL	89.07	HCA	117.59	SMA	214.55	ECC	.31724	INC	.9348	V1	30.266
RP	241.22	LAP	.83	LOP	202.69	VP	21.950	GAP	17.11	AZP	90.43	TAL	11.51	TAP	129.10	RCA	146.49	APO	282.62	V2	22.762
RC	158.408	GL	7.12	GP	3.08	ZAL	66.44	ZAP	167.60	ETS	164.37	ZAE	153.92	ETE	5.80	ZAC	93.04	ETC	255.85	CLP	167.99

PLANETOCENTRIC CONIC

C3	20.457	VHL	4.523	DLA	17.64	RAL	156.03	RAD	6567.8	VEL	11.910	PTH	2.12	VHP	8.312	DPA	-.36	RAP	191.55	ECC	1.3367

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 36 43	2803.13	-28.20	82.05	24.16	92.70	14 23 26	2203.1	-27.53	73.45
90.00	6 27 10	4280.43	2.63	176.47	17.10	61.80	7 38 38	3680.4	-1.16	169.84
100.00	15 8 22	2507.59	-29.63	60.22	24.06	94.16	15 50 10	1907.6	-28.74	51.52
100.00	7 38 20	4051.22	3.89	158.93	16.40	60.34	8 45 51	3451.2	-.09	152.40
110.00	16 30 13	2223.32	-33.33	38.16	23.60	98.09	17 16 17	1623.3	-31.85	29.24
110.00	8 23 58	3908.25	7.05	146.13	14.45	56.47	9 29 6	3308.2	2.60	139.87

DIFFERENTIAL CORRECTIONS

TDE	.1472	TRA	-.7483	TC3	1.9521	BAU	.5342
RDE	-.4693	RRA	-.1613	RC3	.0719	FAU	.08794
FDE	.3032	FRA	-.0749	FC3	-3.7217	BSP	6572
BDE	.4918	BRA	.7655	BC3	1.9534	FSP	849

MID-COURSE EXECUTION ACCURACY

SGT	2035.3	SGR	635.3	SG3	292.9		
RRT	.1681	RRF	-.1978	RTF	-.8369		
SGB	2132.1	R23	-.0431	R13	-.8378		
SG1	2038.4	SG2	625.3	THA	3.32		

ORBIT DETERMINATION ACCURACY

ST	355.9	SR	597.9	SS	286.0
CRT	-.4303	CRS	.9515	CST	-.5305
LSA	682.6	MSA	307.9	SSA	72.3
EL1	624.0	EL2	307.8	ALF	109.21

LAUNCH DATE DEC 17 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 382.487 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	34.338	GAL	2.88	AZL	89.09	HCA	118.52	SMA	212.66	ECC	.31149	INC	.9122	V1	30.266
RP	240.93	LAP	.80	LOP	203.62	VP	21.854	GAP	16.51	AZP	90.44	TAL	12.14	TAP	130.67	RCA	146.42	APO	278.90	V2	22.791
RC	160.729	GL	7.01	GP	3.18	ZAL	65.28	ZAP	166.91	ETS	164.71	ZAE	154.32	ETE	6.26	ZAC	93.19	ETC	255.85	CLP	167.29

PLANETOCENTRIC CONIC

C3	19.995	VHL	4.472	DLA	17.96	RAL	154.85	RAD	6567.8	VEL	11.890	PTH	2.11	VHP	8.109	DPA	-.37	RAP	191.81	ECC	1.3291

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 28 45	2810.08	-28.22	82.56	22.70	92.44	14 15 35	2210.1	-27.58	73.95
90.00	6 25 52	4262.61	2.06	175.47	15.67	61.75	7 36 54	3662.6	-1.73	168.85
100.00	15 0 42	2513.56	-29.66	60.66	22.61	93.93	15 42 36	1913.6	-28.80	51.96
100.00	7 36 36	4034.37	3.32	158.00	14.97	60.28	8 43 50	3434.4	-.66	151.47
110.00	16 32 10	2227.41	-33.36	38.47	22.15	97.91	17 9 17	1627.4	-31.91	29.55
110.00	8 21 38	3893.28	6.49	145.33	13.00	56.36	9 26 31	3293.3	2.02	139.09

DIFFERENTIAL CORRECTIONS

TDE	.1277	TRA	-.7196	TC3	2.0247	BAU	.5417
RDE	-.4626	RRA	-.1542	RC3	.0841	FAU	.09153
FDE	.3288	FRA	-.1266	FC3	-3.9629	BSP	6783
BDE	.4799	BRA	.7359	BC3	2.0264	FSP	901

MID-COURSE EXECUTION ACCURACY

SGT	2060.3	SGR	632.6	SG3	308.7		
RRT	.1846	RRF	-.2128	RTF	-.8399		
SGB	2155.3	R23	-.0430	R13	-.8408		
SG1	2064.0	SG2	620.7	THA	3.57		

ORBIT DETERMINATION ACCURACY

ST	338.0	SR	596.1	SS	306.6
CRT	-.3907	CRS	.9464	CST	-.5276
LSA	683.3	MSA	301.5	SSA	75.6
EL1	615.4	EL2	301.4	ALF	106.58

LAUNCH DATE DEC 17 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 385.569 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	34.262	GAL	2.98	AZL	89.11	HCA	119.46	SMA	210.89	ECC	.30605	INC	.8891	V1	30.266
RP	240.64	LAP	.77	LOP	204.56	VP	21.765	GAP	15.92	AZP	90.44	TAL	12.78	TAP	132.23	RCA	146.35	APO	275.43	V2	22.821
RC	163.052	GL	6.89	GP	3.29	ZAL	64.13	ZAP	166.20	ETS	165.01	ZAE	154.75	ETE	6.74	ZAC	93.34	ETC	255.84	CLP	166.59

PLANETOCENTRIC CONIC

C3	19.577	VHL	4.425	DLA	18.26	RAL	153.68	RAD	6567.8	VEL	11.873	PTH	2.11	VHP	7.911	DPA	-.37	RAP	192.06	ECC	1.3222

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 21 0	2816.75	-28.24	83.05	21.27	92.20	14 7 56	2216.7	-27.63	74.43
90.00	6 24 18	4245.90	1.52	174.54	14.27	61.72	7 35 3	3645.9	-2.27	167.91
100.00	14 53 14	2519.29	-29.68	61.08	21.18	93.71	15 35 13	1919.3	-28.85	52.37
100.00	7 34 44	4018.59	2.78	157.13	13.57	60.23	8 41 43	3418.6	-1.20	150.61
110.00	16 25 16	2231.33	-33.40	38.77	20.74	97.74	17 2 28	1631.3	-31.97	29.84
110.00	8 19 11	3879.31	5.96	144.60	11.60	56.28	9 23 51	3279.3	1.49	138.36

DIFFERENTIAL CORRECTIONS

TDE	.1102	TRA	-.6889	TC3	2.0987	BAU	.5499
RDE	-.4565	RRA	-.1471	RC3	.0973	FAU	.09531
FDE	.3563	FRA	-.1820	FC3	-4.2147	BSP	6920
BDE	.4696	BRA	.7044	BC3	2.1009	FSP	954

MID-COURSE EXECUTION ACCURACY

SGT	2086.1	SGR	630.1	SG3	325.4		
RRT	.2008	RRF	-.2293	RTF	-.8435		
SGB	2179.2	R23	-.0446	R13	-.8446		
SG1	2090.3	SG2	616.0	THA	3.80		

ORBIT DETERMINATION ACCURACY

ST	320.8	SR	594.1	SS	328.5
CRT	-.3530	CRS	.9405	CST	-.5229
LSA	686.3	MSA	294.3	SSA	78.8
EL1	608.2	EL2	293.2	ALF	104.14

LAUNCH DATE DEC 17 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 388.701 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	34.189	GAL	3.09	AZL	89.13	HCA	120.39	SMA	209.23	ECC	.30090	INC	.8655	V1	30.266
RP	240.34	LAP	.75	LOP	205.49	VP	21.682	GAP	15.34	AZP	90.44	TAL	13.40	TAP	133.80	RCA	146.28	APO	272.19	V2	22.851
RC	165.375	GL	6.76	GP	3.40	ZAL	63.00	ZAP	165.48	ETS	165.28	ZAE	155.21	ETE	7.27	ZAC	93.50	ETC	255.83	CLP	165.87

PLANETOCENTRIC CONIC

C3	19.198	VHL	4.382	DLA	18.54	RAL	152.52	RAD	6567.8	VEL	11.857	PTH	2.10	VHP	7.717	DPA	-.36	RAP	192.31	ECC	1.3160

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 13 28	2823.07	-28.25	83.51	19.87	91.97	14 0 31	2223.1	-27.68	74.89
90.00	6 22 35	4230.33	1.02	173.67	12.91	61.70	7 33 5	3630.3	-2.77	167.04
100.00	14 46 0	2524.71	-29.71	61.48	19.79	93.50	15 28 4	1924.7	-28.90	52.77
100.00	7 32 45	4003.92	2.29	156.32	12.20	60.19	8 39 29	3403.9	-1.70	149.80
110.00	16 18 35	2235.05	-33.43	39.06	19.37	97.57	16 55 50	1635.1	-32.03	30.11
110.00	8 16 39	3866.35	5.47	143.91	10.22	56.21	9 21 6	3266.3	1.00	137.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0948	TRA	-.6574	TC3	2.1718	BAU	.5582	SGT	2111.8	SGR	627.6	SG3	342.9	ST	304.3	SR	592.1	SS	350.5
RDE	-.4506	RRA	-.1399	RC3	.1115	FAU	.09927	RRT	.2172	RRF	-.2470	RTF	-.8474	CRT	-.3171	CRS	.9339	CST	-.5171
FDE	.3843	FRA	-.2412	FC3	-4.4766	BSP	7045	SGB	2203.1	R23	-.0472	R13	-.8485	LSA	690.6	MSA	287.0	SSA	82.0
BDE	.4605	BRA	.6721	BC3	2.1746	FSP	1012	SG1	2116.6	SG2	611.3	THA	4.03	EL1	602.2	EL2	283.8	ALF	101.95

LAUNCH DATE DEC 17 1964 FLIGHT TIME 166.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 391.880 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	34.119	GAL	3.19	AZL	89.16	HCA	121.33	SMA	207.68	ECC	.29603	INC	.8415	V1	30.266
RP	240.04	LAP	.72	LOP	206.43	VP	21.604	GAP	14.76	AZP	90.44	TAL	14.02	TAP	135.36	RCA	146.20	APO	269.16	V2	22.881
RC	167.697	GL	6.62	GP	3.52	ZAL	61.89	ZAP	164.74	ETS	165.52	ZAE	155.71	ETE	7.84	ZAC	93.66	ETC	255.83	CLP	165.14

PLANETOCENTRIC CONIC

C3	18.856	VHL	4.342	DLA	18.80	RAL	151.38	RAD	6567.8	VEL	11.842	PTH	2.10	VHP	7.529	DPA	-.33	RAP	192.54	ECC	1.3103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 6 13	2828.98	-28.27	83.94	18.51	91.75	13 53 22	2229.0	-27.72	75.32
90.00	6 20 44	4215.93	.55	172.87	11.58	61.69	7 31 0	3615.9	-3.24	166.24
100.00	14 39 0	2529.78	-29.73	61.86	18.43	93.30	15 21 10	1929.8	-28.95	53.14
100.00	7 30 38	3990.36	1.83	155.58	10.87	60.16	8 37 8	3390.4	-2.16	149.06
110.00	16 12 6	2238.51	-33.46	39.32	18.02	97.42	16 49 24	1638.5	-32.08	30.37
110.00	8 14 2	3854.40	5.02	143.28	8.89	56.14	9 18 16	3254.4	.54	137.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0805	TRA	-.6264	TC3	2.2423	BAU	.5662	SGT	2136.8	SGR	625.4	SG3	361.3	ST	288.6	SR	589.8	SS	372.6
RDE	-.4450	RRA	-.1326	RC3	.1268	FAU	.10343	RRT	.2345	RRF	-.2659	RTF	-.8509	CRT	-.2798	CRS	.9269	CST	-.5076
FDE	.4127	FRA	-.3042	FC3	-4.7487	BSP	7159	SGB	2226.4	R23	-.0503	R13	-.8522	LSA	695.9	MSA	280.3	SSA	84.9
BDE	.4523	BRA	.6403	BC3	2.2459	FSP	1073	SG1	2142.3	SG2	606.4	THA	4.27	EL1	596.8	EL2	273.8	ALF	99.90

LAUNCH DATE DEC 17 1964 FLIGHT TIME 168.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 395.102 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	34.053	GAL	3.29	AZL	89.18	HCA	122.27	SMA	206.22	ECC	.29142	INC	.8168	V1	30.266
RP	239.73	LAP	.69	LOP	207.38	VP	21.532	GAP	14.19	AZP	90.44	TAL	14.64	TAP	136.92	RCA	146.12	APO	266.32	V2	22.912
RC	170.016	GL	6.46	GP	3.64	ZAL	60.80	ZAP	163.98	ETS	165.73	ZAE	156.24	ETE	8.45	ZAC	93.82	ETC	255.82	CLP	164.39

PLANETOCENTRIC CONIC

C3	18.546	VHL	4.307	DLA	19.03	RAL	150.25	RAD	6567.8	VEL	11.829	PTH	2.10	VHP	7.346	DPA	-.30	RAP	192.77	ECC	1.3052

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 59 14	2834.42	-28.28	84.34	17.18	91.55	13 46 28	2234.4	-27.76	75.71
90.00	6 18 44	4202.71	.13	172.13	10.29	61.68	7 28 47	3602.7	-3.66	165.50
100.00	14 32 16	2534.42	-29.74	62.20	17.11	93.12	15 14 30	1934.4	-28.99	53.48
100.00	7 28 24	3977.94	1.41	154.90	9.58	60.14	8 34 42	3377.9	-2.58	148.38
110.00	16 5 50	2241.66	-33.49	39.57	16.71	97.27	16 43 12	1641.7	-32.12	30.60
110.00	8 11 18	3843.47	4.60	142.71	7.59	56.09	9 15 22	3243.5	.12	136.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0674	TRA	-.5948	TC3	2.3089	BAU	.5736	SGT	2159.5	SGR	623.4	SG3	380.5	ST	273.2	SR	587.5	SS	394.8
RDE	-.4398	RRA	-.1252	RC3	.1431	FAU	.10778	RRT	.2527	RRF	-.2862	RTF	-.8544	CRT	-.2427	CRS	.9194	CST	-.4966
FDE	.4417	FRA	-.3724	FC3	-5.0310	BSP	7257	SGB	2247.7	R23	-.0539	R13	-.8558	LSA	702.1	MSA	273.8	SSA	87.7
BDE	.4449	BRA	.6078	BC3	2.3133	FSP	1137	SG1	2165.7	SG2	601.4	THA	4.52	EL1	592.1	EL2	263.0	ALF	98.03

LAUNCH DATE DEC 17 1964 FLIGHT TIME 170.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 398.364 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.990	GAL	3.38	AZL	89.21	HCA	123.22	SMA	204.85	ECC	.28706	INC	.7916	V1	30.266
RP	239.42	LAP	.66	LOP	208.32	VP	21.466	GAP	13.63	AZP	90.43	TAL	15.25	TAP	138.47	RCA	146.05	APO	263.66	V2	22.943
RC	172.331	GL	6.30	GP	3.77	ZAL	59.74	ZAP	163.21	ETS	165.92	ZAE	156.80	ETE	9.13	ZAC	93.98	ETC	255.82	CLP	163.63

PLANETOCENTRIC CONIC

C3	18.267	VHL	4.274	DLA	19.24	RAL	149.15	RAD	6567.7	VEL	11.817	PTH	2.09	VHP	7.168	DPA	-.26	RAP	192.98	ECC	1.3006

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 52 33	2839.33	-28.29	84.70	15.88	91.37	13 39 53	2239.3	-27.80	76.07
90.00	6 16 36	4190.69	-.26	171.46	9.03	61.68	7 26 27	3590.7	-4.05	164.82
100.00	14 25 49	2538.60	-29.76	62.51	15.82	92.96	15 8 7	1938.6	-29.03	53.78
100.00	7 26 1	3966.65	1.03	154.28	8.32	60.12	8 32 8	3366.7	-2.96	147.75
110.00	15 59 50	2244.46	-33.52	39.78	15.43	97.15	16 37 14	1644.5	-32.17	30.81
110.00	8 8 30	3833.56	4.23	142.19	6.32	56.05	9 12 23	3233.6	-.26	135.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0549	TRA	-.5644	TC3	2.3733	BAU	.5809	SGT	2182.5	SGR	621.7	SG3	400.8	ST	258.7	SR	585.0	SS	417.1
RDE	-.4348	RRA	-.1177	RC3	.1607	FAU	.11237	RRT	.2725	RRF	-.3080	RTF	-.8577	CRT	-.2023	CRS	.9120	CST	-.4802
FDE	.4713	FRA	-.4439	FC3	-5.3255	BSP	7352	SGB	2269.3	R23	-.0576	R13	-.8592	LSA	709.1	MSA	268.6	SSA	90.1
BDE	.4382	BRA	.5766	BC3	2.3787	FSP	1206	SG1	2189.6	SG2	596.2	THA	4.79	EL1	587.9	EL2	252.1	ALF	96.27

LAUNCH DATE DEC 17 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 401.664 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.930	GAL	3.48	AZL	89.23	HCA	124.17	SMA	203.57	ECC	.28294	INC	.7658	V1	30.266
RP	239.11	LAP	.63	LOP	209.27	VP	21.404	GAP	13.07	AZP	90.43	TAL	15.85	TAP	140.02	RCA	145.97	APO	261.16	V2	22.975
RC	174.639	GL	6.12	GP	3.90	ZAL	58.70	ZAP	162.42	ETS	166.09	ZAE	157.39	ETE	9.86	ZAC	94.15	ETC	255.81	CLP	162.84

PLANETOCENTRIC CONIC

C3	18.016	VHL	4.244	DLA	19.43	RAL	148.06	RAD	6567.7	VEL	11.807	PTH	2.09	VHP	6.994	DPA	-.21	RAP	193.19	ECC	1.2965

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 46 11	2843.68	-28.29	85.02	14.62	91.21	13 33 35	2243.7	-27.82	76.38
90.00	6 14 18	4179.86	-.61	170.86	7.81	61.69	7 23 58	3579.9	-4.39	164.22
100.00	14 19 39	2542.28	-29.77	62.78	14.56	92.82	15 2 1	1942.3	-29.06	54.05
100.00	7 23 31	3956.50	.68	153.72	7.09	60.11	8 29 28	3356.5	-3.30	147.20
110.00	15 54 4	2246.90	-33.54	39.97	14.18	97.04	16 31 31	1646.9	-32.20	30.99
110.00	8 5 36	3824.64	3.89	141.72	5.09	56.01	9 9 21	3224.6	-.60	135.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0495	TRA	-.5280	TC3	2.4465	BAU	.5908	SGT	2211.1	SGR	620.4	SG3	422.2	ST	244.5	SR	582.4	SS	438.8
RDE	-.4300	RRA	-.1100	RC3	.1795	FAU	.11722	RRT	.2892	RRF	-.3310	RTF	-.8627	CRT	-.1953	CRS	.9039	CST	-.4902
FDE	.5006	FRA	-.5217	FC3	-5.6332	BSP	7298	SGB	2296.5	R23	-.0650	R13	-.8645	LSA	717.3	MSA	261.4	SSA	92.8
BDE	.4328	BRA	.5394	BC3	2.4531	FSP	1275	SG1	2218.9	SG2	591.8	THA	4.99	EL1	584.7	EL2	238.8	ALF	95.63

LAUNCH DATE DEC 17 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 404.999 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.872	GAL	3.57	AZL	89.26	HCA	125.12	SMA	202.36	ECC	.27905	INC	.7392	V1	30.266
RP	238.79	LAP	.60	LOP	210.22	VP	21.348	GAP	12.52	AZP	90.43	TAL	16.44	TAP	141.56	RCA	145.89	APO	258.83	V2	23.007
RC	176.939	GL	5.94	GP	4.04	ZAL	57.70	ZAP	161.61	ETS	166.24	ZAE	158.01	ETE	10.67	ZAC	94.32	ETC	255.81	CLP	162.05

PLANETOCENTRIC CONIC

C3	17.789	VHL	4.218	DLA	19.59	RAL	147.00	RAD	6567.7	VEL	11.797	PTH	2.09	VHP	6.824	DPA	-.14	RAP	193.39	ECC	1.2928

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 40 10	2847.36	-28.30	85.28	13.40	91.08	13 27 38	2247.4	-27.85	76.65
90.00	6 11 51	4170.29	-.92	170.32	6.62	61.70	7 21 22	3570.3	-4.70	163.68
100.00	14 13 49	2545.36	-29.78	63.01	13.34	92.70	14 56 15	1945.4	-29.09	54.28
100.00	7 20 53	3947.51	.38	153.23	5.90	60.11	8 26 41	3347.5	-3.60	146.70
110.00	15 48 35	2248.89	-33.55	40.12	12.97	96.95	16 26 4	1648.9	-32.23	31.14
110.00	8 2 37	3816.75	3.59	141.31	3.89	55.98	9 6 14	3216.7	-.90	135.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0338	TRA	-.5033	TC3	2.4905	BAU	.5942	SGT	2223.1	SGR	619.6	SG3	444.6	ST	231.3	SR	579.6	SS	460.8
RDE	-.4254	RRA	-.1020	RC3	.1997	FAU	.12228	RRT	.3151	RRF	-.3557	RTF	-.8637	CRT	-.1237	CRS	.8961	CST	-.4452
FDE	.5308	FRA	-.6040	FC3	-5.9510	BSP	7513	SGB	2307.8	R23	-.0666	R13	-.8657	LSA	724.6	MSA	260.5	SSA	93.8
BDE	.4267	BRA	.5136	BC3	2.4985	FSP	1352	SG1	2232.3	SG2	585.6	THA	5.39	EL1	580.4	EL2	229.1	ALF	93.35

LAUNCH DATE DEC 17 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 408.367 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.817	GAL	3.65	AZL	89.29	HCA	126.07	SMA	201.22	ECC	.27537	INC	.7120	V1	30.266
RP	238.47	LAP	.58	LOP	211.17	VP	21.296	GAP	11.97	AZP	90.42	TAL	17.02	TAP	143.09	RCA	145.81	APO	256.63	V2	23.040
RC	179.231	GL	5.74	GP	4.19	ZAL	56.72	ZAP	160.79	ETS	166.38	ZAE	158.66	ETE	11.57	ZAC	94.50	ETC	255.80	CLP	161.23

PLANETOCENTRIC CONIC

C3	17.585	VHL	4.193	DLA	19.72	RAL	145.96	RAD	6567.7	VEL	11.788	PTH	2.08	VHP	6.659	DPA	-.06	RAP	193.57	ECC	1.2894

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 34 30	2850.38	-28.30	85.51	12.21	90.97	13 22 0	2250.4	-27.87	76.87
90.00	6 9 15	4161.91	-1.19	169.86	5.47	61.71	7 18 37	3561.9	-4.96	163.21
100.00	14 8 18	2547.87	-29.79	63.20	12.16	92.60	14 50 46	1947.9	-29.11	54.46
100.00	7 18 8	3939.65	.11	152.80	4.74	60.11	8 23 47	3339.7	-3.87	146.27
110.00	15 43 22	2250.46	-33.57	40.24	11.79	96.88	16 20 53	1650.5	-32.25	31.26
110.00	7 59 33	3809.83	3.32	140.95	2.74	55.96	9 3 3	3209.8	-1.17	134.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0249	TRA	-.4743	TC3	2.5424	BAU	.6000	SGT	2240.9	SGR	619.5	SG3	468.1	ST	218.9	SR	576.6	SS	482.1
RDE	-.4209	RRA	-.0939	RC3	.2211	FAU	.12759	RRT	.3384	RRF	-.3817	RTF	-.8663	CRT	-.0854	CRS	.8880	CST	-.4259
FDE	.5606	FRA	-.6912	FC3	-6.2816	BSP	7586	SGB	2324.9	R23	-.0717	R13	-.8684	LSA	732.9	MSA	258.2	SSA	95.0
BDE	.4217	BRA	.4835	BC3	2.5520	FSP	1431	SG1	2251.4	SG2	580.2	THA	5.73	EL1	577.0	EL2	217.9	ALF	92.16

LAUNCH DATE DEC 17 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 411.766 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.765	GAL	3.73	AZL	89.32	HCA	127.02	SMA	200.15	ECC	.27190	INC	.6842	V1	30.266
RP	238.14	LAP	.55	LOP	212.12	VP	21.249	GAP	11.44	AZP	90.41	TAL	17.59	TAP	144.61	RCA	145.73	APO	254.57	V2	23.073
RC	181.513	GL	5.53	GP	4.35	ZAL	55.77	ZAP	159.94	ETS	166.50	ZAE	159.33	ETE	12.56	ZAC	94.68	ETC	255.80	CLP	160.40

PLANETOCENTRIC CONIC

C3	17.402	VHL	4.172	DLA	19.84	RAL	144.95	RAD	6567.7	VEL	11.781	PTH	2.08	VHP	6.499	DPA	.03	RAP	193.75	ECC	1.2864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 29 11	2852.70	-28.30	85.68	11.06	90.88	13 16 43	2252.7	-27.88	77.03
90.00	6 6 30	4154.75	-1.42	169.46	4.35	61.72	7 15 44	3554.7	-5.19	162.81
100.00	14 3 8	2549.76	-29.80	63.34	11.01	92.53	14 45 37	1949.8	-29.13	54.60
100.00	7 15 14	3932.92	-.12	152.43	3.62	60.11	8 20 47	3332.9	-4.10	145.90
110.00	15 38 27	2251.55	-33.58	40.33	10.64	96.83	16 15 58	1651.5	-32.27	31.34
110.00	7 56 24	3803.90	3.10	140.64	1.61	55.94	8 59 48	3203.9	-1.39	134.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0166	TRA	-.4457	TC3	2.5890	BAU	.6050	SGT	2256.1	SGR	620.1	SG3	492.7	ST	207.0	SR	573.5	SS	503.4
RDE	-.4167	RRA	-.0855	RC3	.2441	FAU	.13317	RRT	.3631	RRF	-.4092	RTF	-.8686	CRT	-.0452	CRS	.8800	CST	-.4034
FDE	.5907	FRA	-.7842	FC3	-6.6252	BSP	7663	SGB	2339.7	R23	-.0771	R13	-.8710	LSA	741.6	MSA	257.0	SSA	95.6
BDE	.4170	BRA	.4539	BC3	2.6004	FSP	1516	SG1	2268.0	SG2	574.7	THA	6.09	EL1	573.6	EL2	206.7	ALF	91.07

LAUNCH DATE DEC 17 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 415.196 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.716 GAL 3.81 AZL 89.34 HCA 127.98 SMA 199.14 ECC .26861 INC .6553 V1 30.266
RP 237.81 LAP .52 LOP 213.08 VP 21.206 GAP 10.91 AZP 90.40 TAL 18.15 TAP 146.13 RCA 145.65 APO 252.63 V2 23.106
RC 183.786 GL 5.32 GP 4.51 ZAL 54.85 ZAP 159.07 ETS 166.60 ZAE 160.03 ETE 13.67 ZAC 94.86 ETC 255.79 CLP 159.54

PLANETOCENTRIC CONIC

C3 17.239 VHL 4.152 DLA 19.93 RAL 143.97 RAD 6567.7 VEL 11.774 PTH 2.08 VHP 6.342 DPA .14 RAP 193.91 ECC 1.2837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 24 13	2854.30	-28.31	85.79	9.94	90.82	13 11 47	2254.3	-27.89	77.15
90.00	6 3 35	4148.77	-1.61	169.12	3.26	61.73	7 12 44	3548.8	-5.38	162.47
100.00	13 58 16	2551.01	-29.80	63.43	9.89	92.48	14 40 47	1951.0	-29.14	54.69
100.00	7 12 13	3927.30	-.31	152.12	2.53	60.11	8 17 40	3327.3	-4.28	145.59
110.00	15 33 48	2252.16	-33.58	40.37	9.53	96.80	16 11 20	1652.2	-32.27	31.38
110.00	7 53 11	3798.91	2.91	140.38	.52	55.93	8 56 30	3198.9	-1.58	134.17

DIFFERENTIAL CORRECTIONS
TDE .0185 TRA -.4089 TC3 2.6524 BAU .6144
RDE -.4124 RRA -.0766 RC3 .2688 FAU .13917
FDE .6179 FRA -.8862 FC3-6.9890 BSP 7500
BDE .4128 BRA .4160 BC3 2.6660 FSP 1596

MID-COURSE EXECUTION ACCURACY
SGT 2283.0 SGR 621.6 SG3 519.1
RRT .3837 RRF -.4376 RTF -.8734
SGB 2366.1 R23 -.0867 R13 -.8761
SG1 2296.2 SG2 570.7 THA 6.36

ORBIT DETERMINATION ACCURACY
ST 193.5 SR 570.1 SS 522.6
CRT -.0724 CRS .8703 CST -.4362
LSA 749.7 MSA 253.2 SSA 97.0
EL1 570.3 EL2 192.9 ALF 91.59

LAUNCH DATE DEC 17 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 418.652 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.668 GAL 3.89 AZL 89.37 HCA 128.94 SMA 198.19 ECC .26551 INC .6258 V1 30.266
RP 237.48 LAP .49 LOP 214.04 VP 21.168 GAP 10.38 AZP 90.39 TAL 18.70 TAP 147.63 RCA 145.57 APO 250.82 V2 23.140
RC 186.049 GL 5.09 GP 4.68 ZAL 53.97 ZAP 158.18 ETS 166.70 ZAE 160.75 ETE 14.90 ZAC 95.05 ETC 255.79 CLP 158.67

PLANETOCENTRIC CONIC

C3 17.091 VHL 4.134 DLA 19.99 RAL 143.01 RAD 6567.7 VEL 11.768 PTH 2.08 VHP 6.190 DPA .26 RAP 194.06 ECC 1.2813

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 19 39	2855.07	-28.31	85.85	8.85	90.80	13 7 15	2255.1	-27.90	77.21
90.00	6 0 31	4144.04	-1.77	168.86	2.20	61.73	7 9 35	3544.0	-5.53	162.20
100.00	13 53 48	2551.52	-29.80	63.47	8.80	92.46	14 36 19	1951.5	-29.14	54.73
100.00	7 9 4	3922.82	-.46	151.87	1.48	60.11	8 14 27	3322.8	-4.43	145.34
110.00	15 29 28	2252.21	-33.58	40.38	8.44	96.80	16 7 0	1652.2	-32.28	31.39
110.00	7 49 53	3794.90	2.76	140.17	359.47	55.91	8 53 8	3194.9	-1.74	133.96

DIFFERENTIAL CORRECTIONS
TDE .0026 TRA -.3920 TC3 2.6668 BAU .6130
RDE -.4085 RRA -.0676 RC3 .2946 FAU .14517
FDE .6508 FRA -.9874 FC3-7.3532 BSP 7796
BDE .4085 BRA .3978 BC3 2.6830 FSP 1696

MID-COURSE EXECUTION ACCURACY
SGT 2279.5 SGR 624.3 SG3 545.7
RRT .4165 RRF -.4682 RTF -.8724
SGB 2363.5 R23 -.0893 R13 -.8754
SG1 2295.3 SG2 563.7 THA 6.93

ORBIT DETERMINATION ACCURACY
ST 185.7 SR 566.9 SS 544.8
CRT .0342 CRS .8638 CST -.3543
LSA 759.6 MSA 257.9 SSA 95.4
EL1 567.0 EL2 185.6 ALF 89.28

LAUNCH DATE DEC 17 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 422.134 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.623 GAL 3.96 AZL 89.40 HCA 129.90 SMA 197.30 ECC .26258 INC .5954 V1 30.266
RP 237.15 LAP .46 LOP 215.00 VP 21.133 GAP 9.87 AZP 90.38 TAL 19.23 TAP 149.13 RCA 145.49 APO 249.11 V2 23.174
RC 188.300 GL 4.86 GP 4.87 ZAL 53.11 ZAP 157.27 ETS 166.78 ZAE 161.50 ETE 16.29 ZAC 95.24 ETC 255.78 CLP 157.77

PLANETOCENTRIC CONIC

C3 16.960 VHL 4.118 DLA 20.04 RAL 142.08 RAD 6567.7 VEL 11.762 PTH 2.08 VHP 6.042 DPA .40 RAP 194.19 ECC 1.2791

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 15 28	2855.08	-28.31	85.85	7.80	90.80	13 3 3	2255.1	-27.90	77.21
90.00	5 57 17	4140.47	-1.88	168.66	1.18	61.74	7 6 18	3540.5	-5.65	162.00
100.00	13 49 39	2551.36	-29.80	63.46	7.75	92.46	14 32 10	1951.4	-29.14	54.72
100.00	7 5 47	3919.42	-.58	151.69	.45	60.11	8 11 7	3319.4	-4.55	145.15
110.00	15 25 25	2251.74	-33.58	40.34	7.39	96.82	16 2 57	1651.7	-32.27	31.35
110.00	7 46 30	3791.80	2.64	140.00	358.45	55.91	8 49 42	3191.8	-1.85	133.80

DIFFERENTIAL CORRECTIONS
TDE -.0025 TRA -.3664 TC3 2.6987 BAU .6162
RDE -.4045 RRA -.0581 RC3 .3223 FAU .15159
FDE .6808 FRA -1.0982 FC3-7.7379 BSP 7842
BDE .4045 BRA .3710 BC3 2.7179 FSP 1793

MID-COURSE EXECUTION ACCURACY
SGT 2288.1 SGR 628.2 SG3 574.2
RRT .4444 RRF -.4995 RTF -.8739
SGB 2372.7 R23 -.0965 R13 -.8773
SG1 2306.1 SG2 558.3 THA 7.39

ORBIT DETERMINATION ACCURACY
ST 176.0 SR 563.4 SS 565.1
CRT .0675 CRS .8558 CST -.3327
LSA 769.1 MSA 259.3 SSA 94.7
EL1 563.6 EL2 175.5 ALF 88.66

LAUNCH DATE DEC 17 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 425.642 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.580 GAL 4.03 AZL 89.44 HCA 130.87 SMA 196.46 ECC .25981 INC .5639 V1 30.266
RP 236.81 LAP .43 LOP 215.97 VP 21.103 GAP 9.36 AZP 90.37 TAL 19.75 TAP 150.61 RCA 145.42 APO 247.50 V2 23.209
RC 190.540 GL 4.61 GP 5.06 ZAL 52.29 ZAP 156.34 ETS 166.85 ZAE 162.26 ETE 17.86 ZAC 95.44 ETC 255.78 CLP 156.85

PLANETOCENTRIC CONIC

C3 16.842 VHL 4.104 DLA 20.06 RAL 141.18 RAD 6567.7 VEL 11.757 PTH 2.08 VHP 5.897 DPA .55 RAP 194.31 ECC 1.2772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 11 39	2854.27	-28.31	85.79	6.78	90.83	12 59 14	2254.3	-27.89	77.15
90.00	5 53 54	4138.08	-1.96	168.53	.19	61.75	7 2 52	3538.1	-5.72	161.87
100.00	13 45 52	2550.48	-29.80	63.39	6.73	92.50	14 28 22	1950.5	-29.13	54.65
100.00	7 2 23	3917.10	-.66	151.56	359.46	60.11	8 7 40	3317.1	-4.63	145.02
110.00	15 21 40	2250.73	-33.57	40.26	6.37	96.87	15 59 11	1650.7	-32.25	31.28
110.00	7 43 4	3789.61	2.55	139.89	357.46	55.90	8 46 13	3189.6	-1.94	133.69

DIFFERENTIAL CORRECTIONS
TDE -.0055 TRA -.3405 TC3 2.7266 BAU .6190
RDE -.4005 RRA -.0481 RC3 .3520 FAU .15835
FDE .7085 FRA -1.2175 FC3-8.1395 BSP 7866
BDE .4006 BRA .3439 BC3 2.7492 FSP 1895

MID-COURSE EXECUTION ACCURACY
SGT 2294.5 SGR 633.5 SG3 604.1
RRT .4727 RRF -.5315 RTF -.8754
SGB 2380.3 R23 -.1045 R13 -.8793
SG1 2315.1 SG2 553.3 THA 7.89

ORBIT DETERMINATION ACCURACY
ST 166.2 SR 559.7 SS 583.9
CRT .0876 CRS .8470 CST -.3221
LSA 777.7 MSA 261.3 SSA 93.9
EL1 559.9 EL2 165.5 ALF 88.37

LAUNCH DATE DEC 17 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 429.174 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.539	GAL	4.10	AZL	89.47	HCA	131.83	SMA	195.67	ECC	.25720	INC	.5314	V1	30.266
RP	236.46	LAP	.40	LOP	216.93	VP	21.077	GAP	8.86	AZP	90.35	TAL	20.25	TAP	152.09	RCA	145.34	APO	245.99	V2	23.244
RC	192.768	GL	4.35	GP	5.26	ZAL	51.50	ZAP	155.38	ETS	166.91	ZAE	163.04	ETE	19.64	ZAC	95.64	ETC	255.77	CLP	155.91

PLANETOCENTRIC CONIC

C3	16.737	VHL	4.091	DLA	20.05	RAL	140.31	RAD	6567.7	VEL	11.752	PTH	2.07	VHP	5.757	DPA	.73	RAP	194.42	ECC	1.2754		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 8 14	2852.63	-28.30	85.67	5.80	90.89	12 55 46	2252.6	-27.88	77.03
90.00	5 50 22	4136.83	-2.00	168.46	359.23	61.75	6 59 19	3536.8	-5.76	161.80
100.00	13 42 26	2548.86	-29.79	63.27	5.75	92.56	14 24 55	1948.9	-29.12	54.53
100.00	6 58 51	3915.84	-.70	151.49	358.51	60.11	8 4 7	3315.8	-4.67	144.95
110.00	15 18 14	2249.14	-33.56	40.14	5.38	96.94	15 55 43	1649.1	-32.23	31.16
110.00	7 39 33	3788.32	2.50	139.82	356.51	55.90	8 42 41	3188.3	-1.99	133.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0062	TRA	-.3155	TC3	2.7525	BAU	.6218	SGT	2300.8	SGR	640.5	SG3	635.5	ST	156.7	SR	555.8	SS	602.1
RDE	-.3966	RRA	-.0377	RC3	.3837	FAU	.16545	RRT	.5010	RRF	-.5642	RTF	-.8768	CRT	.0900	CRS	.8383	CST	-.3246
FDE	.7354	FRA	-1.3420	FC3	-8.5580	BSP	7851	SGB	2388.3	R23	-.1137	R13	-.8813	LSA	786.1	MSA	263.3	SSA	93.1
BDE	.3967	BRA	.3178	BC3	2.7791	FSP	2000	SG1	2324.4	SG2	548.7	THA	8.41	EL1	556.0	EL2	156.0	ALF	88.42

LAUNCH DATE DEC 17 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 432.728 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.501	GAL	4.17	AZL	89.50	HCA	132.80	SMA	194.92	ECC	.25473	INC	.4977	V1	30.266
RP	236.12	LAP	.37	LOP	217.90	VP	21.054	GAP	8.36	AZP	90.34	TAL	20.74	TAP	153.55	RCA	145.27	APO	244.57	V2	23.279
RC	194.983	GL	4.08	GP	5.47	ZAL	50.73	ZAP	154.39	ETS	166.97	ZAE	163.83	ETE	21.68	ZAC	95.85	ETC	255.76	CLP	154.95

PLANETOCENTRIC CONIC

C3	16.643	VHL	4.080	DLA	20.02	RAL	139.46	RAD	6567.7	VEL	11.748	PTH	2.07	VHP	5.621	DPA	.92	RAP	194.51	ECC	1.2739		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 5 11	2850.16	-28.30	85.49	4.84	90.98	12 52 41	2250.2	-27.87	76.85
90.00	5 46 41	4136.72	-2.00	168.45	358.30	61.75	6 55 38	3536.7	-5.77	161.79
100.00	13 39 21	2546.50	-29.79	63.10	4.79	92.65	14 21 48	1946.5	-29.10	54.36
100.00	6 55 12	3915.62	-.71	151.48	357.58	60.12	8 0 28	3315.6	-4.68	144.94
110.00	15 15 5	2246.98	-33.54	39.98	4.42	97.04	15 52 32	1647.0	-32.20	31.00
110.00	7 35 57	3787.90	2.49	139.80	355.58	55.90	8 39 5	3187.9	-2.00	133.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0001	TRA	-.2850	TC3	2.7875	BAU	.6271	SGT	2313.9	SGR	649.4	SG3	669.1	ST	144.9	SR	551.5	SS	618.2
RDE	-.3925	RRA	-.0264	RC3	.4179	FAU	.17305	RRT	.5273	RRF	-.5973	RTF	-.8797	CRT	.0268	CRS	.8275	CST	-.3789
FDE	.7575	FRA	-1.4791	FC3	-9.0019	BSP	7683	SGB	2403.3	R23	-.1249	R13	-.8848	LSA	793.0	MSA	264.2	SSA	92.6
BDE	.3925	BRA	.2863	BC3	2.8186	FSP	2101	SG1	2340.6	SG2	545.5	THA	8.91	EL1	551.5	EL2	144.8	ALF	89.57

LAUNCH DATE DEC 17 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 436.302 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.464	GAL	4.23	AZL	89.54	HCA	133.78	SMA	194.21	ECC	.25241	INC	.4633	V1	30.266
RP	235.77	LAP	.33	LOP	218.88	VP	21.035	GAP	7.88	AZP	90.32	TAL	21.21	TAP	154.99	RCA	145.19	APO	243.23	V2	23.315
RC	197.185	GL	3.80	GP	5.70	ZAL	50.01	ZAP	153.39	ETS	167.01	ZAE	164.63	ETE	24.02	ZAC	96.07	ETC	255.76	CLP	153.96

PLANETOCENTRIC CONIC

C3	16.558	VHL	4.069	DLA	19.97	RAL	138.65	RAD	6567.7	VEL	11.745	PTH	2.07	VHP	5.488	DPA	1.13	RAP	194.59	ECC	1.2725		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 2 33	2846.78	-28.30	85.24	3.92	91.10	12 49 59	2246.8	-27.84	76.61
90.00	5 42 51	4137.76	-1.97	168.51	357.40	61.75	6 51 49	3537.8	-5.73	161.85
100.00	13 36 39	2543.32	-29.78	62.86	3.86	92.78	14 19 2	1943.3	-29.07	54.13
100.00	6 51 26	3916.45	-.68	151.52	356.68	60.11	7 56 42	3316.5	-4.65	144.99
110.00	15 12 16	2244.18	-33.51	39.76	3.48	97.16	15 49 40	1644.2	-32.16	30.79
110.00	7 32 18	3788.36	2.51	139.82	354.69	55.90	8 35 27	3188.4	-1.99	133.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0106	TRA	-.2749	TC3	2.7720	BAU	.6218	SGT	2293.3	SGR	660.6	SG3	701.9	ST	141.7	SR	547.8	SS	638.8
RDE	-.3889	RRA	-.0152	RC3	.4530	FAU	.18043	RRT	.5607	RRF	-.6308	RTF	-.8772	CRT	.1261	CRS	.8224	CST	-.2997
FDE	.7901	FRA	-1.6104	FC3	-9.4337	BSP	7939	SGB	2386.5	R23	-.1329	R13	-.8832	LSA	804.5	MSA	269.9	SSA	90.1
BDE	.3891	BRA	.2753	BC3	2.8088	FSP	2233	SG1	2324.7	SG2	539.6	THA	9.70	EL1	548.1	EL2	140.5	ALF	88.00

LAUNCH DATE DEC 17 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 439.898 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.429	GAL	4.29	AZL	89.57	HCA	134.75	SMA	193.55	ECC	.25021	INC	.4272	V1	30.266
RP	235.42	LAP	.30	LOP	219.85	VP	21.019	GAP	7.40	AZP	90.30	TAL	21.67	TAP	156.43	RCA	145.12	APO	241.97	V2	23.351
RC	199.372	GL	3.51	GP	5.94	ZAL	49.31	ZAP	152.35	ETS	167.05	ZAE	165.43	ETE	26.72	ZAC	96.29	ETC	255.75	CLP	152.94

PLANETOCENTRIC CONIC

C3	16.483	VHL	4.060	DLA	19.89	RAL	137.87	RAD	6567.7	VEL	11.742	PTH	2.07	VHP	5.360	DPA	1.36	RAP	194.66	ECC	1.2713		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 0 17	2842.56	-28.29	84.93	3.03	91.26	12 47 39	2242.6	-27.82	76.30
90.00	5 38 52	4139.89	-1.90	168.63	356.53	61.74	6 47 52	3539.9	-5.66	161.97
100.00	13 34 17	2539.40	-29.76	62.57	2.96	92.93	14 16 37	1939.4	-29.04	53.84
100.00	6 47 32	3918.28	-.62	151.62	355.81	60.11	7 52 51	3318.3	-4.59	145.09
110.00	15 9 44	2240.79	-33.48	39.50	2.57	97.31	15 47 5	1640.8	-32.11	30.54
110.00	7 28 35	3789.66	2.56	139.89	353.83	55.90	8 31 45	3189.7	-1.94	133.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0098	TRA	-.2553	TC3	2.7757	BAU	.6211	SGT	2286.2	SGR	674.1	SG3	737.5	ST	134.1	SR	543.5	SS	655.5
RDE	-.3850	RRA	-.0029	RC3	.4913	FAU	.18844	RRT	.5893	RRF	-.6637	RTF	-.8772	CRT	.1158	CRS	.8139	CST	-.3098
FDE	.8142	FRA	-1.7566	FC3	-9.8976	BSP	7936	SGB	2383.5	R23	-.1443	R13	-.8841	LSA	812.8	MSA	273.2	SSA	88.6
BDE	.3851	BRA	.2554	BC3	2.8188	FSP	2357	SG1	2322.4	SG2	536.1	THA	10.42	EL1	543.7	EL2	133.1	ALF	88.26

LAUNCH DATE DEC 17 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 443.513 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.395 GAL 4.34 AZL 89.61 HCA 135.73 SMA 192.92 ECC .24814 INC .3899 V1 30.266
RP 235.06 LAP .27 LOP 220.83 VP 21.006 GAP 6.93 AZP 90.28 TAL 22.11 TAP 157.85 RCA 145.05 APO 240.79 V2 23.387
RC 201.544 GL 3.21 GP 6.19 ZAL 48.65 ZAP 151.28 ETS 167.09 ZAE 166.22 ETE 29.86 ZAC 96.52 ETC 255.75 CLP 151.90

PLANETOCENTRIC CONIC

C3 16.415 VHL 4.052 DLA 19.80 RAL 137.11 RAD 6567.7 VEL 11.739 PTH 2.07 VHP 5.235 DPA 1.62 RAP 194.70 ECC 1.2701

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 58 23	2837.46	-28.28	84.56	2.16	91.44	12 45 41	2237.5	-27.78	75.93
90.00	5 34 44	4143.11	-1.80	168.81	355.68	61.74	6 43 47	3543.1	-5.56	162.15
100.00	13 32 17	2534.68	-29.74	62.22	2.09	93.11	14 14 32	1934.7	-29.00	53.50
100.00	6 43 31	3921.12	-.52	151.78	354.97	60.11	7 48 52	3321.1	-4.49	145.25
110.00	15 7 30	2236.77	-33.45	39.19	1.69	97.49	15 44 47	1636.8	-32.05	30.24
110.00	7 24 47	3791.79	2.64	140.00	353.00	55.91	8 27 59	3191.8	-1.86	133.80

DIFFERENTIAL CORRECTIONS
TDE -.0074 TRA -.2376 TC3 2.7746 BAU .6200
RDE -.3810 RRA .0101 RC3 .5321 FAU .19681
FDE .8362 FRA-1.9101 FC-10.3803 BSP 7914
BDE .3811 BRA .2378 BC3 2.8252 FSP 2485

MID-COURSE EXECUTION ACCURACY
SGT 2276.5 SGR 690.3 SG3 774.7
RRT .6171 RRF -.6960 RTF -.8769
SGB 2378.9 R23 -.1568 R13 -.8849
SG1 2318.3 SG2 533.4 THA 11.20

ORBIT DETERMINATION ACCURACY
ST 127.0 SR 539.0 SS 671.4
CRT .0882 CRS .8053 CST -.3331
LSA 820.7 MSA 276.4 SSA 87.3
EL1 539.1 EL2 126.5 ALF 88.74

LAUNCH DATE DEC 17 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 447.148 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.364 GAL 4.40 AZL 89.65 HCA 136.72 SMA 192.33 ECC .24618 INC .3512 V1 30.266
RP 234.71 LAP .24 LOP 221.82 VP 20.997 GAP 6.46 AZP 90.26 TAL 22.54 TAP 159.26 RCA 144.98 APO 239.68 V2 23.424
RC 203.699 GL 2.89 GP 6.45 ZAL 48.02 ZAP 150.19 ETS 167.12 ZAE 166.98 ETE 33.50 ZAC 96.76 ETC 255.74 CLP 150.83

PLANETOCENTRIC CONIC

C3 16.354 VHL 4.044 DLA 19.67 RAL 136.39 RAD 6567.7 VEL 11.736 PTH 2.07 VHP 5.113 DPA 1.90 RAP 194.73 ECC 1.2691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 56 53	2831.47	-28.27	84.12	1.32	91.66	12 44 4	2231.5	-27.74	75.50
90.00	5 30 27	4147.39	-1.66	169.05	354.87	61.73	6 39 34	3547.4	-5.43	162.39
100.00	13 30 38	2529.16	-29.72	61.81	1.25	93.33	14 12 47	1929.2	-28.95	53.09
100.00	6 39 23	3924.94	-.39	151.99	354.16	60.11	7 44 48	3324.9	-4.36	145.46
110.00	15 5 34	2232.11	-33.41	38.83	.83	97.70	15 42 47	1632.1	-31.98	29.89
110.00	7 20 56	3794.75	2.75	140.16	352.20	55.91	8 24 10	3194.8	-1.74	133.95

DIFFERENTIAL CORRECTIONS
TDE -.0013 TRA -.2185 TC3 2.7743 BAU .6195
RDE -.3768 RRA .0240 RC3 .5761 FAU .20564
FDE .8541 FRA-2.0737 FC-10.8861 BSP 7818
BDE .3768 BRA .2198 BC3 2.8335 FSP 2615

MID-COURSE EXECUTION ACCURACY
SGT 2267.9 SGR 709.5 SG3 813.8
RRT .6430 RRF -.7274 RTF -.8770
SGB 2376.3 R23 -.1704 R13 -.8863
SG1 2315.9 SG2 532.2 THA 12.02

ORBIT DETERMINATION ACCURACY
ST 119.4 SR 534.2 SS 685.9
CRT .0132 CRS .7957 CST -.3902
LSA 827.5 MSA 279.1 SSA 86.0
EL1 534.2 EL2 119.4 ALF 89.82

LAUNCH DATE DEC 17 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 450.799 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.333 GAL 4.45 AZL 89.69 HCA 137.70 SMA 191.77 ECC .24434 INC .3107 V1 30.266
RP 234.35 LAP .21 LOP 222.80 VP 20.990 GAP 6.01 AZP 90.23 TAL 22.95 TAP 160.65 RCA 144.92 APO 238.63 V2 23.461
RC 205.837 GL 2.56 GP 6.73 ZAL 47.42 ZAP 149.06 ETS 167.14 ZAE 167.71 ETE 37.75 ZAC 97.01 ETC 255.73 CLP 149.73

PLANETOCENTRIC CONIC

C3 16.299 VHL 4.037 DLA 19.52 RAL 135.69 RAD 6567.7 VEL 11.734 PTH 2.07 VHP 4.996 DPA 2.20 RAP 194.75 ECC 1.2682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 55 45	2824.58	-28.26	83.62	.50	91.91	12 42 49	2224.6	-27.69	75.00
90.00	5 26 1	4152.75	-1.49	169.35	354.08	61.72	6 35 14	3552.7	-5.26	162.69
100.00	13 29 20	2522.82	-29.70	61.34	.42	93.57	14 11 22	1922.8	-28.89	52.63
100.00	6 35 8	3929.74	-.23	152.25	353.38	60.11	7 40 37	3329.7	-4.20	145.72
110.00	15 3 57	2226.78	-33.36	38.43	359.99	97.94	15 41 4	1626.8	-31.90	29.50
110.00	7 17 0	3798.54	2.89	140.36	351.43	55.92	8 20 18	3198.5	-1.60	134.15

DIFFERENTIAL CORRECTIONS
TDE -.0007 TRA -.2082 TC3 2.7510 BAU .6146
RDE -.3728 RRA .0386 RC3 .6223 FAU .21455
FDE .8747 FRA-2.2399 FC-11.3960 BSP 7875
BDE .3728 BRA .2117 BC3 2.8205 FSP 2763

MID-COURSE EXECUTION ACCURACY
SGT 2243.2 SGR 731.9 SG3 853.5
RRT .6689 RRF -.7573 RTF -.8747
SGB 2359.6 R23 -.1848 R13 -.8858
SG1 2299.2 SG2 530.8 THA 13.02

ORBIT DETERMINATION ACCURACY
ST 115.3 SR 529.6 SS 701.5
CRT -.0020 CRS .7885 CST -.4034
LSA 835.9 MSA 282.8 SSA 84.4
EL1 529.6 EL2 115.3 ALF 90.03

LAUNCH DATE DEC 17 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 454.469 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.305 GAL 4.49 AZL 89.73 HCA 138.69 SMA 191.25 ECC .24259 INC .2686 V1 30.266
RP 233.98 LAP .18 LOP 223.79 VP 20.987 GAP 5.56 AZP 90.20 TAL 23.34 TAP 162.03 RCA 144.85 APO 237.64 V2 23.498
RC 207.958 GL 2.21 GP 7.03 ZAL 46.85 ZAP 147.91 ETS 167.16 ZAE 168.38 ETE 42.69 ZAC 97.27 ETC 255.73 CLP 148.61

PLANETOCENTRIC CONIC

C3 16.249 VHL 4.031 DLA 19.35 RAL 135.02 RAD 6567.7 VEL 11.732 PTH 2.07 VHP 4.882 DPA 2.52 RAP 194.75 ECC 1.2674

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 54 59	2816.79	-28.24	83.05	359.71	92.20	12 41 56	2216.8	-27.63	74.44
90.00	5 21 27	4159.15	-1.28	169.70	353.32	61.71	6 30 46	3559.1	-5.05	163.05
100.00	13 28 22	2515.66	-29.67	60.81	359.62	93.85	14 10 18	1915.7	-28.82	52.11
100.00	6 30 45	3935.51	-.03	152.57	352.62	60.11	7 36 20	3335.5	-4.01	146.04
110.00	15 2 37	2220.79	-33.30	37.97	359.17	98.20	15 39 38	1620.8	-31.81	29.06
110.00	7 12 59	3803.14	3.07	140.60	350.68	55.94	8 16 22	3203.1	-1.42	134.39

DIFFERENTIAL CORRECTIONS
TDE .0059 TRA -.1949 TC3 2.7332 BAU .6115
RDE -.3684 RRA .0543 RC3 .6722 FAU .22400
FDE .8884 FRA-2.4185 FC-11.9347 BSP 7795
BDE .3684 BRA .2023 BC3 2.8147 FSP 2907

MID-COURSE EXECUTION ACCURACY
SGT 2223.0 SGR 758.0 SG3 895.6
RRT .6918 RRF -.7857 RTF -.8732
SGB 2348.7 R23 -.2004 R13 -.8864
SG1 2287.7 SG2 531.9 THA 14.05

ORBIT DETERMINATION ACCURACY
ST 110.4 SR 524.5 SS 714.9
CRT -.0941 CRS .7793 CST -.4686
LSA 842.5 MSA 285.7 SSA 83.0
EL1 524.6 EL2 109.9 ALF 91.19

LAUNCH DATE DEC 17 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 458.154 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.278 GAL 4.54 AZL 89.78 HCA 139.68 SMA 190.75 ECC .24095 INC .2246 V1 30.266
RP 233.62 LAP .15 LOP 224.78 VP 20.986 GAP 5.12 AZP 90.17 TAL 23.71 TAP 163.39 RCA 144.79 APO 236.71 V2 23.536
RC 210.060 GL 1.85 GP 7.35 ZAL 46.31 ZAP 146.72 ETS 167.18 ZAE 168.97 ETE 48.40 ZAC 97.54 ETC 255.72 CLP 147.45

PLANETOCENTRIC CONIC

C3 16.204 VHL 4.025 DLA 19.15 RAL 134.38 RAD 6567.6 VEL 11.730 PTH 2.07 VHP 4.772 DPA 2.88 RAP 194.73 ECC 1.2667

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 54 35	2808.07	-28.21	82.41	358.94	92.52	12 41 24	2208.1	-27.57	73.81
90.00	5 16 43	4166.59	-1.04	170.12	352.58	61.70	6 26 9	3566.6	-4.82	163.47
100.00	13 27 45	2507.65	-29.63	60.22	358.84	94.16	14 9 33	1907.6	-28.74	51.53
100.00	6 26 14	3942.25	.20	152.94	351.89	60.11	7 31 56	3342.2	-3.78	146.41
110.00	15 1 35	2214.10	-33.23	37.46	358.37	98.50	15 38 29	1614.1	-31.70	28.56
110.00	7 8 54	3808.57	3.28	140.88	349.97	55.96	8 12 22	3208.6	-1.21	134.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0115 TRA -.1854 TC3 2.7051 BAU .6067 SGT 2195.7 SGR 788.0 SG3 939.1 ST 107.5 SR 519.3 SS 728.1
RDE -.3639 RRA .0710 RC3 .7255 FAU .23376 RRT .7130 RRF -.8122 RTF -.8708 CRT -.1796 CRS .7708 CST -.5262
FDE .9003 FRA-2.6036 FC-12.4891 BSP 7744 SGB 2332.8 R23 -.2168 R13 -.8864 LSA 849.3 MSA 288.6 SSA 81.6
BDE .3641 BRA .1985 BC3 2.8007 FSP 3059 SG1 2270.8 SG2 534.2 THA 15.22 EL1 519.7 EL2 105.7 ALF 92.22

LAUNCH DATE DEC 17 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 461.856 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.252 GAL 4.58 AZL 89.82 HCA 140.68 SMA 190.29 ECC .23940 INC .1787 V1 30.266
RP 233.25 LAP .11 LOP 225.77 VP 20.988 GAP 4.68 AZP 90.14 TAL 24.06 TAP 164.74 RCA 144.73 APO 235.84 V2 23.574
RC 212.144 GL 1.48 GP 7.68 ZAL 45.80 ZAP 145.50 ETS 167.20 ZAE 169.44 ETE 54.92 ZAC 97.82 ETC 255.71 CLP 146.26

PLANETOCENTRIC CONIC

C3 16.163 VHL 4.020 DLA 18.93 RAL 133.76 RAD 6567.6 VEL 11.728 PTH 2.07 VHP 4.666 DPA 3.26 RAP 194.69 ECC 1.2660

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 54 34	2798.42	-28.18	81.71	358.19	92.87	12 41 12	2198.4	-27.49	73.11
90.00	5 11 50	4175.08	-.77	170.59	351.86	61.69	6 21 25	3575.1	-4.54	163.95
100.00	13 27 29	2498.78	-29.58	59.56	358.08	94.50	14 9 8	1898.8	-28.64	50.89
100.00	6 21 36	3949.96	.46	153.36	351.18	60.11	7 27 26	3350.0	-3.52	146.84
110.00	15 0 51	2206.69	-33.16	36.89	357.59	98.83	15 37 37	1606.7	-31.59	28.02
110.00	7 4 44	3814.81	3.51	141.21	349.27	55.98	8 8 18	3214.8	-.98	135.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0189 TRA -.1783 TC3 2.6685 BAU .6009 SGT 2162.5 SGR 821.9 SG3 983.7 ST 106.6 SR 513.8 SS 739.9
RDE -.3592 RRA .0889 RC3 .7822 FAU .24374 RRT .7313 RRF -.8366 RTF -.8675 CRT -.2881 CRS .7621 CST -.5946
FDE .9074 FRA-2.7963 FC-13.0558 BSP 7681 SGB 2313.4 R23 -.2344 R13 -.8863 LSA 855.3 MSA 291.4 SSA 80.3
BDE .3597 BRA .1992 BC3 2.7807 FSP 3219 SG1 2249.8 SG2 538.9 THA 16.51 EL1 514.8 EL2 101.9 ALF 93.56

LAUNCH DATE DEC 17 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 465.574 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.228 GAL 4.62 AZL 89.87 HCA 141.67 SMA 189.85 ECC .23794 INC .1305 V1 30.266
RP 232.88 LAP .08 LOP 226.77 VP 20.993 GAP 4.26 AZP 90.10 TAL 24.40 TAP 166.07 RCA 144.68 APO 235.02 V2 23.612
RC 214.210 GL 1.08 GP 8.03 ZAL 45.33 ZAP 144.24 ETS 167.21 ZAE 169.77 ETE 62.20 ZAC 98.12 ETC 255.71 CLP 145.04

PLANETOCENTRIC CONIC

C3 16.125 VHL 4.016 DLA 18.67 RAL 133.17 RAD 6567.6 VEL 11.726 PTH 2.07 VHP 4.563 DPA 3.67 RAP 194.63 ECC 1.2654

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 54 54	2787.82	-28.14	80.94	357.45	93.25	12 41 22	2187.8	-27.40	72.35
90.00	5 6 48	4184.62	-.46	171.12	351.17	61.69	6 16 32	3584.6	-4.24	164.48
100.00	13 27 33	2489.03	-29.53	58.84	357.34	94.88	14 9 2	1889.0	-28.54	50.18
100.00	6 16 49	3958.64	.75	153.84	350.50	60.12	7 22 48	3358.6	-3.23	147.31
110.00	15 0 24	2198.54	-33.07	36.27	356.83	99.18	15 37 3	1598.5	-31.45	27.42
110.00	7 0 28	3821.89	3.78	141.58	348.61	56.00	8 4 10	3221.9	-.70	135.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0272 TRA -.1730 TC3 2.6271 BAU .5948 SGT 2126.3 SGR 860.5 SG3 1030.3 ST 107.8 SR 508.1 SS 750.9
RDE -.3541 RRA .1081 RC3 .8433 FAU .25418 RRT .7471 RRF -.8589 RTF -.8636 CRT -.4040 CRS .7528 CST -.6595
FDE .9094 FRA-2.9987 FC-13.6466 BSP 7599 SGB 2293.8 R23 -.2522 R13 -.8863 LSA 860.7 MSA 294.2 SSA 78.9
BDE .3552 BRA .2040 BC3 2.7592 FSP 3381 SG1 2227.9 SG2 545.9 THA 17.94 EL1 510.0 EL2 98.2 ALF 95.09

LAUNCH DATE DEC 17 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 469.306 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.205 GAL 4.65 AZL 89.92 HCA 142.67 SMA 189.44 ECC .23656 INC .0804 V1 30.266
RP 232.51 LAP .05 LOP 227.77 VP 21.000 GAP 3.84 AZP 90.06 TAL 24.72 TAP 167.39 RCA 144.62 APO 234.25 V2 23.650
RC 216.258 GL .67 GP 8.41 ZAL 44.88 ZAP 142.95 ETS 167.23 ZAE 169.93 ETE 70.09 ZAC 98.43 ETC 255.70 CLP 143.78

PLANETOCENTRIC CONIC

C3 16.090 VHL 4.011 DLA 18.39 RAL 132.61 RAD 6567.6 VEL 11.725 PTH 2.07 VHP 4.464 DPA 4.12 RAP 194.56 ECC 1.2648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 55 36	2776.25	-28.10	80.09	356.73	93.67	12 41 52	2176.2	-27.29	71.52
90.00	5 1 36	4195.20	-.12	171.71	350.50	61.68	6 11 31	3595.2	-3.90	165.08
100.00	13 27 58	2478.37	-29.46	58.06	356.61	95.29	14 9 16	1878.4	-28.42	49.41
100.00	6 11 55	3968.31	1.08	154.37	349.83	60.13	7 18 3	3368.3	-2.90	147.85
110.00	15 0 15	2189.63	-32.97	35.59	356.08	99.57	15 36 45	1589.6	-31.30	26.77
110.00	6 56 7	3829.82	4.09	141.99	347.96	56.03	7 59 56	3229.8	-.40	135.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0365 TRA -.1711 TC3 2.5769 BAU .5877 SGT 2084.0 SGR 903.6 SG3 1077.8 ST 111.9 SR 502.0 SS 760.8
RDE -.3488 RRA .1285 RC3 .9083 FAU .26480 RRT .7597 RRF -.8789 RTF -.8586 CRT -.5173 CRS .7439 CST -.7158
FDE .9065 FRA-3.2060 FC-14.2477 BSP 7517 SGB 2271.5 R23 -.2705 R13 -.8862 LSA 865.6 MSA 296.7 SSA 77.6
BDE .3507 BRA .2139 BC3 2.7323 FSP 3553 SG1 2202.4 SG2 556.0 THA 19.53 EL1 505.5 EL2 95.1 ALF 96.82

LAUNCH DATE DEC 17 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 473.054 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.184	GAL	4.69	AZL	89.97	HCA	143.68	SMA	189.05	ECC	.23526	INC	.0252	V1	30.266
RP	232.14	LAP	.02	LOP	228.78	VP	21.009	GAP	3.43	AZP	90.02	TAL	25.02	TAP	168.70	RCA	144.57	APO	233.52	V2	23.689
RC	218.287	GL	.23	GP	8.80	ZAL	44.47	ZAP	141.62	ETS	167.24	ZAE	169.87	ETE	78.33	ZAC	98.75	ETC	255.69	CLP	142.49

PLANETOCENTRIC CONIC

C3	16.058	VHL	4.007	DLA	18.08	RAL	132.07	RAD	6567.6	VEL	11.724	PTH	2.07	VHP	4.369	DPA	4.60	RAP	194.47	ECC	1.2643

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 56 39	2763.67	-28.04	79.18	356.03	94.13	12 42 43	2163.7	-27.17	70.62
90.00	4 56 14	4206.86	.26	172.36	349.85	61.68	6 6 21	3606.9	-3.53	165.73
100.00	13 28 43	2466.78	-29.39	57.21	355.90	95.73	14 9 50	1866.8	-28.28	48.58
100.00	6 6 51	3978.99	1.44	154.95	349.20	60.14	7 13 10	3379.0	-2.54	148.43
110.00	15 0 24	2179.91	-32.86	34.86	355.34	99.99	15 36 44	1579.9	-31.13	26.06
110.00	6 51 39	3838.62	4.42	142.46	347.34	56.07	7 55 38	3238.6	-.06	136.24

DIFFERENTIAL CORRECTIONS

TDE	.0465	TRA	-.1710	TC3	2.5196	BAU	.5802
RDE	-.3431	RRA	.1505	RC3	.9781	FAU	.27577
FDE	.8979	FRA	-3.4242	FC	-14.8676	BSP	7416
BDE	.3462	BRA	.2278	BC3	2.7028	FSP	3726

MID-COURSE EXECUTION ACCURACY

SGT	2036.7	SGR	952.1	SG3	1127.0		
RRT	.7695	RRF	-.8968	RTF	-.8526		
SGB	2248.3	R23	-.2883	R13	-.8865		
SG1	2175.0	SG2	569.4	THA	21.32		

ORBIT DETERMINATION ACCURACY

ST	118.5	SR	495.7	SS	770.2
CRT	-.6203	CRS	.7346	CST	-.7566
LSA	870.4	MSA	299.3	SSA	76.3
EL1	501.4	EL2	91.9	ALF	98.73

LAUNCH DATE DEC 17 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 476.815 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.163	GAL	4.72	AZL	90.03	HCA	144.69	SMA	188.68	ECC	.23403	INC	.0242	V1	30.266
RP	231.76	LAP	-.02	LOP	229.78	VP	21.021	GAP	3.03	AZP	89.98	TAL	25.30	TAP	169.99	RCA	144.52	APO	232.84	V2	23.728
RC	220.299	GL	-.23	GP	9.23	ZAL	44.08	ZAP	140.26	ETS	167.26	ZAE	169.59	ETE	86.56	ZAC	99.09	ETC	255.68	CLP	141.17

PLANETOCENTRIC CONIC

C3	16.028	VHL	4.003	DLA	17.74	RAL	131.55	RAD	6567.6	VEL	11.722	PTH	2.07	VHP	4.278	DPA	5.11	RAP	194.36	ECC	1.2638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 58 4	2750.07	-27.97	78.19	355.34	94.62	12 43 54	2150.1	-27.03	69.65
90.00	4 50 41	4219.62	.67	173.07	349.23	61.69	6 1 1	3619.6	-3.12	166.44
100.00	13 29 48	2454.22	-29.30	56.28	355.20	96.21	14 10 43	1854.2	-28.13	47.67
100.00	6 1 38	3990.70	1.84	155.60	348.58	60.16	7 8 8	3390.7	-2.14	149.08
110.00	15 0 51	2169.37	-32.73	34.06	354.61	100.45	15 37 0	1569.4	-30.95	25.30
110.00	6 47 4	3848.32	4.79	142.96	346.74	56.11	7 51 13	3248.3	.31	136.75

DIFFERENTIAL CORRECTIONS

TDE	.0578	TRA	-.1740	TC3	2.4545	BAU	.5723
RDE	-.3368	RRA	.1743	RC3	1.0529	FAU	.28696
FDE	.8811	FRA	-3.6496	FC	-15.4999	BSP	7309
BDE	.3417	BRA	.2462	BC3	2.6708	FSP	3905

MID-COURSE EXECUTION ACCURACY

SGT	1984.3	SGR	1005.7	SG3	1177.4		
RRT	.7759	RRF	-.9125	RTF	-.8452		
SGB	2224.7	R23	-.3053	R13	-.8870		
SG1	2145.9	SG2	586.7	THA	23.31		

ORBIT DETERMINATION ACCURACY

ST	128.3	SR	489.0	SS	778.4
CRT	-.7097	CRS	.7248	CST	-.7821
LSA	874.4	MSA	302.1	SSA	74.9
EL1	497.7	EL2	88.8	ALF	100.90

LAUNCH DATE DEC 17 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 480.590 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.144	GAL	4.75	AZL	90.09	HCA	145.70	SMA	188.34	ECC	.23288	INC	.0848	V1	30.266
RP	231.38	LAP	-.05	LOP	230.79	VP	21.035	GAP	2.63	AZP	89.93	TAL	25.56	TAP	171.26	RCA	144.48	APO	232.20	V2	23.768
RC	222.292	GL	-.71	GP	9.67	ZAL	43.73	ZAP	138.86	ETS	167.28	ZAE	169.09	ETE	94.44	ZAC	99.45	ETC	255.67	CLP	139.81

PLANETOCENTRIC CONIC

C3	16.000	VHL	4.000	DLA	17.37	RAL	131.06	RAD	6567.6	VEL	11.721	PTH	2.07	VHP	4.190	DPA	5.66	RAP	194.23	ECC	1.2633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 59 51	2735.40	-27.88	77.12	354.66	95.15	12 45 26	2135.4	-26.88	68.60
90.00	4 44 57	4233.50	1.12	173.85	348.63	61.70	5 55 31	3633.5	-2.67	167.22
100.00	13 31 15	2440.65	-29.20	55.29	354.51	96.72	14 11 55	1840.7	-27.96	46.70
100.00	5 56 14	4003.48	2.27	156.30	347.98	60.19	7 2 58	3403.5	-1.71	149.78
110.00	15 1 36	2157.95	-32.59	33.20	353.89	100.94	15 37 34	1557.9	-30.74	24.47
110.00	6 42 22	3858.95	5.19	143.52	346.17	56.17	7 46 41	3258.9	.71	137.30

DIFFERENTIAL CORRECTIONS

TDE	.0694	TRA	-.1801	TC3	2.3803	BAU	.5639
RDE	-.3299	RRA	.1997	RC3	1.1327	FAU	.29832
FDE	.8575	FRA	-3.8810	FC	-16.1416	BSP	7207
BDE	.3372	BRA	.2689	BC3	2.6361	FSP	4090

MID-COURSE EXECUTION ACCURACY

SGT	1925.9	SGR	1065.1	SG3	1228.6		
RRT	.7789	RRF	-.9263	RTF	-.8360		
SGB	2200.8	R23	-.3207	R13	-.8880		
SG1	2115.1	SG2	608.3	THA	25.57		

ORBIT DETERMINATION ACCURACY

ST	140.5	SR	481.9	SS	785.9
CRT	-.7792	CRS	.7152	CST	-.7928
LSA	878.1	MSA	305.0	SSA	73.4
EL1	494.5	EL2	85.8	ALF	103.20

LAUNCH DATE DEC 17 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 484.378 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.126	GAL	4.77	AZL	90.15	HCA	146.71	SMA	188.02	ECC	.23178	INC	.1475	V1	30.266
RP	231.01	LAP	-.08	LOP	231.81	VP	21.051	GAP	2.24	AZP	89.88	TAL	25.81	TAP	172.52	RCA	144.44	APO	231.60	V2	23.807
RC	224.266	GL	-1.22	GP	10.15	ZAL	43.40	ZAP	137.42	ETS	167.30	ZAE	168.37	ETE	101.69	ZAC	99.84	ETC	255.66	CLP	138.42

PLANETOCENTRIC CONIC

C3	15.974	VHL	3.997	DLA	16.96	RAL	130.58	RAD	6567.6	VEL	11.720	PTH	2.06	VHP	4.106	DPA	6.25	RAP	194.09	ECC	1.2629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 1 59	2719.62	-27.78	75.98	353.99	95.71	12 47 19	2119.6	-26.70	67.48
90.00	4 39 2	4248.54	1.61	174.69	348.04	61.72	5 49 50	3648.5	-2.19	168.06
100.00	13 33 2	2426.03	-29.07	54.22	353.82	97.27	14 13 28	1826.0	-27.76	45.66
100.00	5 50 40	4017.37	2.74	157.06	347.41	60.22	6 57 38	3417.4	-1.24	150.54
110.00	15 2 39	2145.61	-32.43	32.28	353.18	101.46	15 38 25	1545.6	-30.51	23.59
110.00	6 37 32	3870.56	5.63	144.13	345.62	56.23	7 42 3	3270.6	1.16	137.91

DIFFERENTIAL CORRECTIONS

TDE	.0818	TRA	-.1896	TC3	2.2973	BAU	.5553
RDE	-.3225	RRA	.2270	RC3	1.2183	FAU	.30984
FDE	.8251	FRA	-4.1187	FC	-16.7922	BSP	7106
BDE	.3327	BRA	.2958	BC3	2.6003	FSP	4279

MID-COURSE EXECUTION ACCURACY

SGT	1861.9	SGR	1130.4	SG3	1280.6		
RRT	.7780	RRF	-.9382	RTF	-.8246		
SGB	2178.2	R23	-.3336	R13	-.8897		
SG1	2083.7	SG2	634.6	THA	28.12		

ORBIT DETERMINATION ACCURACY

ST	155.1	SR	474.3	SS	792.6
CRT	-.8334	CRS	.7055	CST	-.7920
LSA	881.6	MSA	308.1	SSA	71.8
EL1	492.1	EL2	82.6	ALF	105.70

LAUNCH DATE DEC 17 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 488.180 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.109	GAL	4.80	AZL	90.21	HCA	147.73	SMA	187.72	ECC	.23075	INC	.2131	V1	30.266
RP	230.62	LAP	-.11	LOP	232.83	VP	21.070	GAP	1.86	AZP	89.82	TAL	26.04	TAP	173.76	RCA	144.40	APO	231.03	V2	23.847
RC	226.222	GL	-1.77	GP	10.66	ZAL	43.11	ZAP	135.94	ETS	167.33	ZAE	167.44	ETE	108.17	ZAC	100.24	ETC	255.65	CLP	136.99

PLANETOCENTRIC CONIC

C3	15.950	VHL	3.994	DLA	16.52	RAL	130.13	RAD	6567.6	VEL	11.719	PTH	2.06	VHP	4.027	DPA	6.88	RAP	193.93	ECC	1.2625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 4 30	2702.67	-27.66	74.75	353.32	96.32	12 49 33	2102.7	-26.50	66.28
90.00	4 32 53	4264.82	2.13	175.60	347.48	61.76	5 43 58	3664.8	-1.66	168.97
100.00	13 35 10	2410.30	-28.93	53.07	353.14	97.86	14 15 20	1810.3	-27.54	44.54
100.00	5 44 54	4032.42	3.25	157.89	346.86	60.27	6 52 7	3432.4	-.73	151.37
110.00	15 4 1	2132.29	-32.24	31.28	352.47	102.03	15 39 33	1532.3	-30.25	22.63
110.00	6 32 32	3883.19	6.11	144.80	345.08	56.30	7 37 16	3283.2	1.64	138.57

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY					
TDE	.0949	TRA	-.2023	TC3	2.2067	BAU	.5473	SGT 1793.6	SGR 1202.3	SG3 1333.5	ST	172.0	SR	466.1	SS	798.5
RDE	-.3141	RRA	.2564	RC3	1.3102	FAU	.32156	RRT .7731	RRF -.9484	RTF -.8107	CRT	-.8750	CRS	.6954	CST	-.7813
FDE	.7018	FRA	-4.3623	FC	-17.4531	BSP	6994	SGB 2159.3	R23 -.3427	R13 -.8928	LSA	884.4	MSA	311.8	SSA	70.1
BDE	.3281	BRA	.3266	BC3	2.5663	FSP	4466	SG1 2054.0	SG2 665.9	THA 31.01	EL1	490.5	EL2	79.1	ALF	108.39

LAUNCH DATE DEC 17 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 491.994 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.092	GAL	4.82	AZL	90.28	HCA	148.75	SMA	187.44	ECC	.22978	INC	.2833	V1	30.266
RP	230.24	LAP	-.15	LOP	233.85	VP	21.090	GAP	1.49	AZP	89.76	TAL	26.25	TAP	174.99	RCA	144.37	APO	230.50	V2	23.887
RC	228.159	GL	-2.34	GP	11.20	ZAL	42.85	ZAP	134.42	ETS	167.36	ZAE	166.34	ETE	113.83	ZAC	100.67	ETC	255.64	CLP	135.52

PLANETOCENTRIC CONIC

C3	15.929	VHL	3.991	DLA	16.03	RAL	129.69	RAD	6567.6	VEL	11.718	PTH	2.06	VHP	3.951	DPA	7.56	RAP	193.76	ECC	1.2621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 7 24	2684.50	-27.52	73.44	352.66	96.96	12 52 8	2084.5	-26.27	65.00
90.00	4 26 30	4282.37	2.70	176.58	346.93	61.80	5 37 53	3682.4	-1.10	169.95
100.00	13 37 40	2393.40	-28.77	51.84	352.47	98.49	14 17 33	1793.4	-27.30	43.35
100.00	5 38 56	4048.70	3.80	158.78	346.32	60.33	6 46 25	3448.7	-.18	152.26
110.00	15 5 42	2117.95	-32.03	30.22	351.76	102.62	15 41 0	1517.9	-29.96	21.61
110.00	6 27 23	3896.92	6.63	145.53	344.57	56.39	7 32 20	3296.9	2.16	139.28

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY					
TDE	.1088	TRA	-.2183	TC3	2.1062	BAU	.5395	SGT 1719.6	SGR 1280.7	SG3 1386.6	ST	191.1	SR	457.2	SS	803.9
RDE	-.3046	RRA	.2882	RC3	1.4083	FAU	.33325	RRT .7634	RRF -.9572	RTF -.7934	CRT	-.9070	CRS	.6850	CST	-.7627
FDE	.7266	FRA	-4.6116	FC	-18.1120	BSP	6908	SGB 2144.1	R23 -.3470	R13 -.8974	LSA	887.2	MSA	316.4	SSA	68.1
BDE	.3235	BRA	.3616	BC3	2.5336	FSP	4660	SG1 2025.9	SG2 702.2	THA 34.31	EL1	489.8	EL2	75.1	ALF	111.28

LAUNCH DATE DEC 17 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 495.821 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.077	GAL	4.83	AZL	90.36	HCA	149.77	SMA	187.17	ECC	.22886	INC	.3570	V1	30.266
RP	229.86	LAP	-.18	LOP	234.87	VP	21.112	GAP	1.12	AZP	89.69	TAL	26.44	TAP	176.21	RCA	144.34	APO	230.01	V2	23.927
RC	230.076	GL	-2.95	GP	11.78	ZAL	42.63	ZAP	132.86	ETS	167.40	ZAE	165.08	ETE	118.71	ZAC	101.13	ETC	255.63	CLP	134.01

PLANETOCENTRIC CONIC

C3	15.910	VHL	3.989	DLA	15.51	RAL	129.27	RAD	6567.6	VEL	11.717	PTH	2.06	VHP	3.879	DPA	8.28	RAP	193.57	ECC	1.2618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 10 41	2665.03	-27.35	72.04	352.00	97.64	12 55 6	2065.0	-26.01	63.63
90.00	4 19 53	4301.30	3.30	177.64	346.41	61.86	5 31 34	3701.3	-.49	171.00
100.00	13 40 32	2375.26	-28.58	50.52	351.80	99.15	14 20 7	1775.3	-27.02	42.07
100.00	5 32 43	4066.29	4.39	159.76	345.81	60.40	6 40 29	3466.3	.42	153.22
110.00	15 7 42	2102.49	-31.80	29.07	351.06	103.26	15 42 45	1502.5	-29.65	20.52
110.00	6 22 1	3911.83	7.19	146.32	344.08	56.49	7 27 13	3311.8	2.73	140.06

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY					
TDE	.1224	TRA	-.2381	TC3	1.9966	BAU	.5329	SGT 1641.3	SGR 1366.6	SG3 1440.1	ST	211.1	SR	447.7	SS	809.5
RDE	-.2940	RRA	.3225	RC3	1.5137	FAU	.34500	RRT .7483	RRF -.9646	RTF -.7718	CRT	-.9301	CRS	.6750	CST	-.7390
FDE	.6589	FRA	-4.8660	FC	-18.7734	BSP	6832	SGB 2135.7	R23 -.3448	R13 -.9040	LSA	890.1	MSA	321.8	SSA	66.0
BDE	.3184	BRA	.4009	BC3	2.5055	FSP	4850	SG1 2002.3	SG2 743.1	THA 38.09	EL1	489.9	EL2	70.9	ALF	114.22

LAUNCH DATE DEC 17 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 499.659 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.063	GAL	4.85	AZL	90.44	HCA	150.80	SMA	186.93	ECC	.22799	INC	.4366	V1	30.266
RP	229.47	LAP	-.21	LOP	235.90	VP	21.135	GAP	.76	AZP	89.62	TAL	26.61	TAP	177.41	RCA	144.31	APO	229.54	V2	23.968
RC	231.973	GL	-3.61	GP	12.39	ZAL	42.44	ZAP	131.26	ETS	167.45	ZAE	163.68	ETE	122.89	ZAC	101.61	ETC	255.62	CLP	132.47

PLANETOCENTRIC CONIC

C3	15.893	VHL	3.987	DLA	14.93	RAL	128.87	RAD	6567.6	VEL	11.717	PTH	2.06	VHP	3.812	DPA	9.05	RAP	193.37	ECC	1.2616

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 14 22	2644.17	-27.15	70.55	351.34	98.36	12 58 26	2044.2	-25.71	62.18
90.00	4 12 58	4321.68	3.96	178.78	345.90	61.94	5 25 0	3721.7	.17	172.14
100.00	13 43 47	2355.80	-28.36	49.12	351.12	99.86	14 23 2	1755.8	-26.71	40.71
100.00	5 26 14	4085.29	5.03	160.81	345.31	60.50	6 34 19	3485.3	1.06	154.27
110.00	15 10 3	2085.86	-31.53	27.85	350.35	103.94	15 44 49	1485.9	-29.29	19.36
110.00	6 16 27	3927.99	7.79	147.17	343.61	56.61	7 21 55	3328.0	3.35	140.91

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY					
TDE	.1363	TRA	-.2617	TC3	1.8767	BAU	.5276	SGT 1558.4	SGR 1459.6	SG3 1492.6	ST	232.4	SR	437.7	SS	815.6
RDE	-.2821	RRA	.3595	RC3	1.6258	FAU	.35647	RRT .7263	RRF -.9708	RTF -.7443	CRT	-.9475	CRS	.6662	CST	-.7108
FDE	.5792	FRA	-5.1220	FC	-19.4178	BSP	6793	SGB 2135.2	R23 -.3346	R13 -.9131	LSA	893.9	MSA	328.1	SSA	63.6
BDE	.3133	BRA	.4446	BC3	2.4829	FSP	5046	SG1 1984.5	SG2 787.9	THA 42.42	EL1	491.1	EL2	66.2	ALF	117.24

LAUNCH DATE DEC 17 1964 FLIGHT TIME 228.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 503.510 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.050	GAL	4.86	AZL	90.52	HCA	151.83	SMA	186.70	ECC	.22717	INC	.5210	V1	30.266
RP	229.09	LAP	-.25	LOP	236.93	VP	21.161	GAP	.41	AZP	89.54	TAL	26.76	TAP	178.59	RCA	144.28	APO	229.11	V2	24.009
RC	233.848	GL	-4.31	GP	13.05	ZAL	42.28	ZAP	129.62	ETS	167.51	ZAE	162.15	ETE	126.47	ZAC	102.13	ETC	255.61	CLP	130.89

PLANETOCENTRIC CONIC

C3	15.880	VHL	3.985	DLA	14.30	RAL	128.47	RAD	6567.6	VEL	11.716	PTH	2.06	VHP	3.749	DPA	9.87	RAP	193.16	ECC	1.2613

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 18 27	2621.84	-26.92	68.96	350.68	99.13	13 2 9	2021.8	-25.38	60.63
90.00	4 5 45	4343.65	4.66	180.01	345.42	62.04	5 18 9	3743.6	.88	173.36
100.00	13 47 25	2334.92	-28.11	47.62	350.45	100.61	14 26 20	1734.9	-26.36	39.26
100.00	5 19 28	4105.80	5.72	161.94	344.84	60.61	6 27 54	3505.8	1.76	155.39
110.00	15 12 45	2067.95	-31.23	26.54	349.65	104.66	15 47 12	1468.0	-28.90	18.11
110.00	6 10 38	3945.53	8.45	148.11	343.16	56.75	7 16 24	3345.5	4.02	141.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1502	TRA	-.2894	TC3	1.7479	BAU	.5246	SGT	1473.6	SGR	1561.3	SG3	1545.1	ST	254.9	SR	426.6	SS	822.2
RDE	-.2681	RRA	.3995	RC3	1.7465	FAU	.36794	RRT	.6960	RRF	-.9761	RTF	-.7094	CRT	-.9602	CRS	.6578	CST	-.6765
FDE	.4806	FRA	-5.3803	FC	-20.0589	BSP	6776	SGB	2146.9	R23	-.3147	R13	-.9249	LSA	897.9	MSA	336.2	SSA	60.9
BDE	.3073	BRA	.4933	BC3	2.4709	FSP	5229	SG1	1977.7	SG2	835.3	THA	47.37	EL1	493.1	EL2	61.6	ALF	120.36

LAUNCH DATE DEC 17 1964 FLIGHT TIME 230.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 507.374 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.038	GAL	4.87	AZL	90.61	HCA	152.86	SMA	186.48	ECC	.22640	INC	.6115	V1	30.266
RP	228.70	LAP	-.28	LOP	237.96	VP	21.188	GAP	.07	AZP	89.46	TAL	26.90	TAP	179.76	RCA	144.26	APO	228.70	V2	24.049
RC	235.703	GL	-5.06	GP	13.75	ZAL	42.16	ZAP	127.95	ETS	167.58	ZAE	160.52	ETE	129.52	ZAC	102.69	ETC	255.60	CLP	129.28

PLANETOCENTRIC CONIC

C3	15.872	VHL	3.984	DLA	13.62	RAL	128.09	RAD	6567.6	VEL	11.716	PTH	2.06	VHP	3.690	DPA	10.75	RAP	192.94	ECC	1.2612

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 22 59	2597.91	-26.65	67.26	350.02	99.94	13 6 17	1997.9	-25.01	58.97
90.00	3 58 12	4367.33	5.41	181.34	344.95	62.16	5 10 59	3767.3	1.65	174.69
100.00	13 51 29	2312.50	-27.82	46.02	349.77	101.41	14 30 1	1712.5	-25.96	37.71
100.00	5 12 23	4127.97	6.46	163.17	344.38	60.75	6 21 11	3528.0	2.51	156.61
110.00	15 15 48	2048.67	-30.89	25.14	348.93	105.43	15 49 57	1448.7	-28.46	16.78
110.00	6 4 33	3964.57	9.16	149.13	342.73	56.92	7 10 38	3364.6	4.74	142.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1635	TRA	-.3211	TC3	1.6080	BAU	.5241	SGT	1386.6	SGR	1671.3	SG3	1596.0	ST	277.7	SR	415.0	SS	830.8
RDE	-.2523	RRA	.4428	RC3	1.8751	FAU	.37900	RRT	.6548	RRF	-.9804	RTF	-.6643	CRT	-.9685	CRS	.6521	CST	-.6381
FDE	.3659	FRA	-5.6394	FC	-20.6728	BSP	6822	SGB	2171.6	R23	-.2837	R13	-.9389	LSA	903.7	MSA	345.6	SSA	57.8
BDE	.3006	BRA	.5470	BC3	2.4701	FSP	5413	SG1	1984.1	SG2	882.7	THA	53.00	EL1	496.0	EL2	57.9	ALF	123.46

LAUNCH DATE DEC 17 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 511.248 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.026	GAL	4.88	AZL	90.71	HCA	153.90	SMA	186.28	ECC	.22567	INC	.7092	V1	30.266
RP	228.31	LAP	-.31	LOP	239.00	VP	21.216	GAP	-.27	AZP	89.36	TAL	27.02	TAP	180.92	RCA	144.24	APO	228.32	V2	24.090
RC	237.537	GL	-5.87	GP	14.50	ZAL	42.08	ZAP	126.23	ETS	167.66	ZAE	158.78	ETE	132.13	ZAC	103.29	ETC	255.58	CLP	127.62

PLANETOCENTRIC CONIC

C3	15.869	VHL	3.984	DLA	12.88	RAL	127.72	RAD	6567.6	VEL	11.716	PTH	2.06	VHP	3.637	DPA	11.68	RAP	192.72	ECC	1.2612

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 27 57	2572.29	-26.34	65.45	349.35	100.80	13 10 49	1972.3	-24.58	57.22
90.00	3 50 15	4392.88	6.22	182.78	344.51	62.32	5 3 28	3792.9	2.47	176.11
100.00	13 55 58	2288.45	-27.48	44.31	349.09	102.25	14 34 6	1688.5	-25.52	36.06
100.00	5 4 56	4151.95	7.25	164.51	343.95	60.92	6 14 8	3552.0	3.32	157.93
110.00	15 19 14	2027.92	-30.50	23.65	348.21	106.23	15 53 1	1427.9	-27.98	15.36
110.00	5 58 9	3985.25	9.93	150.24	342.33	57.12	7 4 35	3385.2	5.52	143.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1875	TRA	-.3458	TC3	1.4861	BAU	.5323	SGT	1317.2	SGR	1798.5	SG3	1653.8	ST	312.1	SR	399.2	SS	845.8
RDE	-.2298	RRA	.4937	RC3	2.0217	FAU	.39148	RRT	.6106	RRF	-.9842	RTF	-.6188	CRT	-.9702	CRS	.6411	CST	-.5447
FDE	.1889	FRA	-5.9397	FC	-21.3567	BSP	6710	SGB	2229.2	R23	-.2412	R13	-.9545	LSA	912.0	MSA	370.8	SSA	52.7
BDE	.2966	BRA	.6028	BC3	2.5092	FSP	5498	SG1	2028.3	SG2	924.9	THA	58.70	EL1	503.1	EL2	60.0	ALF	127.81

LAUNCH DATE DEC 17 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 515.133 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.015	GAL	4.88	AZL	90.82	HCA	154.94	SMA	186.10	ECC	.22498	INC	.8150	V1	30.266
RP	227.92	LAP	-.35	LOP	240.04	VP	21.247	GAP	-.60	AZP	89.26	TAL	27.12	TAP	182.07	RCA	144.23	APO	227.97	V2	24.132
RC	239.350	GL	-6.74	GP	15.31	ZAL	42.04	ZAP	124.47	ETS	167.76	ZAE	156.95	ETE	134.37	ZAC	103.94	ETC	255.57	CLP	125.93

PLANETOCENTRIC CONIC

C3	15.873	VHL	3.984	DLA	12.07	RAL	127.36	RAD	6567.6	VEL	11.716	PTH	2.06	VHP	3.588	DPA	12.68	RAP	192.49	ECC	1.2612

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 33 26	2544.74	-25.97	63.51	348.67	101.70	13 15 50	1944.7	-24.10	55.34
90.00	3 41 53	4420.53	7.10	184.35	344.09	62.51	4 55 33	3820.5	3.36	177.66
100.00	14 0 56	2262.55	-27.09	42.48	348.39	103.14	14 38 38	1662.5	-25.01	34.30
100.00	4 57 4	4177.96	8.11	165.96	343.54	61.13	6 6 42	3578.0	4.20	159.36
110.00	15 23 4	2005.50	-30.07	22.05	347.48	107.09	15 56 30	1405.5	-27.43	13.84
110.00	5 51 25	4007.77	10.76	151.45	341.95	57.36	6 58 12	3407.8	6.38	145.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1955	TRA	-.3900	TC3	1.3161	BAU	.5377	SGT	1227.9	SGR	1925.3	SG3	1698.0	ST	331.1	SR	388.5	SS	861.1
RDE	-.2094	RRA	.5437	RC3	2.1653	FAU	.40091	RRT	.5356	RRF	-.9871	RTF	-.5403	CRT	-.9664	CRS	.6501	CST	-.5129
FDE	.0469	FRA	-6.1821	FC	-21.8666	BSP	6966	SGB	2283.5	R23	-.1917	R13	-.9684	LSA	925.0	MSA	379.4	SSA	49.7
BDE	.2865	BRA	.6691	BC3	2.5339	FSP	5693	SG1	2069.8	SG2	964.6	THA	65.49	EL1	506.3	EL2	65.3	ALF	130.28

LAUNCH DATE DEC 17 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 519.028 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.006	GAL	4.89	AZL	90.93	HCA	155.99	SMA	185.93	ECC	.22433	INC	.9296	V1	30.266
RP	227.53	LAP	-.38	LOP	241.09	VP	21.278	GAP	-.92	AZP	89.15	TAL	27.21	TAP	183.19	RCA	144.22	APO	227.64	V2	24.173
RC	241.142	GL	-7.69	GP	16.18	ZAL	42.05	ZAP	122.68	ETS	167.88	ZAE	155.04	ETE	136.30	ZAC	104.63	ETC	255.55	CLP	124.21

PLANETOCENTRIC CONIC

C3	15.885	VHL	3.986	DLA	11.18	RAL	127.00	RAD	6567.6	VEL	11.716	PTH	2.06	VHP	3.544	DPA	13.74	RAP	192.27	ECC	1.2614

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 39 25	2515.11	-25.54	61.45	347.99	102.65	13 21 20	1915.1	-23.55	53.35
90.00	3 33 2	4450.50	8.03	186.05	343.70	62.76	4 47 12	3850.5	4.32	179.34
100.00	14 6 23	2234.65	-26.65	40.53	347.69	104.07	14 43 38	1634.6	-24.45	32.42
100.00	4 48 45	4206.20	9.03	167.55	343.16	61.38	5 58 51	3606.2	5.14	160.92
110.00	15 27 21	1981.27	-29.57	20.34	346.74	107.99	16 0 23	1381.3	-26.83	12.22
110.00	5 44 16	4032.34	11.65	152.79	341.59	57.64	6 51 28	3432.3	7.30	146.40

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2026	TRA	-.4385	TC3	1.1368	BAU	.5481	SGT	1148.4	SGR	2061.8	SG3	1738.6	ST	350.3	SR	378.7	SS	880.6
RDE	-.1857	RRA	.5978	RC3	2.3174	FAU	.40948	RRT	.4363	RRF	-.9895	RTF	-.4382	CRT	-.9566	CRS	.6671	CST	-.4773
FDE	-.1156	FRA	-6.4169	FC	-22.3169	BSP	7289	SGB	2360.0	R23	-.1374	R13	-.9800	LSA	942.4	MSA	389.1	SSA	46.4
BDE	.2748	BRA	.7414	BC3	2.5812	FSP	5877	SG1	2139.7	SG2	995.6	THA	72.41	EL1	510.3	EL2	75.7	ALF	132.67

LAUNCH DATE DEC 17 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 522.935 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	32.996	GAL	4.89	AZL	91.05	HCA	157.03	SMA	185.77	ECC	.22371	INC	1.0543	V1	30.266
RP	227.14	LAP	-.41	LOP	242.14	VP	21.311	GAP	-1.24	AZP	89.03	TAL	27.27	TAP	184.31	RCA	144.21	APO	227.33	V2	24.214
RC	242.914	GL	-8.72	GP	17.11	ZAL	42.11	ZAP	120.86	ETS	168.02	ZAE	153.04	ETE	137.96	ZAC	105.38	ETC	255.53	CLP	122.46

PLANETOCENTRIC CONIC

C3	15.908	VHL	3.989	DLA	10.20	RAL	126.64	RAD	6567.6	VEL	11.717	PTH	2.06	VHP	3.506	DPA	14.87	RAP	192.05	ECC	1.2618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 45 59	2483.21	-25.05	59.24	347.29	103.65	13 27 22	1883.2	-22.93	51.21
90.00	3 23 37	4483.08	9.04	187.91	343.34	63.05	4 38 20	3883.1	5.36	181.17
100.00	14 12 22	2204.56	-26.13	38.44	346.98	105.06	14 49 7	1604.6	-23.81	30.41
100.00	4 39 54	4236.96	10.03	169.29	342.81	61.69	5 50 31	3637.0	6.17	162.63
110.00	15 32 6	1955.07	-29.00	18.51	345.99	108.94	16 4 41	1355.1	-26.15	10.49
110.00	5 36 40	4059.22	12.63	154.26	341.27	57.97	6 44 19	3459.2	8.31	147.83

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2095	TRA	-.4902	TC3	.9507	BAU	.5649	SGT	1085.3	SGR	2210.2	SG3	1776.2	ST	370.4	SR	370.5	SS	907.2
RDE	-.1571	RRA	.6574	RC3	2.4799	FAU	.41735	RRT	.3110	RRF	-.9915	RTF	-.3106	CRT	-.9353	CRS	.6942	CST	-.4321
FDE	-.3084	FRA	-6.6493	FC	-22.7119	BSP	7673	SGB	2462.3	R23	-.0843	R13	-.9879	LSA	966.6	MSA	401.6	SSA	42.7
BDE	.2619	BRA	.8200	BC3	2.6559	FSP	6034	SG1	2242.7	SG2	1016.5	THA	79.04	EL1	515.4	EL2	94.3	ALF	134.99

LAUNCH DATE DEC 17 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 526.853 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	32.988	GAL	4.89	AZL	91.19	HCA	158.09	SMA	185.62	ECC	.22313	INC	1.1907	V1	30.266
RP	226.75	LAP	-.44	LOP	243.19	VP	21.345	GAP	-1.55	AZP	88.90	TAL	27.32	TAP	185.41	RCA	144.21	APO	227.04	V2	24.256
RC	244.666	GL	-9.85	GP	18.11	ZAL	42.23	ZAP	119.00	ETS	168.18	ZAE	150.96	ETE	139.40	ZAC	106.20	ETC	255.50	CLP	120.67

PLANETOCENTRIC CONIC

C3	15.947	VHL	3.993	DLA	9.13	RAL	126.28	RAD	6567.6	VEL	11.719	PTH	2.06	VHP	3.474	DPA	16.07	RAP	191.84	ECC	1.2624

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 53 8	2448.79	-24.48	56.88	346.58	104.70	13 33 57	1848.8	-22.22	48.94
90.00	3 13 34	4518.60	10.13	189.95	343.01	63.42	4 28 53	3918.6	6.48	183.17
100.00	14 18 57	2172.04	-25.54	36.21	346.26	106.09	14 55 9	1572.0	-23.09	28.27
100.00	4 30 27	4270.58	11.11	171.20	342.50	62.07	5 41 38	3670.6	7.29	164.50
110.00	15 37 21	1926.68	-28.36	16.55	345.23	109.93	16 9 28	1326.7	-25.38	8.64
110.00	5 28 32	4088.70	13.69	155.89	340.99	58.37	6 36 41	3488.7	9.41	149.41

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2147	TRA	-.5459	TC3	.7574	BAU	.5883	SGT	1044.1	SGR	2371.9	SG3	1810.2	ST	389.7	SR	366.7	SS	943.2
RDE	-.1228	RRA	.7232	RC3	2.6533	FAU	.42433	RRT	.1591	RRF	-.9932	RTF	-.1571	CRT	-.8968	CRS	.7342	CST	-.3829
FDE	-.5307	FRA	-6.8774	FC	-23.0361	BSP	8125	SGB	2591.5	R23	-.0379	R13	-.9925	LSA	1001.1	MSA	415.1	SSA	38.8
BDE	.2474	BRA	.9061	BC3	2.7593	FSP	6157	SG1	2379.1	SG2	1027.7	THA	85.07	EL1	521.2	EL2	121.3	ALF	136.94

LAUNCH DATE DEC 17 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 530.780 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	32.980	GAL	4.88	AZL	91.34	HCA	159.14	SMA	185.49	ECC	.22258	INC	1.3411	V1	30.266
RP	226.36	LAP	-.48	LOP	244.24	VP	21.380	GAP	-1.85	AZP	88.75	TAL	27.36	TAP	186.50	RCA	144.20	APO	226.78	V2	24.297
RC	246.398	GL	-11.08	GP	19.19	ZAL	42.41	ZAP	117.11	ETS	168.37	ZAE	148.81	ETE	140.66	ZAC	107.09	ETC	255.47	CLP	118.85

PLANETOCENTRIC CONIC

C3	16.004	VHL	4.001	DLA	7.95	RAL	125.91	RAD	6567.6	VEL	11.721	PTH	2.07	VHP	3.448	DPA	17.36	RAP	191.66	ECC	1.2634

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 0 59	2411.52	-23.81	54.36	345.87	105.80	13 41 11	1811.5	-21.41	46.50
90.00	3 2 48	4557.49	11.31	192.20	342.72	63.87	4 18 45	3957.5	7.71	185.38
100.00	14 26 10	2136.80	-24.85	33.81	345.53	107.17	15 1 46	1536.8	-22.26	25.97
100.00	4 20 18	4307.45	12.28	173.32	342.22	62.53	5 32 6	3707.4	8.50	166.56
110.00	15 43 9	1895.84	-27.63	14.45	344.46	110.98	16 14 45	1295.8	-24.52	6.65
110.00	5 19 48	4121.17	14.84	157.70	340.74	58.85	6 28 29	3521.2	10.60	151.16

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2167	TRA	-.6075	TC3	.5535	BAU	.6175	SGT	1031.6	SGR	2543.5	SG3	1836.0	ST	407.4	SR	370.7	SS	987.0
RDE	-.0831	RRA	.7941	RC3	2.8326	FAU	.42945	RRT	-.0160	RRF	-.9945	RTF	.0192	CRT	-.8396	CRS	.7853	CST	-.3399
FDE	-.7729	FRA	-7.0815	FC	-23.2309	BSP	8705	SGB	2744.7	R23	-.0002	R13	-.9945	LSA	1046.0	MSA	427.0	SSA	35.0
BDE	.2321	BRA	.9998	BC3	2.8862	FSP	6281	SG1	2543.5	SG2	1031.5	THA	90.45	EL1	528.5	EL2	155.2	ALF	138.21

LAUNCH DATE DEC 17 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 534.719 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.973 GAL 4.87 AZL 91.51 HCA 160.20 SMA 185.37 ECC .22206 INC 1.5067 V1 30.266
RP 225.97 LAP -.51 LOP 245.30 VP 21.417 GAP -2.15 AZP 88.58 TAL 27.37 TAP 187.57 RCA 144.21 APO 226.53 V2 24.339
RC 248.110 GL -12.44 GP 20.36 ZAL 42.66 ZAP 115.19 ETS 168.59 ZAE 146.58 ETE 141.75 ZAC 108.06 ETC 255.43 CLP 117.00

PLANETOCENTRIC CONIC

C3 16.086 VHL 4.011 DLA 6.65 RAL 125.53 RAD 6567.6 VEL 11.725 PTH 2.07 VHP 3.430 DPA 18.74 RAP 191.50 ECC 1.2647

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 9 35	2371.08	-23.03	51.65	345.14	106.94	13 49 6	1771.1	-20.50	43.89
90.00	2 51 10	4600.26	12.58	194.70	342.49	64.42	4 7 51	4000.3	9.03	187.82
100.00	14 34 5	2098.51	-24.06	31.24	344.79	108.30	15 9 4	1498.5	-21.33	23.51
100.00	4 9 21	4348.07	13.54	175.67	342.00	63.09	5 21 49	3748.1	9.83	168.85
110.00	15 49 35	1862.26	-26.79	12.20	343.68	112.07	16 20 37	1262.3	-23.55	4.53
110.00	5 10 21	4157.07	16.09	159.73	340.55	59.43	6 19 38	3557.1	11.92	153.11

DIFFERENTIAL CORRECTIONS
TDE .2161 TRA -.6732 TC3 .3444 BAU .6547
RDE -.0340 RRA .8739 RC3 3.0246 FAU .43361
FDE-1.0569 FRA-7.2837 FC-23.3364 BSP 9342
BDE .2187 BRA 1.1032 BC3 3.0441 FSP 6349

MID-COURSE EXECUTION ACCURACY
SGT 1053.1 SGR 2732.9 SG3 1858.0
RRT -.1952 RRF -.9956 RTF .1989
SGB 2928.7 R23 .0280 R13 -.9952
SG1 2741.9 SG2 1029.4 THA 95.01

ORBIT DETERMINATION ACCURACY
ST 423.9 SR 387.1 SS 1046.5
CRT -.7550 CRS .8432 CST -.2953
LSA 1109.5 MSA 439.0 SSA 31.1
EL1 538.1 EL2 199.9 ALF 138.44

LAUNCH DATE DEC 17 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 538.668 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.967 GAL 4.87 AZL 91.69 HCA 161.26 SMA 185.26 ECC .22157 INC 1.6914 V1 30.266
RP 225.58 LAP -.54 LOP 246.37 VP 21.454 GAP -2.44 AZP 88.40 TAL 27.37 TAP 188.63 RCA 144.21 APO 226.31 V2 24.381
RC 249.803 GL -13.94 GP 21.63 ZAL 43.00 ZAP 113.25 ETS 168.84 ZAE 144.29 ETE 142.69 ZAC 109.12 ETC 255.39 CLP 115.12

PLANETOCENTRIC CONIC

C3 16.200 VHL 4.025 DLA 5.20 RAL 125.14 RAD 6567.6 VEL 11.730 PTH 2.07 VHP 3.419 DPA 20.21 RAP 191.37 ECC 1.2666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 19 1	2327.03	-22.13	48.73	344.41	108.13	13 57 48	1727.0	-19.45	41.09
90.00	2 38 33	4647.53	13.95	197.49	342.31	65.11	3 56 0	4047.5	10.48	190.54
100.00	14 42 49	2056.76	-23.14	28.48	344.04	109.48	15 17 6	1456.8	-20.27	20.86
100.00	3 57 26	4393.04	14.91	178.31	341.84	63.79	5 10 39	3793.0	11.27	171.41
110.00	15 56 41	1825.59	-25.83	9.78	342.89	113.21	16 27 6	1225.6	-22.46	2.24
110.00	5 0 4	4196.96	17.46	162.01	340.42	60.14	6 10 1	3597.0	13.36	155.30

DIFFERENTIAL CORRECTIONS
TDE .2113 TRA -.7443 TC3 .1286 BAU .6983
RDE .0240 RRA .9614 RC3 3.2216 FAU .43554
FDE-1.3641 FRA-7.4582 FC-23.2752 BSP 10088
BDE .2127 BRA 1.2158 BC3 3.2242 FSP 6393

MID-COURSE EXECUTION ACCURACY
SGT 1110.5 SGR 2935.2 SG3 1870.1
RRT -.3630 RRF -.9965 RTF .3669
SGB 3138.2 R23 .0482 R13 -.9953
SG1 2966.5 SG2 1023.8 THA 98.89

ORBIT DETERMINATION ACCURACY
ST 438.6 SR 420.9 SS 1117.7
CRT -.6558 CRS .8970 CST -.2621
LSA 1190.3 MSA 448.8 SSA 27.3
EL1 553.3 EL2 251.9 ALF 136.80

LAUNCH DATE DEC 17 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 542.628 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.961 GAL 4.85 AZL 91.90 HCA 162.33 SMA 185.16 ECC .22110 INC 1.8980 V1 30.266
RP 225.19 LAP -.58 LOP 247.43 VP 21.493 GAP -2.72 AZP 88.19 TAL 27.36 TAP 189.69 RCA 144.22 APO 226.10 V2 24.423
RC 251.477 GL -15.60 GP 23.00 ZAL 43.43 ZAP 111.28 ETS 169.14 ZAE 141.91 ETE 143.52 ZAC 110.28 ETC 255.33 CLP 113.22

PLANETOCENTRIC CONIC

C3 16.358 VHL 4.044 DLA 3.59 RAL 124.71 RAD 6567.7 VEL 11.736 PTH 2.07 VHP 3.417 DPA 21.79 RAP 191.29 ECC 1.2692

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 29 26	2278.89	-21.08	45.60	343.69	109.36	14 7 25	1678.9	-18.24	38.07
90.00	2 24 45	4700.08	15.43	200.64	342.22	65.96	3 43 5	4100.1	12.06	193.59
100.00	14 52 27	2011.10	-22.07	25.51	343.30	110.69	15 25 59	1411.1	-19.06	18.01
100.00	3 44 24	4443.10	16.39	181.28	341.76	64.65	4 58 28	3843.1	12.85	174.29
110.00	16 4 33	1785.46	-24.72	7.18	342.10	114.39	16 34 19	1185.5	-21.22	359.79
110.00	4 48 48	4241.51	18.95	164.61	340.38	61.00	5 59 30	3641.5	14.94	157.79

DIFFERENTIAL CORRECTIONS
TDE .2066 TRA -.8157 TC3 -.0770 BAU .7526
RDE .1004 RRA 1.0653 RC3 3.4405 FAU .43743
FDE-1.7473 FRA-7.6537 FC-23.1513 BSP 10784
BDE .2297 BRA 1.3417 BC3 3.4414 FSP 6297

MID-COURSE EXECUTION ACCURACY
SGT 1195.9 SGR 3170.4 SG3 1882.7
RRT -.4965 RRF -.9972 RTF .4997
SGB 3388.5 R23 .0603 R13 -.9954
SG1 3231.9 SG2 1018.4 THA 101.80

ORBIT DETERMINATION ACCURACY
ST 454.2 SR 482.7 SS 1219.7
CRT -.5294 CRS .9416 CST -.2178
LSA 1308.9 MSA 461.7 SSA 23.4
EL1 580.1 EL2 320.7 ALF 131.73

LAUNCH DATE DEC 17 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 546.595 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.956 GAL 4.84 AZL 92.13 HCA 163.39 SMA 185.07 ECC .22066 INC 2.1312 V1 30.266
RP 224.80 LAP -.61 LOP 248.50 VP 21.532 GAP -3.00 AZP 87.96 TAL 27.33 TAP 190.72 RCA 144.23 APO 225.91 V2 24.465
RC 253.132 GL -17.46 GP 24.51 ZAL 43.99 ZAP 109.31 ETS 169.47 ZAE 139.47 ETE 144.24 ZAC 111.57 ETC 255.25 CLP 111.31

PLANETOCENTRIC CONIC

C3 16.570 VHL 4.071 DLA 1.79 RAL 124.25 RAD 6567.7 VEL 11.745 PTH 2.07 VHP 3.426 DPA 23.48 RAP 191.28 ECC 1.2727

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 41 0	2225.93	-19.84	42.20	342.97	110.63	14 18 6	1625.9	-16.86	34.80
90.00	2 9 31	4758.93	17.03	204.22	342.23	67.03	3 28 50	4158.9	13.78	197.06
100.00	15 3 11	1960.87	-20.82	22.30	342.56	111.94	15 35 52	1360.9	-17.66	14.93
100.00	3 30 2	4499.23	18.00	184.68	341.79	65.72	4 45 1	3899.2	14.57	177.57
110.00	16 13 20	1741.28	-23.45	4.38	341.31	115.61	16 42 22	1141.3	-19.81	357.13
110.00	4 36 22	4291.58	20.58	167.58	340.45	62.08	5 47 53	3691.6	16.68	160.62

DIFFERENTIAL CORRECTIONS
TDE .1847 TRA -.9050 TC3 -.3141 BAU .8078
RDE .1795 RRA 1.1689 RC3 3.6333 FAU .43302
FDE-2.0755 FRA-7.7374 FC-22.6244 BSP 11830
BDE .2576 BRA 1.4783 BC3 3.6468 FSP 6337

MID-COURSE EXECUTION ACCURACY
SGT 1325.6 SGR 3394.5 SG3 1866.2
RRT -.6197 RRF -.9978 RTF .6230
SGB 3644.2 R23 .0702 R13 -.9953
SG1 3501.9 SG2 1008.5 THA 104.87

ORBIT DETERMINATION ACCURACY
ST 462.4 SR 561.8 SS 1307.9
CRT -.4765 CRS .9674 CST -.2420
LSA 1423.9 MSA 460.6 SSA 20.5
EL1 631.3 EL2 361.8 ALF 123.83

LAUNCH DATE DEC 17 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 550.572 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.951 GAL 4.83 AZL 92.40 HCA 164.47 SMA 184.99 ECC .22025 INC 2.3962 V1 30.266
RP 224.41 LAP -.64 LOP 249.58 VP 21.573 GAP -3.27 AZP 87.69 TAL 27.28 TAP 191.75 RCA 144.25 APO 225.74 V2 24.506
RC 254.766 GL -19.54 GP 26.15 ZAL 44.68 ZAP 107.32 ETS 169.86 ZAE 136.96 ETE 144.87 ZAC 112.99 ETC 255.16 CLP 109.37

PLANETOCENTRIC CONIC

C3 16.858 VHL 4.106 DLA -.22 RAL 123.75 RAD 6567.7 VEL 11.758 PTH 2.08 VHP 3.446 DPA 25.30 RAP 191.35 ECC 1.2774

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 53 55	2167.45	-18.40	38.52	342.28	111.91	14 30 3	1567.5	-15.26	31.25
90.00	1 52 35	4825.32	18.75	208.34	342.38	68.38	3 13 0	4225.3	15.65	201.03
100.00	15 15 10	1905.40	-19.37	18.82	341.85	113.22	15 46 55	1305.4	-16.07	11.59
100.00	3 14 2	4562.60	19.73	188.59	341.95	67.07	4 30 4	3962.6	16.45	181.33
110.00	16 23 10	1692.53	-21.98	1.36	340.55	116.86	16 51 23	1092.5	-18.20	354.27
110.00	4 22 31	4348.24	22.34	171.03	340.66	63.43	5 34 59	3748.2	18.59	163.90

DIFFERENTIAL CORRECTIONS
TDE .1566 TRA -.9993 TC3 -.5448 BAU .8717
RDE .2791 RRA 1.2888 RC3 3.8291 FAU .42648
FDE-2.4483 FRA-7.8041 FC-21.9020 BSP 12905
BDE .3200 BRA 1.6308 BC3 3.8676 FSP 6283

MID-COURSE EXECUTION ACCURACY
SGT 1480.7 SGR 3643.2 SG3 1840.4
RRT -.7099 RRF -.9982 RTF .7129
SGB 3932.6 R23 .0755 R13 -.9954
SG1 3803.6 SG2 998.9 THA 107.33

ORBIT DETERMINATION ACCURACY
ST 472.2 SR 672.1 SS 1416.6
CRT -.4471 CRS .9833 CST -.2793
LSA 1571.5 MSA 459.9 SSA 17.7
EL1 720.8 EL2 393.8 ALF 115.56

LAUNCH DATE DEC 17 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 554.558 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.947 GAL 4.81 AZL 92.70 HCA 165.54 SMA 184.92 ECC .21985 INC 2.7012 V1 30.266
RP 224.02 LAP -.67 LOP 250.66 VP 21.614 GAP -3.54 AZP 87.38 TAL 27.21 TAP 192.76 RCA 144.27 APO 225.58 V2 24.548
RC 256.380 GL -21.87 GP 27.96 ZAL 45.54 ZAP 105.33 ETS 170.30 ZAE 134.37 ETE 145.42 ZAC 114.56 ETC 255.04 CLP 107.42

PLANETOCENTRIC CONIC

C3 17.248 VHL 4.153 DLA -2.49 RAL 123.18 RAD 6567.7 VEL 11.774 PTH 2.08 VHP 3.481 DPA 27.26 RAP 191.51 ECC 1.2839

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 8 29	2102.44	-16.70	34.50	341.64	113.21	14 43 31	1502.4	-13.42	27.37
90.00	1 33 30	4900.90	20.57	213.13	342.70	70.10	2 55 11	4300.9	17.67	205.65
100.00	15 28 40	1843.79	-17.68	15.03	341.19	114.50	15 59 24	1243.8	-14.22	7.94
100.00	2 56 0	4634.78	21.57	193.16	342.30	68.79	4 13 15	4034.8	18.50	185.71
110.00	16 34 15	1638.49	-20.29	358.08	339.83	118.12	17 1 33	1038.5	-16.37	351.15
110.00	4 6 55	4412.84	24.25	175.07	341.06	65.14	5 20 28	3812.8	20.70	167.73

DIFFERENTIAL CORRECTIONS
TDE .1189 TRA-1.1023 TC3 -.7713 BAU .9408
RDE .3972 RRA 1.4198 RC3 4.0063 FAU .41566
FDE-2.8220 FRA-7.8002 FC-20.8631 BSP 14172
BDE .4146 BRA 1.7974 BC3 4.0799 FSP 6218

MID-COURSE EXECUTION ACCURACY
SGT 1659.6 SGR 3901.0 SG3 1794.7
RRT -.7764 RRF -.9986 RTF .7791
SGB 4239.3 R23 .0783 R13 -.9955
SG1 4122.1 SG2 989.8 THA 109.44

ORBIT DETERMINATION ACCURACY
ST 485.6 SR 810.1 SS 1529.6
CRT -.4592 CRS .9917 CST -.3429
LSA 1738.3 MSA 457.9 SSA 15.2
EL1 850.4 EL2 410.9 ALF 110.33

LAUNCH DATE DEC 17 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 558.556 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.943 GAL 4.79 AZL 93.05 HCA 166.62 SMA 184.86 ECC .21949 INC 3.0550 V1 30.266
RP 223.63 LAP -.71 LOP 251.74 VP 21.656 GAP -3.80 AZP 87.03 TAL 27.14 TAP 193.76 RCA 144.29 APO 225.43 V2 24.590
RC 257.974 GL -24.51 GP 29.95 ZAL 46.61 ZAP 103.35 ETS 170.81 ZAE 131.70 ETE 145.90 ZAC 116.31 ETC 254.88 CLP 105.45

PLANETOCENTRIC CONIC

C3 17.783 VHL 4.217 DLA -5.05 RAL 122.53 RAD 6567.7 VEL 11.797 PTH 2.09 VHP 3.533 DPA 29.38 RAP 191.81 ECC 1.2927

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 25 5	2029.64	-14.69	30.10	341.10	114.48	14 58 54	1429.6	-11.27	23.10
90.00	1 11 44	4987.84	22.48	218.79	343.27	72.31	2 34 52	4387.8	19.85	211.11
100.00	15 44 3	1774.91	-15.68	10.89	340.62	115.78	16 13 38	1174.9	-12.09	3.94
100.00	2 35 28	4717.81	23.52	198.56	342.90	71.00	3 54 5	4117.8	20.71	190.89
110.00	16 46 50	1578.33	-18.32	354.53	339.18	119.38	17 13 8	978.3	-14.26	347.76
110.00	3 49 9	4487.16	26.29	179.88	341.73	67.32	5 3 57	3887.2	22.99	172.28

DIFFERENTIAL CORRECTIONS
TDE .0740 TRA-1.2096 TC3 -.9750 BAU 1.0221
RDE .5538 RRA 1.5817 RC3 4.1872 FAU .40350
FDE-3.2622 FRA-7.8025 FC-19.6436 BSP 15313
BDE .5587 BRA 1.9912 BC3 4.2992 FSP 5970

MID-COURSE EXECUTION ACCURACY
SGT 1846.2 SGR 4206.2 SG3 1743.9
RRT -.8226 RRF -.9989 RTF .8249
SGB 4593.5 R23 .0778 R13 -.9959
SG1 4486.8 SG2 984.1 THA 110.91

ORBIT DETERMINATION ACCURACY
ST 505.7 SR 998.2 SS 1674.3
CRT -.4900 CRS .9962 CST -.4136
LSA 1960.8 MSA 458.5 SSA 12.7
EL1 1035.0 EL2 425.1 ALF 106.87

LAUNCH DATE DEC 17 1964 FLIGHT TIME 258.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 562.562 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.940 GAL 4.77 AZL 93.47 HCA 167.70 SMA 184.81 ECC .21914 INC 3.4710 V1 30.266
RP 223.24 LAP -.74 LOP 252.82 VP 21.699 GAP -4.05 AZP 86.61 TAL 27.04 TAP 194.75 RCA 144.31 APO 225.31 V2 24.632
RC 259.547 GL -27.51 GP 32.15 ZAL 47.92 ZAP 101.38 ETS 171.39 ZAE 128.95 ETE 146.33 ZAC 118.26 ETC 254.68 CLP 103.48

PLANETOCENTRIC CONIC

C3 18.519 VHL 4.303 DLA -7.95 RAL 121.78 RAD 6567.7 VEL 11.828 PTH 2.09 VHP 3.607 DPA 31.67 RAP 192.27 ECC 1.3048

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 20	1947.21	-12.31	25.22	340.70	115.70	15 16 47	1347.2	-8.75	18.35
90.00	0 46 28	5089.23	24.41	225.59	344.16	75.19	2 11 17	4489.2	22.14	217.66
100.00	16 1 51	1697.17	-13.33	6.32	340.18	117.01	16 30 8	1097.2	-9.60	359.51
100.00	2 11 39	4814.51	25.51	205.05	343.82	73.86	3 31 53	4214.5	23.05	197.12
110.00	17 1 20	1510.69	-16.02	350.65	338.65	120.61	17 26 31	910.9	-11.84	344.04
110.00	3 28 38	4573.55	28.43	185.69	342.76	70.16	4 44 52	3973.6	25.46	177.78

DIFFERENTIAL CORRECTIONS
TDE .0114 TRA-1.3315 TC3-1.1683 BAU 1.1108
RDE .7455 RRA 1.7669 RC3 4.3318 FAU .38652
FDE-3.6918 FRA-7.7290 FC-18.0692 BSP 16553
BDE .7456 BRA 2.2124 BC3 4.4866 FSP 5673

MID-COURSE EXECUTION ACCURACY
SGT 2053.1 SGR 4530.7 SG3 1670.8
RRT -.8585 RRF -.9991 RTF .8604
SGB 4974.1 R23 .0763 R13 -.9962
SG1 4877.0 SG2 978.2 THA 112.20

ORBIT DETERMINATION ACCURACY
ST 538.0 SR 1226.9 SS 1819.9
CRT -.5620 CRS .9983 CST -.5136
LSA 2213.2 MSA 456.4 SSA 10.6
EL1 1268.7 EL2 430.4 ALF 105.70

LAUNCH DATE DEC 17 1964 FLIGHT TIME 260.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 566.575 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	32.937	GAL	4.74	AZL	93.97	HCA	168.79	SMA	184.76	ECC	.21881
RP	222.85	LAP	-.77	LOP	253.91	VP	21.743	GAP	-4.30	AZP	86.11	TAL	26.93	TAP	195.72	INC	3.9681
RC	261.100	GL	-30.91	GP	34.59	ZAL	49.53	ZAP	99.45	ETS	172.06	ZAE	126.11	ETE	146.70	V1	30.266
RCA	144.34	APO	225.19	V2	24.674	ZAC	120.45	ETC	254.42	CLP	101.51						

PLANETOCENTRIC CONIC

C3	19.549	VHL	4.421	DLA	-11.24	RAL	120.89	RAD	6567.8	VEL	11.871	PTH	2.11	VHP	3.710	DPA	34.16
RAP	192.94	ECC	1.3217														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 7 12	1852.48	-9.46	19.72	340.54	116.82	15 38 5	1252.5	-5.78	12.97
90.00	0 16 27	5209.48	26.25	233.92	345.46	78.98	1 43 17	4609.5	24.46	225.71
100.00	16 22 54	1608.26	-10.53	1.21	339.98	118.14	16 49 42	1008.3	-6.68	354.53
100.00	1 43 27	4928.89	27.43	213.01	345.19	77.63	3 5 36	4328.9	25.45	204.77
110.00	17 18 19	1434.70	-13.33	346.38	338.32	121.77	17 42 14	834.7	-9.03	339.92
110.00	3 4 31	4675.25	30.57	192.84	344.28	73.89	4 22 26	4075.3	28.06	184.54

DIFFERENTIAL CORRECTIONS				MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE -.0683	TRA-1.4673	TC3-1.3332	BAU 1.2048	SGT 2270.7	SGR 4863.8	SG3 1569.8	ST 589.3	SR 1494.3	SS 1950.6
RDE .9776	RRA 1.9772	RC3 4.4128	FAU .36357	RRT -.8853	RRF -.9993	RTF .8870	CRT -.6496	CRS .9992	CST -.6199
FDE-4.0750	FRA-7.5504	FC-16.1009	BSP 18037	SGB 5367.7	R23 .0741	R13 -.9966	LSA 2485.7	MSA 454.2	SSA 8.9
BDE .9800	BRA 2.4622	BC3 4.6098	FSP 5357	SG1 5278.8	SG2 973.0	THA 113.29	EL1 1546.9	EL2 432.8	ALF 105.62

LAUNCH DATE DEC 17 1964 FLIGHT TIME 262.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 570.597 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	32.935	GAL	4.72	AZL	94.57	HCA	169.88	SMA	184.73	ECC	.21850
RP	222.47	LAP	-.80	LOP	255.01	VP	21.787	GAP	-4.54	AZP	85.50	TAL	26.81	TAP	196.69	INC	4.5725
RC	262.633	GL	-34.80	GP	37.29	ZAL	51.49	ZAP	97.57	ETS	172.82	ZAE	123.19	ETE	147.04	V1	30.266
RCA	144.36	APO	225.09	V2	24.716	ZAC	122.89	ETC	254.07	CLP	99.54						

PLANETOCENTRIC CONIC

C3	21.018	VHL	4.585	DLA	-14.99	RAL	119.80	RAD	6567.9	VEL	11.933	PTH	2.12	VHP	3.852	DPA	36.85
RAP	193.87	ECC	1.3459														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 21	1740.97	-5.97	13.38	340.79	117.73	16 4 22	1141.0	-2.22	6.72
90.00	23 35 42	5355.58	27.73	244.35	347.27	84.00	25 4 57	4755.6	26.60	235.86
100.00	16 48 35	1504.71	-7.15	355.38	340.15	119.10	17 13 39	904.7	-3.21	348.80
100.00	1 9 6	5067.07	29.05	222.95	347.10	82.62	2 33 33	4467.1	27.72	214.40
110.00	17 38 42	1347.69	-10.16	341.63	338.32	122.81	18 1 10	747.7	-5.77	335.30
110.00	2 35 27	4796.85	32.52	201.77	346.44	78.84	3 55 24	4196.9	30.64	193.06

DIFFERENTIAL CORRECTIONS				MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE -.1682	TRA-1.6198	TC3-1.4565	BAU 1.3105	SGT 2493.9	SGR 5234.4	SG3 1448.6	ST 664.1	SR 1819.4	SS 2074.0
RDE 1.2762	RRA 2.2337	RC3 4.4306	FAU .33627	RRT -.9052	RRF -.9994	RTF .9067	CRT -.7326	CRS .9997	CST -.7152
FDE-4.4313	FRA-7.2976	FC-13.8510	BSP 19473	SGB 5798.1	R23 .0710	R13 -.9969	LSA 2801.3	MSA 453.2	SSA 7.3
BDE 1.2872	BRA 2.7592	BC3 4.6639	FSP 4909	SG1 5716.4	SG2 970.3	THA 114.07	EL1 1887.1	EL2 435.8	ALF 105.84

LAUNCH DATE DEC 17 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 574.626 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	32.934	GAL	4.69	AZL	95.32	HCA	170.97	SMA	184.70	ECC	.21821
RP	222.08	LAP	-.83	LOP	256.10	VP	21.832	GAP	-4.77	AZP	84.74	TAL	26.68	TAP	197.65	INC	5.3236
RC	264.145	GL	-39.25	GP	40.29	ZAL	53.86	ZAP	95.77	ETS	173.68	ZAE	120.19	ETE	147.36	V1	30.266
RCA	144.40	APO	225.00	V2	24.758	ZAC	125.62	ETC	253.62	CLP	97.57						

PLANETOCENTRIC CONIC

C3	23.170	VHL	4.814	DLA	-19.24	RAL	118.45	RAD	6567.9	VEL	12.023	PTH	2.15	VHP	4.047	DPA	39.76
RAP	195.16	ECC	1.3813														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 12 12	1603.33	-1.57	5.67	341.74	118.28	16 38 56	1003.3	2.22	359.04
90.00	22 48 4	5540.39	28.31	257.82	349.58	90.72	24 20 24	4940.4	28.11	249.16
100.00	17 21 38	1379.32	-2.95	348.44	340.97	119.76	17 44 37	779.3	1.04	341.91
100.00	0 25 16	5239.64	29.88	235.70	349.58	89.26	1 52 35	4639.6	29.46	226.92
110.00	18 4 6	1246.25	-6.38	336.22	338.85	123.65	18 24 52	646.2	-1.91	329.98
110.00	1 59 17	4945.47	33.91	213.14	349.36	85.43	3 21 43	4345.5	32.91	204.04

DIFFERENTIAL CORRECTIONS				MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE -.2937	TRA-1.7961	TC3-1.5276	BAU 1.4239	SGT 2722.6	SGR 5614.0	SG3 1297.0	ST 765.3	SR 2187.9	SS 2154.3
RDE 1.6482	RRA 2.5391	RC3 4.3355	FAU .30247	RRT -.9207	RRF -.9995	RTF .9220	CRT -.8026	CRS .9999	CST -.7927
FDE-4.6794	FRA-6.9129	FC-11.3016	BSP 21130	SGB 6239.4	R23 .0677	R13 -.9973	LSA 3131.8	MSA 453.1	SSA 6.0
BDE 1.6741	BRA 3.1102	BC3 4.5967	FSP 4412	SG1 6163.9	SG2 967.7	THA 114.71	EL1 2275.9	EL2 438.9	ALF 106.30

LAUNCH DATE DEC 17 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 578.661 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	32.932	GAL	4.66	AZL	96.28	HCA	172.06	SMA	184.68	ECC	.21794
RP	221.70	LAP	-.87	LOP	257.20	VP	21.877	GAP	-5.00	AZP	83.78	TAL	26.53	TAP	198.59	INC	6.2818
RC	265.639	GL	-44.31	GP	43.62	ZAL	56.72	ZAP	94.07	ETS	174.66	ZAE	117.10	ETE	147.68	V1	30.266
RCA	144.43	APO	224.92	V2	24.799	ZAC	128.67	ETC	253.01	CLP	95.63						

PLANETOCENTRIC CONIC

C3	26.436	VHL	5.142	DLA	-24.06	RAL	116.72	RAD	6568.1	VEL	12.158	PTH	2.18	VHP	4.318	DPA	42.88
RAP	196.89	ECC	1.4351														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 31	1411.65	4.60	354.96	344.10	117.97	17 31 2	811.7	8.31	348.24
90.00	21 39 0	5796.93	26.68	276.38	351.89	99.85	23 15 37	5196.9	27.77	267.88
100.00	18 8 54	1213.46	2.68	339.33	343.03	119.78	18 29 8	613.5	6.62	332.77
100.00	23 20 17	5470.36	28.86	252.74	352.28	98.15	24 51 28	4870.4	29.69	244.03
110.00	18 37 49	1122.80	-1.68	329.75	340.31	124.15	18 56 32	522.8	2.81	323.54
110.00	1 11 48	5133.78	33.97	227.82	352.92	94.10	2 37 22	4533.8	34.16	218.58

DIFFERENTIAL CORRECTIONS				MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE -.4531	TRA-2.0088	TC3-1.5383	BAU 1.5581	SGT 2961.0	SGR 6045.1	SG3 1124.9	ST 893.4	SR 2617.2	SS 2188.0
RDE 2.1388	RRA 2.9330	RC3 4.1315	FAU .26443	RRT -.9330	RRF -.9996	RTF .9341	CRT -.8551	CRS .9999	CST -.8497
FDE-4.8149	FRA-6.4224	FC3-8.6596	BSP 22504	SGB 6731.3	R23 .0638	R13 -.9976	LSA 3496.8	MSA 455.4	SSA 4.9
BDE 2.1862	BRA 3.5550	BC3 4.4086	FSP 3758	SG1 6661.4	SG2 967.3	THA 115.13	EL1 2729.6	EL2 444.2	ALF 106.73

LAUNCH DATE DEC 17 1964 FLIGHT TIME 268.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 582.701 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.931 GAL 4.63 AZL 97.55 HCA 173.15 SMA 184.66 ECC .21769 INC 7.5487 V1 30.266
RP 221.32 LAP -.90 LOP 258.31 VP 21.923 GAP -5.23 AZP 82.50 TAL 26.38 TAP 199.53 RCA 144.46 APO 224.86 V2 24.841
RC 267.114 GL -50.06 GP 47.28 ZAL 60.09 ZAP 92.52 ETS 175.75 ZAE 113.96 ETE 148.01 ZAC 132.03 ETC 252.20 CLP 93.72

PLANETOCENTRIC CONIC

C3 31.629 VHL 5.624 DLA -29.48 RAL 114.45 RAD 6568.3 VEL 12.369 PTH 2.23 VHP 4.707 DPA 46.19 RAP 199.20 ECC 1.5205

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.45	18 3 55	1232.00	17.39	348.25	350.78	114.18	18 24 27	632.0	20.51	340.88
98.55	20 24 26	778.19	17.41	314.93	350.78	114.17	20 37 24	178.2	20.52	307.55
100.00	19 53 44	876.46	13.67	320.36	348.93	116.84	20 8 21	276.5	17.17	313.31
100.00	21 17 18	608.97	21.20	304.08	352.48	111.58	21 27 27	9.0	23.95	296.36
110.00	19 29 28	952.91	4.80	320.87	343.68	123.88	19 45 21	352.9	9.22	314.57
110.00	0 1 59	5393.31	30.95	247.40	356.09	105.28	1 31 52	4793.3	32.74	238.64

DIFFERENTIAL CORRECTIONS
TDE -.6400 TRA-2.2634 TC3-1.4635 BAU 1.7066
RDE 2.7600 RRA 3.4296 RC3 3.7612 FAU .21996
FDE-4.7051 FRA-5.7461 FC3-6.0207 BSP 24110
BDE 2.8332 BRA 4.1091 BC3 4.0359 FSP 3061

MID-COURSE EXECUTION ACCURACY
SGT 3186.0 SGR 6474.0 SG3 922.7
RRT -.9419 RRF -.9997 RTF .9429
SGB 7215.5 R23 .0601 R13 -.9979
SG1 7150.2 SG2 968.8 THA 115.37

ORBIT DETERMINATION ACCURACY
ST 1029.1 SR 3061.4 SS 2116.6
CRT -.8876 CRS 1.0000 CST -.8847
LSA 3833.7 MSA 462.1 SSA 4.0
EL1 3197.7 EL2 453.8 ALF 106.97

LAUNCH DATE DEC 17 1964 FLIGHT TIME 294.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 636.573 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.952 GAL 3.93 AZL 80.80 HCA 188.02 SMA 185.01 ECC .21509 INC 9.2037 V1 30.266
RP 216.57 LAP -1.28 LOP 273.02 VP 22.545 GAP -7.64 AZP 99.12 TAL 22.52 TAP 210.54 RCA 145.21 APO 224.80 V2 25.365
RC 284.679 GL 58.27 GP -42.51 ZAL 67.08 ZAP 77.19 ETS 166.89 ZAE 100.35 ETE 187.77 ZAC 43.31 ETC 252.06 CLP 72.49

PLANETOCENTRIC CONIC

C3 38.220 VHL 6.182 DLA 71.21 RAL 171.92 RAD 6568.5 VEL 12.633 PTH 2.29 VHP 4.476 DPA -31.41 RAP 148.80 ECC 1.6290

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
11.61	9 20 11	4362.62	-48.96	243.73	128.04	15.66	10 32 54	3762.6	-56.61	240.23
11.61	1 37 1	4828.65	-18.01	250.36	20.51	10.74	2 57 30	4228.6	-25.86	249.13
21.46	5 48 36	4577.13	-32.13	237.43	69.60	22.36	7 4 53	3977.1	-39.46	233.92
158.54	16 22 14	2816.63	-32.12	85.92	69.58	22.35	17 9 11	2216.6	-39.46	82.41
21.46	5 48 36	4577.13	-32.13	237.43	69.60	22.36	7 4 53	3977.1	-39.46	233.92
158.54	16 22 14	2816.63	-32.12	85.92	69.58	22.35	17 9 11	2216.6	-39.46	82.41

DIFFERENTIAL CORRECTIONS
TDE 6.5732 TRA .0509 TC3-2.9070 BAU 2.0271
RDE 4.4753 RRA .4124 RC3-2.6998 FAU .25597
FDE 8.7502 FRA .8523 FC3-5.7982 BSP 29915
BDE 7.9521 BRA .4156 BC3 3.9673 FSP 3449

MID-COURSE EXECUTION ACCURACY
SGT 7074.8 SGR 5454.7 SG3 958.9
RRT .9702 RRF .9990 RTF .9619
SGB 8933.4 R23 .1829 R13 .9825
SG1 8871.0 SG2 1054.9 THA 37.42

ORBIT DETERMINATION ACCURACY
ST 6093.0 SR 4164.1 SS 3150.0
CRT .9969 CRS-1.0000 CST -.9965
LSA 8017.8 MSA 319.2 SSA 4.9
EL1 7375.1 EL2 270.3 ALF 34.32

LAUNCH DATE DEC 17 1964 FLIGHT TIME 296.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 640.743 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.955 GAL 3.87 AZL 81.78 HCA 189.17 SMA 185.07 ECC .21501 INC 8.2206 V1 30.266
RP 216.22 LAP -1.31 LOP 274.17 VP 22.594 GAP -7.80 AZP 98.12 TAL 22.17 TAP 211.34 RCA 145.28 APO 224.86 V2 25.404
RC 285.910 GL 55.03 GP -38.94 ZAL 65.58 ZAP 75.14 ETS 166.62 ZAE 99.32 ETE 185.91 ZAC 46.61 ETC 253.18 CLP 70.75

PLANETOCENTRIC CONIC

C3 32.912 VHL 5.737 DLA 68.31 RAL 167.02 RAD 6568.3 VEL 12.421 PTH 2.24 VHP 4.221 DPA -28.03 RAP 150.23 ECC 1.5417

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
24.82	5 36 15	4530.18	-33.77	232.73	61.61	26.39	6 51 45	3930.2	-40.85	228.46
155.18	15 55 28	2788.07	-33.77	84.76	61.59	26.39	16 41 56	2188.1	-40.85	80.49
24.82	5 36 15	4530.18	-33.77	232.73	61.61	26.39	6 51 45	3930.2	-40.85	228.46
155.18	15 55 28	2788.07	-33.77	84.76	61.59	26.39	16 41 56	2188.1	-40.85	80.49
24.82	5 36 15	4530.18	-33.77	232.73	61.61	26.39	6 51 45	3930.2	-40.85	228.46
155.18	15 55 28	2788.07	-33.77	84.76	61.59	26.39	16 41 56	2188.1	-40.85	80.49

DIFFERENTIAL CORRECTIONS
TDE 6.1473 TRA -.1345 TC3-3.4276 BAU 1.9514
RDE 3.8069 RRA .2664 RC3-2.8145 FAU .28659
FDE 9.2844 FRA .6813 FC3-7.5385 BSP 29864
BDE 7.2306 BRA .2984 BC3 4.4350 FSP 3974

MID-COURSE EXECUTION ACCURACY
SGT 7300.1 SGR 5040.1 SG3 1107.1
RRT .9725 RRF .9989 RTF .9651
SGB 8870.9 R23 .1860 R13 .9819
SG1 8817.5 SG2 972.1 THA 34.35

ORBIT DETERMINATION ACCURACY
ST 6141.5 SR 3809.4 SS 3388.7
CRT .9972 CRS-1.0000 CST -.9970
LSA 7976.5 MSA 298.4 SSA 5.7
EL1 7223.0 EL2 241.9 ALF 31.78

LAUNCH DATE DEC 17 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 644.923 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.959 GAL 3.81 AZL 82.55 HCA 190.32 SMA 185.13 ECC .21493 INC 7.4525 V1 30.266
RP 215.88 LAP -1.33 LOP 275.34 VP 22.642 GAP -7.95 AZP 97.33 TAL 21.79 TAP 212.11 RCA 145.34 APO 224.92 V2 25.442
RC 287.127 GL 52.21 GP -35.75 ZAL 64.37 ZAP 73.17 ETS 166.47 ZAE 98.12 ETE 184.31 ZAC 49.59 ETC 254.04 CLP 69.10

PLANETOCENTRIC CONIC

C3 29.136 VHL 5.398 DLA 65.67 RAL 163.78 RAD 6568.2 VEL 12.268 PTH 2.21 VHP 4.045 DPA -25.00 RAP 151.42 ECC 1.4795

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
27.90	5 30 13	4489.65	-34.84	228.26	55.45	30.13	6 45 3	3889.7	-41.65	223.31
152.10	15 35 41	2767.38	-34.83	83.66	55.43	30.12	16 21 48	2167.4	-41.64	78.71
27.90	5 30 13	4489.65	-34.84	228.26	55.45	30.13	6 45 3	3889.7	-41.65	223.31
152.10	15 35 41	2767.38	-34.83	83.66	55.43	30.12	16 21 48	2167.4	-41.64	78.71
27.90	5 30 13	4489.65	-34.84	228.26	55.45	30.13	6 45 3	3889.7	-41.65	223.31
152.10	15 35 41	2767.38	-34.83	83.66	55.43	30.12	16 21 48	2167.4	-41.64	78.71

DIFFERENTIAL CORRECTIONS
TDE 5.7884 TRA -.2844 TC3-3.9535 BAU 1.9026
RDE 3.2475 RRA .1686 RC3-2.8684 FAU .31056
FDE 9.4735 FRA .5084 FC3-9.2280 BSP 29803
BDE 6.6372 BRA .3307 BC3 4.8844 FSP 4390

MID-COURSE EXECUTION ACCURACY
SGT 7516.9 SGR 4654.1 SG3 1228.2
RRT .9741 RRF .9988 RTF .9671
SGB 8841.1 R23 .1901 R13 .9809
SG1 8795.2 SG2 899.7 THA 31.46

ORBIT DETERMINATION ACCURACY
ST 6149.5 SR 3450.8 SS 3518.5
CRT .9973 CRS-1.0000 CST -.9972
LSA 7875.4 MSA 286.7 SSA 6.5
EL1 7048.1 EL2 222.0 ALF 29.26

LAUNCH DATE DEC 17 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 649.114 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.963 GAL 3.74 AZL 83.16 HCA 191.48 SMA 185.20 ECC .21487 INC 6.8356 V1 30.266
RP 215.54 LAP -1.36 LOP 276.50 VP 22.690 GAP -8.10 AZP 96.70 TAL 21.40 TAP 212.88 RCA 145.41 APO 225.00 V2 25.480
RC 288.329 GL 49.73 GP -32.90 ZAL 63.41 ZAP 71.27 ETS 166.42 ZAE 96.81 ETE 182.95 ZAC 52.25 ETC 254.71 CLP 67.52

PLANETOCENTRIC CONIC

C3 26.330 VHL 5.131 DLA 63.28 RAL 161.57 RAD 6568.1 VEL 12.153 PTH 2.18 VHP 3.923 DPA -22.28 RAP 152.42 ECC 1.4333

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.71	5 27 56	4454.09	-35.50	224.08	50.55	33.52	6 42 10	3854.1	-42.03	218.56
149.29	15 20 21	2752.51	-35.49	82.66	50.53	33.51	16 6 14	2152.5	-42.02	77.14
30.71	5 27 56	4454.09	-35.50	224.08	50.55	33.52	6 42 10	3854.1	-42.03	218.56
149.29	15 20 21	2752.51	-35.49	82.66	50.53	33.51	16 6 14	2152.5	-42.02	77.14
30.71	5 27 56	4454.09	-35.50	224.08	50.55	33.52	6 42 10	3854.1	-42.03	218.56
149.29	15 20 21	2752.51	-35.49	82.66	50.53	33.51	16 6 14	2152.5	-42.02	77.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 5.4940 TRA -.4062 TC3-4.4782 BAU 1.8735 SGT 7731.2 SGR 4297.2 SG3 1323.6 ST 6143.6 SR 3114.9 SS 3572.0
RDE 2.7877 RRA .1025 RC3-2.8762 FAU .32877 RRT .9753 RRF .9986 RTF .9685 CRT .9973 CRS-1.0000 CST -.9972
FDE 9.4306 FRA .3464 FC-10.8100 BSP 29827 SGB 8845.2 R23 .1940 R13 .9799 LSA 7754.2 MSA 278.3 SSA 7.4
BDE 6.1608 BRA .4189 BC3 5.3223 FSP 4707 SG1 8805.9 SG2 832.6 THA 28.74 EL1 6885.1 EL2 205.6 ALF 26.85

LAUNCH DATE DEC 17 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 653.315 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.967 GAL 3.67 AZL 83.67 HCA 192.65 SMA 185.27 ECC .21481 INC 6.3294 V1 30.266
RP 215.21 LAP -1.38 LOP 277.67 VP 22.738 GAP -8.25 AZP 96.18 TAL 20.99 TAP 213.64 RCA 145.47 APO 225.07 V2 25.517
RC 289.516 GL 47.54 GP -30.37 ZAL 62.68 ZAP 69.45 ETS 166.44 ZAE 95.42 ETE 181.80 ZAC 54.63 ETC 255.23 CLP 66.00

PLANETOCENTRIC CONIC

C3 24.169 VHL 4.916 DLA 61.12 RAL 160.04 RAD 6568.0 VEL 12.064 PTH 2.16 VHP 3.839 DPA -19.86 RAP 153.28 ECC 1.3978

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
33.27	5 28 3	4422.27	-35.85	220.20	46.56	36.58	6 41 45	3822.3	-42.11	214.19
146.73	15 8 1	2742.10	-35.84	81.81	46.55	36.57	15 53 43	2142.1	-42.10	75.81
33.27	5 28 3	4422.27	-35.85	220.20	46.56	36.58	6 41 45	3822.3	-42.11	214.19
146.73	15 8 1	2742.10	-35.84	81.81	46.55	36.57	15 53 43	2142.1	-42.10	75.81
33.27	5 28 3	4422.27	-35.85	220.20	46.56	36.58	6 41 45	3822.3	-42.11	214.19
146.73	15 8 1	2742.10	-35.84	81.81	46.55	36.57	15 53 43	2142.1	-42.10	75.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 5.2595 TRA -.4997 TC3-4.9891 BAU 1.8557 SGT 7942.9 SGR 3969.8 SG3 1396.1 ST 6142.0 SR 2814.6 SS 3577.4
RDE 2.4137 RRA .0611 RC3-2.8449 FAU .34149 RRT .9764 RRF .9983 RTF .9696 CRT .9972 CRS-1.0000 CST -.9973
FDE 9.2480 FRA .2157 FC-12.2321 BSP 30062 SGB 8879.7 R23 .1974 R13 .9789 LSA 7640.1 MSA 271.7 SSA 8.4
BDE 5.7869 BRA .5034 BC3 5.7432 FSP 4945 SG1 8846.2 SG2 770.3 THA 26.23 EL1 6753.5 EL2 191.5 ALF 24.58

LAUNCH DATE DEC 17 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 657.522 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.972 GAL 3.59 AZL 84.09 HCA 193.82 SMA 185.35 ECC .21476 INC 5.9057 V1 30.266
RP 214.88 LAP -1.41 LOP 278.84 VP 22.786 GAP -8.39 AZP 95.74 TAL 20.57 TAP 214.39 RCA 145.54 APO 225.15 V2 25.554
RC 290.691 GL 45.60 GP -28.12 ZAL 62.13 ZAP 67.71 ETS 166.51 ZAE 93.98 ETE 180.82 ZAC 56.76 ETC 255.65 CLP 64.53

PLANETOCENTRIC CONIC

C3 22.455 VHL 4.739 DLA 59.15 RAL 158.99 RAD 6567.9 VEL 11.993 PTH 2.14 VHP 3.783 DPA -17.71 RAP 154.03 ECC 1.3695

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.62	5 29 46	4393.48	-36.00	216.61	43.29	39.33	6 43 0	3793.5	-42.00	210.21
144.38	14 57 55	2734.99	-35.99	81.10	43.27	39.33	15 43 30	2135.0	-41.99	74.70
35.62	5 29 46	4393.48	-36.00	216.61	43.29	39.33	6 43 0	3793.5	-42.00	210.21
144.38	14 57 55	2734.99	-35.99	81.10	43.27	39.33	15 43 30	2135.0	-41.99	74.70
35.62	5 29 46	4393.48	-36.00	216.61	43.29	39.33	6 43 0	3793.5	-42.00	210.21
144.38	14 57 55	2734.99	-35.99	81.10	43.27	39.33	15 43 30	2135.0	-41.99	74.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 5.0736 TRA -.5683 TC3-5.4838 BAU 1.8445 SGT 8151.0 SGR 3667.4 SG3 1446.9 ST 6149.7 SR 2559.3 SS 3564.5
RDE 2.1155 RRA .0448 RC3-2.7709 FAU .34780 RRT .9767 RRF .9980 RTF .9701 CRT .9970 CRS-1.0000 CST -.9971
FDE 9.0141 FRA .1572 FC-13.4094 BSP 30652 SGB 8938.1 R23 .2005 R13 .9779 LSA 7549.7 MSA 274.2 SSA 9.1
BDE 5.4969 BRA .5701 BC3 6.1441 FSP 5211 SG1 8909.1 SG2 719.5 THA 23.89 EL1 6658.4 EL2 184.1 ALF 22.55

LAUNCH DATE DEC 17 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 661.743 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 32.976 GAL 3.52 AZL 84.45 HCA 194.99 SMA 185.43 ECC .21472 INC 5.5462 V1 30.266
RP 214.56 LAP -1.43 LOP 280.02 VP 22.833 GAP -8.52 AZP 95.36 TAL 20.14 TAP 215.12 RCA 145.61 APO 225.24 V2 25.590
RC 291.851 GL 43.88 GP -26.11 ZAL 61.75 ZAP 66.04 ETS 166.60 ZAE 92.51 ETE 179.98 ZAC 58.67 ETC 255.99 CLP 63.12

PLANETOCENTRIC CONIC

C3 21.061 VHL 4.589 DLA 57.36 RAL 158.29 RAD 6567.9 VEL 11.935 PTH 2.12 VHP 3.747 DPA -15.79 RAP 154.69 ECC 1.3466

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.78	5 32 37	4367.03	-35.99	213.29	40.57	41.81	6 45 24	3767.0	-41.75	206.57
142.22	14 49 27	2730.50	-35.98	80.52	40.56	41.80	15 34 57	2130.5	-41.74	73.80
37.78	5 32 37	4367.03	-35.99	213.29	40.57	41.81	6 45 24	3767.0	-41.75	206.57
142.22	14 49 27	2730.50	-35.98	80.52	40.56	41.80	15 34 57	2130.5	-41.74	73.80
37.78	5 32 37	4367.03	-35.99	213.29	40.57	41.81	6 45 24	3767.0	-41.75	206.57
142.22	14 49 27	2730.50	-35.98	80.52	40.56	41.80	15 34 57	2130.5	-41.74	73.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 4.9037 TRA -.6361 TC3-5.9956 BAU 1.8524 SGT 8362.6 SGR 3397.7 SG3 1484.4 ST 6140.3 SR 2317.3 SS 3499.8
RDE 1.8551 RRA .0236 RC3-2.7079 FAU .35409 RRT .9776 RRF .9975 RTF .9707 CRT .9969 CRS-1.0000 CST -.9971
FDE 8.6524 FRA .0530 FC-14.5551 BSP 30803 SGB 9026.5 R23 .2017 R13 .9771 LSA 7433.0 MSA 266.8 SSA 10.2
BDE 5.2429 BRA .6365 BC3 6.5788 FSP 5258 SG1 9002.0 SG2 664.7 THA 21.79 EL1 6560.8 EL2 171.7 ALF 20.63

LAUNCH DATE DEC 17 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 665.971 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	32.981	GAL	3.44	AZL	84.76	HCA	196.16	SMA	185.51	ECC	.21470	INC	5.2368	V1	30.266
RP	214.24	LAP	-1.46	LOP	281.20	VP	22.881	GAP	-8.66	AZP	95.03	TAL	19.69	TAP	215.85	RCA	145.68	APO	225.34	V2	25.626
RC	292.998	GL	42.34	GP	-24.31	ZAL	61.51	ZAP	64.45	ETS	166.72	ZAE	91.02	ETE	179.27	ZAC	60.38	ETC	256.26	CLP	61.75

PLANETOCENTRIC CONIC

C3	19.903	VHL	4.461	DLA	55.72	RAL	157.85	RAD	6567.8	VEL	11.886	PTH	2.11	VHP	3.727	DPA	-14.07	RAP	155.28	ECC	1.3276

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.78	5 36 18	4342.49	-35.88	210.21	38.31	44.05	6 48 40	3742.5	-41.41	203.22
140.22	14 42 16	2727.99	-35.87	80.08	38.30	44.04	15 27 44	2128.0	-41.40	73.08
39.78	5 36 18	4342.49	-35.88	210.21	38.31	44.05	6 48 40	3742.5	-41.41	203.22
140.22	14 42 16	2727.99	-35.87	80.08	38.30	44.04	15 27 44	2128.0	-41.40	73.08
39.78	5 36 18	4342.49	-35.88	210.21	38.31	44.05	6 48 40	3742.5	-41.41	203.22
140.22	14 42 16	2727.99	-35.87	80.08	38.30	44.04	15 27 44	2128.0	-41.40	73.08

DIFFERENTIAL CORRECTIONS

TDE	4.7610	TRA	-.6888	TC3-6.4992	BAU	1.8653	
RDE	1.6406	RRA	.0136	RC3-2.6269	FAU	.35678	
FDE	8.2718	FRA	-.0100	FC-15.5190	BSP	31106	
BDE	5.0357	BRA	.6889	BC3 7.0100	FSP	5291	

MID-COURSE EXECUTION ACCURACY

SGT	8572.1	SGR	3151.9	SG3	1507.9		
RRT	.9781	RRF	.9969	RTF	.9712		
SGB	9133.2	R23	.2020	R13	.9764		
SG1	9112.3	SG2	617.0	THA	19.88		

ORBIT DETERMINATION ACCURACY

ST	6135.1	SR	2108.3	SS	3423.9		
CRT	.9967	CRS	-1.0000	CST	-.9970		
LSA	7330.6	MSA	262.7	SSA	11.3		
EL1	6485.2	EL2	162.2	ALF	18.92		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 670.208 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	32.986	GAL	3.36	AZL	85.03	HCA	197.35	SMA	185.60	ECC	.21468	INC	4.9677	V1	30.266
RP	213.93	LAP	-1.48	LOP	282.38	VP	22.928	GAP	-8.79	AZP	94.74	TAL	19.22	TAP	216.57	RCA	145.75	APO	225.44	V2	25.662
RC	294.131	GL	40.96	GP	-22.70	ZAL	61.39	ZAP	62.91	ETS	166.86	ZAE	89.54	ETE	178.67	ZAC	61.93	ETC	256.48	CLP	60.42

PLANETOCENTRIC CONIC

C3	18.922	VHL	4.350	DLA	54.20	RAL	157.62	RAD	6567.8	VEL	11.845	PTH	2.10	VHP	3.720	DPA	-12.55	RAP	155.82	ECC	1.3114

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.64	5 40 38	4319.41	-35.69	207.34	36.43	46.07	6 52 38	3719.4	-41.01	200.13
138.36	14 36 6	2727.16	-35.68	79.74	36.42	46.06	15 21 33	2127.2	-41.00	72.53
41.64	5 40 38	4319.41	-35.69	207.34	36.43	46.07	6 52 38	3719.4	-41.01	200.13
138.36	14 36 6	2727.16	-35.68	79.74	36.42	46.06	15 21 33	2127.2	-41.00	72.53
41.64	5 40 38	4319.41	-35.69	207.34	36.43	46.07	6 52 38	3719.4	-41.01	200.13
138.36	14 36 6	2727.16	-35.68	79.74	36.42	46.06	15 21 33	2127.2	-41.00	72.53

DIFFERENTIAL CORRECTIONS

TDE	4.6416	TRA	-.7271	TC3-6.9923	BAU	1.8815	
RDE	1.4619	RRA	.0109	RC3-2.5346	FAU	.35662	
FDE	7.8830	FRA	-.0430	FC-16.3163	BSP	31542	
BDE	4.8663	BRA	.7272	BC3 7.4375	FSP	5300	

MID-COURSE EXECUTION ACCURACY

SGT	8778.6	SGR	2927.6	SG3	1519.6		
RRT	.9784	RRF	.9962	RTF	.9715		
SGB	9253.9	R23	.2012	R13	.9758		
SG1	9236.0	SG2	574.6	THA	18.14		

ORBIT DETERMINATION ACCURACY

ST	6136.1	SR	1926.8	SS	3340.1		
CRT	.9965	CRS	-1.0000	CST	-.9969		
LSA	7242.4	MSA	259.8	SSA	12.3		
EL1	6429.6	EL2	154.4	ALF	17.39		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 674.452 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	32.991	GAL	3.28	AZL	85.27	HCA	198.53	SMA	185.68	ECC	.21468	INC	4.7312	V1	30.266
RP	213.62	LAP	-1.50	LOP	283.57	VP	22.974	GAP	-8.91	AZP	94.49	TAL	18.75	TAP	217.28	RCA	145.82	APO	225.55	V2	25.697
RC	295.251	GL	39.71	GP	-21.24	ZAL	61.38	ZAP	61.44	ETS	167.00	ZAE	88.06	ETE	178.16	ZAC	63.32	ETC	256.67	CLP	59.14

PLANETOGENTRIC CONIC

C3	18.078	VHL	4.252	DLA	52.80	RAL	157.56	RAD	6567.7	VEL	11.809	PTH	2.09	VHP	3.722	DPA	-11.18	RAP	156.33	ECC	1.2975

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.38	5 45 29	4297.57	-35.45	204.65	34.87	47.92	6 57 7	3697.6	-40.56	197.25
136.62	14 30 47	2727.59	-35.43	79.51	34.86	47.91	15 16 15	2127.6	-40.55	72.12
43.38	5 45 29	4297.57	-35.45	204.65	34.87	47.92	6 57 7	3697.6	-40.56	197.25
136.62	14 30 47	2727.59	-35.43	79.51	34.86	47.91	15 16 15	2127.6	-40.55	72.12
43.38	5 45 29	4297.57	-35.45	204.65	34.87	47.92	6 57 7	3697.6	-40.56	197.25
136.62	14 30 47	2727.59	-35.43	79.51	34.86	47.91	15 16 15	2127.6	-40.55	72.12

DIFFERENTIAL CORRECTIONS

TDE	4.5376	TRA	-.7544	TC3-7.4798	BAU	1.9012	
RDE	1.3111	RRA	.0127	RC3-2.4365	FAU	.35435	
FDE	7.4909	FRA	-.0502	FC-16.9696	BSP	32020	
BDE	4.7232	BRA	.7545	BC3 7.8666	FSP	5280	

MID-COURSE EXECUTION ACCURACY

SGT	8981.8	SGR	2723.0	SG3	1521.6		
RRT	.9786	RRF	.9953	RTF	.9717		
SGB	9385.5	R23	.1992	R13	.9752		
SG1	9370.1	SG2	537.4	THA	16.58		

ORBIT DETERMINATION ACCURACY

ST	6138.4	SR	1767.9	SS	3249.5		
CRT	.9962	CRS	-.9999	CST	-.9968		
LSA	7162.2	MSA	258.0	SSA	13.4		
EL1	6386.2	EL2	147.9	ALF	16.02		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 678.704 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	32.997	GAL	3.20	AZL	85.48	HCA	199.72	SMA	185.78	ECC	.21469	INC	4.5215	V1	30.266
RP	213.31	LAP	-1.52	LOP	284.76	VP	23.020	GAP	-9.04	AZP	94.26	TAL	18.26	TAP	217.98	RCA	145.89	APO	225.66	V2	25.731
RC	296.356	GL	38.59	GP	-19.93	ZAL	61.48	ZAP	60.02	ETS	167.15	ZAE	86.59	ETE	177.72	ZAC	64.59	ETC	256.82	CLP	57.89

PLANETOCENTRIC CONIC

C3	17.341	VHL	4.164	DLA	51.49	RAL	157.64	RAD	6567.7	VEL	11.778	PTH	2.08	VHP	3.733	DPA	-9.96	RAP	156.81	ECC	1.2854

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.01	5 50 47	4276.67	-35.16	202.11	33.57	49.60	7 2 3	3676.7	-40.09	194.57
134.99	14 26 9	2729.15	-35.15	79.37	33.56	49.59	15 11 38	2129.2	-40.08	71.83
45.01	5 50 47	4276.67	-35.16	202.11	33.57	49.60	7 2 3	3676.7	-40.09	194.57
134.99	14 26 9	2729.15	-35.15	79.37	33.56	49.59	15 11 38	2129.2	-40.08	71.83
45.01	5 50 47	4276.67	-35.16	202.11	33.57	49.60	7 2 3	3676.7	-40.09	194.57
134.99	14 26 9	2729.15	-35.15	79.37	33.56	49.59	15 11 38	2129.2	-40.08	71.83

DIFFERENTIAL CORRECTIONS

TDE	4.4435	TRA	-.7745	TC3-7.9688	BAU	1.9253	
RDE	1.1823	RRA	.0169	RC3-2.3376	FAU	.35071	
FDE	7.0987	FRA	-.0419	FC-17.5087	BSP	32474	
BDE	4.5981	BRA	.7747	BC3 8.3046	FSP	5232	

MID-COURSE EXECUTION ACCURACY

SGT	9184.5	SGR	2537.3	SG3	1516.4		
RRT	.9785	RRF	.9942	RTF	.9718		
SGB	9528.6	R23	.1959	R13	.9747		
SG1	9515.2	SG2	505.2	THA	15.17		

ORBIT DETERMINATION ACCURACY

ST	6138.5	SR	1627.7	SS	3153.0		
CRT	.9959	CRS	-.9999	CST	-.9967		
LSA	7085.7	MSA	256.9	SSA	14.5		
EL1	6349.1	EL2	142.5	ALF	14.80		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 682.964 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.002	GAL	3.11	AZL	85.67	HCA	200.91	SMA	185.87	ECC	.21471	INC	4.3344	V1	30.266
RP	213.01	LAP	-1.55	LOP	285.95	VP	23.066	GAP	-9.15	AZP	94.05	TAL	17.75	TAP	218.66	RCA	145.96	APO	225.78	V2	25.765
RC	297.448	GL	37.56	GP	-18.75	ZAL	61.67	ZAP	58.66	ETS	167.31	ZAE	85.14	ETE	177.34	ZAC	65.75	ETC	256.94	CLP	56.69

PLANETOCENTRIC CONIC

C3	16.690	VHL	4.085	DLA	50.27	RAL	157.84	RAD	6567.7	VEL	11.750	PTH	2.07	VHP	3.749	DPA	-8.86	RAP	157.28	ECC	1.2747

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.56	5 56 27	4256.55	-34.85	199.71	32.50	51.16	7 7 23	3656.5	-39.60	192.04
133.44	14 22 5	2731.64	-34.83	79.31	32.49	51.15	15 7 36	2131.6	-39.59	71.64
46.56	5 56 27	4256.55	-34.85	199.71	32.50	51.16	7 7 23	3656.5	-39.60	192.04
133.44	14 22 5	2731.64	-34.83	79.31	32.49	51.15	15 7 36	2131.6	-39.59	71.64
46.56	5 56 27	4256.55	-34.85	199.71	32.50	51.16	7 7 23	3656.5	-39.60	192.04
133.44	14 22 5	2731.64	-34.83	79.31	32.49	51.15	15 7 36	2131.6	-39.59	71.64

DIFFERENTIAL CORRECTIONS

TDE	4.3636	TRA	-.7817	TC3	-8.4453	BAU	1.9493
RDE	1.0730	RRA	.0241	RC3	-2.2353	FAU	.34537
FDE	6.7223	FRA	-.0090	FC	-17.9148	BSP	33066
BDE	4.4935	BRA	.7821	BC3	8.7361	FSP	5183

MID-COURSE EXECUTION ACCURACY

SGT	9381.3	SGR	2367.1	SG3	1504.3		
RRT	.9782	RRF	.9929	RTF	.9718		
SGB	9675.3	R23	.1916	R13	.9742		
SG1	9663.5	SG2	477.6	THA	13.90		

ORBIT DETERMINATION ACCURACY

ST	6144.8	SR	1506.0	SS	3057.4		
CRT	.9955	CRS	-.9999	CST	-.9965		
LSA	7022.0	MSA	256.7	SSA	15.5		
EL1	6325.2	EL2	137.9	ALF	13.72		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 318.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 687.231 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.008	GAL	3.02	AZL	85.83	HCA	202.10	SMA	185.97	ECC	.21474	INC	4.1662	V1	30.266
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.112	GAP	-9.27	AZP	93.86	TAL	17.24	TAP	219.34	RCA	146.03	APO	225.90	V2	25.798
RC	298.526	GL	36.63	GP	-17.67	ZAL	61.94	ZAP	57.35	ETS	167.46	ZAE	83.72	ETE	177.03	ZAC	66.81	ETC	257.05	CLP	55.51

PLANETOCENTRIC CONIC

C3	16.108	VHL	4.014	DLA	49.11	RAL	158.15	RAD	6567.6	VEL	11.726	PTH	2.07	VHP	3.772	DPA	-7.88	RAP	157.73	ECC	1.2651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.04	6 2 27	4237.01	-34.51	197.41	31.63	52.59	7 13 4	3637.0	-39.10	189.64
131.96	14 18 30	2734.96	-34.50	79.33	31.62	52.58	15 4 5	2135.0	-39.09	71.56
48.04	6 2 27	4237.01	-34.51	197.41	31.63	52.59	7 13 4	3637.0	-39.10	189.64
131.96	14 18 30	2734.96	-34.50	79.33	31.62	52.58	15 4 5	2135.0	-39.09	71.56
48.04	6 2 27	4237.01	-34.51	197.41	31.63	52.59	7 13 4	3637.0	-39.10	189.64
131.96	14 18 30	2734.96	-34.50	79.33	31.62	52.58	15 4 5	2135.0	-39.09	71.56

DIFFERENTIAL CORRECTIONS

TDE	4.2895	TRA	-.7823	TC3	-8.9231	BAU	1.9759
RDE	.9783	RRA	.0321	RC3	-2.1358	FAU	.33933
FDE	6.3518	FRA	.0329	FC	-18.2373	BSP	33623
BDE	4.3997	BRA	.7829	BC3	9.1752	FSP	5105

MID-COURSE EXECUTION ACCURACY

SGT	9576.6	SGR	2212.3	SG3	1487.8		
RRT	.9776	RRF	.9913	RTF	.9718		
SGB	9828.9	R23	.1860	R13	.9738		
SG1	9818.4	SG2	454.1	THA	12.75		

ORBIT DETERMINATION ACCURACY

ST	6148.7	SR	1397.7	SS	2958.3		
CRT	.9952	CRS	-.9999	CST	-.9962		
LSA	6960.3	MSA	256.5	SSA	16.5		
EL1	6304.1	EL2	133.9	ALF	12.75		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 320.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 691.505 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.014	GAL	2.93	AZL	85.99	HCA	203.30	SMA	186.07	ECC	.21478	INC	4.0139	V1	30.266
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.157	GAP	-9.38	AZP	93.69	TAL	16.71	TAP	220.01	RCA	146.10	APO	226.03	V2	25.831
RC	299.592	GL	35.78	GP	-16.69	ZAL	62.28	ZAP	56.09	ETS	167.61	ZAE	82.31	ETE	176.75	ZAC	67.78	ETC	257.13	CLP	54.38

PLANETOCENTRIC CONIC

C3	15.584	VHL	3.948	DLA	48.02	RAL	158.54	RAD	6567.6	VEL	11.703	PTH	2.06	VHP	3.798	DPA	-7.00	RAP	158.18	ECC	1.2565

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.45	6 8 47	4217.90	-34.15	195.21	30.93	53.93	7 19 5	3617.9	-38.59	187.35
130.55	14 15 19	2739.05	-34.14	79.41	30.92	53.92	15 0 58	2139.1	-38.58	71.55
49.45	6 8 47	4217.90	-34.15	195.21	30.93	53.93	7 19 5	3617.9	-38.59	187.35
130.55	14 15 19	2739.05	-34.14	79.41	30.92	53.92	15 0 58	2139.1	-38.58	71.55
49.45	6 8 47	4217.90	-34.15	195.21	30.93	53.93	7 19 5	3617.9	-38.59	187.35
130.55	14 15 19	2739.05	-34.14	79.41	30.92	53.92	15 0 58	2139.1	-38.58	71.55

DIFFERENTIAL CORRECTIONS

TDE	4.2210	TRA	-.7752	TC3	-9.3987	BAU	2.0036
RDE	.8959	RRA	.0406	RC3	-2.0378	FAU	.33249
FDE	5.9916	FRA	.0845	FC	-18.4713	BSP	34192
BDE	4.3150	BRA	.7762	BC3	9.6171	FSP	5016

MID-COURSE EXECUTION ACCURACY

SGT	9768.6	SGR	2070.6	SG3	1467.1		
RRT	.9768	RRF	.9894	RTF	.9717		
SGB	9985.6	R23	.1792	R13	.9734		
SG1	9976.2	SG2	434.3	THA	11.72		

ORBIT DETERMINATION ACCURACY

ST	6151.1	SR	1301.5	SS	2857.6		
CRT	.9948	CRS	-.9998	CST	-.9960		
LSA	6901.5	MSA	256.4	SSA	17.6		
EL1	6286.0	EL2	130.3	ALF	11.89		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 322.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 695.787 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.020	GAL	2.84	AZL	86.12	HCA	204.50	SMA	186.17	ECC	.21484	INC	3.8755	V1	30.266
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.201	GAP	-9.50	AZP	93.53	TAL	16.16	TAP	220.67	RCA	146.17	APO	226.17	V2	25.863
RC	300.645	GL	34.99	GP	-15.79	ZAL	62.70	ZAP	54.87	ETS	167.76	ZAE	80.93	ETE	176.52	ZAC	68.68	ETC	257.19	CLP	53.27

PLANETOCENTRIC CONIC

C3	15.107	VHL	3.887	DLA	46.97	RAL	159.02	RAD	6567.6	VEL	11.683	PTH	2.05	VHP	3.829	DPA	-6.21	RAP	158.62	ECC	1.2486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.81	6 15 26	4199.08	-33.79	193.07	30.39	55.18	7 25 25	3599.1	-38.08	185.15
129.19	14 12 27	2743.88	-33.77	79.56	30.38	55.17	14 58 11	2143.9	-38.07	71.63
50.81	6 15 26	4199.08	-33.79	193.07	30.39	55.18	7 25 25	3599.1	-38.08	185.15
129.19	14 12 27	2743.88	-33.77	79.56	30.38	55.17	14 58 11	2143.9	-38.07	71.63
50.81	6 15 26	4199.08	-33.79	193.07	30.39	55.18	7 25 25	3599.1	-38.08	185.15
129.19	14 12 27	2743.88	-33.77	79.56	30.38	55.17	14 58 11	2143.9	-38.07	71.63

DIFFERENTIAL CORRECTIONS

TDE	4.1581	TRA	-.7593	TC3	-9.8698	BAU	2.0315
RDE	.8245	RRA	.0500	RC3	-1.9415	FAU	.32496
FDE	5.6471	FRA	.1477	FC	-18.6227	BSP	34798
BDE	4.2390	BRA	.7609	BC3	10.0590	FSP	4923

MID-COURSE EXECUTION ACCURACY

SGT	9956.2	SGR	1940.7	SG3	1443.1		
RRT	.9756	RRF	.9872	RTF	.9716		
SGB	10143.6	R23	.1713	R13	.9730		
SG1	10134.9	SG2	418.4	THA	10.79		

ORBIT DETERMINATION ACCURACY

ST	6153.6	SR	1216.6	SS	2757.9		
CRT	.9943	CRS	-.9998	CST	-.9957		
LSA	6847.4	MSA	256.8	SSA	18.6		
EL1	6271.4	EL2	127.1	ALF	11.13		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 700.075 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.026	GAL	2.74	AZL	86.25	HCA	205.71	SMA	186.28	ECC	.21492	INC	3.7489	V1	30.266
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.245	GAP	-9.60	AZP	93.38	TAL	15.61	TAP	221.32	RCA	146.24	APO	226.31	V2	25.895
RC	301.687	GL	34.27	GP	-14.97	ZAL	63.18	ZAP	53.69	ETS	167.91	ZAE	79.58	ETE	176.32	ZAC	69.51	ETC	257.25	CLP	52.20

PLANETOCENTRIC CONIC

C3	14.670	VHL	3.830	DLA	45.97	RAL	159.57	RAD	6567.6	VEL	11.664	PTH	2.05	VHP	3.863	DPA	-5.51	RAP	159.07	ECC	1.2414

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.13	6 22 23	4180.45	-33.41	191.00	29.98	56.36	7 32 3	3580.4	-37.56	183.01
127.87	14 9 53	2749.41	-33.39	79.77	29.97	56.35	14 55 42	2149.4	-37.55	71.79
52.13	6 22 23	4180.45	-33.41	191.00	29.98	56.36	7 32 3	3580.4	-37.56	183.01
127.87	14 9 53	2749.41	-33.39	79.77	29.97	56.35	14 55 42	2149.4	-37.55	71.79
52.13	6 22 23	4180.45	-33.41	191.00	29.98	56.36	7 32 3	3580.4	-37.56	183.01
127.87	14 9 53	2749.41	-33.39	79.77	29.97	56.35	14 55 42	2149.4	-37.55	71.79

DIFFERENTIAL CORRECTIONS

TDE	4.0979	TRA	-.7369	TC-10.3427	BAU	2.0606	SGT10142.2	SGR	1822.0	SG3	1416.8
RDE	.7618	RRA	.0596	RC3-1.8483	FAU	.31705	RRT .9741	RRF	.9846	RTF	.9714
FDE	5.3158	FRA	.2178	FC-18.7105	BSP	35385	SGB10304.5	R23	.1626	R13	.9726
BDE	4.1681	BRA	.7393	BC310.5065	FSP	4819	SG110296.5	SG2	406.1	THA	9.94

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	6153.1	SR	1141.0	SS	2658.5	CRT	.9938	CRS	-.9997	CST	-.9954
LSA	6794.4	MSA	257.7	SSA	19.6	EL1	6256.8	EL2	124.5	ALF	10.45

LAUNCH DATE DEC 17 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 704.370 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.032	GAL	2.64	AZL	86.37	HCA	206.92	SMA	186.38	ECC	.21500	INC	3.6326	V1	30.266
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.288	GAP	-9.71	AZP	93.24	TAL	15.04	TAP	221.96	RCA	146.31	APO	226.46	V2	25.926
RC	302.717	GL	33.61	GP	-14.21	ZAL	63.73	ZAP	52.56	ETS	168.05	ZAE	78.25	ETE	176.15	ZAC	70.28	ETC	257.28	CLP	51.16

PLANETOCENTRIC CONIC

C3	14.268	VHL	3.777	DLA	45.01	RAL	160.18	RAD	6567.6	VEL	11.647	PTH	2.04	VHP	3.900	DPA	-4.88	RAP	159.51	ECC	1.2348

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.43	6 29 38	4161.88	-33.02	188.97	29.69	57.47	7 39 0	3561.9	-37.04	180.93
126.57	14 7 32	2755.65	-33.00	80.05	29.68	57.46	14 53 27	2155.7	-37.03	72.02
53.43	6 29 38	4161.88	-33.02	188.97	29.69	57.47	7 39 0	3561.9	-37.04	180.93
126.57	14 7 32	2755.65	-33.00	80.05	29.68	57.46	14 53 27	2155.7	-37.03	72.02
53.43	6 29 38	4161.88	-33.02	188.97	29.69	57.47	7 39 0	3561.9	-37.04	180.93
126.57	14 7 32	2755.65	-33.00	80.05	29.68	57.46	14 53 27	2155.7	-37.03	72.02

DIFFERENTIAL CORRECTIONS

TDE	4.0406	TRA	-.7083	TC-10.8124	BAU	2.0895	SGT10324.4	SGR	1712.7	SG3	1388.2
RDE	.7067	RRA	.0688	RC3-1.7573	FAU	.30871	RRT .9721	RRF	.9814	RTF	.9713
FDE	4.9991	FRA	.2897	FC-18.7320	BSP	35974	SGB10465.5	R23	.1528	R13	.9723
BDE	4.1019	BRA	.7117	BC310.9542	FSP	4709	SG110458.0	SG2	396.5	THA	9.17

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	6150.8	SR	1073.6	SS	2560.0	CRT	.9933	CRS	-.9997	CST	-.9950
LSA	6743.3	MSA	258.4	SSA	20.5	EL1	6242.6	EL2	121.9	ALF	9.84

LAUNCH DATE DEC 17 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 708.672 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.038	GAL	2.54	AZL	86.47	HCA	208.13	SMA	186.49	ECC	.21510	INC	3.5253	V1	30.266
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.331	GAP	-9.81	AZP	93.11	TAL	14.46	TAP	222.58	RCA	146.38	APO	226.61	V2	25.956
RC	303.736	GL	32.99	GP	-13.52	ZAL	64.34	ZAP	51.46	ETS	168.19	ZAE	76.95	ETE	176.00	ZAC	71.00	ETC	257.31	CLP	50.14

PLANETOCENTRIC CONIC

C3	13.895	VHL	3.728	DLA	44.08	RAL	160.86	RAD	6567.5	VEL	11.631	PTH	2.04	VHP	3.940	DPA	-4.32	RAP	159.97	ECC	1.2287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.69	6 37 13	4143.23	-32.61	186.97	29.51	58.53	7 46 17	3543.2	-36.51	178.89
125.31	14 5 20	2762.66	-32.60	80.39	29.50	58.52	14 51 23	2162.7	-36.50	72.32
54.69	6 37 13	4143.23	-32.61	186.97	29.51	58.53	7 46 17	3543.2	-36.51	178.89
125.31	14 5 20	2762.66	-32.60	80.39	29.50	58.52	14 51 23	2162.7	-36.50	72.32
54.69	6 37 13	4143.23	-32.61	186.97	29.51	58.53	7 46 17	3543.2	-36.51	178.89
125.31	14 5 20	2762.66	-32.60	80.39	29.50	58.52	14 51 23	2162.7	-36.50	72.32

DIFFERENTIAL CORRECTIONS

TDE	3.9839	TRA	-.6723	TC-11.2828	BAU	2.1188	SGT10503.4	SGR	1612.3	SG3	1358.2
RDE	.6577	RRA	.0782	RC3-1.6697	FAU	.30022	RRT .9696	RRF	.9778	RTF	.9711
FDE	4.6927	FRA	.3679	FC-18.7054	BSP	36572	SGB10626.5	R23	.1427	R13	.9719
BDE	4.0378	BRA	.6769	BC311.4057	FSP	4597	SG110619.3	SG2	389.9	THA	8.48

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	6143.9	SR	1012.9	SS	2460.7	CRT	.9928	CRS	-.9996	CST	-.9946
LSA	6690.3	MSA	259.6	SSA	21.5	EL1	6225.7	EL2	119.6	ALF	9.30

LAUNCH DATE DEC 17 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 712.979 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.045	GAL	2.44	AZL	86.57	HCA	209.34	SMA	186.60	ECC	.21522	INC	3.4260	V1	30.266
RP	211.08	LAP	-1.68	LOP	294.40	VP	23.373	GAP	-9.91	AZP	92.99	TAL	13.86	TAP	223.20	RCA	146.44	APO	226.77	V2	25.986
RC	304.746	GL	32.41	GP	-12.88	ZAL	65.00	ZAP	50.39	ETS	168.32	ZAE	75.67	ETE	175.88	ZAC	71.67	ETC	257.33	CLP	49.16

PLANETOCENTRIC CONIC

C3	13.549	VHL	3.681	DLA	43.16	RAL	161.59	RAD	6567.5	VEL	11.616	PTH	2.04	VHP	3.982	DPA	-3.82	RAP	160.43	ECC	1.2230

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.95	6 45 7	4124.45	-32.20	184.98	29.43	59.54	7 53 52	3524.5	-35.97	176.88
124.05	14 3 18	2770.40	-32.19	80.79	29.42	59.53	14 49 28	2170.4	-35.96	72.69
55.95	6 45 7	4124.45	-32.20	184.98	29.43	59.54	7 53 52	3524.5	-35.97	176.88
124.05	14 3 18	2770.40	-32.19	80.79	29.42	59.53	14 49 28	2170.4	-35.96	72.69
55.95	6 45 7	4124.45	-32.20	184.98	29.43	59.54	7 53 52	3524.5	-35.97	176.88
124.05	14 3 18	2770.40	-32.19	80.79	29.42	59.53	14 49 28	2170.4	-35.96	72.69

DIFFERENTIAL CORRECTIONS

TDE	3.9291	TRA	-.6293	TC-11.7512	BAU	2.1479	SGT10679.3	SGR	1520.2	SG3	1327.2
RDE	.6146	RRA	.0875	RC3-1.5847	FAU	.29153	RRT .9666	RRF	.9736	RTF	.9709
FDE	4.4031	FRA	.4499	FC-18.6278	BSP	37160	SGB10787.0	R23	.1323	R13	.9715
BDE	3.9769	BRA	.6354	BC311.8575	FSP	4480	SG110780.1	SG2	386.0	THA	7.84

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	6134.6	SR	958.9	SS	2364.1	CRT	.9923	CRS	-.9996	CST	-.9941
LSA	6638.8	MSA	261.2	SSA	22.4	EL1	6208.0	EL2	117.5	ALF	8.82

LAUNCH DATE DEC 17 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 717.294 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.051	GAL	2.34	AZL	86.67	HCA	210.56	SMA	186.72	ECC	.21536	INC	3.3336	V1	30.266
RP	210.82	LAP	-1.69	LOP	295.62	VP	23.415	GAP	-10.01	AZP	92.87	TAL	13.25	TAP	223.81	RCA	146.51	APO	226.93	V2	26.015
RC	305.746	GL	31.87	GP	-12.28	ZAL	65.72	ZAP	49.37	ETS	168.45	ZAE	74.41	ETE	175.77	ZAC	72.31	ETC	257.34	CLP	48.20

PLANETOCENTRIC CONIC

C3	13.226	VHL	3.637	DLA	42.27	RAL	162.38	RAD	6567.5	VEL	11.602	PTH	2.03	VHP	4.026	DPA	-3.37	RAP	160.90	ECC	1.2177

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.19	6 53 24	4105.31	-31.78	183.00	29.44	60.51	8 1 49	3505.3	-35.43	174.87
122.81	14 1 18	2779.07	-31.76	81.27	29.44	60.49	14 47 37	2179.1	-35.42	73.14
57.19	6 53 24	4105.31	-31.78	183.00	29.44	60.51	8 1 49	3505.3	-35.43	174.87
122.81	14 1 18	2779.07	-31.76	81.27	29.44	60.49	14 47 37	2179.1	-35.42	73.14
57.19	6 53 24	4105.31	-31.78	183.00	29.44	60.51	8 1 49	3505.3	-35.43	174.87
122.81	14 1 18	2779.07	-31.76	81.27	29.44	60.49	14 47 37	2179.1	-35.42	73.14

DIFFERENTIAL CORRECTIONS

TDE	3.8730	TRA	-.5813	TC-12.2216	BAU	2.1774	SGT10853.0	SGR	1435.3	SG3	1295.5
RDE	.5757	RRA	.0962	RC3-1.5033	FAU	.28290	RRT	.9630	RRF	.9686	RTF
FDE	4.1210	FRA	.5297	FC-18.5175	BSP	37739	SGB10947.5	R23	.1216	R13	.9712
BDE	3.9156	BRA	.5892	BC312.3137	FSP	4360	SG110940.7	SG2	383.8	THA	7.27

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	6118.8	SR	909.6	SS	2265.5
CRT	.9918	CRS	-.9995	CST	-.9935
LSA	6582.6	MSA	262.4	SSA	23.4
EL1	6185.0	EL2	115.4	ALF	8.39

LAUNCH DATE DEC 17 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 721.614 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.058	GAL	2.23	AZL	86.75	HCA	211.78	SMA	186.84	ECC	.21551	INC	3.2475	V1	30.266
RP	210.58	LAP	-1.71	LOP	296.84	VP	23.456	GAP	-10.11	AZP	92.76	TAL	12.63	TAP	224.41	RCA	146.57	APO	227.10	V2	26.043
RC	306.737	GL	31.37	GP	-11.73	ZAL	66.50	ZAP	48.37	ETS	168.57	ZAE	73.18	ETE	175.68	ZAC	72.90	ETC	257.34	CLP	47.27

PLANETOCENTRIC CONIC

C3	12.925	VHL	3.595	DLA	41.40	RAL	163.22	RAD	6567.5	VEL	11.589	PTH	2.03	VHP	4.072	DPA	-2.98	RAP	161.38	ECC	1.2127

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.44	7 2 2	4085.81	-31.34	181.02	29.54	61.43	8 10 8	3485.8	-34.88	172.87
121.56	13 59 21	2788.61	-31.33	81.82	29.54	61.42	14 45 50	2188.6	-34.87	73.67
58.44	7 2 2	4085.81	-31.34	181.02	29.54	61.43	8 10 8	3485.8	-34.88	172.87
121.56	13 59 21	2788.61	-31.33	81.82	29.54	61.42	14 45 50	2188.6	-34.87	73.67
58.44	7 2 2	4085.81	-31.34	181.02	29.54	61.43	8 10 8	3485.8	-34.88	172.87
121.56	13 59 21	2788.61	-31.33	81.82	29.54	61.42	14 45 50	2188.6	-34.87	73.67

DIFFERENTIAL CORRECTIONS

TDE	3.8182	TRA	-.5246	TC-12.6863	BAU	2.2058	SGT11021.6	SGR	1357.1	SG3	1262.9
RDE	.5413	RRA	.1050	RC3-1.4236	FAU	.27406	RRT	.9586	RRF	.9629	RTF
FDE	3.8550	FRA	.6154	FC-18.3571	BSP	38349	SGB11104.8	R23	.1113	R13	.9708
BDE	3.8564	BRA	.5351	BC312.7659	FSP	4246	SG111098.2	SG2	384.0	THA	6.74

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	6100.4	SR	865.8	SS	2170.1
CRT	.9912	CRS	-.9995	CST	-.9928
LSA	6527.2	MSA	264.4	SSA	24.3
EL1	6160.5	EL2	113.3	ALF	8.01

LAUNCH DATE DEC 17 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 725.936 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.065	GAL	2.12	AZL	86.83	HCA	213.00	SMA	186.95	ECC	.21567	INC	3.1669	V1	30.266
RP	210.34	LAP	-1.72	LOP	298.06	VP	23.496	GAP	-10.20	AZP	92.66	TAL	11.99	TAP	225.00	RCA	146.63	APO	227.27	V2	26.071
RC	307.719	GL	30.89	GP	-11.22	ZAL	67.33	ZAP	47.41	ETS	168.69	ZAE	71.98	ETE	175.60	ZAC	73.47	ETC	257.33	CLP	46.37

PLANETOCENTRIC CONIC

C3	12.642	VHL	3.556	DLA	40.53	RAL	164.11	RAD	6567.5	VEL	11.577	PTH	2.02	VHP	4.119	DPA	-2.64	RAP	161.87	ECC	1.2081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.70	7 11 7	4065.66	-30.89	179.00	29.72	62.34	8 18 53	3465.7	-34.32	170.84
120.30	13 57 21	2799.27	-30.88	82.45	29.71	62.32	14 44 1	2199.3	-34.31	74.29
59.70	7 11 7	4065.66	-30.89	179.00	29.72	62.34	8 18 53	3465.7	-34.32	170.84
120.30	13 57 21	2799.27	-30.88	82.45	29.71	62.32	14 44 1	2199.3	-34.31	74.29
59.70	7 11 7	4065.66	-30.89	179.00	29.72	62.34	8 18 53	3465.7	-34.32	170.84
120.30	13 57 21	2799.27	-30.88	82.45	29.71	62.32	14 44 1	2199.3	-34.31	74.29

DIFFERENTIAL CORRECTIONS

TDE	3.7802	TRA	-.4447	TC-13.0997	BAU	2.2255	SGT11170.1	SGR	1284.0	SG3	1226.1
RDE	.5132	RRA	.1165	RC3-1.3368	FAU	.26351	RRT	.9524	RRF	.9564	RTF
FDE	3.6332	FRA	.7359	FC-18.0459	BSP	39363	SGB11243.7	R23	.1035	R13	.9702
BDE	3.8149	BRA	.4598	BC313.1677	FSP	4199	SG111237.0	SG2	389.0	THA	6.26

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	6104.6	SR	830.8	SS	2094.7
CRT	.9907	CRS	-.9995	CST	-.9919
LSA	6501.6	MSA	270.6	SSA	24.7
EL1	6159.9	EL2	111.8	ALF	7.68

LAUNCH DATE DEC 17 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 730.269 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.072	GAL	2.01	AZL	86.91	HCA	214.23	SMA	187.07	ECC	.21586	INC	3.0913	V1	30.266
RP	210.10	LAP	-1.74	LOP	299.29	VP	23.535	GAP	-10.29	AZP	92.56	TAL	11.34	TAP	225.57	RCA	146.69	APO	227.46	V2	26.098
RC	308.691	GL	30.44	GP	-10.75	ZAL	68.21	ZAP	46.47	ETS	168.80	ZAE	70.79	ETE	175.54	ZAC	74.00	ETC	257.32	CLP	45.49

PLANETOCENTRIC CONIC

C3	12.377	VHL	3.518	DLA	39.67	RAL	165.04	RAD	6567.5	VEL	11.566	PTH	2.02	VHP	4.168	DPA	-2.34	RAP	162.37	ECC	1.2037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.97	7 20 38	4044.82	-30.42	176.96	29.97	63.21	8 28 3	3444.8	-33.75	168.78
119.03	13 55 17	2811.08	-30.41	83.18	29.97	63.19	14 42 8	2211.1	-33.74	75.00
60.97	7 20 38	4044.82	-30.42	176.96	29.97	63.21	8 28 3	3444.8	-33.75	168.78
119.03	13 55 17	2811.08	-30.41	83.18	29.97	63.19	14 42 8	2211.1	-33.74	75.00
60.97	7 20 38	4044.82	-30.42	176.96	29.97	63.21	8 28 3	3444.8	-33.75	168.78
119.03	13 55 17	2811.08	-30.41	83.18	29.97	63.19	14 42 8	2211.1	-33.74	75.00

DIFFERENTIAL CORRECTIONS

TDE	3.7145	TRA	-.3846	TC-13.5855	BAU	2.2578	SGT11341.7	SGR	1218.1	SG3	1194.9
RDE	.4840	RRA	.1230	RC3-1.2671	FAU	.25556	RRT	.9466	RRF	.9489	RTF
FDE	3.3736	FRA	.8019	FC-17.8750	BSP	39740	SGB11406.9	R23	.0929	R13	.9699
BDE	3.7459	BRA	.4038	BC313.6445	FSP	4045	SG111400.2	SG2	390.5	THA	5.81

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	6061.1	SR	792.5	SS	1991.8
CRT	.9903	CRS	-.9994	CST	-.9910
LSA	6423.2	MSA	271.0	SSA	25.8
EL1	6111.7	EL2	109.4	ALF	7.38

LAUNCH DATE DEC 17 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 734.606 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.079	GAL	1.89	AZL	86.98	HCA	215.46	SMA	187.20	ECC	.21607	INC	3.0201	V1	30.266
RP	209.88	LAP	-1.75	LOP	300.52	VP	23.574	GAP	-10.38	AZP	92.46	TAL	10.68	TAP	226.14	RCA	146.75	APO	227.64	V2	26.124
RC	309.654	GL	30.01	GP	-10.31	ZAL	69.15	ZAP	45.56	ETS	168.91	ZAE	69.63	ETE	175.48	ZAC	74.51	ETC	257.31	CLP	44.63

PLANETOCENTRIC CONIC

C3	12.129	VHL	3.483	DLA	38.82	RAL	166.01	RAD	6567.5	VEL	11.555	PTH	2.02	VHP	4.219	DPA	-2.08	RAP	162.88	ECC	1.1996

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.26	7 30 40	4023.04	-29.95	174.86	30.30	64.06	8 37 43	3423.0	-33.17	166.68
117.74	13 53 2	2824.28	-29.93	84.01	30.29	64.04	14 40 7	2224.3	-33.16	75.83
62.26	7 30 40	4023.04	-29.95	174.86	30.30	64.06	8 37 43	3423.0	-33.17	166.68
117.74	13 53 2	2824.28	-29.93	84.01	30.29	64.04	14 40 7	2224.3	-33.16	75.83
62.26	7 30 40	4023.04	-29.95	174.86	30.30	64.06	8 37 43	3423.0	-33.17	166.68
117.74	13 53 2	2824.28	-29.93	84.01	30.29	64.04	14 40 7	2224.3	-33.16	75.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.6493	TRA	-.3164	TC-14.0667	BAU	2.2893	SGT11510.5	SGR	1157.4	SG3	1163.4	ST	6014.1	SR	758.3	SS	1892.5
RDE	.4580	RRA	.1296	RC3-1.1986	FAU	.24752	RRT .9398	RRF	.9404	RTF	.9694	CRT	.9898	CRS	-.9993	CST	-.9900
FDE	3.1300	FRA	.8712	FC-17.6665	BSP	40170	SGB11568.5	R23	.0827	R13	.9697	LSA	6344.4	MSA	271.9	SSA	26.8
BDE	3.6779	BRA	.3419	BC314.1177	FSP	3905	SG111561.8	SG2	393.6	THA	5.41	EL1	6060.8	EL2	107.0	ALF	7.12

LAUNCH DATE DEC 17 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 738.948 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.086	GAL	1.77	AZL	87.05	HCA	216.69	SMA	187.32	ECC	.21629	INC	2.9530	V1	30.266
RP	209.66	LAP	-1.76	LOP	301.75	VP	23.612	GAP	-10.47	AZP	92.37	TAL	10.01	TAP	226.70	RCA	146.80	APO	227.84	V2	26.149
RC	310.607	GL	29.60	GP	-9.89	ZAL	70.13	ZAP	44.68	ETS	169.01	ZAE	68.49	ETE	175.44	ZAC	74.99	ETC	257.28	CLP	43.80

PLANETOCENTRIC CONIC

C3	11.897	VHL	3.449	DLA	37.96	RAL	167.03	RAD	6567.5	VEL	11.545	PTH	2.02	VHP	4.271	DPA	-1.85	RAP	163.41	ECC	1.1958

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.59	7 41 13	4000.20	-29.45	172.70	30.69	64.88	8 47 54	3400.2	-32.57	164.52
116.41	13 50 36	2838.98	-29.44	84.95	30.68	64.87	14 37 55	2239.0	-32.56	76.77
63.59	7 41 13	4000.20	-29.45	172.70	30.69	64.88	8 47 54	3400.2	-32.57	164.52
116.41	13 50 36	2838.98	-29.44	84.95	30.68	64.87	14 37 55	2239.0	-32.56	76.77
63.59	7 41 13	4000.20	-29.45	172.70	30.69	64.88	8 47 54	3400.2	-32.57	164.52
116.41	13 50 36	2838.98	-29.44	84.95	30.68	64.87	14 37 55	2239.0	-32.56	76.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.5848	TRA	-.2387	TC-14.5352	BAU	2.3188	SGT11672.7	SGR	1101.2	SG3	1131.4	ST	5964.3	SR	727.7	SS	1796.3
RDE	.4348	RRA	.1364	RC3-1.1308	FAU	.23929	RRT .9318	RRF	.9308	RTF	.9691	CRT	.9895	CRS	-.9991	CST	-.9887
FDE	2.9002	FRA	.9453	FC-17.4131	BSP	40659	SGB11724.5	R23	.0735	R13	.9694	LSA	6265.3	MSA	273.7	SSA	27.7
BDE	3.6111	BRA	.2749	BC314.5791	FSP	3778	SG111717.8	SG2	398.1	THA	5.03	EL1	6007.7	EL2	104.5	ALF	6.89

LAUNCH DATE DEC 17 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 743.295 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.093	GAL	1.66	AZL	87.11	HCA	217.92	SMA	187.45	ECC	.21654	INC	2.8895	V1	30.266
RP	209.44	LAP	-1.78	LOP	302.99	VP	23.649	GAP	-10.56	AZP	92.28	TAL	9.32	TAP	227.25	RCA	146.86	APO	228.03	V2	26.174
RC	311.551	GL	29.20	GP	-9.51	ZAL	71.16	ZAP	43.82	ETS	169.11	ZAE	67.38	ETE	175.40	ZAC	75.46	ETC	257.26	CLP	42.99

PLANETOCENTRIC CONIC

C3	11.680	VHL	3.418	DLA	37.10	RAL	168.09	RAD	6567.4	VEL	11.535	PTH	2.01	VHP	4.324	DPA	-1.67	RAP	163.94	ECC	1.1922

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.96	7 52 26	3975.93	-28.93	170.45	31.14	65.69	8 58 42	3375.9	-31.95	162.27
115.04	13 47 50	2855.52	-28.92	86.03	31.14	65.68	14 35 26	2255.5	-31.94	77.85
64.96	7 52 26	3975.93	-28.93	170.45	31.14	65.69	8 58 42	3375.9	-31.95	162.27
115.04	13 47 50	2855.52	-28.92	86.03	31.14	65.68	14 35 26	2255.5	-31.94	77.85
64.96	7 52 26	3975.93	-28.93	170.45	31.14	65.69	8 58 42	3375.9	-31.95	162.27
115.04	13 47 50	2855.52	-28.92	86.03	31.14	65.68	14 35 26	2255.5	-31.94	77.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.5195	TRA	-.1541	TC-14.9982	BAU	2.3478	SGT11832.7	SGR	1049.6	SG3	1099.5	ST	5909.4	SR	700.4	SS	1704.0
RDE	.4141	RRA	.1430	RC3-1.0644	FAU	.23109	RRT .9225	RRF	.9200	RTF	.9689	CRT	.9892	CRS	-.9989	CST	-.9872
FDE	2.6852	FRA	1.0193	FC-17.1294	BSP	41146	SGB11879.2	R23	.0650	R13	.9691	LSA	6183.7	MSA	275.9	SSA	28.6
BDE	3.5438	BRA	.2102	BC315.0359	FSP	3652	SG111872.3	SG2	403.7	THA	4.68	EL1	5949.9	EL2	101.9	ALF	6.69

LAUNCH DATE DEC 17 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 747.646 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.100	GAL	1.53	AZL	87.17	HCA	219.16	SMA	187.57	ECC	.21680	INC	2.8293	V1	30.266
RP	209.24	LAP	-1.79	LOP	304.23	VP	23.686	GAP	-10.64	AZP	92.19	TAL	8.62	TAP	227.78	RCA	146.91	APO	228.24	V2	26.198
RC	312.486	GL	28.82	GP	-9.15	ZAL	72.25	ZAP	42.99	ETS	169.20	ZAE	66.28	ETE	175.36	ZAC	75.90	ETC	257.23	CLP	42.20

PLANETOCENTRIC CONIC

C3	11.477	VHL	3.388	DLA	36.24	RAL	169.19	RAD	6567.4	VEL	11.527	PTH	2.01	VHP	4.379	DPA	-1.51	RAP	164.49	ECC	1.1889

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.38	8 4 22	3949.96	-28.40	168.08	31.66	66.48	9 10 12	3350.0	-31.32	159.91
113.62	13 44 40	2874.19	-28.39	87.26	31.66	66.47	14 32 34	2274.2	-31.31	79.09
66.38	8 4 22	3949.96	-28.40	168.08	31.66	66.48	9 10 12	3350.0	-31.32	159.91
113.62	13 44 40	2874.19	-28.39	87.26	31.66	66.47	14 32 34	2274.2	-31.31	79.09
66.38	8 4 22	3949.96	-28.40	168.08	31.66	66.48	9 10 12	3350.0	-31.32	159.91
113.62	13 44 40	2874.19	-28.39	87.26	31.66	66.47	14 32 34	2274.2	-31.31	79.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.4521	TRA	-.0622	TC-15.4508	BAU	2.3757	SGT11987.4	SGR	1001.7	SG3	1067.3	ST	5847.0	SR	675.4	SS	1611.7
RDE	.3953	RRA	.1495	RC3 -.9992	FAU	.22289	RRT .9118	RRF	.9078	RTF	.9685	CRT	.9890	CRS	-.9985	CST	-.9854
FDE	2.4775	FRA	1.0949	FC-16.8135	BSP	41683	SGB12029.2	R23	.0574	R13	.9687	LSA	6096.1	MSA	278.9	SSA	29.5
BDE	3.4747	BRA	.1619	BC315.4831	FSP	3536	SG112022.2	SG2	410.1	THA	4.36	EL1	5885.1	EL2	99.1	ALF	6.52

LAUNCH DATE DEC 17 1964 FLIGHT TIME 348.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 752.001 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.108	GAL	1.41	AZL	87.23	HCA	220.40	SMA	187.70	ECC	.21709	INC	2.7721	V1	30.266
RP	209.04	LAP	-1.80	LOP	305.47	VP	23.721	GAP	-10.73	AZP	92.11	TAL	7.91	TAP	228.31	RCA	146.95	APO	228.45	V2	26.221
RC	313.411	GL	28.45	GP	-8.81	ZAL	73.38	ZAP	42.19	ETS	169.29	ZAE	65.20	ETE	175.34	ZAC	76.33	ETC	257.19	CLP	41.43

PLANETOCENTRIC CONIC

C3	11.288	VHL	3.360	DLA	35.36	RAL	170.32	RAD	6567.4	VEL	11.519	PTH	2.01	VHP	4.434	DPA	-1.39	RAP	165.05	ECC	1.1858

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.87	8 17 9	3921.87	-27.84	165.57	32.24	67.26	9 22 30	3321.9	-30.67	157.41
112.13	13 40 56	2895.40	-27.83	88.69	32.23	67.25	14 29 11	2295.4	-30.66	80.52
67.87	8 17 9	3921.87	-27.84	165.57	32.24	67.26	9 22 30	3321.9	-30.67	157.41
112.13	13 40 56	2895.40	-27.83	88.69	32.23	67.25	14 29 11	2295.4	-30.66	80.52
67.87	8 17 9	3921.87	-27.84	165.57	32.24	67.26	9 22 30	3321.9	-30.67	157.41
112.13	13 40 56	2895.40	-27.83	88.69	32.23	67.25	14 29 11	2295.4	-30.66	80.52

DIFFERENTIAL CORRECTIONS

TDE	3.3807	TRA	.0352	TC-15.9000	BAU	2.4037	
RDE	.3781	RRA	.1555	RC3 -.9363	FAU	.21493	
FDE	2.2783	FRA	1.1652	FC-16.4837	BSP	42168	
BDE	3.4018	BRA	.1594	BC315.9275	FSP	3417	

MID-COURSE EXECUTION ACCURACY

SGT12140.6	SGR	957.8	SG3	1035.8			
RRT	.8999	RRF	.8941	RTF	.9682		
SGB12178.3	R23	.0500	R13	.9684			
SG112171.2	SG2	416.7	THA	4.07			

ORBIT DETERMINATION ACCURACY

ST	5774.1	SR	652.4	SS	1520.0		
CRT	.9890	CRS	-.9979	CST	-.9831		
LSA	5999.7	MSA	281.7	SSA	30.3		
EL1	5810.1	EL2	96.0	ALF	6.38		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 350.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 756.361 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.115	GAL	1.28	AZL	87.28	HCA	221.64	SMA	187.83	ECC	.21741	INC	2.7176	V1	30.266
RP	208.85	LAP	-1.81	LOP	306.71	VP	23.756	GAP	-10.81	AZP	92.03	TAL	7.18	TAP	228.82	RCA	147.00	APO	228.67	V2	26.243
RC	314.329	GL	28.09	GP	-8.49	ZAL	74.56	ZAP	41.40	ETS	169.37	ZAE	64.14	ETE	175.31	ZAC	76.74	ETC	257.15	CLP	40.68

PLANETOCENTRIC CONIC

C3	11.114	VHL	3.334	DLA	34.48	RAL	171.49	RAD	6567.4	VEL	11.511	PTH	2.01	VHP	4.491	DPA	-1.29	RAP	165.63	ECC	1.1829

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.45	8 30 56	3891.09	-27.27	162.88	32.87	68.03	9 35 47	3291.1	-30.00	154.73
110.55	13 36 28	2919.74	-27.26	90.34	32.87	68.01	14 25 8	2319.7	-29.99	82.19
69.45	8 30 56	3891.09	-27.27	162.88	32.87	68.03	9 35 47	3291.1	-30.00	154.73
110.55	13 36 28	2919.74	-27.26	90.34	32.87	68.01	14 25 8	2319.7	-29.99	82.19
69.45	8 30 56	3891.09	-27.27	162.88	32.87	68.03	9 35 47	3291.1	-30.00	154.73
110.55	13 36 28	2919.74	-27.26	90.34	32.87	68.01	14 25 8	2319.7	-29.99	82.19

DIFFERENTIAL CORRECTIONS

TDE	3.3079	TRA	.1409	TC-16.3335	BAU	2.4303	
RDE	.3628	RRA	.1614	RC3 -.8736	FAU	.20683	
FDE	2.0911	FRA	1.2371	FC-16.1119	BSP	42686	
BDE	3.3277	BRA	.2142	BC316.3568	FSP	3303	

MID-COURSE EXECUTION ACCURACY

SGT12288.4	SGR	917.2	SG3	1003.8			
RRT	.8861	RRF	.8789	RTF	.9679		
SGB12322.6	R23	.0438	R13	.9680			
SG112315.3	SG2	424.2	THA	3.79			

ORBIT DETERMINATION ACCURACY

ST	5695.2	SR	631.9	SS	1432.0		
CRT	.9891	CRS	-.9969	CST	-.9804		
LSA	5899.4	MSA	285.4	SSA	31.1		
EL1	5729.4	EL2	92.5	ALF	6.26		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 352.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 760.724 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.123	GAL	1.15	AZL	87.33	HCA	222.89	SMA	187.96	ECC	.21774	INC	2.6657	V1	30.266
RP	208.67	LAP	-1.81	LOP	307.95	VP	23.790	GAP	-10.89	AZP	91.95	TAL	6.44	TAP	229.32	RCA	147.04	APO	228.89	V2	26.264
RC	315.238	GL	27.73	GP	-8.19	ZAL	75.79	ZAP	40.64	ETS	169.45	ZAE	63.10	ETE	175.29	ZAC	77.14	ETC	257.11	CLP	39.95

PLANETOCENTRIC CONIC

C3	10.953	VHL	3.310	DLA	33.59	RAL	172.70	RAD	6567.4	VEL	11.504	PTH	2.00	VHP	4.549	DPA	-1.22	RAP	166.21	ECC	1.1803

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.14	8 45 56	3857.01	-26.67	159.95	33.57	68.79	9 50 13	3257.0	-29.31	151.82
108.86	13 31 5	2947.84	-26.66	92.26	33.56	68.77	14 20 13	2347.8	-29.30	84.13
71.14	8 45 56	3857.01	-26.67	159.95	33.57	68.79	9 50 13	3257.0	-29.31	151.82
108.86	13 31 5	2947.84	-26.66	92.26	33.56	68.77	14 20 13	2347.8	-29.30	84.13
110.00	14 26 27	2778.43	-30.41	80.55	35.02	73.58	15 12 45	2178.4	-32.36	71.87
110.00	12 49 44	3074.41	-23.03	100.35	31.82	64.02	13 40 59	2474.4	-26.33	92.75

DIFFERENTIAL CORRECTIONS

TDE	3.2323	TRA	.2523	TC-16.7597	BAU	2.4570	
RDE	.3489	RRA	.1667	RC3 -.8136	FAU	.19912	
FDE	1.9121	FRA	1.3029	FC-15.7388	BSP	43207	
BDE	3.2511	BRA	.3024	BC316.7794	FSP	3192	

MID-COURSE EXECUTION ACCURACY

SGT12435.9	SGR	880.3	SG3	973.0			
RRT	.8711	RRF	.8623	RTF	.9676		
SGB12467.0	R23	.0374	R13	.9677			
SG112459.5	SG2	431.5	THA	3.53			

ORBIT DETERMINATION ACCURACY

ST	5608.0	SR	613.1	SS	1345.3		
CRT	.9894	CRS	-.9954	CST	-.9771		
LSA	5792.3	MSA	288.7	SSA	31.9		
EL1	5640.7	EL2	88.7	ALF	6.18		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 765.090 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.130	GAL	1.02	AZL	87.38	HCA	224.13	SMA	188.10	ECC	.21810	INC	2.6160	V1	30.266
RP	208.49	LAP	-1.82	LOP	309.20	VP	23.823	GAP	-10.97	AZP	91.88	TAL	5.69	TAP	229.82	RCA	147.07	APO	229.12	V2	26.285
RC	316.140	GL	27.38	GP	-7.91	ZAL	77.07	ZAP	39.90	ETS	169.53	ZAE	62.08	ETE	175.28	ZAC	77.52	ETC	257.07	CLP	39.23

PLANETOCENTRIC CONIC

C3	10.806	VHL	3.287	DLA	32.68	RAL	173.93	RAD	6567.4	VEL	11.498	PTH	2.00	VHP	4.608	DPA	-1.18	RAP	166.81	ECC	1.1778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.97	9 2 29	3818.41	-26.05	156.71	34.31	69.54	10 6 7	3218.4	-28.59	148.59
107.03	13 24 24	2980.91	-26.03	94.55	34.31	69.52	14 14 5	2380.9	-28.58	86.43
72.97	9 2 29	3818.41	-26.05	156.71	34.31	69.54	10 6 7	3218.4	-28.59	148.59
107.03	13 24 24	2980.91	-26.03	94.55	34.31	69.52	14 14 5	2380.9	-28.58	86.43
110.00	14 59 36	2687.65	-31.97	73.94	36.34	77.21	15 44 24	2087.6	-33.40	65.00
110.00	12 26 27	3159.68	-20.40	105.56	31.54	61.95	13 19 7	2559.7	-23.98	98.26

DIFFERENTIAL CORRECTIONS

TDE	3.1524	TRA	.3681	TC-17.1746	BAU	2.4836	
RDE	.3363	RRA	.1716	RC3 -.7548	FAU	.19151	
FDE	1.7401	FRA	1.3636	FC-15.3426	BSP	43714	
BDE	3.1703	BRA	.4062	BC317.1912	FSP	3087	

MID-COURSE EXECUTION ACCURACY

SGT12580.5	SGR	846.2	SG3	942.2			
RRT	.8543	RRF	.8438	RTF	.9674		
SGB12608.9	R23	.0315	R13	.9674			
SG112601.3	SG2	439.1	THA	3.29			

ORBIT DETERMINATION ACCURACY

ST	5509.6	SR	595.9	SS	1259.4		
CRT	.9898	CRS	-.9932	CST	-.9731		
LSA	5675.5	MSA	292.2	SSA	32.8		
EL1	5541.1	EL2	84.4	ALF	6.11		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 769.460 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.138 GAL .88 AZL 87.43 HCA 225.38 SMA 188.23 ECC .21849 INC 2.5685 V1 30.266
RP 208.32 LAP -1.83 LOP 310.45 VP 23.855 GAP -11.05 AZP 91.80 TAL 4.92 TAP 230.30 RCA 147.11 APO 229.36 V2 26.304
RC 317.035 GL 27.03 GP -7.65 ZAL 78.39 ZAP 39.17 ETS 169.59 ZAE 61.08 ETE 175.27 ZAC 77.90 ETC 257.02 CLP 38.54

PLANETOCENTRIC CONIC

C3 10.674 VHL 3.267 DLA 31.75 RAL 175.20 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 4.668 DPA -1.16 RAP 167.42 ECC 1.1757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.00	9 21 2	3773.81	-25.40	153.05	35.11	70.27	10 23 56	3173.8	-27.85	144.95
105.00	13 15 57	3020.48	-25.39	97.30	35.11	70.26	14 6 18	2420.5	-27.84	89.20
75.00	9 21 2	3773.81	-25.40	153.05	35.11	70.27	10 23 56	3173.8	-27.85	144.95
105.00	13 15 57	3020.48	-25.39	97.30	35.11	70.26	14 6 18	2420.5	-27.84	89.20
110.00	15 25 7	2619.95	-32.88	68.86	37.38	80.08	16 8 47	2019.9	-33.90	59.78
110.00	12 11 2	3222.34	-18.35	109.27	31.65	60.64	13 4 45	2622.3	-22.11	102.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.0699 TRA .4933 TC-17.5731 BAU 2.5096 SGT12722.7 SGR 815.2 SG3 911.7 ST 5403.5 SR 580.4 SS 1176.5
RDE .3250 RRA .1764 RC3 -.6971 FAU .18397 RRT .8357 RRF .8237 RTF .9671 CRT .9904 CRS -.9900 CST -.9679
FDE 1.5768 FRA 1.4253 FC-14.9219 BSP 44231 SGB12748.8 R23 .0265 R13 .9671 LSA 5552.5 MSA 296.6 SSA 33.5
BDE 3.0871 BRA .5239 BC317.5869 FSP 2983 SG112741.0 SG2 447.0 THA 3.07 EL1 5434.0 EL2 79.7 ALF 6.07

LAUNCH DATE DEC 17 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 773.833 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.145 GAL .74 AZL 87.48 HCA 226.63 SMA 188.37 ECC .21891 INC 2.5228 V1 30.266
RP 208.16 LAP -1.83 LOP 311.70 VP 23.887 GAP -11.13 AZP 91.73 TAL 4.14 TAP 230.77 RCA 147.13 APO 229.60 V2 26.323
RC 317.924 GL 26.68 GP -7.40 ZAL 79.76 ZAP 38.47 ETS 169.66 ZAE 60.09 ETE 175.26 ZAC 78.26 ETC 256.98 CLP 37.86

PLANETOCENTRIC CONIC

C3 10.555 VHL 3.249 DLA 30.81 RAL 176.50 RAD 6567.4 VEL 11.487 PTH 2.00 VHP 4.728 DPA -1.16 RAP 168.04 ECC 1.1737

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.32	9 42 30	3720.24	-24.73	148.75	35.97	71.01	10 44 31	3120.2	-27.09	140.66
102.68	13 4 49	3069.52	-24.71	100.74	35.96	70.99	13 55 59	2469.5	-27.08	92.66
77.32	9 42 30	3720.24	-24.73	148.75	35.97	71.01	10 44 31	3120.2	-27.09	140.66
102.68	13 4 49	3069.52	-24.71	100.74	35.96	70.99	13 55 59	2469.5	-27.08	92.66
110.00	15 47 17	2562.46	-33.47	64.48	38.31	82.61	16 29 59	1962.5	-34.13	55.30
110.00	11 59 13	3275.30	-16.55	112.33	31.96	59.66	12 53 48	2675.3	-20.46	105.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.9834 TRA .6225 TC-17.9571 BAU 2.5356 SGT12863.1 SGR 787.0 SG3 881.9 ST 5286.9 SR 566.3 SS 1095.4
RDE .3148 RRA .1807 RC3 -.6411 FAU .17669 RRT .8156 RRF .8019 RTF .9668 CRT .9912 CRS -.9852 CST -.9616
FDE 1.4208 FRA 1.4803 FC-14.4924 BSP 44699 SGB12887.1 R23 .0214 R13 .9669 LSA 5420.3 MSA 300.9 SSA 34.3
BDE 2.9999 BRA .6482 BC317.9685 FSP 2870 SG112879.1 SG2 454.8 THA 2.86 EL1 5316.6 EL2 74.4 ALF 6.06

LAUNCH DATE DEC 17 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 778.209 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.153 GAL .60 AZL 87.52 HCA 227.88 SMA 188.51 ECC .21935 INC 2.4790 V1 30.266
RP 208.01 LAP -1.84 LOP 312.95 VP 23.917 GAP -11.21 AZP 91.66 TAL 3.35 TAP 231.23 RCA 147.16 APO 229.85 V2 26.341
RC 318.808 GL 26.33 GP -7.16 ZAL 81.18 ZAP 37.78 ETS 169.72 ZAE 59.12 ETE 175.25 ZAC 78.61 ETC 256.93 CLP 37.20

PLANETOCENTRIC CONIC

C3 10.451 VHL 3.233 DLA 29.85 RAL 177.82 RAD 6567.4 VEL 11.482 PTH 2.00 VHP 4.790 DPA -1.18 RAP 168.67 ECC 1.1720

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.13	10 8 42	3651.78	-24.03	143.37	36.88	71.73	11 9 33	3051.8	-26.30	135.31
99.87	12 49 12	3133.98	-24.02	105.30	36.87	71.72	13 41 26	2534.0	-26.29	97.24
100.00	13 3 21	3088.78	-24.92	102.25	37.19	72.93	13 54 50	2488.8	-27.02	94.08
100.00	12 37 13	3172.21	-23.13	107.81	36.54	70.52	13 30 6	2572.2	-25.58	99.86
110.00	16 7 29	2511.00	-33.85	60.51	39.19	84.93	16 49 20	1911.0	-34.18	51.28
110.00	11 49 35	3322.76	-14.90	115.01	32.43	58.87	12 44 58	2722.8	-18.91	108.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.8911 TRA .7587 TC-18.3241 BAU 2.5616 SGT13001.1 SGR 761.1 SG3 852.5 ST 5157.2 SR 553.1 SS 1014.9
RDE .3054 RRA .1847 RC3 -.5865 FAU .16956 RRT .7935 RRF .7782 RTF .9665 CRT .9922 CRS -.9780 CST -.9532
FDE 1.2685 FRA 1.5339 FC-14.0455 BSP 45217 SGB13023.4 R23 .0170 R13 .9665 LSA 5276.2 MSA 306.3 SSA 35.1
BDE 2.9072 BRA .7809 BC318.3335 FSP 2780 SG113015.1 SG2 462.7 THA 2.66 EL1 5186.4 EL2 68.7 ALF 6.08

LAUNCH DATE DEC 17 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 782.586 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.161 GAL .46 AZL 87.56 HCA 229.13 SMA 188.64 ECC .21982 INC 2.4368 V1 30.266
RP 207.86 LAP -1.84 LOP 314.21 VP 23.946 GAP -11.29 AZP 91.59 TAL 2.54 TAP 231.68 RCA 147.18 APO 230.11 V2 26.357
RC 319.685 GL 25.97 GP -6.94 ZAL 82.63 ZAP 37.12 ETS 169.77 ZAE 58.17 ETE 175.24 ZAC 78.96 ETC 256.88 CLP 36.55

PLANETOCENTRIC CONIC

C3 10.362 VHL 3.219 DLA 28.87 RAL 179.17 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 4.853 DPA -1.23 RAP 169.31 ECC 1.1705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.10	10 45 24	3549.49	-23.30	135.56	37.83	72.45	11 44 33	2949.5	-25.48	127.52
95.90	12 23 15	3232.81	-23.29	112.35	37.83	72.44	13 17 8	2632.8	-25.48	104.31
100.00	14 1 6	2918.45	-27.79	90.42	39.12	78.51	14 49 45	2318.5	-29.09	81.86
100.00	11 50 14	3339.09	-18.95	118.44	36.09	66.44	12 45 53	2739.1	-21.98	110.95
110.00	16 26 23	2463.59	-34.07	56.83	40.05	87.10	17 7 26	1863.6	-34.10	47.58
110.00	11 41 27	3366.71	-13.34	117.46	33.02	58.23	12 37 34	2766.7	-17.44	110.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.7964 TRA .9024 TC-18.6652 BAU 2.5868 SGT13135.5 SGR 737.9 SG3 823.7 ST 5020.5 SR 541.5 SS 938.9
RDE .2973 RRA .1884 RC3 -.5334 FAU .16264 RRT .7699 RRF .7529 RTF .9662 CRT .9932 CRS -.9678 CST -.9426
FDE 1.1255 FRA 1.5834 FC-13.5880 BSP 45687 SGB13156.2 R23 .0126 R13 .9662 LSA 5126.6 MSA 312.1 SSA 35.8
BDE 2.8121 BRA .9219 BC318.6728 FSP 2673 SG113147.8 SG2 470.4 THA 2.48 EL1 5049.2 EL2 62.5 ALF 6.12

LAUNCH DATE DEC 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 786.966 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.169	GAL	.31	AZL	87.60	HCA	230.39	SMA	188.78	ECC	.22033	INC	2.3961
RP	207.73	LAP	-1.85	LOP	315.46	VP	23.975	GAP	-11.37	AZP	91.53	TAL	1.72	TAP	232.11	RCA	147.19	APO	230.38
RC	320.558	GL	25.61	GP	-6.73	ZAL	84.14	ZAP	36.47	ETS	169.83	ZAE	57.23	ETE	175.24	ZAC	79.29	ETC	256.83

V1 30.266 V2 26.373 CLP 35.93

PLANETOCENTRIC CONIC

C3	10.289	VHL	3.208	DLA	27.88	RAL	180.54	RAD	6567.4	VEL	11.475	PTH	1.99	VHP	4.917	DPA	-1.29	RAP	169.97

ECC 1.1693

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 23 34	3247.46	-25.41	114.05	39.67	77.06	13 17 41	2647.5	-26.94	105.72
90.00	10 56 2	3531.98	-19.74	132.95	37.82	69.28	11 54 54	2932.0	-22.38	125.27
100.00	14 33 4	2829.97	-28.82	84.05	40.39	81.71	15 20 14	2230.0	-29.67	75.35
100.00	11 29 13	3424.69	-16.54	123.65	36.39	64.74	12 26 18	2824.7	-19.81	116.38
110.00	16 44 20	2419.14	-34.17	53.36	40.89	89.15	17 24 39	1819.1	-33.91	44.12
110.00	11 34 26	3408.29	-11.84	119.75	33.73	57.70	12 31 15	2808.3	-16.02	113.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.6984	TRA	1.0533	TC	-18.9796	BAU	2.6115	SGT	13267.0	SGR	717.0	SG3	795.0	ST	4875.9	SR	531.1	SS	867.5
RDE	.2901	RRA	.1919	RC3	-.4810	FAU	.15572	RRT	.7443	RRF	.7259	RTF	.9657	CRT	.9944	CRS	-.9531	CST	-.9287
FDE	.9899	FRA	1.6328	FC	-13.1032	BSP	46157	SGB	13286.3	R23	.0093	R13	.9657	LSA	4970.4	MSA	319.4	SSA	36.5
BDE	2.7140	BRA	1.0706	BC	318.9857	FSP	2580	SG1	13277.7	SG2	478.5	THA	2.31	EL1	4904.4	EL2	55.9	ALF	6.18

LAUNCH DATE DEC 17 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 791.347 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.177	GAL	.16	AZL	87.64	HCA	231.65	SMA	188.93	ECC	.22086	INC	2.3567
RP	207.60	LAP	-1.85	LOP	316.72	VP	24.002	GAP	-11.45	AZP	91.46	TAL	.89	TAP	232.54	RCA	147.20	APO	230.65
RC	321.425	GL	25.25	GP	-6.53	ZAL	85.68	ZAP	35.83	ETS	169.88	ZAE	56.30	ETE	175.23	ZAC	79.62	ETC	256.78

V1 30.266 V2 26.388 CLP 35.31

PLANETOCENTRIC CONIC

C3	10.231	VHL	3.199	DLA	26.86	RAL	181.94	RAD	6567.4	VEL	11.473	PTH	1.99	VHP	4.981	DPA	-1.37	RAP	170.63

ECC 1.1684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 4 57	3128.28	-26.96	105.67	41.17	80.99	13 57 5	2528.3	-27.93	97.14
90.00	10 25 47	3648.89	-16.76	140.23	38.01	66.84	11 26 36	3048.9	-19.75	132.84
100.00	14 59 18	2759.62	-29.40	78.90	41.53	84.36	15 45 18	2159.6	-29.87	70.13
100.00	11 14 7	3492.78	-14.52	127.70	36.93	63.58	12 12 19	2892.8	-17.95	120.59
110.00	17 1 36	2376.94	-34.17	50.06	41.75	91.10	17 41 13	1776.9	-33.64	40.86
110.00	11 28 18	3448.22	-10.37	121.91	34.52	57.25	12 25 47	2848.2	-14.62	115.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.5915	TRA	1.2020	TC	-19.2789	BAU	2.6375	SGT	13396.9	SGR	696.1	SG3	765.6	ST	4712.9	SR	520.6	SS	789.9
RDE	.2832	RRA	.1937	RC3	-.4307	FAU	.14913	RRT	.7176	RRF	.6952	RTF	.9658	CRT	.9955	CRS	-.9320	CST	-.9108
FDE	.8500	FRA	1.6533	FC	-12.6197	BSP	46633	SGB	13414.9	R23	.0018	R13	.9658	LSA	4795.8	MSA	323.4	SSA	37.3
BDE	2.6069	BRA	1.2175	BC	319.2837	FSP	2485	SG1	13406.2	SG2	484.5	THA	2.14	EL1	4741.3	EL2	49.0	ALF	6.28

LAUNCH DATE DEC 17 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 795.733 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.185	GAL	.01	AZL	87.68	HCA	232.90	SMA	189.07	ECC	.22143	INC	2.3187
RP	207.48	LAP	-1.85	LOP	317.98	VP	24.029	GAP	-11.53	AZP	91.40	TAL	.05	TAP	232.95	RCA	147.20	APO	230.93
RC	322.286	GL	24.87	GP	-6.34	ZAL	87.26	ZAP	35.22	ETS	169.92	ZAE	55.39	ETE	175.23	ZAC	79.95	ETC	256.73

V1 30.266 V2 26.402 CLP 34.71

PLANETOCENTRIC CONIC

C3	10.189	VHL	3.192	DLA	25.83	RAL	183.35	RAD	6567.4	VEL	11.471	PTH	1.99	VHP	5.047	DPA	-1.47	RAP	171.31

ECC 1.1677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 35 1	3045.43	-27.70	99.72	42.42	83.88	14 25 47	2445.4	-28.26	91.10
90.00	10 7 0	3730.10	-14.52	145.14	38.55	65.42	11 9 10	3130.1	-17.72	137.93
100.00	15 22 37	2698.57	-29.73	74.39	42.61	86.72	16 7 35	2098.6	-29.87	65.59
100.00	11 2 5	3552.20	-12.69	131.16	37.63	62.71	12 1 18	2952.2	-16.25	124.18
110.00	17 18 19	2336.55	-34.07	46.91	42.62	92.96	17 57 16	1736.6	-33.28	37.76
110.00	11 22 53	3486.98	-8.94	124.00	35.41	56.87	12 21 0	2887.0	-13.24	117.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.4803	TRA	1.4308	TC	-19.6869	BAU	2.6823	SGT	13635.5	SGR	691.9	SG3	773.4	ST	4549.3	SR	509.4	SS	724.8
RDE	.2755	RRA	.2039	RC3	-.4110	FAU	.14901	RRT	.7059	RRF	.6798	RTF	.9623	CRT	.9964	CRS	-.8772	CST	-.8591
FDE	.6844	FRA	1.8274	FC	-12.6611	BSP	45604	SGB	13653.0	R23	-.0006	R13	.9623	LSA	4620.0	MSA	367.8	SSA	37.5
BDE	2.4956	BRA	1.4453	BC	319.6912	FSP	1976	SG1	13644.2	SG2	489.7	THA	2.05	EL1	4577.5	EL2	43.0	ALF	6.37

LAUNCH DATE DEC 17 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 800.113 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.193	GAL	-.15	AZL	87.72	HCA	234.16	SMA	189.21	ECC	.22204	INC	2.2819
RP	207.36	LAP	-1.85	LOP	319.24	VP	24.054	GAP	-11.61	AZP	91.34	TAL	359.19	TAP	233.35	RCA	147.20	APO	231.22
RC	323.141	GL	24.49	GP	-6.16	ZAL	88.88	ZAP	34.61	ETS	169.96	ZAE	54.50	ETE	175.22	ZAC	80.26	ETC	256.67

V1 30.266 V2 26.416 CLP 34.13

PLANETOCENTRIC CONIC

C3	10.165	VHL	3.188	DLA	24.77	RAL	184.78	RAD	6567.4	VEL	11.470	PTH	1.99	VHP	5.113	DPA	-1.58	RAP	171.99

ECC 1.1673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 0 43	2976.68	-28.10	94.73	43.58	86.35	14 50 19	2376.7	-28.31	86.07
90.00	9 52 44	3797.89	-12.56	149.16	39.27	64.41	10 56 2	3197.9	-15.91	142.08
100.00	15 44 5	2643.38	-29.87	70.30	43.66	88.87	16 28 9	2043.4	-29.71	61.49
100.00	10 52 3	3606.42	-10.98	134.27	38.46	62.02	11 52 9	3006.4	-14.64	127.39
110.00	17 34 35	2297.66	-33.89	43.89	43.51	94.75	18 12 53	1697.7	-32.86	34.80
110.00	11 18 2	3524.90	-7.52	126.02	36.38	56.56	12 16 47	2924.9	-11.87	119.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.3836	TRA	1.5420	TC	-19.7591	BAU	2.6855	SGT	13652.9	SGR	666.8	SG3	711.0	ST	4396.6	SR	507.4	SS	686.1
RDE	.2745	RRA	.1999	RC3	-.3318	FAU	.13588	RRT	.6576	RRF	.6360	RTF	.9647	CRT	.9970	CRS	-.8677	CST	-.8625
FDE	.6308	FRA	1.7490	FC	-11.5733	BSP	47673	SGB	13669.2	R23	.0010	R13	.9647	LSA	4465.3	MSA	344.1	SSA	38.4
BDE	2.3993	BRA	1.5549	BC	319.7619	FSP	2331	SG1	13660.0	SG2	502.1	THA	1.84	EL1	4425.6	EL2	39.2	ALF	6.56

LAUNCH DATE DEC 17 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 804.497 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.201 GAL -.31 AZL 87.75 HCA 235.43 SMA 189.36 ECC .22268 INC 2.2463 V1 30.266
RP 207.26 LAP -1.85 LOP 320.50 VP 24.079 GAP -11.68 AZP 91.28 TAL 358.32 TAP 233.75 RCA 147.19 APO 231.52 V2 26.428
RC 323.990 GL 24.10 GP -5.99 ZAL 90.53 ZAP 34.03 ETS 170.00 ZAE 53.62 ETE 175.22 ZAC 80.58 ETC 256.62 CLP 33.56

PLANETOCENTRIC CONIC

C3 10.158 VHL 3.187 DLA 23.70 RAL 186.23 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 5.180 DPA -1.71 RAP 172.69 ECC 1.1672

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 23 55	2915.95	-28.28	90.30	44.71	88.56	15 12 31	2316.0	-28.18	81.64
90.00	9 41 6	3858.34	-10.76	152.68	40.13	63.65	10 45 24	3258.3	-14.22	145.71
100.00	16 4 17	2592.34	-29.88	66.50	44.72	90.86	16 47 29	1992.3	-29.44	57.72
100.00	10 43 25	3657.19	-9.34	137.16	39.38	61.48	11 44 22	3057.2	-13.08	130.36
110.00	17 50 30	2260.04	-33.64	40.98	44.44	96.45	18 28 10	1660.0	-32.38	31.97
110.00	11 13 41	3562.25	-6.12	128.00	37.42	56.30	12 13 3	2962.2	-10.50	121.65

DIFFERENTIAL CORRECTIONS
TDE 2.2718 TRA 1.7178 TC-19.9545 BAU 2.7101
RDE .2713 RRA .2018 RC3 -.2860 FAU .12976
FDE .5279 FRA 1.7802 FC-11.0598 BSP 48103
BDE 2.2879 BRA 1.7296 BC319.9566 FSP 2233

MID-COURSE EXECUTION ACCURACY
SGT13778.1 SGR 654.2 SG3 684.8
RRT .6264 RRF .6042 RTF .9646
SGB13793.7 R23 -.0011 R13 .9646
SG113784.2 SG2 509.8 THA 1.71

ORBIT DETERMINATION ACCURACY
ST 4224.8 SR 502.0 SS 640.0
CRT .9968 CRS -.8200 CST -.8305
LSA 4287.6 MSA 353.9 SSA 39.0
EL1 4254.3 EL2 39.7 ALF 6.76

LAUNCH DATE DEC 17 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 808.881 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.209 GAL -.47 AZL 87.79 HCA 236.69 SMA 189.50 ECC .22336 INC 2.2116 V1 30.266
RP 207.16 LAP -1.85 LOP 321.77 VP 24.102 GAP -11.76 AZP 91.21 TAL 357.44 TAP 234.12 RCA 147.18 APO 231.83 V2 26.439
RC 324.833 GL 23.69 GP -5.83 ZAL 92.22 ZAP 33.45 ETS 170.03 ZAE 52.75 ETE 175.22 ZAC 80.88 ETC 256.57 CLP 33.00

PLANETOCENTRIC CONIC

C3 10.169 VHL 3.189 DLA 22.61 RAL 187.69 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 5.248 DPA -1.85 RAP 173.39 ECC 1.1674

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 45 28	2860.58	-28.31	86.25	45.83	90.59	15 33 9	2260.6	-27.93	77.61
90.00	9 31 12	3914.16	-9.06	155.90	41.10	63.06	10 36 26	3314.2	-12.60	149.01
100.00	16 23 32	2544.42	-29.78	62.94	45.78	92.73	17 5 56	1944.4	-29.08	54.21
100.00	10 35 50	3705.56	-7.76	139.87	40.40	61.04	11 37 36	3105.6	-11.56	133.15
110.00	18 6 5	2223.55	-33.33	38.18	45.39	98.08	18 43 9	1623.5	-31.85	29.26
110.00	11 9 46	3599.19	-4.72	129.94	38.53	56.10	12 9 45	2999.2	-9.14	123.64

DIFFERENTIAL CORRECTIONS
TDE 2.1547 TRA 1.9003 TC-20.1087 BAU 2.7340
RDE .2684 RRA .2032 RC3 -.2407 FAU .12358
FDE .4226 FRA 1.8035 FC-10.5205 BSP 48534
BDE 2.1713 BRA 1.9111 BC320.1101 FSP 2141

MID-COURSE EXECUTION ACCURACY
SGT13897.6 SGR 642.3 SG3 657.5
RRT .5936 RRF .5697 RTF .9641
SGB13912.5 R23 -.0043 R13 .9641
SG113902.9 SG2 516.7 THA 1.57

ORBIT DETERMINATION ACCURACY
ST 4045.6 SR 496.6 SS 595.7
CRT .9956 CRS -.7541 CST -.7875
LSA 4102.8 MSA 365.9 SSA 39.4
EL1 4075.7 EL2 46.2 ALF 6.97

LAUNCH DATE DEC 17 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 813.264 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.217 GAL -.63 AZL 87.82 HCA 237.95 SMA 189.65 ECC .22407 INC 2.1779 V1 30.266
RP 207.08 LAP -1.85 LOP 323.03 VP 24.125 GAP -11.84 AZP 91.16 TAL 356.54 TAP 234.49 RCA 147.15 APO 232.14 V2 26.449
RC 325.671 GL 23.28 GP -5.68 ZAL 93.94 ZAP 32.89 ETS 170.06 ZAE 51.89 ETE 175.21 ZAC 81.19 ETC 256.52 CLP 32.45

PLANETOCENTRIC CONIC

C3 10.200 VHL 3.194 DLA 21.50 RAL 189.17 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 5.317 DPA -2.01 RAP 174.11 ECC 1.1679

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 5 51	2809.13	-28.22	82.49	46.96	92.48	15 52 40	2209.1	-27.58	73.88
90.00	9 22 36	3966.81	-7.42	158.90	42.16	62.59	10 28 43	3366.8	-11.03	152.09
100.00	16 42 2	2498.99	-29.58	59.58	46.87	94.49	17 23 41	1899.0	-28.65	50.90
100.00	10 29 6	3752.19	-6.21	142.47	41.51	60.70	11 31 38	3152.2	-10.07	135.81
110.00	18 21 24	2188.07	-32.96	35.48	46.38	99.64	18 57 52	1588.1	-31.27	26.66
110.00	11 6 12	3635.87	-3.32	131.87	39.72	55.96	12 6 48	3035.9	-7.77	125.60

DIFFERENTIAL CORRECTIONS
TDE 2.0353 TRA 2.0924 TC-20.2245 BAU 2.7579
RDE .2665 RRA .2048 RC3 -.1977 FAU .11765
FDE .3253 FRA 1.8331 FC3-9.9861 BSP 48973
BDE 2.0527 BRA 2.1024 BC320.2255 FSP 2053

MID-COURSE EXECUTION ACCURACY
SGT14017.4 SGR 632.8 SG3 632.1
RRT .5603 RRF .5358 RTF .9634
SGB14031.6 R23 -.0057 R13 .9634
SG114021.9 SG2 523.9 THA 1.45

ORBIT DETERMINATION ACCURACY
ST 3866.3 SR 492.5 SS 563.0
CRT .9927 CRS -.6716 CST -.7364
LSA 3919.2 MSA 381.8 SSA 39.8
EL1 3897.1 EL2 58.7 ALF 7.21

LAUNCH DATE DEC 17 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 817.647 EARTH TO MARS

RL 147.20 LAL .00 LOL 85.10 VL 33.225 GAL -.80 AZL 87.85 HCA 239.22 SMA 189.80 ECC .22483 INC 2.1451 V1 30.266
RP 207.00 LAP -1.84 LOP 324.30 VP 24.146 GAP -11.92 AZP 91.10 TAL 355.63 TAP 234.85 RCA 147.12 APO 232.47 V2 26.459
RC 326.503 GL 22.86 GP -5.53 ZAL 95.69 ZAP 32.35 ETS 170.09 ZAE 51.05 ETE 175.21 ZAC 81.49 ETC 256.47 CLP 31.92

PLANETOCENTRIC CONIC

C3 10.250 VHL 3.202 DLA 20.38 RAL 190.65 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 5.388 DPA -2.18 RAP 174.83 ECC 1.1687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 25 18	2760.71	-28.02	78.96	48.11	94.24	16 11 19	2160.7	-27.14	70.41
90.00	9 14 58	4017.21	-5.83	161.75	43.31	62.24	10 21 56	3417.2	-9.50	155.00
100.00	16 59 55	2455.62	-29.31	56.39	47.98	96.15	17 40 51	1855.6	-28.15	47.77
100.00	10 23 3	3797.53	-4.70	144.98	42.69	60.45	11 26 20	3197.5	-8.60	138.37
110.00	18 36 29	2153.53	-32.53	32.87	47.41	101.13	19 12 22	1553.5	-30.66	24.15
110.00	11 2 58	3672.39	-1.93	133.77	40.97	55.86	12 4 11	3072.4	-6.39	127.54

DIFFERENTIAL CORRECTIONS
TDE 1.9118 TRA 2.2894 TC-20.3066 BAU 2.7827
RDE .2653 RRA .2056 RC3 -.1570 FAU .11200
FDE .2331 FRA 1.8506 FC3-9.4601 BSP 49424
BDE 1.9301 BRA 2.2987 BC320.3072 FSP 1976

MID-COURSE EXECUTION ACCURACY
SGT14137.7 SGR 624.1 SG3 606.9
RRT .5266 RRF .5003 RTF .9629
SGB14151.5 R23 -.0088 R13 .9629
SG114141.6 SG2 530.4 THA 1.33

ORBIT DETERMINATION ACCURACY
ST 3684.8 SR 489.2 SS 536.9
CRT .9875 CRS -.5732 CST -.6795
LSA 3734.3 MSA 398.2 SSA 40.0
EL1 3716.4 EL2 76.4 ALF 7.47

LAUNCH DATE DEC 17 1964 FLIGHT TIME 380.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 822.029 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.233	GAL	-.97	AZL	87.89	HCA	240.48	SMA	189.94	ECC	.22563	INC	2.1131	V1	30.266
RP	206.93	LAP	-1.84	LOP	325.56	VP	24.167	GAP	-12.00	AZP	91.04	TAL	354.71	TAP	235.19	RCA	147.09	APO	232.80	V2	26.467
RC	327.330	GL	22.42	GP	-5.39	ZAL	97.46	ZAP	31.81	ETS	170.12	ZAE	50.21	ETE	175.20	ZAC	81.78	ETC	256.42	CLP	31.40

PLANETOCENTRIC CONIC

C3	10.321	VHL	3.213	DLA	19.24	RAL	192.14	RAD	6567.4	VEL	11.477	PTH	1.99	VHP	5.459	DPA	-2.36	RAP	175.57	ECC	1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 2	2714.78	-27.75	75.63	49.28	95.89	16 29 17	2114.8	-26.64	67.14
90.00	9 8 8	4065.93	-4.28	164.49	44.54	61.98	10 15 54	3465.9	-7.99	157.78
100.00	17 17 18	2414.04	-28.97	53.34	49.12	97.72	17 57 32	1814.0	-27.60	44.81
100.00	10 17 34	3841.90	-3.20	147.43	43.95	60.26	11 21 36	3241.9	-7.14	140.85
110.00	18 51 19	2119.89	-32.06	30.36	48.48	102.54	19 26 39	1519.9	-30.00	21.75
110.00	11 0 2	3708.82	-.53	135.67	42.28	55.82	12 1 51	3108.8	-5.02	129.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7869	TRA	2.4947	TC-20.3377	BAU	2.8064	SGT14252.3	SGR	617.1	SG3	582.0	ST	3508.3	SR	486.9	SS	521.0
RDE	.2651	RRA	.2062	RC3 -.1175	FAU	.10635	RRT .4921	RRF	.4649	RTF	.9622	CRT	.9790	CRS	-.4643	CST	-.6221
FDE	.1491	FRA	1.8677	FC3-8.9209	BSP	49900	SGB14265.6	R23	-.0107	R13	.9622	LSA	3555.4	MSA	417.1	SSA	40.2
BDE	1.8065	BRA	2.5032	BC320.3381	FSP	1897	SG114255.5	SG2	537.1	THA	1.22	EL1	3540.5	EL2	98.3	ALF	7.74

LAUNCH DATE DEC 17 1964 FLIGHT TIME 382.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 826.409 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.242	GAL	-1.15	AZL	87.92	HCA	241.75	SMA	190.09	ECC	.22647	INC	2.0820	V1	30.266
RP	206.86	LAP	-1.83	LOP	326.83	VP	24.186	GAP	-12.09	AZP	90.99	TAL	353.77	TAP	235.52	RCA	147.04	APO	233.14	V2	26.474
RC	328.152	GL	21.97	GP	-5.26	ZAL	99.25	ZAP	31.30	ETS	170.14	ZAE	49.39	ETE	175.20	ZAC	82.07	ETC	256.37	CLP	30.89

PLANETOCENTRIC CONIC

C3	10.414	VHL	3.227	DLA	18.09	RAL	193.64	RAD	6567.4	VEL	11.481	PTH	2.00	VHP	5.531	DPA	-2.55	RAP	176.31	ECC	1.1714

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 2 10	2670.95	-27.40	72.47	50.48	97.43	16 46 41	2071.0	-26.09	64.05
90.00	9 1 57	4113.38	-2.76	167.15	45.85	61.81	10 10 31	3513.4	-6.50	160.47
100.00	17 34 15	2374.03	-28.57	50.44	50.29	99.20	18 13 49	1774.0	-27.00	41.98
100.00	10 12 34	3885.53	-1.73	149.83	45.28	60.15	11 17 19	3285.5	-5.68	143.28
110.00	19 5 57	2087.10	-31.55	27.94	49.59	103.89	19 40 44	1487.1	-29.32	19.44
110.00	10 57 21	3745.22	.86	137.57	43.66	55.83	11 59 46	3145.2	-3.63	131.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.6596	TRA	2.7057	TC-20.3284	BAU	2.8304	SGT14365.6	SGR	611.2	SG3	557.1	ST	3337.0	SR	485.6	SS	512.3
RDE	.2656	RRA	.2063	RC3 -.0800	FAU	.10082	RRT .4572	RRF	.4289	RTF	.9616	CRT	.9661	CRS	-.3487	CST	-.5679
FDE	.0713	FRA	1.8777	FC3-8.3814	BSP	50338	SGB14378.6	R23	-.0128	R13	.9616	LSA	3382.4	MSA	437.5	SSA	40.1
BDE	1.6807	BRA	2.7136	BC320.3286	FSP	1817	SG114368.4	SG2	543.5	THA	1.12	EL1	3369.8	EL2	124.1	ALF	8.01

LAUNCH DATE DEC 17 1964 FLIGHT TIME 384.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 830.787 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.250	GAL	-1.33	AZL	87.95	HCA	243.02	SMA	190.24	ECC	.22736	INC	2.0514	V1	30.266
RP	206.81	LAP	-1.83	LOP	328.10	VP	24.204	GAP	-12.17	AZP	90.93	TAL	352.83	TAP	235.84	RCA	146.99	APO	233.50	V2	26.480
RC	328.970	GL	21.51	GP	-5.13	ZAL	101.06	ZAP	30.79	ETS	170.16	ZAE	48.59	ETE	175.19	ZAC	82.36	ETC	256.32	CLP	30.40

PLANETOCENTRIC CONIC

C3	10.530	VHL	3.245	DLA	16.94	RAL	195.14	RAD	6567.4	VEL	11.486	PTH	2.00	VHP	5.603	DPA	-2.76	RAP	177.06	ECC	1.1733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 47	2628.97	-27.00	69.46	51.72	98.89	17 3 36	2029.0	-25.49	61.12
90.00	8 56 19	4159.84	-1.26	169.74	47.22	61.71	10 5 38	3559.8	-5.03	163.09
100.00	17 50 48	2335.46	-28.12	47.66	51.50	100.60	18 29 43	1735.5	-26.37	39.29
100.00	10 7 59	3928.59	-.27	152.19	46.67	60.11	11 13 27	3328.6	-4.24	145.66
110.00	19 20 23	2055.18	-31.01	25.61	50.74	105.17	19 54 38	1455.2	-28.61	17.23
110.00	10 54 53	3781.63	2.25	139.47	45.10	55.88	11 57 55	3181.6	-2.24	133.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.5293	TRA	2.9261	TC-20.2721	BAU	2.8540	SGT14476.2	SGR	606.4	SG3	533.1	ST	3173.6	SR	484.9	SS	511.3
RDE	.2669	RRA	.2062	RC3 -.0445	FAU	.09544	RRT .4223	RRF	.3930	RTF	.9606	CRT	.9473	CRS	-.2286	CST	-.5191
FDE	-.0029	FRA	1.8873	FC3-7.8463	BSP	50792	SGB14488.9	R23	-.0147	R13	.9606	LSA	3217.6	MSA	461.8	SSA	40.0
BDE	1.5524	BRA	2.9333	BC320.2722	FSP	1743	SG114478.5	SG2	549.6	THA	1.02	EL1	3206.7	EL2	153.7	ALF	8.26

LAUNCH DATE DEC 17 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 835.162 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.258	GAL	-1.51	AZL	87.98	HCA	244.28	SMA	190.39	ECC	.22830	INC	2.0216	V1	30.266
RP	206.77	LAP	-1.82	LOP	329.37	VP	24.221	GAP	-12.26	AZP	90.88	TAL	351.87	TAP	236.15	RCA	146.93	APO	233.86	V2	26.486
RC	329.784	GL	21.04	GP	-5.01	ZAL	102.88	ZAP	30.29	ETS	170.17	ZAE	47.79	ETE	175.19	ZAC	82.65	ETC	256.27	CLP	29.91

PLANETOCENTRIC CONIC

C3	10.670	VHL	3.267	DLA	15.77	RAL	196.64	RAD	6567.4	VEL	11.492	PTH	2.00	VHP	5.677	DPA	-2.97	RAP	177.82	ECC	1.1756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 56	2588.65	-26.54	66.60	52.99	100.25	17 20 5	1988.6	-24.85	58.34
90.00	8 51 8	4205.52	.22	172.29	48.66	61.68	10 1 14	3605.5	-3.57	165.66
100.00	18 7 0	2298.22	-27.62	45.00	52.75	101.91	18 45 18	1698.2	-25.70	36.73
100.00	10 3 46	3971.19	1.18	154.53	48.13	60.13	11 9 57	3371.2	-2.80	148.00
110.00	19 34 36	2024.10	-30.43	23.37	51.94	106.38	20 8 20	1424.1	-27.89	15.10
110.00	10 52 38	3818.07	3.64	141.38	46.59	55.99	11 56 16	3218.1	-.85	135.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3970	TRA	3.1531	TC-20.1732	BAU	2.8778	SGT14585.2	SGR	602.8	SG3	509.3	ST	3022.0	SR	485.2	SS	515.8
RDE	.2691	RRA	.2057	RC3 -.0110	FAU	.09016	RRT .3874	RRF	.3574	RTF	.9596	CRT	.9210	CRS	-.1157	CST	-.4854
FDE	-.0693	FRA	1.8922	FC3-7.3147	BSP	51241	SGB14597.6	R23	-.0161	R13	.9596	LSA	3065.2	MSA	487.2	SSA	39.7
BDE	1.4226	BRA	3.1598	BC320.1732	FSP	1670	SG114587.0	SG2	555.7	THA	.92	EL1	3055.0	EL2	186.9	ALF	8.44

LAUNCH DATE DEC 17 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 839.535 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.267	GAL	-1.70	AZL	88.01	HCA	245.55	SMA	190.55	ECC	.22929	INC	1.9924
RP	206.73	LAP	-1.81	LOP	330.64	VP	24.237	GAP	-12.34	AZP	90.82	TAL	350.89	TAP	236.44	RCA	146.86	APO	234.24
RC	330.595	GL	20.56	GP	-4.90	ZAL	104.72	ZAP	29.81	ETS	170.19	ZAE	47.00	ETE	175.18	ZAC	82.94	ETC	256.23

PLANETOCENTRIC CONIC

C3	10.836	VHL	3.292	DLA	14.60	RAL	198.14	RAD	6567.4	VEL	11.499	PTH	2.00	VHP	5.752	DPA	-3.20	RAP	178.59

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 41	2549.86	-26.04	63.87	54.29	101.54	17 36 11	1949.9	-24.19	55.69
90.00	8 46 22	4250.57	1.67	174.80	50.17	61.73	9 57 12	3650.6	-2.12	168.17
100.00	18 22 52	2262.25	-27.09	42.46	54.04	103.15	19 0 34	1662.3	-25.01	34.28
100.00	9 59 52	4013.41	2.61	156.84	49.64	60.21	11 6 45	3413.4	-1.37	150.32
110.00	19 48 38	1993.88	-29.83	21.22	53.18	107.52	20 21 52	1393.9	-27.15	13.06
110.00	10 50 35	3854.55	5.03	143.29	48.14	56.14	11 54 49	3254.6	.54	137.07

DIFFERENTIAL CORRECTIONS

TDE	1.2623	TRA	3.3864	TC-20.0308	BAU	2.9017	
RDE	.2720	RRA	.2047	RC3 .0204	FAU	.08498	
FDE	-.1315	FRA	1.8911	FC3-6.7897	BSP	51679	
BDE	1.2913	BRA	3.3926	BC320.0308	FSP	1597	

MID-COURSE EXECUTION ACCURACY

SGT14691.3	SGR	599.9	SG3	485.7			
RRT	.3524	RRF	.3215	RTF	.9585		
SGB14703.5	R23	-.0180	R13	.9585			
SG114692.8	SG2	561.4	THA	.83			

ORBIT DETERMINATION ACCURACY

ST	2885.1	SR	486.1	SS	524.0		
CRT	.8855	CRS	-.0085	CST	-.4652		
LSA	2927.2	MSA	514.4	SSA	39.2		
EL1	2917.2	EL2	223.4	ALF	8.54		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 843.904 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.275	GAL	-1.88	AZL	88.04	HCA	246.82	SMA	190.70	ECC	.23033	INC	1.9638
RP	206.70	LAP	-1.81	LOP	331.91	VP	24.252	GAP	-12.43	AZP	90.77	TAL	349.91	TAP	236.73	RCA	146.78	APO	234.62
RC	331.403	GL	20.07	GP	-4.79	ZAL	106.56	ZAP	29.34	ETS	170.20	ZAE	46.23	ETE	175.17	ZAC	83.22	ETC	256.18

PLANETOCENTRIC CONIC

C3	11.027	VHL	3.321	DLA	13.43	RAL	199.64	RAD	6567.4	VEL	11.507	PTH	2.00	VHP	5.828	DPA	-3.44	RAP	179.37

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 3	2512.51	-25.51	61.27	55.64	102.74	17 51 56	1912.5	-23.50	53.17
90.00	8 41 56	4295.10	3.10	177.29	51.73	61.84	9 53 31	3695.1	-.69	170.66
100.00	18 38 26	2227.50	-26.53	40.03	55.36	104.31	19 15 33	1627.5	-24.30	31.94
100.00	9 56 15	4055.34	4.02	159.15	51.22	60.35	11 3 50	3455.3	.05	152.62
110.00	20 2 28	1964.53	-29.21	19.16	54.47	108.60	20 35 13	1364.5	-26.39	11.11
110.00	10 48 42	3891.07	6.41	145.22	49.75	56.35	11 53 33	3291.1	1.94	138.98

DIFFERENTIAL CORRECTIONS

TDE	1.1266	TRA	3.6291	TC-19.8461	BAU	2.9257	
RDE	.2756	RRA	.2034	RC3 .0493	FAU	.08000	
FDE	-.1883	FRA	1.8873	FC3-6.2809	BSP	52122	
BDE	1.1599	BRA	3.6348	BC319.8461	FSP	1527	

MID-COURSE EXECUTION ACCURACY

SGT14797.0	SGR	597.9	SG3	463.0			
RRT	.3183	RRF	.2862	RTF	.9573		
SGB14809.1	R23	-.0200	R13	.9573			
SG114798.2	SG2	566.7	THA	.74			

ORBIT DETERMINATION ACCURACY

ST	2768.6	SR	487.8	SS	535.3		
CRT	.8391	CRS	.0886	CST	-.4613		
LSA	2809.6	MSA	542.6	SSA	38.6		
EL1	2799.0	EL2	262.4	ALF	8.48		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 848.268 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.283	GAL	-2.08	AZL	88.06	HCA	248.09	SMA	190.85	ECC	.23142	INC	1.9357
RP	206.68	LAP	-1.80	LOP	333.17	VP	24.266	GAP	-12.52	AZP	90.72	TAL	348.91	TAP	237.00	RCA	146.69	APO	235.02
RC	332.208	GL	19.57	GP	-4.68	ZAL	108.41	ZAP	28.88	ETS	170.21	ZAE	45.47	ETE	175.16	ZAC	83.50	ETC	256.14

PLANETOCENTRIC CONIC

C3	11.246	VHL	3.354	DLA	12.26	RAL	201.14	RAD	6567.4	VEL	11.517	PTH	2.01	VHP	5.905	DPA	-3.68	RAP	180.15

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 26 5	2476.53	-24.94	58.78	57.02	103.86	18 7 22	1876.5	-22.79	50.77
90.00	8 37 50	4339.18	4.52	179.76	53.35	62.02	9 50 9	3739.2	.74	173.12
100.00	18 53 42	2193.95	-25.94	37.71	56.73	105.40	19 30 16	1594.0	-23.58	29.71
100.00	9 52 54	4096.99	5.42	161.45	52.86	60.56	11 1 11	3497.0	1.46	154.91
110.00	20 16 7	1936.08	-28.58	17.19	55.80	109.61	20 48 23	1336.1	-25.64	9.25
110.00	10 46 58	3927.63	7.78	147.16	51.41	56.61	11 52 26	3327.6	3.34	140.89

DIFFERENTIAL CORRECTIONS

TDE	.9896	TRA	3.8786	TC-19.6186	BAU	2.9496	
RDE	.2801	RRA	.2018	RC3 .0759	FAU	.07514	
FDE	-.2396	FRA	1.8805	FC3-5.7845	BSP	52573	
BDE	1.0285	BRA	3.8838	BC319.6187	FSP	1458	

MID-COURSE EXECUTION ACCURACY

SGT14899.1	SGR	596.7	SG3	440.8			
RRT	.2848	RRF	.2518	RTF	.9558		
SGB14911.1	R23	-.0217	R13	.9558			
SG114900.1	SG2	572.0	THA	.65			

ORBIT DETERMINATION ACCURACY

ST	2674.6	SR	490.1	SS	548.1		
CRT	.7810	CRS	.1741	CST	-.4735		
LSA	2714.3	MSA	570.3	SSA	37.8		
EL1	2702.2	EL2	303.0	ALF	8.25		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 852.628 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.292	GAL	-2.27	AZL	88.09	HCA	249.36	SMA	191.01	ECC	.23256	INC	1.9081
RP	206.67	LAP	-1.79	LOP	334.44	VP	24.279	GAP	-12.61	AZP	90.67	TAL	347.90	TAP	237.26	RCA	146.59	APO	235.43
RC	333.009	GL	19.07	GP	-4.58	ZAL	110.25	ZAP	28.43	ETS	170.22	ZAE	44.71	ETE	175.15	ZAC	83.78	ETC	256.10

PLANETOCENTRIC CONIC

C3	11.494	VHL	3.390	DLA	11.09	RAL	202.62	RAD	6567.4	VEL	11.527	PTH	2.01	VHP	5.984	DPA	-3.94	RAP	180.95

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 47	2441.89	-24.36	56.41	58.44	104.91	18 22 29	1841.9	-22.07	48.49
90.00	8 34 0	4382.88	5.91	182.22	55.03	62.26	9 47 3	3782.9	2.15	175.55
100.00	19 8 42	2161.58	-25.34	35.49	58.14	106.41	19 44 43	1561.6	-22.85	27.58
100.00	9 49 46	4138.41	6.80	163.75	54.54	60.82	10 58 44	3538.4	2.86	157.18
110.00	20 29 33	1908.55	-27.93	15.31	57.17	110.55	21 1 22	1308.5	-24.88	7.47
110.00	10 45 24	3964.21	9.15	149.11	53.12	56.92	11 51 28	3364.2	4.73	142.81

DIFFERENTIAL CORRECTIONS

TDE	.8514	TRA	4.1364	TC-19.3525	BAU	2.9738	
RDE	.2853	RRA	.1997	RC3 .1006	FAU	.07031	
FDE	-.2861	FRA	1.8697	FC3-5.2954	BSP	53000	
BDE	.8979	BRA	4.1412	BC319.3527	FSP	1390	

MID-COURSE EXECUTION ACCURACY

SGT15000.2	SGR	596.2	SG3	418.8			
RRT	.2515	RRF	.2179	RTF	.9539		
SGB15012.0	R23	-.0232	R13	.9539			
SG115000.9	SG2	577.0	THA	.57			

ORBIT DETERMINATION ACCURACY

ST	2606.2	SR	493.1	SS	561.2		
CRT	.7108	CRS	.2497	CST	-.4987		
LSA	2644.6	MSA	596.2	SSA	37.0		
EL1	2630.1	EL2	343.7	ALF	7.79		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 856.983 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.300	GAL	-2.48	AZL	88.12	HCA	250.63	SMA	191.16	ECC	.23377	INC	1.8809	V1	30.266
RP	206.67	LAP	-1.77	LOP	335.71	VP	24.291	GAP	-12.71	AZP	90.62	TAL	346.88	TAP	237.50	RCA	146.47	APO	235.85	V2	26.497
RC	333.807	GL	18.56	GP	-4.49	ZAL	112.10	ZAP	27.99	ETS	170.22	ZAE	43.97	ETE	175.13	ZAC	84.05	ETC	256.06	CLP	27.65

PLANETOCENTRIC CONIC

C3	11.773	VHL	3.431	DLA	9.93	RAL	204.10	RAD	6567.4	VEL	11.540	PTH	2.01	VHP	6.063	DPA	-4.20	RAP	181.75	ECC	1.1937

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 10	2408.54	-23.75	54.15	59.90	105.88	18 37 18	1808.5	-21.35	46.31
90.00	8 30 25	4426.22	7.27	184.67	56.77	62.56	9 44 11	3826.2	3.54	177.98
100.00	19 23 25	2130.38	-24.72	33.38	59.58	107.36	19 58 55	1530.4	-22.11	25.55
100.00	9 46 51	4179.61	8.16	166.06	56.29	61.14	10 56 31	3579.6	4.25	159.45
110.00	20 42 48	1881.95	-27.28	13.51	58.58	111.44	21 14 10	1282.0	-24.13	5.77
110.00	10 43 57	4000.81	10.50	151.08	54.88	57.28	11 50 38	3400.8	6.11	144.73

DIFFERENTIAL CORRECTIONS

TDE	.7123	TRA	4.4008	TC-19.0504	BAU	2.9984	
RDE	.2912	RRA	.1972	RC3 .1228	FAU	.06564	
FDE	-.3276	FRA	1.8529	FC3-4.8273	BSP	53407	
BDE	.7695	BRA	4.4052	BC319.0508	FSP	1324	

MID-COURSE EXECUTION ACCURACY

SGT15098.8	SGR	596.1	SG3	397.2			
RRT	.2190	RRF	.1842	RTF	.9520		
SGB15110.6	R23	-.0252	R13	.9520			
SG115099.4	SG2	581.7	THA	.50			

ORBIT DETERMINATION ACCURACY

ST	2564.8	SR	496.6	SS	573.1		
CRT	.6297	CRS	.3162	CST	-.5336		
LSA	2601.8	MSA	618.3	SSA	36.1		
EL1	2584.2	EL2	382.9	ALF	7.11		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 861.331 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.309	GAL	-2.68	AZL	88.15	HCA	251.90	SMA	191.32	ECC	.23503	INC	1.8542	V1	30.266
RP	206.68	LAP	-1.76	LOP	336.98	VP	24.302	GAP	-12.80	AZP	90.58	TAL	345.84	TAP	237.74	RCA	146.35	APO	236.28	V2	26.496
RC	334.601	GL	18.04	GP	-4.39	ZAL	113.93	ZAP	27.56	ETS	170.22	ZAE	43.23	ETE	175.12	ZAC	84.33	ETC	256.03	CLP	27.23

PLANETOCENTRIC CONIC

C3	12.083	VHL	3.476	DLA	8.78	RAL	205.57	RAD	6567.5	VEL	11.553	PTH	2.02	VHP	6.143	DPA	-4.47	RAP	182.56	ECC	1.1989

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 15	2376.48	-23.14	52.01	61.40	106.79	18 51 51	1776.5	-20.62	44.24
90.00	8 27 3	4469.23	8.62	187.12	58.55	62.92	9 41 33	3869.2	4.92	180.39
100.00	19 37 52	2100.35	-24.10	31.37	61.07	108.25	20 12 52	1500.3	-21.38	23.63
100.00	9 44 8	4220.59	9.50	168.36	58.08	61.52	10 54 28	3620.6	5.63	161.72
110.00	20 55 50	1856.32	-26.64	11.80	60.03	112.26	21 26 47	1256.3	-23.38	4.15
110.00	10 42 38	4037.38	11.84	153.07	56.69	57.70	11 49 56	3437.4	7.49	146.67

DIFFERENTIAL CORRECTIONS

TDE	.5724	TRA	4.6731	TC-18.7156	BAU	3.0234	
RDE	.2979	RRA	.1943	RC3 .1427	FAU	.06111	
FDE	-.3648	FRA	1.8332	FC3-4.3781	BSP	53840	
BDE	.6453	BRA	4.6771	BC318.7162	FSP	1259	

MID-COURSE EXECUTION ACCURACY

SGT15196.4	SGR	596.7	SG3	376.4			
RRT	.1874	RRF	.1515	RTF	.9497		
SGB15208.1	R23	-.0272	R13	.9497			
SG115196.8	SG2	586.1	THA	-.42			

ORBIT DETERMINATION ACCURACY

ST	2551.4	SR	500.6	SS	584.2		
CRT	.5398	CRS	.3746	CST	-.5744		
LSA	2587.6	MSA	636.1	SSA	35.1		
EL1	2566.1	EL2	419.0	ALF	6.21		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 865.674 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.317	GAL	-2.89	AZL	88.17	HCA	253.16	SMA	191.47	ECC	.23635	INC	1.8278	V1	30.266
RP	206.69	LAP	-1.75	LOP	338.25	VP	24.312	GAP	-12.90	AZP	90.53	TAL	344.80	TAP	237.96	RCA	146.22	APO	236.73	V2	26.494
RC	335.390	GL	17.52	GP	-4.31	ZAL	115.76	ZAP	27.14	ETS	170.22	ZAE	42.51	ETE	175.10	ZAC	84.60	ETC	255.99	CLP	26.82

PLANETOCENTRIC CONIC

C3	12.427	VHL	3.525	DLA	7.63	RAL	207.03	RAD	6567.5	VEL	11.568	PTH	2.02	VHP	6.225	DPA	-4.75	RAP	183.37	ECC	1.2045

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 27 2	2345.68	-22.52	49.96	62.93	107.64	19 6 8	1745.7	-19.90	42.27
90.00	8 23 54	4511.94	9.93	189.57	60.39	63.35	9 39 6	3911.9	6.27	182.79
100.00	19 52 3	2071.49	-23.47	29.45	62.59	109.07	20 26 34	1471.5	-20.65	21.79
100.00	9 41 35	4261.37	10.82	170.67	59.93	61.96	10 52 36	3661.4	6.98	163.98
110.00	21 8 40	1831.69	-25.99	10.18	61.52	113.03	21 39 12	1231.7	-22.64	2.62
110.00	10 41 26	4073.93	13.16	155.07	58.55	58.16	11 49 20	3473.9	8.86	148.62

DIFFERENTIAL CORRECTIONS

TDE	.4332	TRA	4.9534	TC-18.3479	BAU	3.0484	
RDE	.3053	RRA	.1911	RC3 .1605	FAU	.05662	
FDE	-.3969	FRA	1.8101	FC3-3.9443	BSP	54247	
BDE	.5300	BRA	4.9571	BC318.3486	FSP	1196	

MID-COURSE EXECUTION ACCURACY

SGT15291.1	SGR	597.7	SG3	355.8			
RRT	.1565	RRF	.1200	RTF	.9469		
SGB15302.8	R23	-.0288	R13	.9469			
SG115291.4	SG2	590.3	THA	.35			

ORBIT DETERMINATION ACCURACY

ST	2566.0	SR	505.1	SS	593.1		
CRT	.4453	CRS	.4249	CST	-.6178		
LSA	2601.9	MSA	648.1	SSA	34.2		
EL1	2576.2	EL2	450.5	ALF	5.17		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 870.009 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.326	GAL	-3.10	AZL	88.20	HCA	254.43	SMA	191.63	ECC	.23774	INC	1.8018	V1	30.266
RP	206.72	LAP	-1.74	LOP	339.52	VP	24.320	GAP	-13.00	AZP	90.48	TAL	343.74	TAP	238.17	RCA	146.07	APO	237.19	V2	26.491
RC	336.176	GL	17.00	GP	-4.22	ZAL	117.57	ZAP	26.73	ETS	170.22	ZAE	41.79	ETE	175.09	ZAC	84.87	ETC	255.96	CLP	26.42

PLANETOCENTRIC CONIC

C3	12.807	VHL	3.579	DLA	6.50	RAL	208.48	RAD	6567.5	VEL	11.584	PTH	2.03	VHP	6.308	DPA	-5.03	RAP	184.20	ECC	1.2108

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 32	2316.14	-21.90	48.02	64.50	108.42	19 20 8	1716.1	-19.18	40.40
90.00	8 20 57	4554.33	11.21	192.02	62.28	63.83	9 36 51	3954.3	7.61	185.20
100.00	20 5 58	2043.80	-22.84	27.64	64.15	109.83	20 40 2	1443.8	-19.93	20.05
100.00	9 39 11	4301.91	12.10	173.00	61.82	62.46	10 50 53	3701.9	8.32	166.25
110.00	21 21 18	1808.06	-25.35	8.64	63.05	113.74	21 51 26	1208.1	-21.92	1.16
110.00	10 40 21	4110.41	14.46	157.10	60.45	58.68	11 48 52	3510.4	10.21	150.58

DIFFERENTIAL CORRECTIONS

TDE	.2929	TRA	5.2422	TC-17.9554	BAU	3.0743	
RDE	.3134	RRA	.1874	RC3 .1760	FAU	.05231	
FDE	-.4248	FRA	1.7820	FC3-3.5361	BSP	54647	
BDE	.4290	BRA	5.2456	BC317.9562	FSP	1133	

MID-COURSE EXECUTION ACCURACY

SGT15386.0	SGR	599.0	SG3	335.9			
RRT	.1266	RRF	.0888	RTF	.9439		
SGB15397.7	R23	-.0311	R13	.9439			
SG115386.2	SG2	594.2	THA	.28			

ORBIT DETERMINATION ACCURACY

ST	2605.9	SR	509.9	SS	599.6		
CRT	.3487	CRS	.4698	CST	-.6604		
LSA	2642.1	MSA	654.8	SSA	33.1		
EL1	2612.2	EL2	476.8	ALF	4.04		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 874.336 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.334	GAL	-3.32	AZL	88.22	HCA	255.70	SMA	191.79	ECC	.23920	INC	1.7762
RP	206.75	LAP	-1.72	LOP	340.79	VP	24.328	GAP	-13.11	AZP	90.44	TAL	342.67	TAP	238.37	RCA	145.91	APO	237.66
RC	336.957	GL	16.48	GP	-4.14	ZAL	119.36	ZAP	26.33	ETS	170.22	ZAE	41.09	ETE	175.07	ZAC	85.14	ETC	255.93

V1	30.266	V2	26.488	CLP	26.03														

PLANETOCENTRIC CONIC

C3	13.223	VHL	3.636	DLA	5.39	RAL	209.91	RAD	6567.5	VEL	11.602	PTH	2.03	VHP	6.392	DPA	-5.33	RAP	185.03

ECC	1.2176																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 45	2287.85	-21.28	46.18	66.11	109.14	19 33 53	1687.9	-18.47	38.63
90.00	8 18 9	4596.42	12.47	194.48	64.21	64.37	9 34 46	3996.4	8.92	187.60
100.00	20 19 38	2017.29	-22.22	25.91	65.74	110.53	20 53 16	1417.3	-19.22	18.40
100.00	9 36 57	4342.23	13.36	175.33	63.76	63.01	10 49 19	3742.2	9.64	168.52
110.00	21 33 43	1785.46	-24.72	7.18	64.61	114.39	22 3 28	1185.5	-21.22	359.79
110.00	10 39 22	4146.81	15.74	159.15	62.41	59.26	11 48 29	3546.8	11.54	152.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1521	TRA	5.5382	TC-17.5379	BAU	3.1006	SGT15478.0	SGR	600.7	SG3	316.4	ST	2668.0	SR	515.1	SS	604.3
RDE	.3222	RRA	.1833	RC3 .1895	FAU	.04805	RRT .0974	RRF	.0584	RTF	.9402	CRT	.2539	CRS	.5103	CST	-.6994
FDE	-.4496	FRA	1.7505	FC3-3.1458	BSP	55013	SGB15489.6	R23	-.0335	R13	.9402	LSA	2704.8	MSA	657.0	SSA	32.1
BDE	.3563	BRA	5.5412	BC317.5389	FSP	1072	SG115478.1	SG2	597.8	THA	.22	EL1	2671.3	EL2	497.6	ALF	2.91

LAUNCH DATE DEC 17 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 878.655 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.343	GAL	-3.54	AZL	88.25	HCA	256.97	SMA	191.95	ECC	.24072	INC	1.7508
RP	206.79	LAP	-1.71	LOP	342.06	VP	24.334	GAP	-13.22	AZP	90.39	TAL	341.59	TAP	238.56	RCA	145.74	APO	238.15
RC	337.733	GL	15.96	GP	-4.06	ZAL	121.13	ZAP	25.94	ETS	170.22	ZAE	40.39	ETE	175.04	ZAC	85.41	ETC	255.91

V1	30.266	V2	26.483	CLP	25.65														

PLANETOCENTRIC CONIC

C3	13.679	VHL	3.699	DLA	4.29	RAL	211.33	RAD	6567.5	VEL	11.622	PTH	2.04	VHP	6.477	DPA	-5.63	RAP	185.87

ECC	1.2251																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 42	2260.81	-20.66	44.43	67.74	109.80	19 47 22	1660.8	-17.78	36.95
90.00	8 15 31	4638.20	13.68	196.94	66.19	64.97	9 32 50	4038.2	10.20	190.00
100.00	20 33 3	1991.95	-21.60	24.28	67.37	111.18	21 6 15	1392.0	-18.53	16.83
100.00	9 34 51	4382.30	14.59	177.67	65.74	63.62	10 47 53	3782.3	10.93	170.80
110.00	21 45 55	1763.92	-24.11	5.81	66.20	115.00	22 15 18	1163.9	-20.54	358.49
110.00	10 38 29	4183.10	16.99	161.21	64.40	59.88	11 48 12	3583.1	12.86	154.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0116	TRA	5.8422	TC-17.1030	BAU	3.1279	SGT15569.9	SGR	602.7	SG3	297.5	ST	2749.2	SR	520.5	SS	605.9
RDE	.3317	RRA	.1787	RC3 .2009	FAU	.04393	RRT .0692	RRF	.0288	RTF	.9361	CRT	.1637	CRS	.5462	CST	-.7343
FDE	-.4700	FRA	1.7143	FC3-2.7803	BSP	55372	SGB15581.6	R23	-.0362	R13	.9361	LSA	2786.7	MSA	655.2	SSA	31.1
BDE	.3319	BRA	5.8449	BC317.1041	FSP	1010	SG115570.0	SG2	601.2	THA	.15	EL1	2750.5	EL2	513.3	ALF	1.84

LAUNCH DATE DEC 17 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 882.964 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.351	GAL	-3.77	AZL	88.27	HCA	258.24	SMA	192.10	ECC	.24232	INC	1.7257
RP	206.84	LAP	-1.69	LOP	343.33	VP	24.339	GAP	-13.33	AZP	90.35	TAL	340.49	TAP	238.73	RCA	145.55	APO	238.65
RC	338.506	GL	15.44	GP	-3.99	ZAL	122.89	ZAP	25.57	ETS	170.21	ZAE	39.70	ETE	175.02	ZAC	85.68	ETC	255.89

V1	30.266	V2	26.477	CLP	25.27														

PLANETOCENTRIC CONIC

C3	14.176	VHL	3.765	DLA	3.21	RAL	212.73	RAD	6567.6	VEL	11.643	PTH	2.04	VHP	6.564	DPA	-5.93	RAP	186.71

ECC	1.2333																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 22	2235.01	-20.06	42.78	69.41	110.42	20 0 37	1635.0	-17.10	35.35
90.00	8 13 2	4679.67	14.86	199.41	68.22	65.62	9 31 2	4079.7	11.45	192.40
100.00	20 46 12	1967.80	-21.00	22.74	69.02	111.78	21 19 0	1367.8	-17.86	15.35
100.00	9 32 53	4422.11	15.78	180.03	67.77	64.28	10 46 35	3822.1	12.19	173.08
110.00	21 57 53	1743.43	-23.52	4.52	67.83	115.56	22 26 57	1143.4	-19.88	357.26
110.00	10 37 41	4219.25	18.21	163.30	66.44	60.56	11 48 0	3619.2	14.15	156.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1265	TRA	6.1553	TC-16.6470	BAU	3.1551	SGT15658.6	SGR	604.9	SG3	278.9	ST	2846.0	SR	526.2	SS	604.4
RDE	.3418	RRA	.1738	RC3 .2105	FAU	.03987	RRT .0420	RRF	.0004	RTF	.9312	CRT	.0812	CRS	.5777	CST	-.7642
FDE	-.4858	FRA	1.6744	FC3-2.4350	BSP	55752	SGB15670.3	R23	-.0388	R13	.9312	LSA	2884.1	MSA	650.4	SSA	30.1
BDE	.3645	BRA	6.1578	BC316.6484	FSP	951	SG115658.6	SG2	604.3	THA	.09	EL1	2846.4	EL2	524.4	ALF	.89

LAUNCH DATE DEC 17 1964 FLIGHT TIME 410.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 887.264 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.360	GAL	-4.00	AZL	88.30	HCA	259.50	SMA	192.26	ECC	.24398	INC	1.7009
RP	206.90	LAP	-1.67	LOP	344.60	VP	24.344	GAP	-13.44	AZP	90.31	TAL	339.39	TAP	238.89	RCA	145.35	APO	239.17
RC	339.274	GL	14.92	GP	-3.92	ZAL	124.62	ZAP	25.20	ETS	170.20	ZAE	39.02	ETE	175.00	ZAC	85.95	ETC	255.87

V1	30.266	V2	26.470	CLP	24.91														

PLANETOCENTRIC CONIC

C3	14.716	VHL	3.836	DLA	2.16	RAL	214.11	RAD	6567.6	VEL	11.666	PTH	2.05	VHP	6.652	DPA	-6.24	RAP	187.56

ECC	1.2422																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 46	2210.44	-19.47	41.22	71.11	110.98	20 13 36	1610.4	-16.44	33.85
90.00	8 10 42	4720.81	16.00	201.89	70.28	66.32	9 29 22	4120.8	12.67	194.81
100.00	20 59 6	1944.83	-20.41	21.29	70.71	112.32	21 31 31	1344.8	-17.21	13.96
100.00	9 31 2	4461.66	16.93	182.40	69.85	64.99	10 45 24	3861.7	13.42	175.37
110.00	22 9 39	1724.02	-22.94	3.30	69.48	116.07	22 38 23	1124.0	-19.25	356.11
110.00	10 36 58	4255.25	19.40	165.42	68.53	61.29	11 47 54	3655.2	15.42	158.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2654	TRA	6.4760	TC-16.1807	BAU	3.1836	SGT15746.8	SGR	607.3	SG3	261.0	ST	2954.3	SR	532.1	SS	600.3
RDE	.3526	RRA	.1684	RC3 .2182	FAU	.03593	RRT .0156	RRF	-.0274	RTF	.9255	CRT	.0055	CRS	.6066	CST	-.7894
FDE	-.4985	FRA	1.6303	FC3-2.1139	BSP	56089	SGB15758.5	R23	-.0419	R13	.9255	LSA	2992.7	MSA	643.9	SSA	29.2
BDE	.4413	BRA	6.4782	BC316.1822	FSP	892	SG115746.8	SG2	607.2	THA	.03	EL1	2954.3	EL2	532.1	ALF	.06

LAUNCH DATE DEC 17 1964 FLIGHT TIME 412.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 891.553 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.369	GAL	-4.24	AZL	88.32	HCA	260.77	SMA	192.42	ECC	.24573	INC	1.6762
RP	206.97	LAP	-1.65	LOP	345.86	VP	24.347	GAP	-13.56	AZP	90.27	TAL	338.27	TAP	239.04	RCA	145.14	APO	239.71
RC	340.039	GL	14.41	GP	-3.85	ZAL	126.32	ZAP	24.83	ETS	170.20	ZAE	38.35	ETE	174.97	ZAC	86.22	ETC	255.85

V1	30.266	V2	26.462	CLP	24.55														

PLANETOCENTRIC CONIC

C3	15.301	VHL	3.912	DLA	1.12	RAL	215.48	RAD	6567.6	VEL	11.691	PTH	2.06	VHP	6.742	DPA	-6.56	RAP	188.42

ECC	1.2518																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 54	2187.09	-18.89	39.75	72.83	111.49	20 26 21	1587.1	-15.81	32.43
90.00	8 8 29	4761.62	17.10	204.39	72.39	67.08	9 27 50	4161.6	13.85	197.22
100.00	21 11 45	1923.03	-19.84	19.92	72.42	112.83	21 43 49	1323.0	-16.58	12.64
100.00	9 29 18	4500.91	18.05	184.78	71.96	65.76	10 44 19	3900.9	14.62	177.67
110.00	22 21 12	1705.68	-22.39	2.17	71.17	116.53	22 49 38	1105.7	-18.64	355.03
110.00	10 36 21	4291.03	20.56	167.55	70.65	62.07	11 47 52	3691.0	16.66	160.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4031	TRA	6.8044	TC-15.7026	BAU	3.2125	SGT15831.5	SGR	609.8	SG3	243.4	ST	3070.5	SR	538.0	SS	593.3
RDE	.3641	RRA	.1626	RC3 .2243	FAU	.03206	RRT -.0100	RRF	-.0542	RTF	.9187	CRT	-.0624	CRS	.6328	CST	-.8102
FDE	-.5073	FRA	1.5821	FC3-1.8142	BSP	56381	SGB15843.3	R23	.0451	R13	-.9187	LSA	3108.7	MSA	636.3	SSA	28.3
BDE	.5431	BRA	6.8064	BC315.7042	FSP	834	SG115831.5	SG2	609.8	THA	179.98	EL1	3070.7	EL2	537.0	ALF	179.35

LAUNCH DATE DEC 17 1964 FLIGHT TIME 414.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 895.830 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.377	GAL	-4.48	AZL	88.35	HCA	262.03	SMA	192.58	ECC	.24755	INC	1.6518
RP	207.04	LAP	-1.64	LOP	347.13	VP	24.349	GAP	-13.68	AZP	90.23	TAL	337.15	TAP	239.18	RCA	144.91	APO	240.26
RC	340.800	GL	13.90	GP	-3.79	ZAL	128.00	ZAP	24.48	ETS	170.19	ZAE	37.69	ETE	174.94	ZAC	86.48	ETC	255.84

V1	30.266	V2	26.453	CLP	24.21														

PLANETOCENTRIC CONIC

C3	15.935	VHL	3.992	DLA	.11	RAL	216.83	RAD	6567.6	VEL	11.718	PTH	2.06	VHP	6.833	DPA	-6.88	RAP	189.29

ECC	1.2622																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 2 46	2164.96	-18.33	38.36	74.58	111.96	20 38 51	1565.0	-15.19	31.10
90.00	8 6 23	4802.09	18.16	206.89	74.53	67.89	9 26 25	4202.1	15.00	199.63
100.00	21 24 10	1902.41	-19.29	18.63	74.16	113.28	21 55 52	1302.4	-15.98	11.41
100.00	9 27 40	4539.87	19.12	187.18	74.11	66.57	10 43 20	3939.9	15.79	179.97
110.00	22 32 31	1688.42	-21.86	1.11	72.87	116.96	23 0 40	1088.4	-18.07	354.03
110.00	10 35 48	4326.62	21.68	169.70	72.82	62.90	11 47 54	3726.6	17.87	162.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5398	TRA	7.1421	TC-15.2211	BAU	3.2430	SGT15917.2	SGR	612.5	SG3	226.5	ST	3192.3	SR	544.0	SS	584.2
RDE	.3761	RRA	.1564	RC3 .2289	FAU	.02830	RRT -.0346	RRF	-.0807	RTF	.9106	CRT	-.1227	CRS	.6575	CST	-.8264
FDE	-.5138	FRA	1.5298	FC3-1.5374	BSP	56701	SGB15929.0	R23	.0491	R13	-.9106	LSA	3229.9	MSA	628.6	SSA	27.4
BDE	.6579	BRA	7.1438	BC315.2228	FSP	777	SG115917.2	SG2	612.1	THA	179.92	EL1	3193.1	EL2	539.8	ALF	178.77

LAUNCH DATE DEC 17 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 6 1966

HELIOCENTRIC CONIC DISTANCE 900.094 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.386	GAL	-4.72	AZL	88.37	HCA	263.30	SMA	192.75	ECC	.24946	INC	1.6275
RP	207.13	LAP	-1.62	LOP	348.39	VP	24.350	GAP	-13.81	AZP	90.19	TAL	336.01	TAP	239.31	RCA	144.66	APO	240.83
RC	341.558	GL	13.40	GP	-3.72	ZAL	129.64	ZAP	24.14	ETS	170.18	ZAE	37.04	ETE	174.91	ZAC	86.75	ETC	255.83

V1	30.266	V2	26.444	CLP	23.87														

PLANETOCENTRIC CONIC

C3	16.619	VHL	4.077	DLA	-.87	RAL	218.16	RAD	6567.7	VEL	11.747	PTH	2.07	VHP	6.925	DPA	-7.21	RAP	190.17

ECC	1.2735																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 15 23	2144.02	-17.80	37.06	76.35	112.40	20 51 7	1544.0	-14.61	29.84
90.00	8 4 24	4842.20	19.17	209.40	76.71	68.75	9 25 6	4242.2	16.11	202.06
100.00	21 36 19	1882.94	-18.77	17.43	75.92	113.70	22 7 42	1282.9	-15.40	10.25
100.00	9 26 8	4578.51	20.14	189.59	76.30	67.44	10 42 27	3978.5	16.91	182.29
110.00	22 43 38	1672.24	-21.36	.12	74.60	117.35	23 11 30	1072.2	-17.52	353.09
110.00	10 35 19	4361.98	22.76	171.88	75.02	63.78	11 48 1	3762.0	19.05	164.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6741	TRA	7.4887	TC-14.7328	BAU	3.2737	SGT15999.7	SGR	615.3	SG3	210.0	ST	3316.6	SR	550.0	SS	572.0
RDE	.3887	RRA	.1497	RC3 .2320	FAU	.02458	RRT -.0584	RRF	-.1057	RTF	.9009	CRT	-.1756	CRS	.6799	CST	-.8394
FDE	-.5164	FRA	1.4736	FC3-1.2803	BSP	56998	SGB16011.5	R23	.0531	R13	-.9009	LSA	3353.1	MSA	620.8	SSA	26.6
BDE	.7781	BRA	7.4902	BC314.7346	FSP	721	SG115999.7	SG2	614.2	THA	179.87	EL1	3318.0	EL2	541.2	ALF	178.29

LAUNCH DATE DEC 17 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 8 1966

HELIOCENTRIC CONIC DISTANCE 904.345 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.395	GAL	-4.97	AZL	88.40	HCA	264.56	SMA	192.91	ECC	.25145	INC	1.6034
RP	207.22	LAP	-1.60	LOP	349.66	VP	24.351	GAP	-13.94	AZP	90.15	TAL	334.86	TAP	239.42	RCA	144.40	APO	241.41
RC	342.314	GL	12.91	GP	-3.66	ZAL	131.26	ZAP	23.81	ETS	170.17	ZAE	36.40	ETE	174.88	ZAC	87.01	ETC	255.82

V1	30.266	V2	26.433	CLP	23.54														

PLANETOCENTRIC CONIC

C3	17.356	VHL	4.166	DLA	-1.83	RAL	219.48	RAD	6567.7	VEL	11.779	PTH	2.08	VHP	7.019	DPA	-7.54	RAP	191.05

ECC	1.2856																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 27 44	2124.26	-17.28	35.84	78.15	112.79	21 3 8	1524.3	-14.04	28.66
90.00	8 2 31	4881.95	20.13	211.92	78.93	69.65	9 23 53	4281.9	17.18	204.49
100.00	21 48 13	1864.62	-18.26	16.30	77.70	114.09	22 19 18	1264.6	-14.85	9.17
100.00	9 24 42	4616.82	21.13	192.01	78.52	68.35	10 41 39	4016.8	18.00	184.61
110.00	22 54 30	1657.12	-20.88	359.20	76.35	117.70	23 22 8	1057.1	-17.01	352.22
110.00	10 34 55	4397.08	23.80	174.08	77.26	64.70	11 48 12	3797.1	20.19	166.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8082	TRA	7.8425	TC-14.2463	BAU	3.3060	SGT16080.7	SGR	618.1	SG3	194.0	ST	3441.4	SR	555.9	SS	557.4
RDE	.4019	RRA	.1426	RC3 .2338	FAU	.02096	RRT -.0814	RRF	-.1301	RTF	.8892	CRT	-.2226	CRS	.7010	CST	-.8494
FDE	-.5162	FRA	1.4130	FC3-1.0457	BSP	57248	SGB16092.6	R23	.0578	R13	-.8892	LSA	3476.5	MSA	613.2	SSA	25.8
BDE	.9026	BRA	7.8438	BC314.2482	FSP	665	SG116080.8	SG2	616.0	THA	179.82	EL1	3443.7	EL2	541.6	ALF	177.89

LAUNCH DATE DEC 17 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 10 1966

HELIOCENTRIC CONIC DISTANCE 908.582 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.403	GAL	-5.23	AZL	88.42	HCA	265.82	SMA	193.07	ECC	.25353	INC	1.5794	V1	30.266
RP	207.32	LAP	-1.58	LOP	350.92	VP	24.350	GAP	-14.08	AZP	90.12	TAL	333.70	TAP	239.52	RCA	144.12	APO	242.02	V2	26.421
RC	343.066	GL	12.43	GP	-3.60	ZAL	132.85	ZAP	23.48	ETS	170.15	ZAE	35.76	ETE	174.84	ZAC	87.27	ETC	255.82	CLP	23.22

PLANETOCENTRIC CONIC

C3	18.149	VHL	4.260	DLA	-2.77	RAL	220.77	RAD	6567.7	VEL	11.812	PTH	2.09	VHP	7.115	DPA	-7.88	RAP	191.93	ECC	1.2987

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 39 50	2105.66	-16.79	34.70	79.96	113.14	21 14 56	1505.7	-13.51	27.56
90.00	8 0 44	4921.32	21.04	214.45	81.18	70.60	9 22 45	4321.3	18.20	206.92
100.00	21 59 53	1847.43	-17.78	15.25	79.50	114.43	22 30 41	1247.4	-14.33	8.16
100.00	9 23 22	4654.79	22.06	194.44	80.77	69.30	10 40 57	4054.8	19.05	186.95
110.00	23 5 10	1643.06	-20.43	358.36	78.12	118.02	23 32 33	1043.1	-16.53	351.41
110.00	10 34 34	4431.92	24.79	176.29	79.54	65.68	11 48 26	3831.9	21.30	168.89

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.9401	TRA	8.2060	TC-13.7600	BAU 3.3391	SGT16159.7	SGR	620.9	SG3	178.6		ST	3565.1	SR	561.7	SS	540.8
RDE	.4157	RRA	.1351	RC3 .2344	FAU .01742	RRT -.1036	RRF	-.1538	RTF	.8750		CRT	-.2637	CRS	.7214	CST	-.8563
FDE	-.5135	FRA	1.3480	FC3 -.8308	BSP 57493	SGB16171.7	R23	.0634	R13	-.8750		LSA	3598.6	MSA	606.2	SSA	25.1
BDE	1.0279	BRA	8.2071	BC313.7620	FSP 610	SG116159.9	SG2	617.5	THA	179.77		EL1	3568.3	EL2	541.4	ALF	177.56

LAUNCH DATE DEC 17 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 12 1966

HELIOCENTRIC CONIC DISTANCE 912.803 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.412	GAL	-5.49	AZL	88.44	HCA	267.08	SMA	193.23	ECC	.25570	INC	1.5554	V1	30.266
RP	207.43	LAP	-1.55	LOP	352.18	VP	24.348	GAP	-14.22	AZP	90.08	TAL	332.53	TAP	239.61	RCA	143.82	APO	242.64	V2	26.408
RC	343.815	GL	11.95	GP	-3.55	ZAL	134.40	ZAP	23.17	ETS	170.14	ZAE	35.14	ETE	174.80	ZAC	87.54	ETC	255.82	CLP	22.91

PLANETOCENTRIC CONIC

C3	19.001	VHL	4.359	DLA	-3.67	RAL	222.05	RAD	6567.8	VEL	11.848	PTH	2.10	VHP	7.213	DPA	-8.22	RAP	192.83	ECC	1.3127

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 51 41	2088.21	-16.31	33.64	81.79	113.47	21 26 29	1488.2	-13.00	26.52
90.00	7 59 3	4960.31	21.90	216.98	83.45	71.59	9 21 43	4360.3	19.18	209.36
100.00	22 11 19	1831.35	-17.32	14.28	81.32	114.75	22 41 50	1231.4	-13.84	7.21
100.00	9 22 7	4692.40	22.94	196.89	83.06	70.30	10 40 19	4092.4	20.05	189.29
110.00	23 15 37	1630.05	-20.01	357.58	79.90	118.31	23 42 47	1030.0	-16.08	350.67
110.00	10 34 18	4466.47	25.74	178.53	81.85	66.69	11 48 44	3866.5	22.36	171.00

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.0701	TRA	8.5775	TC-13.2791	BAU 3.3737	SGT16236.9	SGR	623.7	SG3	163.7		ST	3686.0	SR	567.4	SS	521.9
RDE	.4300	RRA	.1271	RC3 .2340	FAU .01393	RRT -.1250	RRF	-.1761	RTF	.8574		CRT	-.2997	CRS	.7407	CST	-.8610
FDE	-.5079	FRA	1.2792	FC3 -.6349	BSP 57711	SGB16248.9	R23	.0693	R13	-.8575		LSA	3717.6	MSA	599.7	SSA	24.4
BDE	1.1533	BRA	8.5785	BC313.2812	FSP 557	SG116237.1	SG2	618.8	THA	179.72		EL1	3690.0	EL2	540.7	ALF	177.30

LAUNCH DATE DEC 17 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 14 1966

HELIOCENTRIC CONIC DISTANCE 917.008 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.421	GAL	-5.76	AZL	88.47	HCA	268.34	SMA	193.40	ECC	.25797	INC	1.5316	V1	30.266
RP	207.54	LAP	-1.53	LOP	353.44	VP	24.345	GAP	-14.36	AZP	90.04	TAL	331.35	TAP	239.69	RCA	143.51	APO	243.29	V2	26.395
RC	344.561	GL	11.49	GP	-3.49	ZAL	135.92	ZAP	22.86	ETS	170.13	ZAE	34.52	ETE	174.76	ZAC	87.80	ETC	255.82	CLP	22.61

PLANETOCENTRIC CONIC

C3	19.915	VHL	4.463	DLA	-4.55	RAL	223.30	RAD	6567.8	VEL	11.887	PTH	2.11	VHP	7.312	DPA	-8.56	RAP	193.73	ECC	1.3277

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 3 18	2071.86	-15.87	32.64	83.64	113.76	21 37 50	1471.9	-12.52	25.56
90.00	7 57 27	4998.91	22.71	219.52	85.75	72.61	9 20 46	4398.9	20.12	211.81
100.00	22 22 30	1816.36	-16.89	13.37	83.16	115.03	22 52 46	1216.4	-13.38	6.34
100.00	9 20 56	4729.65	23.78	199.34	85.38	71.33	10 39 46	4129.6	21.01	191.64
110.00	23 25 50	1618.06	-19.63	356.87	81.71	118.57	23 52 49	1018.1	-15.66	349.99
110.00	10 34 5	4500.71	26.64	180.78	84.19	67.75	11 49 6	3900.7	23.39	173.13

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.1978	TRA	8.9592	TC-12.8029	BAU 3.4093	SGT16312.4	SGR	626.5	SG3	149.4		ST	3803.5	SR	572.9	SS	501.2
RDE	.4447	RRA	.1187	RC3 .2327	FAU .01052	RRT -.1455	RRF	-.1973	RTF	.8356		CRT	-.3311	CRS	.7596	CST	-.8632
FDE	-.5000	FRA	1.2061	FC3 -.4572	BSP 57911	SGB16324.4	R23	.0764	R13	-.8356		LSA	3833.1	MSA	593.8	SSA	23.8
BDE	1.2777	BRA	8.9600	BC312.8050	FSP 504	SG116312.6	SG2	619.9	THA	179.68		EL1	3808.3	EL2	539.9	ALF	177.09

LAUNCH DATE DEC 17 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 16 1966

HELIOCENTRIC CONIC DISTANCE 921.196 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.429	GAL	-6.03	AZL	88.49	HCA	269.60	SMA	193.56	ECC	.26033	INC	1.5078	V1	30.266
RP	207.67	LAP	-1.51	LOP	354.70	VP	24.341	GAP	-14.51	AZP	90.01	TAL	330.16	TAP	239.76	RCA	143.17	APO	243.95	V2	26.380
RC	345.302	GL	11.03	GP	-3.44	ZAL	137.41	ZAP	22.56	ETS	170.11	ZAE	33.91	ETE	174.72	ZAC	88.06	ETC	255.83	CLP	22.31

PLANETOCENTRIC CONIC

C3	20.895	VHL	4.571	DLA	-5.40	RAL	224.54	RAD	6567.8	VEL	11.928	PTH	2.12	VHP	7.413	DPA	-8.91	RAP	194.64	ECC	1.3439

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 14 40	2056.60	-15.45	31.72	85.51	114.03	21 48 56	1456.6	-12.07	24.67
90.00	7 55 57	5037.11	23.46	222.07	88.08	73.67	9 19 54	4437.1	21.00	214.26
100.00	22 33 27	1802.43	-16.49	12.53	85.01	115.29	23 3 30	1202.4	-12.95	5.53
100.00	9 19 50	4766.52	24.56	201.80	87.72	72.40	10 39 17	4166.5	21.92	194.00
110.00	23 35 51	1607.06	-19.27	356.22	83.52	118.80	24 2 38	1007.1	-15.28	349.37
110.00	10 33 56	4534.64	27.50	183.05	86.57	68.85	11 49 30	3934.6	24.37	175.27

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.3250	TRA	9.3485	TC-12.3372	BAU 3.4469	SGT16386.1	SGR	629.3	SG3	135.8		ST	3916.8	SR	578.2	SS	478.6
RDE	.4601	RRA	.1099	RC3 .2305	FAU .00717	RRT -.1655	RRF	-.2169	RTF	.8080		CRT	-.3592	CRS	.7782	CST	-.8635
FDE	-.4896	FRA	1.1287	FC3 -.2970	BSP 58055	SGB16398.2	R23	.0841	R13	-.8080		LSA	3944.4	MSA	588.2	SSA	23.2
BDE	1.4026	BRA	9.3491	BC312.3393	FSP 453	SG116386.5	SG2	620.7	THA	179.64		EL1	3922.4	EL2	538.8	ALF	176.91

LAUNCH DATE DEC 17 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 18 1966

HELIOCENTRIC CONIC DISTANCE 925.365 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.438	GAL	-6.31	AZL	88.52	HCA	270.86	SMA	193.72	ECC	.26279	INC	1.4841
RP	207.80	LAP	-1.48	LOP	355.95	VP	24.336	GAP	-14.67	AZP	89.98	TAL	328.96	TAP	239.81	RCA	142.82	APO	244.63
RC	346.039	GL	10.59	GP	-3.39	ZAL	138.87	ZAP	22.27	ETS	170.10	ZAE	33.31	ETE	174.67	ZAC	88.32	ETC	255.84

V1 30.266 V2 26.364 CLP 22.03

PLANETOCENTRIC CONIC

C3	21.944	VHL	4.684	DLA	-6.23	RAL	225.75	RAD	6567.9	VEL	11.972	PTH	2.13	VHP	7.516	DPA	-9.26	RAP	195.55

ECC 1.3611

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 25 48	2042.40	-15.05	30.87	87.38	114.27	21 59 50	1442.4	-11.65	23.84
90.00	7 54 31	5074.91	24.16	224.62	90.43	74.77	9 19 6	4474.9	21.84	216.72
100.00	22 44 11	1789.54	-16.11	11.76	86.87	115.52	23 14 0	1189.5	-12.55	4.79
100.00	9 18 49	4803.00	25.29	204.27	90.08	73.51	10 38 52	4203.0	22.79	196.36
110.00	23 45 39	1597.07	-18.94	355.63	85.35	119.00	24 12 16	997.1	-14.92	348.81
110.00	10 33 50	4568.23	28.30	185.33	88.96	69.98	11 49 58	3968.2	25.31	177.43

DIFFERENTIAL CORRECTIONS

TDE	-1.4483	TRA	9.7496	TC	-11.8768	BAU	3.4849
RDE	.4758	RRA	.1006	RC3	.2277	FAU	.00386
FDE	-.4769	FRA	1.0475	FC3	-.1522	BSP	58236
BDE	1.5244	BRA	9.7501	BC3	11.8790	FSP	402

MID-COURSE EXECUTION ACCURACY

SGT	16457.5	SGR	632.1	SG3	122.8		
RRT	-.1846	RRF	-.2341	RTF	.7727		
SGB	16469.8	R23	.0929	R13	-.7727		
SG1	16457.9	SG2	621.2	THA	179.59		

ORBIT DETERMINATION ACCURACY

ST	4024.9	SR	583.2	SS	454.4		
CRT	-.3832	CRS	.7967	CST	-.8613		
LSA	4050.4	MSA	583.3	SSA	22.6		
EL1	4031.2	EL2	537.8	ALF	176.76		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 20 1966

HELIOCENTRIC CONIC DISTANCE 929.514 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.447	GAL	-6.60	AZL	88.54	HCA	272.11	SMA	193.89	ECC	.26536	INC	1.4604
RP	207.94	LAP	-1.46	LOP	357.21	VP	24.330	GAP	-14.83	AZP	89.95	TAL	327.75	TAP	239.86	RCA	142.44	APO	245.34
RC	346.771	GL	10.16	GP	-3.34	ZAL	140.30	ZAP	21.99	ETS	170.09	ZAE	32.72	ETE	174.62	ZAC	88.58	ETC	255.86

V1 30.266 V2 26.348 CLP 21.75

PLANETOCENTRIC CONIC

C3	23.065	VHL	4.803	DLA	-7.03	RAL	226.95	RAD	6567.9	VEL	12.018	PTH	2.15	VHP	7.620	DPA	-9.62	RAP	196.48

ECC 1.3796

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 36 42	2029.22	-14.68	30.07	89.27	114.49	22 10 31	1429.2	-11.26	23.07
90.00	7 53 10	5112.29	24.81	227.17	92.80	75.89	9 18 22	4512.3	22.62	219.18
100.00	22 54 41	1777.65	-15.76	11.05	88.74	115.73	23 24 19	1177.7	-12.17	4.10
100.00	9 17 52	4839.10	25.96	206.74	92.46	74.64	10 38 31	4239.1	23.60	198.74
110.00	23 55 15	1588.02	-18.64	355.10	87.18	119.19	24 21 43	988.0	-14.61	348.30
110.00	10 33 48	4601.49	29.06	187.62	91.39	71.15	11 50 29	4001.5	26.21	179.60

DIFFERENTIAL CORRECTIONS

TDE	-1.5700	TRA	10.1579	TC	-11.4292	BAU	3.5250
RDE	.4920	RRA	.0909	RC3	.2242	FAU	.00060
FDE	-.4624	FRA	.9617	FC3	-.0226	BSP	58342
BDE	1.6453	BRA	10.1583	BC3	11.4314	FSP	352

MID-COURSE EXECUTION ACCURACY

SGT	16526.2	SGR	634.7	SG3	110.7		
RRT	-.2030	RRF	-.2487	RTF	.7268		
SGB	16538.3	R23	.1031	R13	-.7268		
SG1	16526.7	SG2	621.5	THA	179.55		

ORBIT DETERMINATION ACCURACY

ST	4127.3	SR	587.9	SS	429.0		
CRT	-.4045	CRS	.8156	CST	-.8566		
LSA	4150.8	MSA	578.8	SSA	22.0		
EL1	4134.3	EL2	536.8	ALF	176.65		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 22 1966

HELIOCENTRIC CONIC DISTANCE 933.641 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.455	GAL	-6.89	AZL	88.56	HCA	273.36	SMA	194.06	ECC	.26803	INC	1.4367
RP	208.09	LAP	-1.43	LOP	358.46	VP	24.323	GAP	-15.00	AZP	89.92	TAL	326.53	TAP	239.89	RCA	142.04	APO	246.07
RC	347.497	GL	9.73	GP	-3.30	ZAL	141.69	ZAP	21.72	ETS	170.07	ZAE	32.13	ETE	174.57	ZAC	88.84	ETC	255.88

V1 30.266 V2 26.331 CLP 21.48

PLANETOCENTRIC CONIC

C3	24.264	VHL	4.926	DLA	-7.80	RAL	228.13	RAD	6568.0	VEL	12.068	PTH	2.16	VHP	7.727	DPA	-9.97	RAP	197.41

ECC 1.3993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 22	2017.04	-14.34	29.35	91.17	114.68	22 20 59	1417.0	-10.89	22.37
90.00	7 51 54	5149.25	25.40	229.71	95.18	77.03	9 17 43	4549.3	23.36	221.64
100.00	23 4 58	1766.74	-15.44	10.40	90.63	115.92	23 34 24	1166.7	-11.83	3.47
100.00	9 16 59	4874.79	26.58	209.21	94.86	75.80	10 38 14	4274.8	24.37	201.11
110.00	0 8 34	1579.90	-18.37	354.62	89.03	119.35	0 34 54	979.9	-14.32	347.85
110.00	10 33 48	4634.39	29.76	189.93	93.83	72.35	11 51 3	4034.4	27.06	181.78

DIFFERENTIAL CORRECTIONS

TDE	-1.6905	TRA	10.5754	TC	-10.9950	BAU	3.5674
RDE	.5087	RRA	.0807	RC3	.2202	FAU	-.00259
FDE	-.4460	FRA	.8716	FC3	.0924	BSP	58405
BDE	1.7653	BRA	10.5757	BC3	10.9972	FSP	303

MID-COURSE EXECUTION ACCURACY

SGT	16593.6	SGR	637.3	SG3	99.4		
RRT	-.2209	RRF	-.2594	RTF	.6671		
SGB	16605.8	R23	.1147	R13	-.6671		
SG1	16594.2	SG2	621.5	THA	179.51		

ORBIT DETERMINATION ACCURACY

ST	4224.4	SR	592.4	SS	402.5		
CRT	-.4234	CRS	.8351	CST	-.8492		
LSA	4245.9	MSA	574.7	SSA	21.5		
EL1	4231.9	EL2	535.7	ALF	176.55		

LAUNCH DATE DEC 17 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 24 1966

HELIOCENTRIC CONIC DISTANCE 937.747 EARTH TO MARS

RL	147.20	LAL	.00	LOL	85.10	VL	33.464	GAL	-7.19	AZL	88.59	HCA	274.61	SMA	194.22	ECC	.27082	INC	1.4129
RP	208.25	LAP	-1.41	LOP	359.71	VP	24.316	GAP	-15.17	AZP	89.89	TAL	325.30	TAP	239.91	RCA	141.62	APO	246.82
RC	348.218	GL	9.32	GP	-3.25	ZAL	143.05	ZAP	21.46	ETS	170.06	ZAE	31.55	ETE	174.52	ZAC	89.09	ETC	255.90

V1 30.266 V2 26.312 CLP 21.22

PLANETOCENTRIC CONIC

C3	25.544	VHL	5.054	DLA	-8.54	RAL	229.29	RAD	6568.0	VEL	12.121	PTH	2.17	VHP	7.836	DPA	-10.33	RAP	198.34

ECC 1.4204

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 50	2005.81	-14.02	28.68	93.07	114.86	22 31 15	1405.8	-10.55	21.72
90.00	7 50 41	5185.80	25.93	232.26	97.57	78.20	9 17 7	4585.8	24.04	224.10
100.00	23 15 1	1756.77	-15.14	9.81	92.52	116.08	23 44 18	1156.8	-11.52	2.90
100.00	9 16 11	4910.07	27.15	211.68	97.27	76.98	10 38 1	4310.1	25.08	203.49
110.00	0 17 45	1572.67	-18.13	354.20	90.88	119.49	0 43 58	972.7	-14.06	347.45
110.00	10 33 52	4666.93	30.41	192.24	96.30	73.57	11 51 39	4066.9	27.86	183.97

DIFFERENTIAL CORRECTIONS

TDE	-1.8066	TRA	11.0050	TC	-10.5703	BAU	3.6105
RDE	.5257	RRA	.0701	RC3	.2157	FAU	-.00575
FDE	-.4277	FRA	.7772	FC3	.1949	BSP	58495
BDE	1.8815	BRA	11.0052	BC3	10.5725	FSP	255

MID-COURSE EXECUTION ACCURACY

SGT	16658.7	SGR	639.7	SG3	89.3		
RRT	-.2380	RRF	-.2638	RTF	.5884		
SGB	16670.9	R23	.1272	R13	-.5884		
SG1	16659.3	SG2	621.3	THA	179.48		

ORBIT DETERMINATION ACCURACY

ST	4315.2	SR	596.5	SS	374.9		
CRT	-.4395	CRS	.8553	CST	-.8382		
LSA	4334.8	MSA	571.1	SSA	21.0		
EL1	4323.3	EL2	534.8	ALF	176.47		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 353.753 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	35.283	GAL	1.96	AZL	88.89	HCA	108.73	SMA	237.67	ECC	.38200	INC	1.1050	V1	30.269
RP	243.50	LAP	1.05	LOP	194.85	VP	23.057	GAP	22.42	AZP	90.35	TAL	7.09	TAP	115.82	RCA	146.88	APO	328.45	V2	22.535
RC	139.022	GL	7.50	GP	2.42	ZAL	75.04	ZAP	173.00	ETS	158.46	ZAE	152.03	ETE	2.94	ZAC	91.87	ETC	255.92	CLP	173.43

PLANETOCENTRIC CONIC

C3	27.152	VHL	5.211	DLA	14.36	RAL	165.42	RAD	6568.1	VEL	12.187	PTH	2.19	VHP	10.306	DPA	.03	RAP	189.09	ECC	1.4469

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 41 23	2752.00	-27.98	78.33	37.42	94.55	15 27 15	2152.0	-27.05	69.78
90.00	6 29 41	4469.86	8.64	187.15	30.16	62.93	7 44 11	3869.9	4.94	180.42
100.00	16 10 24	2464.95	-29.38	57.07	37.27	95.80	16 51 29	1864.9	-28.26	48.44
100.00	7 43 22	4232.14	9.88	169.01	29.50	61.64	8 53 54	3632.1	6.01	162.36
110.00	17 35 48	2197.72	-33.06	36.21	36.70	99.22	18 12 26	1597.7	-31.44	27.36
110.00	8 34 27	4072.13	13.09	154.97	27.59	58.14	9 42 19	3472.1	8.79	148.52

DIFFERENTIAL CORRECTIONS

TDE	.2887	TRA	-1.0012	TC3	1.2146	BAU	.4409
RDE	-.5524	RRA	-.2233	RC3	.0055	FAU	.06378
FDE	.1214	FRA	.1903	FC3	-2.0335	BSP	5513
BDE	.6233	BRA	1.0258	BC3	1.2146	FSP	498

MID-COURSE EXECUTION ACCURACY

SGT	1730.5	SGR	658.1	SG3	184.4		
RRT	.0899	RRF	-.1053	RTF	-.7813		
SGB	1851.4	R23	-.0234	R13	-.7817		
SG1	1731.6	SG2	655.0	THA	2.29		

ORBIT DETERMINATION ACCURACY

ST	467.4	SR	612.1	SS	143.8
CRT	-.5833	CRS	.8705	CST	-.2369
LSA	701.6	MSA	345.1	SSA	49.9
EL1	693.4	EL2	335.1	ALF	122.46

LAUNCH DATE DEC 18 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 356.078 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	35.163	GAL	2.09	AZL	88.91	HCA	109.64	SMA	234.11	ECC	.37282	INC	1.0851	V1	30.269
RP	243.25	LAP	1.02	LOP	195.76	VP	22.897	GAP	21.78	AZP	90.36	TAL	7.72	TAP	117.36	RCA	146.83	APO	321.38	V2	22.560
RC	141.251	GL	7.48	GP	2.49	ZAL	73.82	ZAP	172.41	ETS	159.55	ZAE	152.11	ETE	3.23	ZAC	92.00	ETC	255.91	CLP	172.82

PLANETOCENTRIC CONIC

C3	26.138	VHL	5.112	DLA	14.81	RAL	164.25	RAD	6568.1	VEL	12.146	PTH	2.18	VHP	10.049	DPA	-.03	RAP	189.40	ECC	1.4302

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 32 40	2758.52	-28.01	78.80	35.73	94.32	15 18 39	2158.5	-27.12	70.25
90.00	6 29 8	4444.44	7.84	185.70	28.46	62.70	7 43 12	3844.4	4.13	179.00
100.00	16 2 0	2470.42	-29.41	57.47	35.60	95.59	16 43 11	1870.4	-28.33	48.84
100.00	7 42 29	4207.77	9.09	167.64	27.79	61.40	8 52 37	3607.8	5.20	161.01
110.00	17 28 6	2201.05	-33.10	36.46	35.04	99.07	18 4 47	1601.1	-31.49	27.61
110.00	8 32 53	4049.90	12.29	153.75	25.88	57.85	9 40 23	3449.9	7.96	147.34

DIFFERENTIAL CORRECTIONS

TDE	.2688	TRA	-.9705	TC3	1.2943	BAU	.4523
RDE	-.5417	RRA	-.2157	RC3	.0106	FAU	.06609
FDE	.1410	FRA	.1635	FC3	-2.1890	BSP	5649
BDE	.6047	BRA	.9942	BC3	1.2943	FSP	530

MID-COURSE EXECUTION ACCURACY

SGT	1762.9	SGR	656.7	SG3	194.6		
RRT	.0975	RRF	-.1134	RTF	-.7879		
SGB	1881.2	R23	-.0244	R13	-.7884		
SG1	1764.2	SG2	653.1	THA	2.41		

ORBIT DETERMINATION ACCURACY

ST	454.1	SR	611.8	SS	157.0
CRT	-.5671	CRS	.9058	CST	-.3132
LSA	696.4	MSA	342.7	SSA	52.2
EL1	684.7	EL2	334.2	ALF	120.96

LAUNCH DATE DEC 18 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 358.517 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	35.048	GAL	2.23	AZL	88.93	HCA	110.56	SMA	230.82	ECC	.36412	INC	1.0650	V1	30.269
RP	243.00	LAP	1.00	LOP	196.68	VP	22.745	GAP	21.15	AZP	90.37	TAL	8.35	TAP	118.91	RCA	146.77	APO	314.87	V2	22.585
RC	143.499	GL	7.45	GP	2.56	ZAL	72.61	ZAP	171.80	ETS	160.48	ZAE	152.22	ETE	3.52	ZAC	92.14	ETC	255.90	CLP	172.21

PLANETOCENTRIC CONIC

C3	25.212	VHL	5.021	DLA	15.25	RAL	163.08	RAD	6568.0	VEL	12.107	PTH	2.17	VHP	9.798	DPA	-.09	RAP	189.71	ECC	1.4149

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 23 57	2765.35	-28.05	79.30	34.07	94.07	15 10 2	2165.4	-27.19	70.74
90.00	6 28 28	4419.79	7.07	184.30	26.79	62.51	7 42 8	3819.8	3.33	177.62
100.00	15 53 36	2476.20	-29.45	57.90	33.94	95.37	16 34 53	1876.2	-28.39	49.25
100.00	7 41 30	4184.17	8.31	166.31	26.12	61.18	8 51 14	3584.2	4.41	159.70
110.00	17 20 23	2204.69	-33.14	36.74	33.40	98.91	17 57 8	1604.7	-31.55	27.87
110.00	8 31 13	4028.45	11.51	152.58	24.20	57.59	9 38 21	3428.4	7.15	146.20

DIFFERENTIAL CORRECTIONS

TDE	.2493	TRA	-.9387	TC3	1.3753	BAU	.4636
RDE	-.5317	RRA	-.2083	RC3	.0165	FAU	.06854
FDE	.1614	FRA	.1334	FC3	-2.3537	BSP	5783
BDE	.5873	BRA	.9615	BC3	1.3754	FSP	564

MID-COURSE EXECUTION ACCURACY

SGT	1794.7	SGR	655.1	SG3	205.3		
RRT	.1054	RRF	-.1220	RTF	-.7943		
SGB	1910.6	R23	-.0257	R13	-.7948		
SG1	1796.3	SG2	650.9	THA	2.54		

ORBIT DETERMINATION ACCURACY

ST	439.9	SR	611.3	SS	171.8
CRT	-.5501	CRS	.9293	CST	-.3772
LSA	691.9	MSA	339.1	SSA	54.7
EL1	675.9	EL2	332.3	ALF	119.34

LAUNCH DATE DEC 18 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 361.060 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	34.938	GAL	2.36	AZL	88.96	HCA	111.48	SMA	227.78	ECC	.35589	INC	1.0446	V1	30.269
RP	242.74	LAP	.97	LOP	197.60	VP	22.602	GAP	20.52	AZP	90.38	TAL	8.99	TAP	120.47	RCA	146.71	APO	308.84	V2	22.611
RC	145.763	GL	7.41	GP	2.64	ZAL	71.39	ZAP	171.18	ETS	161.29	ZAE	152.38	ETE	3.84	ZAC	92.28	ETC	255.90	CLP	171.59

PLANETOCENTRIC CONIC

C3	24.367	VHL	4.936	DLA	15.68	RAL	161.89	RAD	6568.0	VEL	12.072	PTH	2.16	VHP	9.555	DPA	-.14	RAP	190.01	ECC	1.4010

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 15 14	2772.42	-28.08	79.81	32.43	93.81	15 1 27	2172.4	-27.26	71.25
90.00	6 27 43	4395.95	6.32	182.95	25.16	62.34	7 40 59	3796.0	2.57	176.28
100.00	15 45 14	2482.22	-29.49	58.34	32.31	95.14	16 26 36	1882.2	-28.46	49.69
100.00	7 40 25	4161.38	7.56	165.03	24.48	60.99	8 49 47	3561.4	3.64	158.45
110.00	17 12 41	2208.57	-33.18	37.03	31.78	98.74	17 49 30	1608.6	-31.62	28.16
110.00	8 29 27	4007.80	10.76	151.46	22.55	57.36	9 36 15	3407.8	6.38	145.10

DIFFERENTIAL CORRECTIONS

TDE	.2301	TRA	-.9070	TC3	1.4569	BAU	.4747
RDE	-.5223	RRA	-.2010	RC3	.0231	FAU	.07112
FDE	.1827	FRA	.1011	FC3	-2.5268	BSP	5911
BDE	.5708	BRA	.9290	BC3	1.4571	FSP	600

MID-COURSE EXECUTION ACCURACY

SGT	1826.4	SGR	653.3	SG3	216.6		
RRT	.1138	RRF	-.1313	RTF	-.8005		
SGB	1939.7	R23	-.0272	R13	-.8011		
SG1	1828.2	SG2	648.4	THA	2.67		

ORBIT DETERMINATION ACCURACY

ST	425.2	SR	610.6	SS	188.1
CRT	-.5317	CRS	.9436	CST	-.4274
LSA	688.2	MSA	334.9	SSA	57.3
EL1	667.1	EL2	329.6	ALF	117.59

LAUNCH DATE DEC 18 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 363.696 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	34.834	GAL	2.48	AZL	88.98	HCA	112.40	SMA	224.96	ECC	.34809	INC	1.0239
RP	242.47	LAP	.95	LOP	198.52	VP	22.467	GAP	19.90	AZP	90.39	TAL	9.63	TAP	122.03	RCA	146.65	APO	303.27
RC	148.041	GL	7.36	GP	2.72	ZAL	70.17	ZAP	170.56	ETS	161.99	ZAE	152.58	ETE	4.16	ZAC	92.42	ETC	255.89

V1 30.269 V2 22.638 CLP 170.95

PLANETOCENTRIC CONIC

C3	23.598	VHL	4.858	DLA	16.10	RAL	160.70	RAD	6568.0	VEL	12.041	PTH	2.15	VHP	9.318	DPA	-.19	RAP	190.30

ECC 1.3884

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 6 35	2779.67	-28.11	80.34	30.82	93.55	14 52 55	2179.7	-27.32	71.76
90.00	6 26 52	4372.98	5.59	181.66	23.55	62.20	7 39 45	3773.0	1.83	175.00
100.00	15 36 54	2488.41	-29.52	58.80	30.70	94.90	16 18 22	1888.4	-28.53	50.14
100.00	7 39 15	4139.47	6.84	163.81	22.87	60.83	8 48 14	3539.5	2.90	157.24
110.00	17 5 2	2212.63	-33.22	37.34	30.19	98.56	17 41 55	1612.6	-31.68	28.46
110.00	8 27 35	3988.02	10.03	150.39	20.93	57.15	9 34 3	3388.0	5.63	144.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2113	TRA	-.8751	TC3	1.5389	BAU	.4856	SGT	1857.9	SGR	651.3	SG3	228.4	ST	409.9	SR	609.8	SS	205.8
RDE	-.5135	RRA	-.1937	RC3	.0304	FAU	.07382	RRT	.1228	RRF	-.1414	RTF	-.8065	CRT	-.5118	CRS	.9514	CST	-.4669
FDE	.2051	FRA	.0661	FC3	-2.7084	BSP	6046	SGB	1968.7	R23	-.0290	R13	-.8071	LSA	685.5	MSA	329.7	SSA	60.0
BDE	.5553	BRA	.8963	BC3	1.5392	FSP	638	SG1	1859.8	SG2	645.7	THA	2.80	EL1	658.5	EL2	326.1	ALF	115.73

LAUNCH DATE DEC 18 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 366.419 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	34.734	GAL	2.61	AZL	89.00	HCA	113.32	SMA	222.35	ECC	.34071	INC	1.0028
RP	242.20	LAP	.92	LOP	199.44	VP	22.339	GAP	19.28	AZP	90.40	TAL	10.28	TAP	123.60	RCA	146.59	APO	298.10
RC	150.330	GL	7.29	GP	2.80	ZAL	68.95	ZAP	169.91	ETS	162.60	ZAE	152.81	ETE	4.51	ZAC	92.56	ETC	255.88

V1 30.269 V2 22.664 CLP 170.31

PLANETOCENTRIC CONIC

C3	22.897	VHL	4.785	DLA	16.49	RAL	159.51	RAD	6567.9	VEL	12.011	PTH	2.14	VHP	9.087	DPA	-.23	RAP	190.59

ECC 1.3768

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 58 0	2787.02	-28.14	80.88	29.23	93.28	14 44 27	2187.0	-27.39	72.29
90.00	6 25 55	4350.93	4.89	180.42	21.98	62.07	7 38 26	3750.9	1.12	173.77
100.00	15 28 38	2494.71	-29.56	59.26	29.12	94.66	16 10 13	1894.7	-28.60	50.59
100.00	7 37 58	4118.47	6.14	162.64	21.30	60.69	8 46 36	3518.5	2.19	156.09
110.00	16 57 27	2216.83	-33.26	37.67	28.63	98.38	17 34 24	1616.8	-31.75	28.76
110.00	8 25 38	3969.11	9.33	149.37	19.35	56.96	9 31 47	3369.1	4.91	143.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1931	TRA	-.8430	TC3	1.6212	BAU	.4964	SGT	1889.2	SGR	649.2	SG3	240.9	ST	394.2	SR	608.9	SS	224.5
RDE	-.5052	RRA	-.1865	RC3	.0385	FAU	.07668	RRT	.1324	RRF	-.1523	RTF	-.8123	CRT	-.4907	CRS	.9544	CST	-.4971
FDE	.2283	FRA	.0280	FC3	-2.8993	BSP	6161	SGB	1997.6	R23	-.0309	R13	-.8129	LSA	683.9	MSA	323.8	SSA	62.9
BDE	.5408	BRA	.8634	BC3	1.6217	FSP	678	SG1	1891.4	SG2	642.8	THA	2.95	EL1	650.1	EL2	321.7	ALF	113.78

LAUNCH DATE DEC 18 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 369.220 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	34.639	GAL	2.73	AZL	89.02	HCA	114.25	SMA	219.91	ECC	.33372	INC	.9815
RP	241.93	LAP	.89	LOP	200.37	VP	22.219	GAP	18.66	AZP	90.40	TAL	10.92	TAP	125.17	RCA	146.52	APO	293.30
RC	152.629	GL	7.22	GP	2.89	ZAL	67.74	ZAP	169.26	ETS	163.13	ZAE	153.09	ETE	4.88	ZAC	92.70	ETC	255.87

V1 30.269 V2 22.692 CLP 169.65

PLANETOCENTRIC CONIC

C3	22.260	VHL	4.718	DLA	16.88	RAL	158.31	RAD	6567.9	VEL	11.985	PTH	2.14	VHP	8.863	DPA	-.26	RAP	190.87

ECC 1.3663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 49 31	2794.39	-28.17	81.41	27.68	93.02	14 36 5	2194.4	-27.45	72.82
90.00	6 24 51	4329.85	4.22	179.23	20.44	61.97	7 37 1	3729.8	.44	172.60
100.00	15 20 29	2501.04	-29.59	59.73	27.57	94.41	16 2 10	1901.0	-28.67	51.05
100.00	7 36 34	4098.42	5.47	161.53	19.75	60.57	8 44 53	3498.4	1.51	154.99
110.00	16 49 57	2221.10	-33.30	37.99	27.09	98.19	17 26 58	1621.1	-31.81	29.08
110.00	8 23 35	3951.13	8.66	148.41	17.80	56.80	9 29 26	3351.1	4.23	142.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1747	TRA	-.8110	TC3	1.7023	BAU	.5068	SGT	1919.5	SGR	647.0	SG3	254.1	ST	377.7	SR	607.9	SS	244.2
RDE	-.4974	RRA	-.1793	RC3	.0473	FAU	.07968	RRT	.1431	RRF	-.1640	RTF	-.8177	CRT	-.4661	CRS	.9540	CST	-.5179
FDE	.2524	FRA	-.0133	FC3	-3.0991	BSP	6298	SGB	2025.6	R23	-.0326	R13	-.8184	LSA	683.2	MSA	317.3	SSA	65.9
BDE	.5272	BRA	.8306	BC3	1.7030	FSP	721	SG1	1922.0	SG2	639.5	THA	3.11	EL1	641.9	EL2	316.5	ALF	111.67

LAUNCH DATE DEC 18 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 372.093 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	34.548	GAL	2.84	AZL	89.04	HCA	115.18	SMA	217.65	ECC	.32711	INC	.9597
RP	241.65	LAP	.87	LOP	201.29	VP	22.105	GAP	18.05	AZP	90.41	TAL	11.57	TAP	126.74	RCA	146.45	APO	288.84
RC	154.936	GL	7.13	GP	2.98	ZAL	66.55	ZAP	168.60	ETS	163.60	ZAE	153.40	ETE	5.26	ZAC	92.85	ETC	255.86

V1 30.269 V2 22.720 CLP 168.99

PLANETOCENTRIC CONIC

C3	21.680	VHL	4.656	DLA	17.24	RAL	157.11	RAD	6567.9	VEL	11.961	PTH	2.13	VHP	8.644	DPA	-.29	RAP	191.15

ECC 1.3568

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 41 10	2801.71	-28.19	81.95	26.15	92.75	14 27 52	2201.7	-27.52	73.35
90.00	6 23 40	4309.77	3.58	178.11	18.94	61.89	7 35 30	3709.8	-.21	171.48
100.00	15 12 27	2507.34	-29.63	60.20	26.05	94.17	15 54 14	1907.3	-28.73	51.51
100.00	7 35 4	4079.37	4.83	160.48	18.24	60.47	8 43 3	3479.4	.86	153.94
110.00	16 42 34	2225.38	-33.35	38.32	25.58	98.00	17 19 39	1625.4	-31.88	29.40
110.00	8 21 26	3934.10	8.02	147.50	16.28	56.66	9 27 0	3334.1	3.58	141.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1575	TRA	-.7782	TC3	1.7820	BAU	.5168	SGT	1948.5	SGR	644.7	SG3	267.8	ST	361.3	SR	606.6	SS	264.6
RDE	-.4900	RRA	-.1721	RC3	.0570	FAU	.08283	RRT	.1541	RRF	-.1765	RTF	-.8229	CRT	-.4416	CRS	.9512	CST	-.5336
FDE	.2773	FRA	-.0580	FC3	-3.3075	BSP	6409	SGB	2052.3	R23	-.0350	R13	-.8237	LSA	683.8	MSA	310.1	SSA	69.0
BDE	.5147	BRA	.7970	BC3	1.7829	FSP	766	SG1	1951.3	SG2	636.0	THA	3.27	EL1	634.4	EL2	310.0	ALF	109.59

LAUNCH DATE DEC 18 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 375.032 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	34.461	GAL	2.96	AZL	89.06	HCA	116.11	SMA	215.53	ECC	.32085	INC	.9375	V1	30.269
RP	241.36	LAP	.84	LOP	202.22	VP	21.999	GAP	17.44	AZP	90.41	TAL	12.22	TAP	128.32	RCA	146.38	APO	284.69	V2	22.748
RC	157.250	GL	7.03	GP	3.07	ZAL	65.36	ZAP	167.92	ETS	164.02	ZAE	153.75	ETE	5.68	ZAC	93.00	ETC	255.86	CLP	168.31

PLANETOCENTRIC CONIC

C3	21.154	VHL	4.599	DLA	17.58	RAL	155.92	RAD	6567.9	VEL	11.939	PTH	2.12	VHP	8.431	DPA	-.31	RAP	191.41	ECC	1.3481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 32 57	2808.94	-28.22	82.48	24.65	92.48	14 19 46	2208.9	-27.57	73.87
90.00	6 22 22	4290.71	2.96	177.04	17.46	61.83	7 33 52	3690.7	-.83	170.41
100.00	15 4 33	2513.57	-29.66	60.66	24.56	93.93	15 46 27	1913.6	-28.80	51.96
100.00	7 33 27	4061.31	4.23	159.48	16.76	60.38	8 41 8	3461.3	.25	152.95
110.00	16 35 18	2229.64	-33.38	38.64	24.11	97.81	17 12 28	1629.6	-31.95	29.71
110.00	8 19 12	3918.01	7.42	146.64	14.79	56.54	9 24 30	3318.0	2.97	140.39

DIFFERENTIAL CORRECTIONS

TDE	.1508	TRA	-.7357	TC3	1.8812	BAU	.5324
RDE	-.4832	RRA	-.1651	RC3	.0674	FAU	.08611
FDE	.3043	FRA	-.1048	FC3	-3.5240	BSP	6274
BDE	.5062	BRA	.7540	BC3	1.8824	FSP	816

MID-COURSE EXECUTION ACCURACY

SGT	1988.5	SGR	642.4	SG3	282.2		
RRT	.1578	RRF	-.1905	RTF	-.8323		
SGB	2089.7	R23	-.0448	R13	-.8333		
SG1	1991.4	SG2	633.5	THA	3.25		

ORBIT DETERMINATION ACCURACY

ST	348.1	SR	605.4	SS	286.7
CRT	-.4476	CRS	.9474	CST	-.5696
LSA	689.6	MSA	298.5	SSA	72.3
EL1	631.4	EL2	298.5	ALF	108.78

LAUNCH DATE DEC 18 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 378.032 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	34.379	GAL	3.07	AZL	89.08	HCA	117.04	SMA	213.56	ECC	.31493	INC	.9149	V1	30.269
RP	241.08	LAP	.82	LOP	203.16	VP	21.899	GAP	16.84	AZP	90.42	TAL	12.86	TAP	129.90	RCA	146.31	APO	280.82	V2	22.777
RC	159.568	GL	6.93	GP	3.17	ZAL	64.19	ZAP	167.23	ETS	164.39	ZAE	154.13	ETE	6.12	ZAC	93.15	ETC	255.85	CLP	167.62

PLANETOCENTRIC CONIC

C3	20.677	VHL	4.547	DLA	17.91	RAL	154.74	RAD	6567.8	VEL	11.919	PTH	2.12	VHP	8.224	DPA	-.32	RAP	191.67	ECC	1.3403

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 24 58	2815.93	-28.24	82.99	23.18	92.23	14 11 54	2215.9	-27.63	74.37
90.00	6 20 56	4272.78	2.39	176.04	16.03	61.78	7 32 9	3672.8	-1.41	169.41
100.00	14 56 52	2519.58	-29.68	61.10	23.10	93.70	15 38 51	1919.6	-28.86	52.40
100.00	7 31 43	4044.36	3.65	158.55	15.32	60.31	8 39 8	3444.4	-.32	152.02
110.00	16 28 13	2233.76	-33.42	38.96	22.66	97.63	17 5 27	1633.8	-32.01	30.02
110.00	8 16 51	3902.94	6.85	145.84	13.35	56.43	9 21 54	3302.9	2.39	139.60

DIFFERENTIAL CORRECTIONS

TDE	.1295	TRA	-.7089	TC3	1.9475	BAU	.5388
RDE	-.4766	RRA	-.1578	RC3	.0790	FAU	.08965
FDE	.3296	FRA	-.1578	FC3	-3.7533	BSP	6522
BDE	.4939	BRA	.7263	BC3	1.9491	FSP	864

MID-COURSE EXECUTION ACCURACY

SGT	2011.2	SGR	639.9	SG3	297.6		
RRT	.1752	RRF	-.2047	RTF	-.8345		
SGB	2110.6	R23	-.0433	R13	-.8355		
SG1	2014.7	SG2	629.0	THA	3.54		

ORBIT DETERMINATION ACCURACY

ST	329.8	SR	603.8	SS	307.2
CRT	-.4029	CRS	.9413	CST	-.5609
LSA	689.9	MSA	293.4	SSA	75.5
EL1	622.7	EL2	292.7	ALF	106.05

LAUNCH DATE DEC 18 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 381.088 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	34.300	GAL	3.18	AZL	89.11	HCA	117.97	SMA	211.72	ECC	.30932	INC	.8921	V1	30.269
RP	240.79	LAP	.79	LOP	204.09	VP	21.806	GAP	16.25	AZP	90.42	TAL	13.50	TAP	131.47	RCA	146.23	APO	277.21	V2	22.806
RC	161.890	GL	6.81	GP	3.28	ZAL	63.03	ZAP	166.52	ETS	164.72	ZAE	154.55	ETE	6.59	ZAC	93.30	ETC	255.84	CLP	166.92

PLANETOCENTRIC CONIC

C3	20.245	VHL	4.499	DLA	18.21	RAL	153.57	RAD	6567.8	VEL	11.901	PTH	2.11	VHP	8.022	DPA	-.32	RAP	191.93	ECC	1.3332

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 17 10	2822.67	-28.25	83.48	21.75	91.98	14 4 13	2222.7	-27.68	74.86
90.00	6 19 23	4255.95	1.84	175.10	14.63	61.74	7 30 19	3655.9	-1.95	168.47
100.00	14 49 22	2525.38	-29.71	61.53	21.67	93.47	15 31 27	1925.4	-28.91	52.82
100.00	7 29 52	4028.47	3.12	157.67	13.92	60.26	8 37 1	3428.5	-.86	151.15
110.00	16 21 18	2237.74	-33.46	39.27	21.25	97.45	16 58 36	1637.7	-32.07	30.31
110.00	8 14 26	3888.87	6.32	145.10	11.93	56.34	9 19 15	3288.9	1.86	138.86

DIFFERENTIAL CORRECTIONS

TDE	.1108	TRA	-.6798	TC3	2.0164	BAU	.5463
RDE	-.4705	RRA	-.1506	RC3	.0915	FAU	.09333
FDE	.3567	FRA	-.2132	FC3	-3.9911	BSP	6715
BDE	.4834	BRA	.6963	BC3	2.0184	FSP	917

MID-COURSE EXECUTION ACCURACY

SGT	2035.4	SGR	637.5	SG3	313.8		
RRT	.1917	RRF	-.2203	RTF	-.8378		
SGB	2132.9	R23	-.0438	R13	-.8388		
SG1	2039.4	SG2	624.5	THA	3.79		

ORBIT DETERMINATION ACCURACY

ST	312.4	SR	602.2	SS	328.9
CRT	-.3606	CRS	.9349	CST	-.5507
LSA	692.6	MSA	287.4	SSA	78.6
EL1	615.6	EL2	285.1	ALF	103.55

LAUNCH DATE DEC 18 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 384.196 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	34.225	GAL	3.28	AZL	89.13	HCA	118.91	SMA	209.99	ECC	.30402	INC	.8686	V1	30.269
RP	240.49	LAP	.76	LOP	205.03	VP	21.719	GAP	15.66	AZP	90.42	TAL	14.14	TAP	133.04	RCA	146.15	APO	273.84	V2	22.836
RC	164.213	GL	6.68	GP	3.39	ZAL	61.90	ZAP	165.80	ETS	165.02	ZAE	155.00	ETE	7.10	ZAC	93.45	ETC	255.84	CLP	166.20

PLANETOCENTRIC CONIC

C3	19.855	VHL	4.456	DLA	18.49	RAL	152.41	RAD	6567.8	VEL	11.884	PTH	2.11	VHP	7.825	DPA	-.31	RAP	192.17	ECC	1.3268

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 9 37	2829.08	-28.27	83.95	20.35	91.75	13 56 46	2229.1	-27.73	75.32
90.00	6 17 41	4240.25	1.34	174.23	13.26	61.71	7 28 22	3640.2	-2.45	167.60
100.00	14 42 5	2530.89	-29.73	61.94	20.28	93.26	15 24 16	1930.9	-28.96	53.22
100.00	7 27 54	4013.67	2.62	156.86	12.55	60.21	8 34 48	3413.7	-1.37	150.34
110.00	16 14 34	2241.53	-33.49	39.56	19.87	97.28	16 51 56	1641.5	-32.12	30.59
110.00	8 11 55	3875.80	5.83	144.41	10.56	56.26	9 16 30	3275.8	1.36	138.18

DIFFERENTIAL CORRECTIONS

TDE	.0947	TRA	-.6492	TC3	2.0853	BAU	.5542
RDE	-.4647	RRA	-.1432	RC3	.1049	FAU	.09719
FDE	.3841	FRA	-.2729	FC3	-4.2379	BSP	6838
BDE	.4743	BRA	.6648	BC3	2.0879	FSP	972

MID-COURSE EXECUTION ACCURACY

SGT	2059.9	SGR	635.2	SG3	330.6		
RRT	.2078	RRF	-.2371	RTF	-.8414		
SGB	2155.6	R23	-.0458	R13	-.8426		
SG1	2064.5	SG2	620.0	THA	4.03		

ORBIT DETERMINATION ACCURACY

ST	296.1	SR	600.4	SS	350.7
CRT	-.3220	CRS	.9279	CST	-.5414
LSA	696.7	MSA	281.1	SSA	81.7
EL1	609.9	EL2	275.9	ALF	101.39

LAUNCH DATE DEC 18 1964 FLIGHT TIME 164.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 387.353 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	34.153	GAL	3.38	AZL	89.16	HCA	119.85	SMA	208.38	ECC	.29901	INC	.8446
RP	240.19	LAP	.73	LOP	205.96	VP	21.638	GAP	15.08	AZP	90.42	TAL	14.77	TAP	134.62	RCA	146.07	APO	270.69
RC	166.536	GL	6.54	GP	3.50	ZAL	60.79	ZAP	165.06	ETS	165.28	ZAE	155.48	ETE	7.65	ZAC	93.61	ETC	255.83

V1	30.269	V2	22.866	CLP	165.47

PLANETOCENTRIC CONIC

C3	19.501	VHL	4.416	DLA	18.75	RAL	151.27	RAD	6567.8	VEL	11.869	PTH	2.11	VHP	7.634	DPA	-.29	RAP	192.41
ECC	1.3209																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 2 19	2835.10	-28.28	84.39	18.99	91.53	13 49 34	2235.1	-27.77	75.76
90.00	6 15 52	4225.71	.87	173.41	11.83	61.70	7 26 18	3625.7	-2.92	166.78
100.00	14 35 3	2536.05	-29.75	62.32	18.92	93.06	15 17 19	1936.1	-29.01	53.60
100.00	7 25 49	3999.99	2.16	156.11	11.22	60.18	8 32 29	3400.0	-1.83	149.59
110.00	16 8 4	2245.07	-33.52	39.83	18.53	97.12	16 45 29	1645.1	-32.17	30.86
110.00	8 9 18	3863.73	5.37	143.78	9.22	56.19	9 13 42	3263.7	.90	137.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0805	TRA	-.6184	TC3	2.1543	BAU	.5625	SGT	2085.5	SGR	633.0	SG3	348.5	ST	280.6	SR	598.4	SS	372.7
RDE	-.4592	RRA	-.1359	RC3	.1194	FAU	.10130	RRT	.2243	RRF	-.2552	RTF	-.8453	CRT	-.2847	CRS	.9206	CST	-.5307
FDE	.4122	FRA	-.3363	FC3	-4.4971	BSP	6951	SGB	2179.4	R23	-.0487	R13	-.8465	LSA	702.1	MSA	275.1	SSA	84.6
BDE	.4662	BRA	.6331	BC3	2.1576	FSP	1030	SG1	2090.7	SG2	615.4	THA	4.27	EL1	605.0	EL2	266.1	ALF	99.45

LAUNCH DATE DEC 18 1964 FLIGHT TIME 166.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 390.554 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	34.085	GAL	3.48	AZL	89.18	HCA	120.79	SMA	206.86	ECC	.29427	INC	.8202
RP	239.88	LAP	.70	LOP	206.90	VP	21.562	GAP	14.50	AZP	90.42	TAL	15.40	TAP	136.18	RCA	145.99	APO	267.74
RC	168.857	GL	6.39	GP	3.62	ZAL	59.70	ZAP	164.31	ETS	165.52	ZAE	156.00	ETE	8.25	ZAC	93.77	ETC	255.82

V1	30.269	V2	22.897	CLP	164.72

PLANETOCENTRIC CONIC

C3	19.183	VHL	4.380	DLA	18.99	RAL	150.14	RAD	6567.8	VEL	11.856	PTH	2.10	VHP	7.447	DPA	-.26	RAP	192.64
ECC	1.3157																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 55 18	2840.67	-28.29	84.80	17.66	91.32	13 42 38	2240.7	-27.81	76.16
90.00	6 13 54	4212.34	.44	172.67	10.64	61.69	7 24 6	3612.3	-3.35	166.04
100.00	14 28 17	2540.82	-29.77	62.68	17.60	92.87	15 10 38	1940.8	-29.05	53.94
100.00	7 23 36	3987.43	1.73	155.42	9.92	60.15	8 30 3	3387.4	-2.25	148.90
110.00	16 1 46	2248.33	-33.55	40.08	17.21	96.98	16 39 15	1648.3	-32.22	31.10
110.00	8 6 36	3852.68	4.95	143.19	7.91	56.13	9 10 49	3252.7	.47	136.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0670	TRA	-.5874	TC3	2.2197	BAU	.5703	SGT	2109.2	SGR	631.1	SG3	367.2	ST	265.6	SR	596.3	SS	395.1
RDE	-.4540	RRA	-.1284	RC3	.1349	FAU	.10557	RRT	.2419	RRF	-.2746	RTF	-.8489	CRT	-.2454	CRS	.9131	CST	-.5164
FDE	.4413	FRA	-.4043	FC3	-4.7646	BSP	7057	SGB	2201.6	R23	-.0520	R13	-.8503	LSA	708.5	MSA	269.7	SSA	87.1
BDE	.4589	BRA	.6013	BC3	2.2238	FSP	1093	SG1	2115.2	SG2	610.6	THA	4.52	EL1	600.7	EL2	255.6	ALF	97.63

LAUNCH DATE DEC 18 1964 FLIGHT TIME 168.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 393.798 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	34.020	GAL	3.58	AZL	89.20	HCA	121.73	SMA	205.44	ECC	.28979	INC	.7953
RP	239.58	LAP	.68	LOP	207.85	VP	21.492	GAP	13.93	AZP	90.42	TAL	16.02	TAP	137.74	RCA	145.91	APO	264.98
RC	171.174	GL	6.22	GP	3.74	ZAL	58.64	ZAP	163.54	ETS	165.73	ZAE	156.55	ETE	8.90	ZAC	93.93	ETC	255.82

V1	30.269	V2	22.928	CLP	163.96

PLANETOCENTRIC CONIC

C3	18.895	VHL	4.347	DLA	19.20	RAL	149.03	RAD	6567.8	VEL	11.844	PTH	2.10	VHP	7.266	DPA	-.23	RAP	192.85
ECC	1.3110																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 48 34	2845.74	-28.30	85.17	16.37	91.14	13 36 0	2245.7	-27.84	76.53
90.00	6 11 48	4200.16	.04	171.99	9.38	61.68	7 21 48	3600.2	-3.74	165.35
100.00	14 21 48	2545.14	-29.78	63.00	16.31	92.71	15 4 13	1945.1	-29.09	54.26
100.00	7 21 16	3975.99	1.34	154.79	8.66	60.13	8 27 32	3376.0	-2.64	148.27
110.00	15 55 44	2251.25	-33.57	40.30	15.94	96.85	16 33 15	1651.3	-32.26	31.32
110.00	8 3 49	3842.64	4.57	142.67	6.65	56.09	9 7 52	3242.6	.09	136.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0546	TRA	-.5569	TC3	2.2813	BAU	.5776	SGT	2131.4	SGR	629.4	SG3	386.8	ST	251.2	SR	594.1	SS	417.3
RDE	-.4491	RRA	-.1207	RC3	.1514	FAU	.11006	RRT	.2605	RRF	-.2953	RTF	-.8522	CRT	-.2050	CRS	.9054	CST	-.4994
FDE	.4705	FRA	-.4768	FC3	-5.0427	BSP	7156	SGB	2222.4	R23	-.0557	R13	-.8538	LSA	715.4	MSA	265.2	SSA	89.4
BDE	.4524	BRA	.5698	BC3	2.2863	FSP	1159	SG1	2138.2	SG2	605.7	THA	4.78	EL1	596.8	EL2	244.7	ALF	95.96

LAUNCH DATE DEC 18 1964 FLIGHT TIME 170.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 397.080 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.957	GAL	3.67	AZL	89.23	HCA	122.68	SMA	204.11	ECC	.28556	INC	.7696
RP	239.26	LAP	.65	LOP	208.79	VP	21.428	GAP	13.37	AZP	90.42	TAL	16.63	TAP	139.30	RCA	145.82	APO	262.39
RC	173.485	GL	6.05	GP	3.88	ZAL	57.60	ZAP	162.76	ETS	165.91	ZAE	157.13	ETE	9.61	ZAC	94.10	ETC	255.81

V1	30.269	V2	22.959	CLP	163.19

PLANETOCENTRIC CONIC

C3	18.637	VHL	4.317	DLA	19.39	RAL	147.95	RAD	6567.8	VEL	11.833	PTH	2.10	VHP	7.089	DPA	-.18	RAP	193.06
ECC	1.3067																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 42 10	2850.24	-28.30	85.50	15.11	90.97	13 29 40	2250.2	-27.87	76.86
90.00	6 9 33	4189.17	-.31	171.38	8.16	61.68	7 19 22	3589.2	-4.09	164.74
100.00	14 15 36	2548.96	-29.79	63.28	15.05	92.56	14 58 5	1949.0	-29.12	54.54
100.00	7 18 48	3965.68	.99	154.22	7.43	60.12	8 24 54	3365.7	-2.99	147.70
110.00	15 49 56	2253.81	-33.59	40.50	14.69	96.73	16 27 30	1653.8	-32.30	31.51
110.00	8 0 57	3833.60	4.23	142.19	5.42	56.05	9 4 51	3233.6	-.26	135.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0436	TRA	-.5265	TC3	2.3398	BAU	.5845	SGT	2152.5	SGR	628.0	SG3	407.5	ST	237.5	SR	591.7	SS	438.8
RDE	-.4443	RRA	-.1129	RC3	.1692	FAU	.11480	RRT	.2802	RRF	-.3172	RTF	-.8554	CRT	-.1653	CRS	.8973	CST	-.4818
FDE	.4995	FRA	-.5546	FC3	-5.3329	BSP	7244	SGB	2242.2	R23	-.0597	R13	-.8572	LSA	722.7	MSA	261.7	SSA	91.3
BDE	.4465	BRA	.5385	BC3	2.3459	FSP	1228	SG1	2160.3	SG2	600.7	THA	5.07	EL1	593.2	EL2	233.6	ALF	94.50

LAUNCH DATE DEC 18 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 400.399 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.898	GAL	3.76	AZL	89.26	HCA	123.62	SMA	202.85	ECC	.28156	INC	.7436
RP	238.95	LAP	.62	LOP	209.74	VP	21.368	GAP	12.81	AZP	90.41	TAL	17.23	TAP	140.85	RCA	145.74	APO	259.97
RC	175.790	GL	5.87	GP	4.01	ZAL	56.59	ZAP	161.95	ETS	166.08	ZAE	157.74	ETE	10.39	ZAC	94.27	ETC	255.81

V1	30.269	V2	22.991	CLP	162.39

PLANETOCENTRIC CONIC

C3	18.404	VHL	4.290	DLA	19.56	RAL	146.89	RAD	6567.7	VEL	11.823	PTH	2.09	VHP	6.916	DPA	-.11	RAP	193.26
ECC	1.3029																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 36 5	2854.15	-28.31	85.78	13.88	90.83	13 23 39	2254.2	-27.89	77.14
90.00	6 7 9	4179.38	-.63	170.83	6.97	61.69	7 16 48	3579.4	-4.41	164.19
100.00	14 9 42	2552.26	-29.80	63.52	13.84	92.43	14 52 14	1952.3	-29.15	54.78
100.00	7 16 13	3956.50	.68	153.72	6.24	60.11	8 22 9	3356.5	-3.30	147.20
110.00	15 44 24	2255.98	-33.61	40.67	13.48	96.63	16 22 0	1656.0	-32.33	31.67
110.00	7 58 0	3825.54	3.92	141.77	4.22	56.02	9 1 46	3225.5	-.56	135.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0365	TRA	-.4931	TC3	2.4009	BAU	.5925	SGT	2175.8	SGR	627.1	SG3	429.2	ST	223.9	SR	589.1	SS	460.6
RDE	-.4398	RRA	-.1049	RC3	.1881	FAU	.11976	RRT	.2988	RRF	-.3406	RTF	-.8595	CRT	-.1439	CRS	.8892	CST	-.4772
FDE	.5292	FRA	-.6381	FC3	-5.6332	BSP	7250	SGB	2264.4	R23	-.0659	R13	-.8614	LSA	731.0	MSA	257.7	SSA	93.0
BDE	.4414	BRA	.5041	BC3	2.4082	FSP	1300	SG1	2184.5	SG2	596.0	THA	5.32	EL1	590.2	EL2	221.2	ALF	93.64

LAUNCH DATE DEC 18 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 403.752 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.842	GAL	3.85	AZL	89.28	HCA	124.57	SMA	201.68	ECC	.27778	INC	.7167
RP	238.63	LAP	.59	LOP	210.69	VP	21.313	GAP	12.26	AZP	90.41	TAL	17.82	TAP	142.39	RCA	145.65	APO	257.70
RC	178.086	GL	5.68	GP	4.16	ZAL	55.61	ZAP	161.13	ETS	166.23	ZAE	158.38	ETE	11.25	ZAC	94.44	ETC	255.80

V1	30.269	V2	23.024	CLP	161.58

PLANETOCENTRIC CONIC

C3	18.196	VHL	4.266	DLA	19.70	RAL	145.85	RAD	6567.7	VEL	11.814	PTH	2.09	VHP	6.749	DPA	-.04	RAP	193.44
ECC	1.2995																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 30 21	2857.39	-28.31	86.02	12.70	90.71	13 17 59	2257.4	-27.91	77.38
90.00	6 4 36	4170.80	-.90	170.35	5.82	61.70	7 14 7	3570.8	-4.68	163.71
100.00	14 4 8	2554.97	-29.81	63.73	12.65	92.32	14 46 43	1955.0	-29.17	54.98
100.00	7 13 30	3948.45	.41	153.28	5.09	60.11	8 19 19	3348.5	-3.57	146.75
110.00	15 39 9	2257.71	-33.62	40.80	12.31	96.56	16 16 47	1657.7	-32.35	31.80
110.00	7 54 59	3818.48	3.65	141.40	3.06	55.99	8 58 37	3218.5	-.84	135.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0237	TRA	-.4675	TC3	2.4441	BAU	.5967	SGT	2189.4	SGR	626.7	SG3	452.0	ST	212.0	SR	586.5	SS	482.5
RDE	-.4355	RRA	-.0966	RC3	.2084	FAU	.12496	RRT	.3236	RRF	-.3657	RTF	-.8611	CRT	-.0803	CRS	.8815	CST	-.4359
FDE	.5598	FRA	-.7252	FC3	-5.9454	BSP	7400	SGB	2277.3	R23	-.0689	R13	-.8633	LSA	739.3	MSA	257.9	SSA	93.5
BDE	.4362	BRA	.4773	BC3	2.4530	FSP	1377	SG1	2199.5	SG2	590.3	THA	5.70	EL1	586.7	EL2	211.2	ALF	91.91

LAUNCH DATE DEC 18 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 407.137 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.788	GAL	3.93	AZL	89.31	HCA	125.53	SMA	200.57	ECC	.27421	INC	.6891
RP	238.31	LAP	.56	LOP	211.64	VP	21.263	GAP	11.72	AZP	90.40	TAL	18.40	TAP	143.93	RCA	145.57	APO	255.57
RC	180.373	GL	5.48	GP	4.31	ZAL	54.66	ZAP	160.29	ETS	166.37	ZAE	159.05	ETE	12.21	ZAC	94.61	ETC	255.80

V1	30.269	V2	23.056	CLP	160.75

PLANETOCENTRIC CONIC

C3	18.009	VHL	4.244	DLA	19.82	RAL	144.84	RAD	6567.7	VEL	11.806	PTH	2.09	VHP	6.585	DPA	.05	RAP	193.62
ECC	1.2964																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 24 58	2859.96	-28.31	86.21	11.55	90.62	13 12 38	2260.0	-27.93	77.56
90.00	6 1 55	4163.40	-1.14	169.94	4.70	61.70	7 11 18	3563.4	-4.92	163.29
100.00	13 58 54	2557.08	-29.82	63.88	11.51	92.24	14 41 31	1957.1	-29.19	55.13
100.00	7 10 40	3941.51	.17	152.90	3.97	60.11	8 16 22	3341.5	-3.81	146.37
110.00	15 34 11	2258.99	-33.63	40.90	11.16	96.50	16 11 50	1659.0	-32.37	31.89
110.00	7 51 53	3812.37	3.42	141.08	1.94	55.97	8 55 25	3212.4	-1.07	134.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0149	TRA	-.4392	TC3	2.4895	BAU	.6019	SGT	2205.0	SGR	627.1	SG3	475.9	ST	200.5	SR	583.6	SS	504.2
RDE	-.4313	RRA	-.0881	RC3	.2299	FAU	.13043	RRT	.3474	RRF	-.3921	RTF	-.8635	CRT	-.0357	CRS	.8736	CST	-.4086
FDE	.5905	FRA	-.8188	FC3	-6.2704	BSP	7481	SGB	2292.5	R23	-.0740	R13	-.8659	LSA	748.3	MSA	257.7	SSA	93.8
BDE	.4316	BRA	.4480	BC3	2.5001	FSP	1458	SG1	2216.6	SG2	585.0	THA	6.07	EL1	583.7	EL2	200.3	ALF	90.80

LAUNCH DATE DEC 18 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 410.553 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.737	GAL	4.01	AZL	89.34	HCA	126.48	SMA	199.53	ECC	.27084	INC	.6609
RP	237.98	LAP	.53	LOP	212.60	VP	21.218	GAP	11.18	AZP	90.39	TAL	18.97	TAP	145.45	RCA	145.49	APO	253.56
RC	182.651	GL	5.27	GP	4.47	ZAL	53.74	ZAP	159.43	ETS	166.49	ZAE	159.74	ETE	13.26	ZAC	94.79	ETC	255.79

V1	30.269	V2	23.089	CLP	159.90

PLANETOCENTRIC CONIC

C3	17.841	VHL	4.224	DLA	19.92	RAL	143.85	RAD	6567.7	VEL	11.799	PTH	2.09	VHP	6.426	DPA	.15	RAP	193.78
ECC	1.2936																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 19 57	2861.82	-28.31	86.34	10.43	90.55	13 7 39	2261.8	-27.94	77.70
90.00	5 59 5	4157.19	-1.34	169.59	3.62	61.71	7 8 22	3557.2	-5.11	162.94
100.00	13 54 0	2558.57	-29.82	63.99	10.39	92.18	14 36 38	1958.6	-29.20	55.24
100.00	7 7 43	3935.67	-.03	152.58	2.88	60.11	8 13 19	3335.7	-4.00	146.05
110.00	15 29 30	2259.80	-33.64	40.96	10.05	96.46	16 7 9	1659.8	-32.38	31.96
110.00	7 48 43	3807.21	3.22	140.81	.86	55.95	8 52 10	3207.2	-1.27	134.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0092	TRA	-.4102	TC3	2.5339	BAU	.6074	SGT	2220.9	SGR	628.2	SG3	501.1	ST	189.2	SR	580.6	SS	524.7
RDE	-.4272	RRA	-.0793	RC3	.2530	FAU	.13620	RRT	.3712	RRF	-.4196	RTF	-.8662	CRT	-.0067	CRS	.8652	CST	-.3933
FDE	.6199	FRA	-.9184	FC3	-6.6088	BSP	7510	SGB	2308.1	R23	-.0803	R13	-.8689	LSA	756.9	MSA	257.8	SSA	94.0
BDE	.4273	BRA	.4178	BC3	2.5465	FSP	1542	SG1	2234.0	SG2	579.9	THA	6.43	EL1	580.6	EL2	189.2	ALF	90.14

LAUNCH DATE DEC 18 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 413.998 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.688 GAL 4.09 AZL 89.37 HCA 127.44 SMA 198.54 ECC .26766 INC .6318 V1 30.269
RP 237.65 LAP .50 LOP 213.56 VP 21.177 GAP 10.65 AZP 90.38 TAL 19.53 TAP 146.97 RCA 145.40 APO 251.68 V2 23.123
RC 184.919 GL 5.05 GP 4.64 ZAL 52.85 ZAP 158.54 ETS 166.60 ZAE 160.46 ETE 14.45 ZAC 94.98 ETC 255.79 CLP 159.03

PLANETOCENTRIC CONIC

C3 17.692 VHL 4.206 DLA 19.99 RAL 142.89 RAD 6567.7 VEL 11.793 PTH 2.09 VHP 6.271 DPA .27 RAP 193.93 ECC 1.2912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 15 17	2862.98	-28.31	86.43	9.35	90.51	13 3 0	2263.0	-27.94	77.78
90.00	5 56 5	4152.12	-1.51	169.31	2.56	61.72	7 5 17	3552.1	-5.28	162.66
100.00	13 49 25	2559.44	-29.82	64.06	9.31	92.15	14 32 4	1959.4	-29.21	55.31
100.00	7 4 38	3930.90	-.19	152.32	1.83	60.11	8 10 9	3330.9	-4.16	145.79
110.00	15 25 5	2260.14	-33.64	40.99	8.98	96.45	16 2 45	1660.1	-32.39	31.98
110.00	7 45 28	3802.96	3.06	140.59	359.80	55.94	8 48 51	3203.0	-1.43	134.38

DIFFERENTIAL CORRECTIONS
TDE .0175 TRA -.3686 TC3 2.6040 BAU .6194
RDE -.4231 RRA -.0699 RC3 .2779 FAU .14245
FDE .6452 FRA-1.0293 FC3-6.9706 BSP 7215
BDE .4235 BRA .3751 BC3 2.6188 FSP 1621

MID-COURSE EXECUTION ACCURACY
SGT 2254.9 SGR 630.1 SG3 528.3
RRT .3888 RRF -.4480 RTF -.8724
SGB 2341.3 R23 -.0923 R13 -.8755
SG1 2269.1 SG2 576.9 THA 6.63

ORBIT DETERMINATION ACCURACY
ST 174.9 SR 577.2 SS 542.8
CRT -.0831 CRS .8546 CST -.4630
LSA 764.7 MSA 254.2 SSA 95.3
EL1 577.4 EL2 174.2 ALF 91.59

LAUNCH DATE DEC 18 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 417.468 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.642 GAL 4.16 AZL 89.40 HCA 128.40 SMA 197.62 ECC .26465 INC .6019 V1 30.269
RP 237.31 LAP .47 LOP 214.52 VP 21.140 GAP 10.13 AZP 90.37 TAL 20.07 TAP 148.47 RCA 145.32 APO 249.92 V2 23.157
RC 187.176 GL 4.83 GP 4.82 ZAL 52.00 ZAP 157.64 ETS 166.69 ZAE 161.19 ETE 15.77 ZAC 95.16 ETC 255.78 CLP 158.14

PLANETOCENTRIC CONIC

C3 17.557 VHL 4.190 DLA 20.04 RAL 141.97 RAD 6567.7 VEL 11.787 PTH 2.08 VHP 6.121 DPA .40 RAP 194.06 ECC 1.2889

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 11 2	2863.28	-28.31	86.45	8.31	90.50	12 58 45	2263.3	-27.94	77.80
90.00	5 52 58	4148.28	-1.63	169.10	1.55	61.73	7 2 6	3548.3	-5.40	162.44
100.00	13 45 13	2559.54	-29.82	64.07	8.27	92.14	14 27 53	1959.5	-29.21	55.31
100.00	7 1 27	3927.24	-.31	152.12	.82	60.11	8 6 54	3327.2	-4.29	145.58
110.00	15 21 0	2259.89	-33.64	40.97	7.93	96.46	15 58 40	1659.9	-32.38	31.96
110.00	7 42 10	3799.66	2.94	140.41	358.79	55.93	8 45 29	3199.7	-1.55	134.21

DIFFERENTIAL CORRECTIONS
TDE -.0037 TRA -.3590 TC3 2.5990 BAU .6142
RDE -.4194 RRA -.0605 RC3 .3035 FAU .14852
FDE .6805 FRA-1.1353 FC3-7.3234 BSP 7648
BDE .4194 BRA .3641 BC3 2.6167 FSP 1726

MID-COURSE EXECUTION ACCURACY
SGT 2239.9 SGR 633.5 SG3 555.0
RRT .4249 RRF -.4789 RTF -.8694
SGB 2327.7 R23 -.0928 R13 -.8728
SG1 2257.1 SG2 569.1 THA 7.32

ORBIT DETERMINATION ACCURACY
ST 169.9 SR 574.2 SS 566.0
CRT .0773 CRS .8494 CST -.3353
LSA 775.6 MSA 262.2 SSA 92.5
EL1 574.3 EL2 169.4 ALF 88.56

LAUNCH DATE DEC 18 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 420.965 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.597 GAL 4.23 AZL 89.43 HCA 129.37 SMA 196.75 ECC .26182 INC .5711 V1 30.269
RP 236.98 LAP .44 LOP 215.48 VP 21.108 GAP 9.62 AZP 90.36 TAL 20.60 TAP 149.97 RCA 145.24 APO 248.26 V2 23.191
RC 189.421 GL 4.59 GP 5.00 ZAL 51.17 ZAP 156.71 ETS 166.78 ZAE 161.95 ETE 17.27 ZAC 95.36 ETC 255.78 CLP 157.22

PLANETOCENTRIC CONIC

C3 17.438 VHL 4.176 DLA 20.07 RAL 141.07 RAD 6567.7 VEL 11.782 PTH 2.08 VHP 5.974 DPA .55 RAP 194.19 ECC 1.2870

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 7 8	2862.84	-28.31	86.42	7.30	90.51	12 54 51	2262.8	-27.94	77.77
90.00	5 49 41	4145.54	-1.72	168.94	.56	61.73	6 58 46	3545.5	-5.49	162.29
100.00	13 41 21	2559.00	-29.82	64.02	7.26	92.17	14 24 0	1959.0	-29.20	55.28
100.00	6 58 8	3924.62	-.40	151.97	359.83	60.11	8 3 33	3324.6	-4.37	145.44
110.00	15 17 12	2259.15	-33.64	40.91	6.92	96.49	15 54 51	1659.2	-32.37	31.91
110.00	7 38 47	3797.23	2.84	140.29	357.80	55.92	8 42 5	3197.2	-1.65	134.08

DIFFERENTIAL CORRECTIONS
TDE -.0076 TRA -.3345 TC3 2.6254 BAU .6169
RDE -.4156 RRA -.0505 RC3 .3313 FAU .15513
FDE .7098 FRA-1.2531 FC3-7.7017 BSP 7696
BDE .4157 BRA .3383 BC3 2.6463 FSP 1826

MID-COURSE EXECUTION ACCURACY
SGT 2246.5 SGR 638.1 SG3 583.9
RRT .4525 RRF -.5101 RTF -.8707
SGB 2335.4 R23 -.1004 R13 -.8747
SG1 2266.2 SG2 564.1 THA 7.81

ORBIT DETERMINATION ACCURACY
ST 161.0 SR 570.7 SS 585.6
CRT .1063 CRS .8413 CST -.3153
LSA 784.8 MSA 265.0 SSA 91.5
EL1 571.0 EL2 160.0 ALF 88.14

LAUNCH DATE DEC 18 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 424.486 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.555 GAL 4.30 AZL 89.46 HCA 130.33 SMA 195.93 ECC .25914 INC .5393 V1 30.269
RP 236.64 LAP .41 LOP 216.45 VP 21.079 GAP 9.11 AZP 90.35 TAL 21.12 TAP 151.45 RCA 145.16 APO 246.70 V2 23.226
RC 191.655 GL 4.34 GP 5.20 ZAL 50.38 ZAP 155.76 ETS 166.85 ZAE 162.73 ETE 18.96 ZAC 95.55 ETC 255.77 CLP 156.29

PLANETOCENTRIC CONIC

C3 17.331 VHL 4.163 DLA 20.07 RAL 140.20 RAD 6567.7 VEL 11.778 PTH 2.08 VHP 5.831 DPA .72 RAP 194.30 ECC 1.2852

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 3 37	2861.60	-28.31	86.33	6.32	90.56	12 51 18	2261.6	-27.93	77.68
90.00	5 46 16	4143.94	-1.77	168.85	359.61	61.73	6 55 20	3543.9	-5.54	162.20
100.00	13 37 50	2557.75	-29.82	63.93	6.28	92.21	14 20 28	1957.7	-29.19	55.18
100.00	6 54 43	3923.03	-.45	151.88	358.88	60.11	8 0 6	3323.0	-4.43	145.35
110.00	15 13 42	2257.87	-33.63	40.81	5.94	96.55	15 51 19	1657.9	-32.35	31.81
110.00	7 35 21	3795.67	2.78	140.21	356.86	55.92	8 38 37	3195.7	-1.71	134.00

DIFFERENTIAL CORRECTIONS
TDE -.0094 TRA -.3099 TC3 2.6492 BAU .6195
RDE -.4117 RRA -.0400 RC3 .3609 FAU .16209
FDE .7373 FRA-1.3790 FC3-8.0967 BSP 7704
BDE .4118 BRA .3125 BC3 2.6736 FSP 1929

MID-COURSE EXECUTION ACCURACY
SGT 2252.0 SGR 644.1 SG3 614.3
RRT .4804 RRF -.5420 RTF -.8721
SGB 2342.3 R23 -.1089 R13 -.8766
SG1 2274.5 SG2 559.3 THA 8.33

ORBIT DETERMINATION ACCURACY
ST 152.0 SR 567.0 SS 604.2
CRT .1200 CRS .8327 CST -.3074
LSA 793.5 MSA 268.0 SSA 90.4
EL1 567.3 EL2 150.8 ALF 88.02

LAUNCH DATE DEC 18 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 428.030 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.515 GAL 4.36 AZL 89.49 HCA 131.30 SMA 195.16 ECC .25661 INC .5066 V1 30.269
RP 236.29 LAP .38 LOP 217.42 VP 21.054 GAP 8.61 AZP 90.33 TAL 21.62 TAP 152.92 RCA 145.08 APO 245.23 V2 23.261
RC 193.877 GL 4.08 GP 5.40 ZAL 49.62 ZAP 154.78 ETS 166.92 ZAE 163.52 ETE 20.89 ZAC 95.76 ETC 255.77 CLP 155.33

PLANETOCENTRIC CONIC

C3 17.236 VHL 4.152 DLA 20.06 RAL 139.36 RAD 6567.7 VEL 11.774 PTH 2.08 VHP 5.693 DPA .90 RAP 194.39 ECC 1.2837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 0 28	2859.56	-28.31	86.18	5.37	90.63	12 48 7	2259.6	-27.92	77.53
90.00	5 42 42	4143.43	-1.79	168.83	358.69	61.73	6 51 45	3543.4	-5.55	162.17
100.00	13 34 40	2555.78	-29.81	63.79	5.33	92.29	14 17 16	1955.8	-29.18	55.04
100.00	6 51 10	3922.45	-.47	151.85	357.96	60.11	7 56 33	3322.5	-4.45	145.32
110.00	15 10 29	2256.03	-33.61	40.67	4.98	96.63	15 48 5	1656.0	-32.33	31.67
110.00	7 31 51	3794.96	2.76	140.17	355.94	55.91	8 35 6	3195.0	-1.73	133.97

DIFFERENTIAL CORRECTIONS
TDE -.0087 TRA -.2852 TC3 2.6713 BAU .6221
RDE -.4079 RRA -.0289 RC3 .3926 FAU .16938
FDE .7640 FRA-1.5124 FC3-8.5080 BSP 7669
BDE .4080 BRA .2866 BC3 2.7000 FSP 2035

MID-COURSE EXECUTION ACCURACY
SGT 2257.3 SGR 651.9 SG3 646.3
RRT .5080 RRF -.5746 RTF -.8736
SGB 2349.5 R23 -.1186 R13 -.8787
SG1 2283.0 SG2 555.2 THA 8.87

ORBIT DETERMINATION ACCURACY
ST 142.7 SR 563.2 SS 622.3
CRT .1119 CRS .8240 CST -.3160
LSA 802.2 MSA 270.8 SSA 89.3
EL1 563.4 EL2 141.8 ALF 88.27

LAUNCH DATE DEC 18 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 431.597 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.477 GAL 4.43 AZL 89.53 HCA 132.27 SMA 194.43 ECC .25423 INC .4727 V1 30.269
RP 235.94 LAP .35 LOP 218.39 VP 21.033 GAP 8.12 AZP 90.32 TAL 22.10 TAP 154.38 RCA 145.00 APO 243.86 V2 23.297
RC 196.086 GL 3.81 GP 5.62 ZAL 48.89 ZAP 153.78 ETS 166.98 ZAE 164.32 ETE 23.11 ZAC 95.97 ETC 255.76 CLP 154.35

PLANETOCENTRIC CONIC

C3 17.151 VHL 4.141 DLA 20.01 RAL 138.54 RAD 6567.7 VEL 11.770 PTH 2.08 VHP 5.558 DPA 1.10 RAP 194.47 ECC 1.2823

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 57 41	2856.72	-28.31	85.97	4.46	90.74	12 45 18	2256.7	-27.91	77.33
90.00	5 39 0	4144.01	-1.77	168.86	357.79	61.73	6 48 4	3544.0	-5.53	162.20
100.00	13 31 51	2553.09	-29.81	63.59	4.41	92.40	14 14 24	1953.1	-29.15	54.84
100.00	6 47 31	3922.87	-.46	151.88	357.06	60.11	7 52 54	3322.9	-4.43	145.34
110.00	15 7 34	2253.63	-33.59	40.49	4.06	96.74	15 45 7	1653.6	-32.30	31.50
110.00	7 28 18	3795.09	2.76	140.18	355.05	55.92	8 31 33	3195.1	-1.73	133.97

DIFFERENTIAL CORRECTIONS
TDE .0010 TRA -.2537 TC3 2.7069 BAU .6284
RDE -.4038 RRA -.0169 RC3 .4269 FAU .17726
FDE .7846 FRA-1.6583 FC3-8.9476 BSP 7428
BDE .4038 BRA .2543 BC3 2.7404 FSP 2135

MID-COURSE EXECUTION ACCURACY
SGT 2273.0 SGR 661.6 SG3 680.7
RRT .5328 RRF -.6074 RTF -.8769
SGB 2367.4 R23 -.1308 R13 -.8828
SG1 2301.9 SG2 552.9 THA 9.36

ORBIT DETERMINATION ACCURACY
ST 130.7 SR 558.8 SS 637.8
CRT .0107 CRS .8128 CST -.3953
LSA 808.7 MSA 272.6 SSA 88.7
EL1 558.8 EL2 130.7 ALF 89.85

LAUNCH DATE DEC 18 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 435.183 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.441 GAL 4.49 AZL 89.56 HCA 133.25 SMA 193.74 ECC .25198 INC .4375 V1 30.269
RP 235.59 LAP .32 LOP 219.37 VP 21.015 GAP 7.63 AZP 90.30 TAL 22.57 TAP 155.82 RCA 144.92 APO 242.56 V2 23.333
RC 198.280 GL 3.54 GP 5.85 ZAL 48.19 ZAP 152.75 ETS 167.03 ZAE 165.12 ETE 25.65 ZAC 96.18 ETC 255.76 CLP 153.34

PLANETOCENTRIC CONIC

C3 17.074 VHL 4.132 DLA 19.95 RAL 137.77 RAD 6567.7 VEL 11.767 PTH 2.08 VHP 5.427 DPA 1.32 RAP 194.54 ECC 1.2810

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 55 19	2852.97	-28.30	85.69	3.57	90.87	12 42 52	2253.0	-27.88	77.05
90.00	5 35 9	4145.68	-1.71	168.95	356.93	61.73	6 44 15	3545.7	-5.48	162.30
100.00	13 29 24	2549.60	-29.79	63.33	3.52	92.53	14 11 53	1949.6	-29.13	54.59
100.00	6 43 46	3924.29	-.41	151.95	356.21	60.11	7 49 10	3324.3	-4.39	145.42
110.00	15 4 58	2250.60	-33.57	40.25	3.16	96.87	15 42 28	1650.6	-32.25	31.27
110.00	7 24 41	3796.05	2.80	140.23	354.20	55.92	8 27 57	3196.1	-1.69	134.02

DIFFERENTIAL CORRECTIONS
TDE -.0126 TRA -.2486 TC3 2.6792 BAU .6206
RDE -.4004 RRA -.0051 RC3 .4617 FAU .18476
FDE .8190 FRA-1.7962 FC3-9.3680 BSP 7765
BDE .4006 BRA .2486 BC3 2.7186 FSP 2273

MID-COURSE EXECUTION ACCURACY
SGT 2244.3 SGR 673.7 SG3 713.8
RRT .5669 RRF -.6404 RTF -.8732
SGB 2343.3 R23 -.1385 R13 -.8800
SG1 2278.6 SG2 546.6 THA 10.25

ORBIT DETERMINATION ACCURACY
ST 129.7 SR 555.3 SS 659.0
CRT .1487 CRS .8089 CST -.2862
LSA 821.1 MSA 279.0 SSA 86.1
EL1 555.7 EL2 128.2 ALF 87.90

LAUNCH DATE DEC 18 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 438.789 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.407 GAL 4.54 AZL 89.60 HCA 134.23 SMA 193.09 ECC .24986 INC .4014 V1 30.269
RP 235.24 LAP .29 LOP 220.34 VP 21.000 GAP 7.16 AZP 90.28 TAL 23.02 TAP 157.25 RCA 144.85 APO 241.34 V2 23.369
RC 200.460 GL 3.25 GP 6.09 ZAL 47.53 ZAP 151.69 ETS 167.07 ZAE 165.91 ETE 28.60 ZAC 96.41 ETC 255.75 CLP 152.30

PLANETOCENTRIC CONIC

C3 17.006 VHL 4.124 DLA 19.86 RAL 137.01 RAD 6567.7 VEL 11.764 PTH 2.08 VHP 5.300 DPA 1.57 RAP 194.58 ECC 1.2799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 53 18	2848.42	-28.30	85.36	2.72	91.04	12 40 46	2248.4	-27.86	76.72
90.00	5 31 11	4148.39	-1.63	169.10	356.10	61.73	6 40 19	3548.4	-5.39	162.45
100.00	13 27 16	2545.38	-29.78	63.01	2.66	92.70	14 9 42	1945.4	-29.09	54.28
100.00	6 39 53	3926.66	-.33	152.08	355.38	60.11	7 45 20	3326.7	-4.31	145.55
110.00	15 2 39	2247.00	-33.54	39.98	2.29	97.04	15 40 6	1647.0	-32.20	31.00
110.00	7 21 0	3797.81	2.87	140.32	353.38	55.92	8 24 18	3197.8	-1.63	134.11

DIFFERENTIAL CORRECTIONS
TDE -.0114 TRA -.2311 TC3 2.6773 BAU .6192
RDE -.3966 RRA .0079 RC3 .4996 FAU .19295
FDE .8441 FRA-1.9499 FC3-9.8225 BSP 7758
BDE .3968 BRA .2313 BC3 2.7235 FSP 2399

MID-COURSE EXECUTION ACCURACY
SGT 2234.4 SGR 688.2 SG3 749.8
RRT .5948 RRF -.6729 RTF -.8728
SGB 2338.0 R23 -.1504 R13 -.8808
SG1 2273.9 SG2 543.6 THA 11.02

ORBIT DETERMINATION ACCURACY
ST 123.0 SR 551.2 SS 676.3
CRT .1350 CRS .8013 CST -.2968
LSA 830.2 MSA 282.6 SSA 84.6
EL1 551.4 EL2 121.8 ALF 88.19

LAUNCH DATE DEC 18 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 442.415 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.374 GAL 4.60 AZL 89.64 HCA 135.21 SMA 192.48 ECC .24786 INC .3639 V1 30.269
RP 234.89 LAP .26 LOP 221.32 VP 20.989 GAP 6.69 AZP 90.26 TAL 23.45 TAP 158.66 RCA 144.77 APO 240.19 V2 23.405
RC 202.623 GL 2.94 GP 6.35 ZAL 46.90 ZAP 150.61 ETS 167.11 ZAE 166.69 ETE 32.03 ZAC 96.64 ETC 255.75 CLP 151.24

PLANETOCENTRIC CONIC

C3 16.945 VHL 4.116 DLA 19.75 RAL 136.29 RAD 6567.7 VEL 11.761 PTH 2.08 VHP 5.177 DPA 1.83 RAP 194.62 ECC 1.2789

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 51 39	2843.03	-28.29	84.97	1.89	91.24	12 39 2	2243.0	-27.82	76.33
90.00	5 27 4	4152.13	-1.51	169.31	355.29	61.72	6 36 16	3552.1	-5.28	162.66
100.00	13 25 30	2540.41	-29.77	62.65	1.83	92.89	14 7 50	1940.4	-29.05	53.91
100.00	6 35 54	3929.98	-.22	152.27	354.57	60.11	7 41 24	3330.0	-4.19	145.73
110.00	15 0 37	2242.79	-33.50	39.65	1.44	97.22	15 38 0	1642.8	-32.14	30.69
110.00	7 17 16	3800.37	2.96	140.45	352.58	55.93	8 20 36	3200.4	-1.53	134.25

DIFFERENTIAL CORRECTIONS
TDE -.0082 TRA -.2147 TC3 2.6727 BAU .6177
RDE -.3926 RRA .0217 RC3 .5404 FAU .20156
FDE .8659 FRA-2.1123 FC-10.2979 BSP 7726
BDE .3927 BRA .2158 BC3 2.7267 FSP 2529

MID-COURSE EXECUTION ACCURACY
SGT 2223.2 SGR 705.4 SG3 787.6
RRT .6216 RRF -.7046 RTF -.8723
SGB 2332.4 R23 -.1634 R13 -.8815
SG1 2268.7 SG2 541.5 THA 11.84

ORBIT DETERMINATION ACCURACY
ST 116.5 SR 546.8 SS 692.2
CRT .0968 CRS .7930 CST -.3263
LSA 838.4 MSA 286.1 SSA 83.2
EL1 546.9 EL2 115.9 ALF 88.76

LAUNCH DATE DEC 18 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 446.060 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.343 GAL 4.65 AZL 89.68 HCA 136.19 SMA 191.91 ECC .24597 INC .3251 V1 30.269
RP 234.53 LAP .22 LOP 222.31 VP 20.981 GAP 6.23 AZP 90.23 TAL 23.87 TAP 160.06 RCA 144.70 APO 239.11 V2 23.442
RC 204.770 GL 2.63 GP 6.62 ZAL 46.29 ZAP 149.49 ETS 167.15 ZAE 167.44 ETE 36.03 ZAC 96.88 ETC 255.74 CLP 150.15

PLANETOCENTRIC CONIC

C3 16.891 VHL 4.110 DLA 19.62 RAL 135.60 RAD 6567.7 VEL 11.759 PTH 2.08 VHP 5.057 DPA 2.12 RAP 194.63 ECC 1.2780

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 50 21	2836.79	-28.28	84.51	1.08	91.47	12 37 38	2236.8	-27.78	75.88
90.00	5 22 49	4156.87	-1.35	169.58	354.51	61.71	6 32 5	3556.9	-5.12	162.93
100.00	13 24 3	2534.67	-29.74	62.22	1.01	93.11	14 6 18	1934.7	-29.00	53.50
100.00	6 31 48	3934.23	-.07	152.50	353.80	60.11	7 37 22	3334.2	-4.05	145.97
110.00	14 58 53	2237.97	-33.46	39.28	.61	97.44	15 36 11	1638.0	-32.07	30.33
110.00	7 13 27	3803.70	3.09	140.63	351.82	55.94	8 16 51	3203.7	-1.40	134.42

DIFFERENTIAL CORRECTIONS
TDE .0014 TRA -.1951 TC3 2.6728 BAU .6178
RDE -.3883 RRA .0366 RC3 .5843 FAU .21068
FDE .8805 FRA-2.2875 FC-10.7986 BSP 7569
BDE .3883 BRA .1986 BC3 2.7359 FSP 2657

MID-COURSE EXECUTION ACCURACY
SGT 2215.9 SGR 725.7 SG3 827.6
RRT .6457 RRF -.7352 RTF -.8725
SGB 2331.7 R23 -.1779 R13 -.8833
SG1 2268.0 SG2 541.4 THA 12.68

ORBIT DETERMINATION ACCURACY
ST 108.9 SR 541.8 SS 705.8
CRT -.0258 CRS .7826 CST -.4143
LSA 844.5 MSA 289.3 SSA 82.1
EL1 541.8 EL2 108.8 ALF 90.31

LAUNCH DATE DEC 18 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 449.721 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.314 GAL 4.69 AZL 89.72 HCA 137.18 SMA 191.37 ECC .24419 INC .2844 V1 30.269
RP 234.17 LAP .19 LOP 223.29 VP 20.976 GAP 5.77 AZP 90.21 TAL 24.27 TAP 161.45 RCA 144.64 APO 238.10 V2 23.479
RC 206.900 GL 2.30 GP 6.91 ZAL 45.72 ZAP 148.35 ETS 167.18 ZAE 168.14 ETE 40.69 ZAC 97.13 ETC 255.73 CLP 149.03

PLANETOCENTRIC CONIC

C3 16.841 VHL 4.104 DLA 19.46 RAL 134.93 RAD 6567.7 VEL 11.757 PTH 2.08 VHP 4.941 DPA 2.44 RAP 194.63 ECC 1.2772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 49 27	2829.67	-28.27	83.99	.30	91.73	12 36 36	2229.7	-27.73	75.37
90.00	5 18 25	4162.64	-1.17	169.90	353.75	61.71	6 27 48	3562.6	-4.94	163.25
100.00	13 22 57	2528.12	-29.72	61.73	.23	93.37	14 5 5	1928.1	-28.94	53.02
100.00	6 27 36	3939.41	.10	152.78	353.05	60.11	7 33 15	3339.4	-3.88	146.25
110.00	14 57 27	2232.48	-33.41	38.86	359.81	97.68	15 34 40	1632.5	-31.99	29.92
110.00	7 9 35	3807.82	3.25	140.84	351.08	55.95	8 13 3	3207.8	-1.24	134.64

DIFFERENTIAL CORRECTIONS
TDE .0002 TRA -.1890 TC3 2.6403 BAU .6111
RDE -.3845 RRA .0519 RC3 .6299 FAU .21970
FDE .9041 FRA-2.4601 FC-11.2945 BSP 7663
BDE .3845 BRA .1960 BC3 2.7144 FSP 2811

MID-COURSE EXECUTION ACCURACY
SGT 2185.0 SGR 749.2 SG3 867.4
RRT .6711 RRF -.7644 RTF -.8692
SGB 2309.9 R23 -.1926 R13 -.8821
SG1 2245.8 SG2 540.4 THA 13.77

ORBIT DETERMINATION ACCURACY
ST 106.2 SR 537.5 SS 722.6
CRT -.0183 CRS .7772 CST -.4115
LSA 854.5 MSA 292.8 SSA 80.4
EL1 537.5 EL2 106.2 ALF 90.22

LAUNCH DATE DEC 18 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 453.401 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.286 GAL 4.74 AZL 89.76 HCA 138.17 SMA 190.86 ECC .24251 INC .2423 V1 30.269
RP 233.80 LAP .16 LOP 224.28 VP 20.974 GAP 5.33 AZP 90.18 TAL 24.65 TAP 162.82 RCA 144.57 APO 237.14 V2 23.517
RC 209.011 GL 1.96 GP 7.21 ZAL 45.18 ZAP 147.17 ETS 167.21 ZAE 168.77 ETE 46.09 ZAC 97.39 ETC 255.73 CLP 147.88

PLANETOCENTRIC CONIC

C3 16.796 VHL 4.098 DLA 19.28 RAL 134.29 RAD 6567.7 VEL 11.755 PTH 2.07 VHP 4.829 DPA 2.78 RAP 194.61 ECC 1.2764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 48 52	2821.71	-28.25	83.41	359.54	92.02	12 35 54	2221.7	-27.67	74.79
90.00	5 13 54	4169.38	-.95	170.27	353.02	61.70	6 23 23	3569.4	-4.73	163.63
100.00	13 22 11	2520.81	-29.69	61.19	359.46	93.65	14 4 11	1920.8	-28.87	52.49
100.00	6 23 16	3945.51	.31	153.12	352.32	60.11	7 29 2	3345.5	-3.67	146.59
110.00	14 56 17	2226.38	-33.35	38.40	359.02	97.96	15 33 24	1626.4	-31.90	29.47
110.00	7 5 39	3812.71	3.43	141.10	350.37	55.97	8 9 12	3212.7	-1.06	134.89

DIFFERENTIAL CORRECTIONS
TDE .0156 TRA -.1698 TC3 2.6375 BAU .6116
RDE -.3795 RRA .0691 RC3 .6807 FAU .22978
FDE .9073 FRA-2.6572 FC-11.8437 BSP 7393
BDE .3798 BRA .1833 BC3 2.7239 FSP 2938

MID-COURSE EXECUTION ACCURACY
SGT 2176.5 SGR 776.7 SG3 911.7
RRT .6914 RRF -.7922 RTF -.8695
SGB 2310.9 R23 -.2085 R13 -.8846
SG1 2246.1 SG2 543.8 THA 14.74

ORBIT DETERMINATION ACCURACY
ST 101.9 SR 531.7 SS 733.2
CRT -.2363 CRS .7643 CST -.5467
LSA 858.2 MSA 296.3 SSA 79.4
EL1 532.3 EL2 98.9 ALF 92.68

LAUNCH DATE DEC 18 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 457.096 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.260	GAL	4.78	AZL	89.80	HCA	139.16	SMA	190.38	ECC	.24093	INC	.1979	V1	30.269
RP	233.44	LAP	.13	LOP	225.28	VP	20.975	GAP	4.89	AZP	90.15	TAL	25.01	TAP	164.18	RCA	144.51	APO	236.24	V2	23.555
RC	211.104	GL	1.60	GP	7.53	ZAL	44.67	ZAP	145.96	ETS	167.23	ZAE	169.30	ETE	52.29	ZAC	97.66	ETC	255.72	CLP	146.70

PLANETOCENTRIC CONIC

C3	16.754	VHL	4.093	DLA	19.08	RAL	133.68	RAD	6567.7	VEL	11.753	PTH	2.07	VHP	4.721	DPA	3.15	RAP	194.57	ECC	1.2757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 48 40	2812.82	-28.23	82.76	358.80	92.34	12 35 33	2212.8	-27.60	74.15
90.00	5 9 14	4177.13	-.70	170.71	352.32	61.69	6 18 51	3577.1	-4.48	164.06
100.00	13 21 45	2512.64	-29.65	60.59	358.71	93.97	14 3 38	1912.6	-28.79	51.89
100.00	6 18 50	3952.53	.55	153.50	351.63	60.11	7 24 43	3352.5	-3.43	146.98
110.00	14 55 26	2219.56	-33.29	37.87	358.26	98.26	15 32 25	1619.6	-31.79	28.97
110.00	7 1 39	3818.38	3.65	141.39	349.69	55.99	8 5 17	3218.4	-.84	135.19

DIFFERENTIAL CORRECTIONS

TDE	.0136	TRA	-.1713	TC3	2.5839	BAU	.6016
RDE	-.3756	RRA	.0862	RC3	.7320	FAU	.23922
FDE	.9288	FRA	-2.8407	FC	-12.3612	BSP	7536
BDE	.3758	BRA	.1918	BC3	2.6856	FSP	3114

MID-COURSE EXECUTION ACCURACY

SGT	2130.6	SGR	807.4	SG3	953.5		
RRT	.7123	RRF	-.8176	RTF	-.8639		
SGB	2278.4	R23	-.2260	R13	-.8822		
SG1	2212.1	SG2	545.8	THA	16.11		

ORBIT DETERMINATION ACCURACY

ST	100.9	SR	527.4	SS	749.4
CRT	-.2214	CRS	.7609	CST	-.5478
LSA	868.7	MSA	298.8	SSA	77.8
EL1	527.9	EL2	98.3	ALF	92.51

LAUNCH DATE DEC 18 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 460.806 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.235	GAL	4.82	AZL	89.85	HCA	140.16	SMA	189.92	ECC	.23944	INC	.1518	V1	30.269
RP	233.07	LAP	.10	LOP	226.27	VP	20.978	GAP	4.46	AZP	90.12	TAL	25.36	TAP	165.52	RCA	144.45	APO	235.40	V2	23.593
RC	213.179	GL	1.23	GP	7.86	ZAL	44.20	ZAP	144.71	ETS	167.26	ZAE	169.70	ETE	59.30	ZAC	97.94	ETC	255.71	CLP	145.49

PLANETOCENTRIC CONIC

C3	16.716	VHL	4.089	DLA	18.85	RAL	133.10	RAD	6567.7	VEL	11.752	PTH	2.07	VHP	4.616	DPA	3.54	RAP	194.52	ECC	1.2751

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 48 48	2803.05	-28.20	82.05	358.09	92.70	12 35 31	2203.1	-27.53	73.45
90.00	5 4 26	4185.85	-.42	171.19	351.64	61.69	6 14 12	3585.9	-4.20	164.55
100.00	13 21 39	2503.67	-29.61	59.93	357.99	94.31	14 3 22	1903.7	-28.70	51.24
100.00	6 14 17	3960.47	.82	153.94	350.95	60.12	7 20 17	3360.5	-3.17	147.41
110.00	14 54 51	2212.07	-33.21	37.30	357.51	98.59	15 31 43	1612.1	-31.67	28.41
110.00	6 57 34	3824.83	3.90	141.73	349.03	56.01	8 1 19	3224.8	-.59	135.52

DIFFERENTIAL CORRECTIONS

TDE	.0211	TRA	-.1666	TC3	2.5446	BAU	.5953
RDE	-.3709	RRA	.1051	RC3	.7883	FAU	.24946
FDE	.9367	FRA	-3.0424	FC	-12.9192	BSP	7466
BDE	.3715	BRA	.1970	BC3	2.6639	FSP	3275

MID-COURSE EXECUTION ACCURACY

SGT	2095.5	SGR	842.6	SG3	998.7		
RRT	.7292	RRF	-.8413	RTF	-.8600		
SGB	2258.6	R23	-.2440	R13	-.8820		
SG1	2190.2	SG2	551.6	THA	17.49		

ORBIT DETERMINATION ACCURACY

ST	101.2	SR	522.2	SS	762.0
CRT	-.3337	CRS	.7532	CST	-.6158
LSA	875.7	MSA	301.4	SSA	76.6
EL1	523.3	EL2	95.2	ALF	93.83

LAUNCH DATE DEC 18 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 464.533 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.211	GAL	4.86	AZL	89.90	HCA	141.16	SMA	189.50	ECC	.23803	INC	.1033	V1	30.269
RP	232.70	LAP	.07	LOP	227.27	VP	20.984	GAP	4.03	AZP	90.08	TAL	25.69	TAP	166.84	RCA	144.39	APO	234.61	V2	23.631
RC	215.236	GL	.84	GP	8.22	ZAL	43.75	ZAP	143.43	ETS	167.28	ZAE	169.93	ETE	67.00	ZAC	98.24	ETC	255.71	CLP	144.24

PLANETOCENTRIC CONIC

C3	16.681	VHL	4.084	DLA	18.59	RAL	132.54	RAD	6567.7	VEL	11.750	PTH	2.07	VHP	4.515	DPA	3.97	RAP	194.45	ECC	1.2745

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 49 17	2792.37	-28.16	81.27	357.38	93.09	12 35 50	2192.4	-27.44	72.68
90.00	4 59 29	4195.57	-.10	171.73	350.98	61.68	6 9 25	3595.6	-3.89	165.10
100.00	13 21 52	2493.85	-29.56	59.20	357.28	94.69	14 3 26	1893.8	-28.59	50.53
100.00	6 9 36	3969.33	1.12	154.42	350.30	60.13	7 15 45	3369.3	-2.87	147.90
110.00	14 54 33	2203.87	-33.13	36.68	356.78	98.95	15 31 17	1603.9	-31.54	27.81
110.00	6 53 24	3832.07	4.17	142.11	348.40	56.04	7 57 16	3232.1	-.32	135.90

DIFFERENTIAL CORRECTIONS

TDE	.0300	TRA	-.1640	TC3	2.4992	BAU	.5886
RDE	-.3658	RRA	.1254	RC3	.8487	FAU	.26003
FDE	.9388	FRA	-3.2535	FC	-13.4951	BSP	7381
BDE	.3671	BRA	.2064	BC3	2.6394	FSP	3440

MID-COURSE EXECUTION ACCURACY

SGT	2056.3	SGR	882.3	SG3	1045.6		
RRT	.7434	RRF	-.8628	RTF	-.8552		
SGB	2237.6	R23	-.2622	R13	-.8819		
SG1	2166.3	SG2	560.2	THA	19.01		

ORBIT DETERMINATION ACCURACY

ST	104.0	SR	516.6	SS	773.5
CRT	-.4535	CRS	.7451	CST	-.6804
LSA	882.0	MSA	303.9	SSA	75.3
EL1	518.8	EL2	92.3	ALF	95.39

LAUNCH DATE DEC 18 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 468.274 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.189	GAL	4.89	AZL	89.95	HCA	142.16	SMA	189.10	ECC	.23670	INC	.0519	V1	30.269
RP	232.32	LAP	.03	LOP	228.27	VP	20.992	GAP	3.62	AZP	90.04	TAL	26.00	TAP	168.15	RCA	144.34	APO	233.86	V2	23.670
RC	217.275	GL	.43	GP	8.60	ZAL	43.33	ZAP	142.12	ETS	167.31	ZAE	169.97	ETE	75.18	ZAC	98.55	ETC	255.70	CLP	142.97

PLANETOCENTRIC CONIC

C3	16.649	VHL	4.080	DLA	18.31	RAL	132.01	RAD	6567.7	VEL	11.749	PTH	2.07	VHP	4.418	DPA	4.43	RAP	194.35	ECC	1.2740

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 50 7	2780.76	-28.12	80.42	356.70	93.51	12 36 28	2180.8	-27.33	71.84
90.00	4 54 23	4206.29	.24	172.33	350.34	61.68	6 4 29	3606.3	-3.55	165.70
100.00	13 22 25	2483.15	-29.49	58.41	356.58	95.10	14 3 48	1883.2	-28.47	49.76
100.00	6 4 47	3979.12	1.45	154.96	349.67	60.14	7 11 6	3379.1	-2.54	148.44
110.00	14 54 32	2194.82	-33.03	36.00	356.05	99.34	15 31 7	1594.9	-31.39	27.16
110.00	6 49 9	3840.12	4.48	142.53	347.79	56.08	7 53 9	3240.1	-.01	136.32

DIFFERENTIAL CORRECTIONS

TDE	.0400	TRA	-.1642	TC3	2.4459	BAU	.5811
RDE	-.3604	RRA	.1471	RC3	.9131	FAU	.27088
FDE	.9347	FRA	-3.4723	FC	-14.0856	BSP	7277
BDE	.3626	BRA	.2204	BC3	2.6107	FSP	3608

MID-COURSE EXECUTION ACCURACY

SGT	2011.5	SGR	926.6	SG3	1093.7		
RRT	.7544	RRF	-.8821	RTF	-.8492		
SGB	2214.6	R23	-.2807	R13	-.8819		
SG1	2139.5	SG2	571.9	THA	20.71		

ORBIT DETERMINATION ACCURACY

ST	109.7	SR	510.7	SS	783.7
CRT	-.5676	CRS	.7367	CST	-.7334
LSA	887.5	MSA	306.4	SSA	74.1
EL1	514.6	EL2	89.7	ALF	97.17

LAUNCH DATE DEC 18 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 472.029 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.168	GAL	4.92	AZL	90.00	HCA	143.16	SMA	188.72	ECC	.23545	INC	.0000	V1	30.269		
RP	231.95	LAP	.00	LOP	229.28	VP	21.003	GAP	3.21	AZP	90.00	TAL	26.29	TAP	169.45	RCA	144.29	APO	233.16	V2	23.709		
RC	219.295	GL	.00	GP	9.00	ZAL	42.94	ZAP	140.77	ETS	167.34	ZAE	169.79	ETE	83.51	ZAC	98.87	ETC	255.69	CLP	141.65		

PLANETOCENTRIC CONIC

C3	16.618	VHL	4.077	DLA	18.00	RAL	131.49	RAD	6567.7	VEL	11.747	PTH	2.07	VHP	4.325	DPA	4.92	RAP	194.24	ECC	1.2735		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 51 18	2768.19	-28.06	79.51	356.02	93.97	12 37 26	2168.2	-27.22	70.94
90.00	4 49 8	4218.02	.62	172.99	349.73	61.69	5 59 26	3618.0	-3.17	166.35
100.00	13 23 17	2471.56	-29.42	57.56	355.90	95.55	14 4 29	1871.6	-28.34	48.92
100.00	5 59 50	3989.88	1.81	155.55	349.07	60.16	7 6 20	3389.9	-2.17	149.03
110.00	14 54 49	2185.20	-32.92	35.26	355.35	99.76	15 31 14	1585.2	-31.23	26.45
110.00	6 44 48	3849.00	4.81	143.00	347.20	56.12	7 48 57	3249.0	.33	136.78

DIFFERENTIAL CORRECTIONS

TDE	.0506	TRA	-.1675	TC3	2.3850	BAU	.5731
RDE	-.3545	RRA	.1703	RC3	.9820	FAU	.28200
FDE	.9253	FRA	-3.6974	FC	-14.6907	BSP	7180
BDE	.3581	BRA	.2388	BC3	2.5793	FSP	3785

MID-COURSE EXECUTION ACCURACY

SGT	1961.5	SGR	976.1	SG3	1143.0		
RRT	.7622	RRF	-.8994	RTF	-.8419		
SGB	2191.0	R23	-.2985	R13	-.8821		
SG1	2110.8	SG2	587.2	THA	22.62		

ORBIT DETERMINATION ACCURACY

ST	118.2	SR	504.6	SS	793.3
CRT	-.6644	CRS	.7285	CST	-.7699
LSA	892.8	MSA	308.8	SSA	72.9
EL1	510.8	EL2	87.2	ALF	99.11

LAUNCH DATE DEC 18 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 475.798 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.148	GAL	4.95	AZL	90.06	HCA	144.17	SMA	188.37	ECC	.23426	INC	.0499	V1	30.269		
RP	231.57	LAP	-.03	LOP	230.29	VP	21.016	GAP	2.81	AZP	89.96	TAL	26.56	TAP	170.73	RCA	144.24	APO	232.50	V2	23.748		
RC	221.297	GL	-.45	GP	9.43	ZAL	42.59	ZAP	139.38	ETS	167.37	ZAE	169.38	ETE	91.61	ZAC	99.21	ETC	255.68	CLP	140.30		

PLANETOCENTRIC CONIC

C3	16.590	VHL	4.073	DLA	17.66	RAL	131.01	RAD	6567.7	VEL	11.746	PTH	2.07	VHP	4.235	DPA	5.44	RAP	194.12	ECC	1.2730		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 52 50	2754.63	-27.99	78.52	355.36	94.46	12 38 44	2154.6	-27.08	69.97
90.00	4 43 42	4230.79	1.03	173.70	349.14	61.70	5 54 13	3630.8	-2.76	167.07
100.00	13 24 29	2459.03	-29.33	56.64	355.22	96.02	14 5 28	1859.0	-28.19	48.02
100.00	5 54 44	4001.62	2.21	156.20	348.48	60.18	7 1 25	3401.6	-1.77	149.68
110.00	14 55 22	2174.68	-32.80	34.46	354.65	100.22	15 31 37	1574.7	-31.04	25.68
110.00	6 40 20	3858.73	5.18	143.51	346.63	56.16	7 44 39	3258.7	.70	137.29

DIFFERENTIAL CORRECTIONS

TDE	.0621	TRA	-.1731	TC3	2.3170	BAU	.5647
RDE	-.3482	RRA	.1953	RC3	1.0560	FAU	.29340
FDE	.9080	FRA	-3.9327	FC	-15.3108	BSP	7067
BDE	.3536	BRA	.2610	BC3	2.5463	FSP	3963

MID-COURSE EXECUTION ACCURACY

SGT	1906.7	SGR	1031.0	SG3	1193.7		
RRT	.7667	RRF	-.9146	RTF	-.8331		
SGB	2167.6	R23	-.3149	R13	-.8829		
SG1	2081.0	SG2	606.5	THA	24.76		

ORBIT DETERMINATION ACCURACY

ST	129.3	SR	498.0	SS	802.1
CRT	-.7446	CRS	.7199	CST	-.7901
LSA	897.8	MSA	311.3	SSA	71.6
EL1	507.5	EL2	84.7	ALF	101.26

LAUNCH DATE DEC 18 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 479.581 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.129	GAL	4.97	AZL	90.11	HCA	145.19	SMA	188.04	ECC	.23315	INC	.1128	V1	30.269		
RP	231.20	LAP	-.06	LOP	231.30	VP	21.031	GAP	2.42	AZP	89.91	TAL	26.81	TAP	172.00	RCA	144.20	APO	231.88	V2	23.788		
RC	223.281	GL	-.92	GP	9.88	ZAL	42.26	ZAP	137.96	ETS	167.40	ZAE	168.75	ETE	99.19	ZAC	99.57	ETC	255.67	CLP	138.92		

PLANETOCENTRIC CONIC

C3	16.563	VHL	4.070	DLA	17.29	RAL	130.54	RAD	6567.7	VEL	11.745	PTH	2.07	VHP	4.149	DPA	6.01	RAP	193.97	ECC	1.2726		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 54 42	2740.04	-27.91	77.46	354.71	94.98	12 40 22	2140.0	-26.93	68.93
90.00	4 38 6	4244.63	1.48	174.47	348.56	61.72	5 48 51	3644.6	-2.31	167.84
100.00	13 26 1	2445.54	-29.23	55.65	354.56	96.54	14 6 47	1845.5	-28.02	47.05
100.00	5 49 28	4014.37	2.64	156.90	347.92	60.21	6 56 23	3414.4	-1.34	150.38
110.00	14 56 14	2163.32	-32.66	33.61	353.96	100.71	15 32 17	1563.3	-30.84	24.86
110.00	6 35 45	3869.35	5.59	144.07	346.09	56.22	7 40 15	3269.4	1.11	137.84

DIFFERENTIAL CORRECTIONS

TDE	.0743	TRA	-.1827	TC3	2.2399	BAU	.5560
RDE	-.3413	RRA	.2220	RC3	1.1345	FAU	.30485
FDE	.8839	FRA	-4.1716	FC	-15.9346	BSP	6961
BDE	.3493	BRA	.2875	BC3	2.5108	FSP	4150

MID-COURSE EXECUTION ACCURACY

SGT	1845.9	SGR	1091.2	SG3	1244.9		
RRT	.7671	RRF	-.9279	RTF	-.8219		
SGB	2144.3	R23	-.3297	R13	-.8841		
SG1	2049.5	SG2	630.5	THA	27.17		

ORBIT DETERMINATION ACCURACY

ST	143.1	SR	491.1	SS	810.0
CRT	-.8068	CRS	.7118	CST	-.7982
LSA	902.4	MSA	313.8	SSA	70.2
EL1	504.9	EL2	82.2	ALF	103.59

LAUNCH DATE DEC 18 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 483.377 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.111	GAL	5.00	AZL	90.18	HCA	146.20	SMA	187.73	ECC	.23209	INC	.1743	V1	30.269		
RP	230.82	LAP	-.10	LOP	232.32	VP	21.048	GAP	2.03	AZP	89.85	TAL	27.05	TAP	173.25	RCA	144.16	APO	231.30	V2	23.827		
RC	225.247	GL	-1.42	GP	10.36	ZAL	41.96	ZAP	136.49	ETS	167.44	ZAE	167.91	ETE	106.03	ZAC	99.95	ETC	255.67	CLP	137.50		

PLANETOCENTRIC CONIC

C3	16.538	VHL	4.067	DLA	16.88	RAL	130.09	RAD	6567.7	VEL	11.744	PTH	2.07	VHP	4.067	DPA	6.61	RAP	193.81	ECC	1.2722		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 56 55	2724.38	-27.81	76.32	354.07	95.54	12 42 20	2124.4	-26.75	67.82
90.00	4 32 19	4259.59	1.96	175.30	348.01	61.75	5 43 19	3659.6	-1.83	168.68
100.00	13 27 53	2431.02	-29.12	54.58	353.90	97.08	14 8 24	1831.0	-27.83	46.02
100.00	5 44 2	4028.18	3.11	157.66	347.37	60.25	6 51 10	3428.2	-.87	151.13
110.00	14 57 22	2151.06	-32.50	32.69	353.27	101.23	15 33 13	1551.1	-30.61	23.98
110.00	6 31 3	3880.91	6.02	144.68	345.56	56.29	7 35 44	3280.9	1.55	138.45

DIFFERENTIAL CORRECTIONS

TDE	.0870	TRA	-.1950	TC3	2.1555	BAU	.5475
RDE	-.3336	RRA	.2509	RC3	1.2192	FAU	.31661
FDE	.8504	FRA	-4.4192	FC	-16.5743	BSP	6844
BDE	.3448	BRA	.3178	BC3	2.4764	FSP	4332

MID-COURSE EXECUTION ACCURACY

SGT	1780.7	SGR	1157.8	SG3	1297.4		
RRT	.7637	RRF	-.9394	RTF	-.8084		
SGB	2124.0	R23	-.3410	R13	-.8866		
SG1	2019.2	SG2	659.1	THA	29.92		

ORBIT DETERMINATION ACCURACY

ST	158.8	SR	483.8	SS	817.4
CRT	-.8539	CRS	.7034	CST	-.7954
LSA	906.9	MSA	316.6	SSA	68.8
EL1	503.0	EL2	79.5	ALF	106.07

LAUNCH DATE DEC 18 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 487.186 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.095 GAL 5.02 AZL 90.24 HCA 147.22 SMA 187.44 ECC .23110 INC .2407 V1 30.269
RP 230.43 LAP -.13 LOP 233.34 VP 21.067 GAP 1.65 AZP 89.80 TAL 27.26 TAP 174.48 RCA 144.12 APO 230.75 V2 23.867
RC 227.193 GL -1.96 GP 10.87 ZAL 41.70 ZAP 134.99 ETS 167.48 ZAE 166.88 ETE 112.06 ZAC 100.35 ETC 255.66 CLP 136.05

PLANETOCENTRIC CONIC

C3 16.514 VHL 4.064 DLA 16.44 RAL 129.66 RAD 6567.7 VEL 11.743 PTH 2.07 VHP 3.990 DPA 7.25 RAP 193.63 ECC 1.2718

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 59 30	2707.60	-27.70	75.11	353.43	96.14	12 44 38	2107.6	-26.56	66.63
90.00	4 26 20	4275.72	2.48	176.20	347.47	61.78	5 37 35	3675.7	-1.31	169.58
100.00	13 30 6	2415.45	-28.98	53.44	353.25	97.67	14 10 21	1815.4	-27.62	44.91
100.00	5 38 25	4043.10	3.61	158.48	346.85	60.31	6 45 48	3443.1	-.37	151.95
110.00	14 58 49	2137.87	-32.32	31.70	352.59	101.79	15 34 27	1537.9	-30.36	23.03
110.00	6 26 11	3893.44	6.50	145.34	345.06	56.37	7 31 5	3293.4	2.03	139.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1002 TRA -.2114 TC3 2.0611 BAU .5391 SGT 1709.6 SGR 1230.3 SG3 1349.8 ST 176.5 SR 476.1 SS 824.0
RDE -.3252 RRA .2817 RC3 1.3090 FAU .32829 RRT .7554 RRF -.9493 RTF -.7914 CRT -.8892 CRS .6954 CST -.7862
FDE .8079 FRA-4.6694 FC-17.2106 BSP 6749 SGB 2106.2 R23 -.3482 R13 -.8904 LSA 911.1 MSA 319.6 SSA 67.2
BDE .3403 BRA .3522 BC3 2.4417 FSP 4523 SG1 1989.0 SG2 692.9 THA 33.04 EL1 501.9 EL2 76.6 ALF 108.70

LAUNCH DATE DEC 18 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 491.007 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.079 GAL 5.04 AZL 90.31 HCA 148.24 SMA 187.17 ECC .23016 INC .3097 V1 30.269
RP 230.05 LAP -.16 LOP 234.36 VP 21.088 GAP 1.28 AZP 89.74 TAL 27.46 TAP 175.70 RCA 144.09 APO 230.24 V2 23.907
RC 229.120 GL -2.52 GP 11.42 ZAL 41.46 ZAP 133.45 ETS 167.53 ZAE 165.69 ETE 117.28 ZAC 100.78 ETC 255.65 CLP 134.55

PLANETOCENTRIC CONIC

C3 16.492 VHL 4.061 DLA 15.96 RAL 129.25 RAD 6567.7 VEL 11.742 PTH 2.07 VHP 3.916 DPA 7.94 RAP 193.44 ECC 1.2714

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 2 27	2689.64	-27.56	73.81	352.80	96.78	12 47 16	2089.6	-26.33	65.36
90.00	4 20 7	4293.07	3.04	177.17	346.96	61.83	5 31 40	3693.1	-.75	170.54
100.00	13 32 39	2398.74	-28.82	52.23	352.61	98.29	14 12 38	1798.7	-27.38	43.72
100.00	5 32 36	4059.20	4.15	159.37	346.34	60.37	6 40 15	3459.2	.18	152.83
110.00	15 0 34	2123.67	-32.12	30.64	351.91	102.39	15 35 57	1523.7	-30.08	22.02
110.00	6 21 10	3907.03	7.01	146.06	344.58	56.46	7 26 17	3307.0	2.55	139.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1134 TRA -.2317 TC3 1.9574 BAU .5313 SGT 1633.6 SGR 1309.5 SG3 1402.7 ST 195.6 SR 467.7 SS 829.9
RDE -.3157 RRA .3148 RC3 1.4054 FAU .34005 RRT .7416 RRF -.9578 RTF -.7701 CRT -.9154 CRS .6872 CST -.7717
FDE .7528 FRA-4.9246 FC-17.8510 BSP 6674 SGB 2093.6 R23 -.3497 R13 -.8961 LSA 914.8 MSA 323.3 SSA 65.6
BDE .3354 BRA .3909 BC3 2.4097 FSP 4715 SG1 1961.7 SG2 731.5 THA 36.63 EL1 501.6 EL2 73.4 ALF 111.43

LAUNCH DATE DEC 18 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 494.841 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.065 GAL 5.05 AZL 90.38 HCA 149.27 SMA 186.91 ECC .22928 INC .3837 V1 30.269
RP 229.67 LAP -.20 LOP 235.38 VP 21.111 GAP .92 AZP 89.67 TAL 27.64 TAP 176.91 RCA 144.06 APO 229.77 V2 23.948
RC 231.027 GL -3.12 GP 11.99 ZAL 41.26 ZAP 131.87 ETS 167.59 ZAE 164.35 ETE 121.77 ZAC 101.23 ETC 255.64 CLP 133.02

PLANETOCENTRIC CONIC

C3 16.472 VHL 4.059 DLA 15.44 RAL 128.86 RAD 6567.7 VEL 11.741 PTH 2.07 VHP 3.846 DPA 8.67 RAP 193.23 ECC 1.2711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 5 45	2670.43	-27.40	72.43	352.17	97.45	12 50 16	2070.4	-26.08	64.01
90.00	4 13 40	4311.72	3.64	178.22	346.46	61.90	5 25 31	3711.7	-.15	171.58
100.00	13 35 33	2380.84	-28.64	50.93	351.96	98.95	14 15 14	1780.8	-27.11	42.46
100.00	5 26 33	4076.55	4.74	160.32	345.86	60.45	6 34 29	3476.5	.77	153.79
110.00	15 2 37	2108.41	-31.89	29.51	351.23	103.02	15 37 46	1508.4	-29.77	20.94
110.00	6 15 58	3921.73	7.56	146.84	344.12	56.56	7 21 20	3321.7	3.11	140.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1275 TRA -.2551 TC3 1.8457 BAU .5249 SGT 1554.5 SGR 1395.7 SG3 1455.5 ST 216.7 SR 458.7 SS 835.8
RDE -.3049 RRA .3506 RC3 1.5083 FAU .35175 RRT .7213 RRF -.9650 RTF -.7436 CRT -.9364 CRS .6793 CST -.7505
FDE .6850 FRA-5.1843 FC-18.4875 BSP 6608 SGB 2089.1 R23 -.3434 R13 -.9044 LSA 918.9 MSA 328.0 SSA 63.6
BDE .3305 BRA .4336 BC3 2.3836 FSP 4905 SG1 1940.3 SG2 774.4 THA 40.74 EL1 502.5 EL2 69.4 ALF 114.36

LAUNCH DATE DEC 18 1964 FLIGHT TIME 226.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 498.687 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.051 GAL 5.07 AZL 90.46 HCA 150.30 SMA 186.67 ECC .22844 INC .4626 V1 30.269
RP 229.28 LAP -.23 LOP 236.41 VP 21.136 GAP .56 AZP 89.60 TAL 27.80 TAP 178.10 RCA 144.03 APO 229.32 V2 23.988
RC 232.913 GL -3.76 GP 12.61 ZAL 41.09 ZAP 130.25 ETS 167.66 ZAE 162.88 ETE 125.60 ZAC 101.71 ETC 255.63 CLP 131.46

PLANETOCENTRIC CONIC

C3 16.454 VHL 4.056 DLA 14.87 RAL 128.48 RAD 6567.7 VEL 11.740 PTH 2.07 VHP 3.781 DPA 9.45 RAP 193.01 ECC 1.2708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 9 27	2649.89	-27.21	70.96	351.53	98.17	12 53 37	2049.9	-25.80	62.57
90.00	4 6 56	4331.78	4.28	179.34	345.99	61.98	5 19 8	3731.8	.50	172.70
100.00	13 38 50	2361.66	-28.43	49.54	351.32	99.65	14 18 11	1761.7	-26.80	41.12
100.00	5 20 15	4095.24	5.36	161.36	345.39	60.55	6 28 30	3495.2	1.40	154.81
110.00	15 5 0	2092.02	-31.63	28.30	350.55	103.69	15 39 52	1492.0	-29.43	19.79
110.00	6 10 34	3937.65	8.16	147.69	343.67	56.69	7 16 11	3337.6	3.72	141.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1412 TRA -.2826 TC3 1.7245 BAU .5203 SGT 1472.3 SGR 1489.4 SG3 1508.0 ST 238.6 SR 449.1 SS 842.2
RDE -.2928 RRA .3891 RC3 1.6185 FAU .36335 RRT .6930 RRF -.9711 RTF -.7099 CRT -.9519 CRS .6726 CST -.7262
FDE .6044 FRA-5.4463 FC-19.1175 BSP 6581 SGB 2094.3 R23 -.3278 R13 -.9155 LSA 923.5 MSA 333.5 SSA 61.5
BDE .3251 BRA .4809 BC3 2.3650 FSP 5095 SG1 1926.9 SG2 820.5 THA 45.48 EL1 504.4 EL2 65.1 ALF 117.32

LAUNCH DATE DEC 18 1964 FLIGHT TIME 228.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 502.545 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.038	GAL	5.08	AZL	90.55	HCA	151.33	SMA	186.45	ECC	.22765	INC	.5468
RP	228.89	LAP	-.26	LOP	237.44	VP	21.162	GAP	.21	AZP	89.52	TAL	27.94	TAP	179.27	RCA	144.01	APO	228.90
RC	234.778	GL	-4.44	GP	13.26	ZAL	40.96	ZAP	128.59	ETS	167.74	ZAE	161.30	ETE	128.88	ZAC	102.23	ETC	255.62

V1	30.269	V2	24.029	CLP	129.85														

PLANETOCENTRIC CONIC

C3	16.440	VHL	4.055	DLA	14.25	RAL	128.11	RAD	6567.7	VEL	11.740	PTH	2.07	VHP	3.720	DPA	10.28	RAP	192.78
ECC	1.2706																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 13 33	2627.92	-26.99	69.39	350.90	98.92	12 57 21	2027.9	-25.47	61.05
90.00	3 59 55	4353.34	4.97	180.55	345.53	62.09	5 12 29	3753.3	1.20	173.91
100.00	13 42 29	2341.11	-28.19	48.06	350.67	100.39	14 21 30	1741.1	-26.46	39.69
100.00	5 13 41	4115.38	6.04	162.47	344.94	60.67	6 22 16	3515.4	2.08	155.92
110.00	15 7 43	2074.39	-31.34	27.01	349.87	104.40	15 42 18	1474.4	-29.04	18.56
110.00	6 4 55	3954.87	8.80	148.61	343.25	56.83	7 10 50	3354.9	4.37	142.32

DIFFERENTIAL CORRECTIONS

TDE	.1552	TRA	-.3141	TC3	1.5935	BAU	.5179
RDE	-.2788	RRA	.4307	RC3	1.7358	FAU	.37467
FDE	.5059	FRA	-5.7096	FC	-19.7302	BSP	6593
BDE	.3191	BRA	.5331	BC3	2.3564	FSP	5279

MID-COURSE EXECUTION ACCURACY

SGT	1388.4	SGR	1590.9	SG3	1559.5		
RRT	.6542	RRF	-.9762	RTF	-.6666		
SGB	2111.5	R23	-.3011	R13	-.9293		
SG1	1925.0	SG2	867.8	THA	50.90		

ORBIT DETERMINATION ACCURACY

ST	261.7	SR	438.7	SS	849.0
CRT	-.9638	CRS	.6664	CST	-.6962
LSA	928.5	MSA	340.7	SSA	59.0
EL1	507.2	EL2	60.4	ALF	120.37

LAUNCH DATE DEC 18 1964 FLIGHT TIME 230.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 506.413 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.027	GAL	5.08	AZL	90.64	HCA	152.36	SMA	186.25	ECC	.22690	INC	.6370
RP	228.51	LAP	-.30	LOP	238.48	VP	21.190	GAP	-.13	AZP	89.44	TAL	28.07	TAP	180.43	RCA	143.99	APO	228.51
RC	236.623	GL	-5.18	GP	13.96	ZAL	40.86	ZAP	126.89	ETS	167.83	ZAE	159.62	ETE	131.69	ZAC	102.78	ETC	255.61

V1	30.269	V2	24.070	CLP	128.21														

PLANETOCENTRIC CONIC

C3	16.429	VHL	4.053	DLA	13.58	RAL	127.76	RAD	6567.7	VEL	11.739	PTH	2.07	VHP	3.663	DPA	11.16	RAP	192.55
ECC	1.2704																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 18 3	2604.42	-26.73	67.72	350.26	99.72	13 1 28	2004.4	-25.11	59.42
90.00	3 52 35	4376.55	5.71	181.86	345.09	62.22	5 5 31	3776.6	1.94	175.20
100.00	13 46 32	2319.09	-27.90	46.49	350.01	101.18	14 25 11	1719.1	-26.08	38.16
100.00	5 6 48	4137.11	6.76	163.68	344.52	60.81	6 15 45	3537.1	2.82	157.11
110.00	15 10 47	2055.44	-31.01	25.63	349.18	105.16	15 45 3	1455.4	-28.62	17.25
110.00	5 59 1	3973.53	9.49	149.61	342.85	57.01	7 5 15	3373.5	5.08	143.30

DIFFERENTIAL CORRECTIONS

TDE	.1677	TRA	-.3504	TC3	1.4514	BAU	.5183
RDE	-.2631	RRA	.4753	RC3	1.8604	FAU	.38549
FDE	.3955	FRA	-5.9695	FC	-20.3131	BSP	6665
BDE	.3120	BRA	.5905	BC3	2.3596	FSP	5461

MID-COURSE EXECUTION ACCURACY

SGT	1304.0	SGR	1700.2	SG3	1609.1		
RRT	.6017	RRF	-.9804	RTF	-.6102		
SGB	2142.7	R23	-.2625	R13	-.9450		
SG1	1938.1	SG2	913.6	THA	57.02		

ORBIT DETERMINATION ACCURACY

ST	284.3	SR	428.2	SS	857.4
CRT	-.9716	CRS	.6640	CST	.6664
LSA	935.4	MSA	348.2	SSA	56.3
EL1	510.9	EL2	56.4	ALF	123.28

LAUNCH DATE DEC 18 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 510.296 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.015	GAL	5.09	AZL	90.73	HCA	153.40	SMA	186.06	ECC	.22620	INC	.7337
RP	228.12	LAP	-.33	LOP	239.52	VP	21.219	GAP	-.46	AZP	89.34	TAL	28.18	TAP	181.58	RCA	143.97	APO	228.14
RC	238.446	GL	-5.97	GP	14.71	ZAL	40.80	ZAP	125.16	ETS	167.94	ZAE	157.84	ETE	134.11	ZAC	103.37	ETC	255.60

V1	30.269	V2	24.111	CLP	126.54														

PLANETOCENTRIC CONIC

C3	16.425	VHL	4.053	DLA	12.86	RAL	127.41	RAD	6567.7	VEL	11.739	PTH	2.07	VHP	3.611	DPA	12.10	RAP	192.30
ECC	1.2703																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 23 0	2579.30	-26.42	65.94	349.61	100.57	13 5 59	1979.3	-24.70	57.70
90.00	3 44 52	4401.55	6.50	183.27	344.67	62.38	4 58 14	3801.6	2.75	176.60
100.00	13 50 59	2295.51	-27.58	44.81	349.35	102.00	14 29 15	1695.5	-25.65	36.54
100.00	4 59 34	4160.57	7.54	164.99	344.11	60.99	6 8 54	3560.6	3.61	158.40
110.00	15 14 13	2035.08	-30.64	24.16	348.48	105.96	15 48 8	1435.1	-28.15	15.85
110.00	5 52 50	3993.76	10.24	150.70	342.47	57.21	6 59 23	3393.8	5.85	144.36

DIFFERENTIAL CORRECTIONS

TDE	.1907	TRA	-.3799	TC3	1.3271	BAU	.5277
RDE	-.2405	RRA	.5279	RC3	2.0034	FAU	.39795
FDE	.2180	FRA	-6.2734	FC	-20.9753	BSP	6600
BDE	.3070	BRA	.6504	BC3	2.4031	FSP	5540

MID-COURSE EXECUTION ACCURACY

SGT	1238.2	SGR	1827.2	SG3	1666.2		
RRT	.5452	RRF	-.9841	RTF	-.5526		
SGB	2207.2	R23	-.2135	R13	-.9609		
SG1	1991.1	SG2	952.6	THA	63.10		

ORBIT DETERMINATION ACCURACY

ST	317.9	SR	413.2	SS	871.6
CRT	-.9750	CRS	.6553	CST	-.5829
LSA	943.9	MSA	371.2	SSA	51.7
EL1	518.3	EL2	56.4	ALF	127.39

LAUNCH DATE DEC 18 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 514.187 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.005	GAL	5.09	AZL	90.84	HCA	154.45	SMA	185.88	ECC	.22553	INC	.8382
RP	227.73	LAP	-.36	LOP	240.56	VP	21.250	GAP	-.79	AZP	89.24	TAL	28.27	TAP	182.72	RCA	143.96	APO	227.80
RC	240.248	GL	-6.82	GP	15.51	ZAL	40.78	ZAP	123.39	ETS	168.07	ZAE	155.98	ETE	136.19	ZAC	104.00	ETC	255.59

V1	30.269	V2	24.152	CLP	124.83														

PLANETOCENTRIC CONIC

C3	16.426	VHL	4.053	DLA	12.06	RAL	127.07	RAD	6567.7	VEL	11.739	PTH	2.07	VHP	3.565	DPA	13.10	RAP	192.05
ECC	1.2703																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 28 25	2552.31	-26.07	64.04	348.96	101.46	13 10 57	1952.3	-24.23	55.86
90.00	3 36 45	4428.56	7.35	184.80	344.28	62.58	4 50 34	3828.6	3.62	178.11
100.00	13 55 54	2270.13	-27.21	43.01	348.69	102.88	14 33 45	1670.1	-25.16	34.81
100.00	4 51 57	4185.97	8.37	166.41	343.73	61.20	6 1 43	3586.0	4.47	159.80
110.00	15 18 3	2013.11	-30.22	22.59	347.78	106.80	15 51 36	1413.1	-27.62	14.36
110.00	5 46 18	4015.75	11.05	151.89	342.12	57.44	6 53 14	3415.8	6.68	145.52

DIFFERENTIAL CORRECTIONS

TDE	.1979	TRA	-.4290	TC3	1.1556	BAU	.5344
RDE	-.2204	RRA	.5791	RC3	2.1418	FAU	.40705
FDE	.0799	FRA	-6.5139	FC	-21.4539	BSP	6886
BDE	.2962	BRA	.7207	BC3	2.4337	FSP	5731

MID-COURSE EXECUTION ACCURACY

SGT	1157.6	SGR	1952.4	SG3	1708.7		
RRT	.4512	RRF	-.9870	RTF	-.4550		
SGB	2269.8	R23	-.1580	R13	-.9743		
SG1	2044.1	SG2	986.8	THA	70.24		

ORBIT DETERMINATION ACCURACY

ST	337.1	SR	403.6	SS	885.5
CRT	-.9733	CRS	.6652	CST	-.5597
LSA	956.7	MSA	378.1	SSA	49.0
EL1	522.5	EL2	59.8	ALF	129.74

LAUNCH DATE DEC 18 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 518.088 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.996	GAL	5.09	AZL	90.95	HCA	155.49	SMA	185.72	ECC	.22490	INC	.9519
RP	227.34	LAP	-.39	LOP	241.61	VP	21.283	GAP	-1.11	AZP	89.13	TAL	28.34	TAP	183.83	RCA	143.95	APO	227.49
RC	242.030	GL	-7.74	GP	16.36	ZAL	40.81	ZAP	121.59	ETS	168.22	ZAE	154.04	ETE	137.99	ZAC	104.68	ETC	255.57

V1 30.269 V2 24.193 CLP 123.08

PLANETOCENTRIC CONIC

C3	16.435	VHL	4.054	DLA	11.19	RAL	126.74	RAD	6567.7	VEL	11.740	PTH	2.07	VHP	3.523	DPA	14.15	RAP	191.81

ECC 1.2705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 34 20	2523.35	-25.67	62.02	348.30	102.39	13 16 23	1923.3	-23.70	53.90
90.00	3 28 10	4457.77	8.26	186.46	343.91	62.82	4 42 28	3857.8	4.55	179.75
100.00	14 1 18	2242.86	-26.78	41.10	348.01	103.80	14 38 41	1642.9	-24.62	32.97
100.00	4 43 53	4213.50	9.27	167.96	343.37	61.45	5 54 7	3613.5	5.39	161.32
110.00	15 22 17	1989.42	-29.74	20.91	347.06	107.69	15 55 27	1389.4	-27.03	12.77
110.00	5 39 23	4039.70	11.92	153.19	341.79	57.72	6 46 43	3439.7	7.58	146.79

DIFFERENTIAL CORRECTIONS

TDE	.2049	TRA	-.4814	TC3	.9779	BAU	.5469
RDE	-.1970	RRA	.6345	RC3	2.2888	FAU	.41539
FDE	-.0787	FRA	-6.7469	FC	-21.8815	BSP	7243
BDE	.2842	BRA	.7964	BC3	2.4890	FSP	5914

MID-COURSE EXECUTION ACCURACY

SGT	1092.5	SGR	2087.3	SG3	1747.9		
RRT	.3319	RRF	-.9894	RTF	-.3329		
SGB	2355.9	R23	-.1012	R13	-.9842		
SG1	2128.1	SG2	1010.8	THA	77.21		

ORBIT DETERMINATION ACCURACY

ST	357.4	SR	394.7	SS	903.0
CRT	-.9666	CRS	.6818	CST	-.5300
LSA	973.1	MSA	387.1	SSA	46.0
EL1	528.1	EL2	68.5	ALF	132.06

LAUNCH DATE DEC 18 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 522.001 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.987	GAL	5.09	AZL	91.08	HCA	156.54	SMA	185.57	ECC	.22430	INC	1.0747
RP	226.95	LAP	-.43	LOP	242.66	VP	21.316	GAP	-1.42	AZP	89.01	TAL	28.40	TAP	184.94	RCA	143.94	APO	227.19
RC	243.792	GL	-8.74	GP	17.28	ZAL	40.89	ZAP	119.75	ETS	168.39	ZAE	152.02	ETE	139.55	ZAC	105.42	ETC	255.55

V1 30.269 V2 24.235 CLP 121.31

PLANETOCENTRIC CONIC

C3	16.455	VHL	4.056	DLA	10.24	RAL	126.41	RAD	6567.7	VEL	11.740	PTH	2.07	VHP	3.487	DPA	15.28	RAP	191.57

ECC 1.2708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 40 47	2492.20	-25.19	59.86	347.63	103.37	13 22 19	1892.2	-23.10	51.81
90.00	3 19 4	4489.47	9.24	188.27	343.57	63.11	4 33 53	3889.5	5.56	181.53
100.00	14 7 12	2213.48	-26.29	39.06	347.32	104.77	14 44 6	1613.5	-24.00	31.00
100.00	4 35 19	4243.43	10.24	169.65	343.04	61.76	5 46 3	3643.4	6.39	162.99
110.00	15 26 59	1963.84	-29.20	19.11	346.34	108.62	15 59 42	1363.8	-26.38	11.07
110.00	5 32 2	4065.84	12.87	154.63	341.49	58.06	6 39 48	3465.8	8.55	148.18

DIFFERENTIAL CORRECTIONS

TDE	.2105	TRA	-.5381	TC3	.7920	BAU	.5656
RDE	-.1687	RRA	.6953	RC3	2.4460	FAU	.42305
FDE	-.2680	FRA	-6.9775	FC	-22.2580	BSP	7656
BDE	.2698	BRA	.8793	BC3	2.5710	FSP	6060

MID-COURSE EXECUTION ACCURACY

SGT	1047.8	SGR	2234.0	SG3	1784.4		
RRT	.1851	RRF	-.9914	RTF	-.1839		
SGB	2467.5	R23	-.0493	R13	-.9901		
SG1	2244.6	SG2	1024.8	THA	83.72		

ORBIT DETERMINATION ACCURACY

ST	377.5	SR	387.3	SS	926.9
CRT	-.9515	CRS	.7065	CST	-.4937
LSA	995.6	MSA	398.0	SSA	42.6
EL1	534.2	EL2	84.2	ALF	134.23

LAUNCH DATE DEC 18 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 525.925 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.979	GAL	5.09	AZL	91.21	HCA	157.60	SMA	185.43	ECC	.22374	INC	1.2092
RP	226.56	LAP	-.46	LOP	243.71	VP	21.351	GAP	-1.73	AZP	88.88	TAL	28.44	TAP	186.03	RCA	143.94	APO	226.92
RC	245.534	GL	-9.83	GP	18.26	ZAL	41.02	ZAP	117.88	ETS	168.58	ZAE	149.93	ETE	140.91	ZAC	106.22	ETC	255.53

V1 30.269 V2 24.277 CLP 119.50

PLANETOCENTRIC CONIC

C3	16.489	VHL	4.061	DLA	9.20	RAL	126.07	RAD	6567.7	VEL	11.742	PTH	2.07	VHP	3.457	DPA	16.48	RAP	191.35

ECC 1.2714

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 47 49	2458.64	-24.65	57.55	346.95	104.40	13 28 48	1858.6	-22.42	49.59
90.00	3 9 21	4523.98	10.30	190.26	343.27	63.48	4 24 45	3924.0	6.65	183.48
100.00	14 13 40	2181.78	-25.72	36.87	346.63	105.78	14 50 1	1581.8	-23.31	28.90
100.00	4 26 11	4276.08	11.29	171.51	342.75	62.14	5 37 27	3676.1	7.47	164.80
110.00	15 32 9	1936.16	-28.58	17.20	345.60	109.61	16 4 25	1336.2	-25.64	9.25
110.00	5 24 11	4094.46	13.89	156.21	341.23	58.45	6 32 26	3494.5	9.62	149.72

DIFFERENTIAL CORRECTIONS

TDE	.2150	TRA	-.5986	TC3	.5993	BAU	.5906
RDE	-.1353	RRA	.7618	RC3	2.6115	FAU	.42951
FDE	-.4826	FRA	-7.1979	FC	-22.5512	BSP	8153
BDE	.2540	BRA	.9689	BC3	2.6794	FSP	6188

MID-COURSE EXECUTION ACCURACY

SGT	1030.1	SGR	2391.7	SG3	1815.9		
RRT	.0173	RRF	-.9930	RTF	-.0146		
SGB	2604.1	R23	-.0064	R13	-.9930		
SG1	2391.8	SG2	1029.9	THA	89.48		

ORBIT DETERMINATION ACCURACY

ST	397.6	SR	383.7	SS	958.2
CRT	-.9231	CRS	.7419	CST	-.4529
LSA	1026.3	MSA	410.8	SSA	39.0
EL1	541.9	EL2	108.3	ALF	136.11

LAUNCH DATE DEC 18 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 529.859 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.972	GAL	5.08	AZL	91.36	HCA	158.65	SMA	185.31	ECC	.22320	INC	1.3569
RP	226.17	LAP	-.49	LOP	244.77	VP	21.387	GAP	-2.03	AZP	88.74	TAL	28.46	TAP	187.11	RCA	143.94	APO	226.67
RC	247.256	GL	-11.03	GP	19.32	ZAL	41.22	ZAP	115.99	ETS	168.81	ZAE	147.77	ETE	142.10	ZAC	107.08	ETC	255.51

V1 30.269 V2 24.318 CLP 117.67

PLANETOCENTRIC CONIC

C3	16.541	VHL	4.067	DLA	8.05	RAL	125.73	RAD	6567.7	VEL	11.744	PTH	2.07	VHP	3.433	DPA	17.75	RAP	191.14

ECC 1.2722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 55 30	2422.38	-24.01	55.09	346.25	105.48	13 35 52	1822.4	-21.65	47.21
90.00	2 58 56	4561.68	11.43	192.45	343.00	63.92	4 14 58	3961.7	7.84	185.61
100.00	14 20 44	2147.48	-25.06	34.54	345.92	106.85	14 56 31	1547.5	-22.52	26.66
100.00	4 16 23	4311.81	12.42	173.57	342.50	62.59	5 28 15	3711.8	8.65	166.81
110.00	15 37 51	1906.14	-27.88	15.14	344.85	110.64	16 9 37	1306.1	-24.81	7.31
110.00	5 15 45	4125.92	15.01	157.97	341.00	58.92	6 24 31	3525.9	10.78	151.42

DIFFERENTIAL CORRECTIONS

TDE	.2170	TRA	-.6639	TC3	.3996	BAU	.6224
RDE	-.0955	RRA	.8344	RC3	2.7861	FAU	.43471
FDE	-.7266	FRA	-7.4034	FC	-22.7524	BSP	8734
BDE	.2370	BRA	1.0663	BC3	2.8146	FSP	6287

MID-COURSE EXECUTION ACCURACY

SGT	1044.7	SGR	2561.9	SG3	1842.0		
RRT	-.1591	RRF	-.9943	RTF	.1626		
SGB	2766.8	R23	.0264	R13	-.9940		
SG1	2568.4	SG2	1028.8	THA	94.42		

ORBIT DETERMINATION ACCURACY

ST	416.9	SR	386.7	SS	999.0
CRT	-.8768	CRS	.7874	CST	-.4111
LSA	1067.7	MSA	424.3	SSA	35.2
EL1	551.0	EL2	140.7	ALF	137.45

LAUNCH DATE DEC 18 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 533.804 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.965	GAL	5.07	AZL	91.52	HCA	159.71	SMA	185.19	ECC	.22270	INC	1.5194
RP	225.78	LAP	-.53	LOP	245.83	VP	21.424	GAP	-2.33	AZP	88.57	TAL	28.46	TAP	188.18	RCA	143.95	APO	226.43
RC	248.959	GL	-12.34	GP	20.47	ZAL	41.49	ZAP	114.07	ETS	169.06	ZAE	145.55	ETE	143.15	ZAC	108.02	ETC	255.47

V1 30.269 V2 24.360 CLP 115.81

PLANETOCENTRIC CONIC

C3	16.616	VHL	4.076	DLA	6.79	RAL	125.37	RAD	6567.7	VEL	11.747	PTH	2.07	VHP	3.416	DPA	19.11	RAP	190.96

ECC 1.2735

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 3 54	2383.09	-23.27	52.45	345.55	106.61	13 43 37	1783.1	-20.77	44.66
90.00	2 47 43	4603.06	12.66	194.87	342.78	64.46	4 4 26	4003.1	9.12	187.98
100.00	14 28 28	2110.28	-24.31	32.03	345.20	107.96	15 3 39	1510.3	-21.62	24.26
100.00	4 5 49	4351.10	13.64	175.85	342.29	63.14	5 18 20	3751.1	9.92	169.02
110.00	15 44 8	1873.52	-27.07	12.95	344.09	111.71	16 15 21	1273.5	-23.88	5.24
110.00	5 6 39	4160.63	16.22	159.93	340.83	59.49	6 16 0	3560.6	12.05	153.31

DIFFERENTIAL CORRECTIONS

TDE	.2150	TRA	-.7348	TC3	.1921	BAU	.6610				
RDE	-.0480	RRA	.9144	RC3	2.9693	FAU	.43840				
FDE	-.9996	FRA	-7.5938	FC	-22.8412	BSP	9397				
BDE	.2203	BRA	1.1730	BC3	2.9755	FSP	6350				

MID-COURSE EXECUTION ACCURACY

SGT	1094.4	SGR	2745.9	SG3	1861.7		
RRT	-.3286	RRF	-.9954	RTF	.3324		
SGB	2955.9	R23	.0502	R13	-.9942		
SG1	2773.1	SG2	1023.4	THA	98.65		

ORBIT DETERMINATION ACCURACY

ST	434.4	SR	400.7	SS	1051.2		
CRT	-.8111	CRS	.8393	CST	-.3742		
LSA	1123.7	MSA	436.6	SSA	31.5		
EL1	562.6	EL2	181.0	ALF	137.84		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 537.758 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.959	GAL	5.06	AZL	91.70	HCA	160.78	SMA	185.09	ECC	.22222	INC	1.7001
RP	225.38	LAP	-.56	LOP	246.90	VP	21.463	GAP	-2.61	AZP	88.39	TAL	28.45	TAP	189.23	RCA	143.96	APO	226.22
RC	250.643	GL	-13.78	GP	21.70	ZAL	41.84	ZAP	112.13	ETS	169.35	ZAE	143.26	ETE	144.07	ZAC	109.05	ETC	255.43

V1 30.269 V2 24.402 CLP 113.92

PLANETOCENTRIC CONIC

C3	16.722	VHL	4.089	DLA	5.39	RAL	125.00	RAD	6567.7	VEL	11.752	PTH	2.07	VHP	3.407	DPA	20.56	RAP	190.81

ECC 1.2752

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 13 6	2340.38	-22.41	49.61	344.85	107.78	13 52 6	1740.4	-19.77	41.93
90.00	2 35 34	4648.69	13.98	197.56	342.62	65.12	3 53 2	4048.7	10.52	190.60
100.00	14 36 59	2069.80	-23.43	29.34	344.48	109.11	15 11 29	1469.8	-20.61	21.68
100.00	3 54 21	4394.50	14.96	178.39	342.14	63.81	5 7 36	3794.5	11.32	171.49
110.00	15 51 4	1837.97	-26.16	10.59	343.33	112.84	16 21 42	1238.0	-22.83	3.01
110.00	4 56 46	4199.10	17.53	162.14	340.72	60.18	6 6 45	3599.1	13.43	155.42

DIFFERENTIAL CORRECTIONS

TDE	.2085	TRA	-.8113	TC3	-.0224	BAU	.7058				
RDE	.0078	RRA	1.0015	RC3	3.1568	FAU	.43985				
FDE	-1.2947	FRA	-7.7557	FC	-22.7714	BSP	10173				
BDE	.2086	BRA	1.2889	BC3	3.1569	FSP	6397				

MID-COURSE EXECUTION ACCURACY

SGT	1178.7	SGR	2941.5	SG3	1871.7		
RRT	-.4769	RRF	-.9963	RTF	.4807		
SGB	3168.9	R23	.0666	R13	-.9941		
SG1	3001.9	SG2	1015.2	THA	102.24		

ORBIT DETERMINATION ACCURACY

ST	450.2	SR	430.0	SS	1114.1		
CRT	-.7319	CRS	.8895	CST	-.3475		
LSA	1195.1	MSA	446.8	SSA	27.9		
EL1	579.4	EL2	227.6	ALF	136.79		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 541.724 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.953	GAL	5.05	AZL	91.90	HCA	161.84	SMA	184.99	ECC	.22177	INC	1.9016
RP	224.99	LAP	-.59	LOP	247.97	VP	21.502	GAP	-2.89	AZP	88.19	TAL	28.43	TAP	190.27	RCA	143.97	APO	226.02
RC	252.307	GL	-15.38	GP	23.04	ZAL	42.28	ZAP	110.17	ETS	169.68	ZAE	140.90	ETE	144.88	ZAC	110.18	ETC	255.38

V1 30.269 V2 24.444 CLP 112.01

PLANETOCENTRIC CONIC

C3	16.869	VHL	4.107	DLA	3.84	RAL	124.61	RAD	6567.7	VEL	11.758	PTH	2.08	VHP	3.406	DPA	22.10	RAP	190.71

ECC 1.2776

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 23 13	2293.78	-21.41	46.56	344.14	108.99	14 1 27	1693.8	-18.62	39.00
90.00	2 22 17	4699.30	15.41	200.59	342.54	65.95	3 40 37	4099.3	12.03	193.54
100.00	14 46 21	2025.62	-22.41	26.45	343.75	110.31	15 20 7	1425.6	-19.45	18.91
100.00	3 41 50	4442.70	16.38	181.26	342.07	64.64	4 55 53	3842.7	12.83	174.27
110.00	15 58 43	1799.12	-25.10	8.06	342.56	114.00	16 28 43	1199.1	-21.65	.62
110.00	4 45 57	4241.96	18.97	164.63	340.68	61.01	5 56 39	3642.0	14.96	157.81

DIFFERENTIAL CORRECTIONS

TDE	.1998	TRA	-.8902	TC3	-.2320	BAU	.7598				
RDE	.0793	RRA	1.1029	RC3	3.3610	FAU	.44073				
FDE	-1.6497	FRA	-7.9255	FC	-22.6186	BSP	10931				
BDE	.2150	BRA	1.4173	BC3	3.3690	FSP	6331				

MID-COURSE EXECUTION ACCURACY

SGT	1289.6	SGR	3164.2	SG3	1879.7		
RRT	-.5917	RRF	-.9971	RTF	.5949		
SGB	3416.9	R23	.0762	R13	-.9942		
SG1	3265.0	SG2	1007.5	THA	105.02		

ORBIT DETERMINATION ACCURACY

ST	466.0	SR	482.8	SS	1201.2		
CRT	-.6328	CRS	.9330	CST	-.3170		
LSA	1296.8	MSA	459.2	SSA	24.2		
EL1	606.4	EL2	287.3	ALF	133.40		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 545.696 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.948	GAL	5.03	AZL	92.13	HCA	162.91	SMA	184.91	ECC	.22134	INC	2.1286
RP	224.60	LAP	-.63	LOP	249.04	VP	21.542	GAP	-3.17	AZP	87.97	TAL	28.38	TAP	191.29	RCA	143.98	APO	225.84
RC	253.951	GL	-17.16	GP	24.50	ZAL	42.84	ZAP	108.21	ETS	170.06	ZAE	138.48	ETE	145.59	ZAC	111.42	ETC	255.32

V1 30.269 V2 24.486 CLP 110.09

PLANETOCENTRIC CONIC

C3	17.068	VHL	4.131	DLA	2.11	RAL	124.18	RAD	6567.7	VEL	11.767	PTH	2.08	VHP	3.416	DPA	23.76	RAP	190.68

ECC 1.2809

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 34 25	2242.66	-20.24	43.27	343.44	110.24	14 11 48	1642.7	-17.30	35.82
90.00	2 7 41	4755.81	16.95	204.03	342.55	66.97	3 26 57	4155.8	13.69	196.87
100.00	14 56 45	1977.12	-21.23	23.33	343.03	111.55	15 29 42	1377.1	-18.12	15.92
100.00	3 28 3	4496.59	17.92	184.52	342.10	65.67	4 42 59	3896.6	14.49	177.41
110.00	16 7 15	1756.45	-23.90	5.34	341.79	115.20	16 36 31	1156.5	-20.30	358.04
110.00	4 34 2	4290.02	20.53	167.49	340.75	62.05	5 45 32	3690.0	16.63	160.53

DIFFERENTIAL CORRECTIONS

TDE	.1767	TRA	-.9842	TC3	-.4647	BAU	.8149				
RDE	.1530	RRA	1.2036	RC3	3.5410	FAU	.43560				
FDE	-1.9542	FRA	-7.9854	FC	-22.0954	BSP	12013				
BDE	.2337	BRA	1.5548	BC3	3.5713	FSP	6389				

MID-COURSE EXECUTION ACCURACY

SGT	1439.8	SGR	3375.7	SG3	1860.0		
RRT	-.6898	RRF	-.9976	RTF	.6931		
SGB	3670.0	R23	.0837	R13	-.9941		
SG1	3532.1	SG2	996.2	THA	107.86		

ORBIT DETERMINATION ACCURACY

ST	477.6	SR	551.2	SS	1276.1		
CRT	-.5863	CRS	.9604	CST	-.3411		
LSA	1396.0	MSA	459.3	SSA	21.4		
EL1	651.9	EL2	327.2	ALF	128.11		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 549.681 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 32.944 GAL 5.01 AZL 92.39 HCA 163.99 SMA 184.84 ECC .22093 INC 2.3855 V1 30.269
RP 224.21 LAP -.66 LOP 250.12 VP 21.583 GAP -3.44 AZP 87.71 TAL 28.32 TAP 192.31 RCA 144.00 APO 225.68 V2 24.527
RC 255.576 GL -19.15 GP 26.09 ZAL 43.53 ZAP 106.24 ETS 170.49 ZAE 136.00 ETE 146.23 ZAC 112.78 ETC 255.23 CLP 108.15

PLANETOCENTRIC CONIC

C3 17.338 VHL 4.164 DLA .18 RAL 123.71 RAD 6567.7 VEL 11.778 PTH 2.08 VHP 3.436 DPA 25.53 RAP 190.71 ECC 1.2853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 46 52	2186.38	-18.87	39.70	342.76	111.51	14 23 19	1586.4	-15.79	32.39
90.00	1 51 29	4819.35	18.60	207.96	342.69	68.25	3 11 48	4219.3	15.48	200.67
100.00	15 8 18	1923.73	-19.86	19.96	342.34	112.81	15 40 22	1323.7	-16.60	12.69
100.00	3 12 44	4557.23	19.58	188.26	342.26	66.95	4 28 42	3957.2	16.30	181.01
110.00	16 16 44	1709.52	-22.50	2.40	341.04	116.44	16 45 14	1109.5	-18.77	355.26
110.00	4 20 48	4344.21	22.22	170.78	340.95	63.33	5 33 12	3744.2	18.46	163.67

DIFFERENTIAL CORRECTIONS
TDE .1506 TRA-1.0797 TC3 -.6822 BAU .8811
RDE .2525 RRA 1.3259 RC3 3.7396 FAU .43031
FDE-2.3429 FRA-8.0662 FC-21.4870 BSP 12990
BDE .2940 BRA 1.7099 BC3 3.8013 FSP 6271

MID-COURSE EXECUTION ACCURACY
SGT 1604.1 SGR 3626.0 SG3 1840.5
RRT -.7578 RRF -.9981 RTF .7605
SGB 3965.0 R23 .0863 R13 -.9944
SG1 3839.8 SG2 988.3 THA 109.91

ORBIT DETERMINATION ACCURACY
ST 491.9 SR 655.0 SS 1385.2
CRT -.5386 CRS .9793 CST -.3595
LSA 1540.9 MSA 463.8 SSA 18.4
EL1 729.8 EL2 372.0 ALF 120.83

LAUNCH DATE DEC 18 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 553.672 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 32.940 GAL 4.99 AZL 92.68 HCA 165.07 SMA 184.77 ECC .22055 INC 2.6795 V1 30.269
RP 223.82 LAP -.69 LOP 251.20 VP 21.625 GAP -3.70 AZP 87.41 TAL 28.25 TAP 193.31 RCA 144.02 APO 225.53 V2 24.569
RC 257.180 GL -21.39 GP 27.83 ZAL 44.38 ZAP 104.28 ETS 170.97 ZAE 133.45 ETE 146.78 ZAC 114.29 ETC 255.13 CLP 106.20

PLANETOCENTRIC CONIC

C3 17.703 VHL 4.207 DLA -1.99 RAL 123.19 RAD 6567.7 VEL 11.793 PTH 2.09 VHP 3.470 DPA 27.43 RAP 190.85 ECC 1.2913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 0 52	2123.96	-17.27	35.82	342.13	112.79	14 36 16	1524.0	-14.04	28.64
90.00	1 33 18	4891.43	20.35	212.52	342.99	69.88	2 54 50	4291.4	17.43	205.07
100.00	15 21 17	1864.55	-18.26	16.30	341.68	114.09	15 52 21	1264.6	-14.85	9.16
100.00	2 55 34	4626.07	21.36	192.60	342.58	68.57	4 12 40	4026.1	18.26	185.18
110.00	16 27 24	1657.58	-20.89	359.23	340.32	117.69	16 55 1	1057.6	-17.02	352.24
110.00	4 5 57	4405.80	24.05	174.63	341.33	64.94	5 19 22	3805.8	20.47	167.31

DIFFERENTIAL CORRECTIONS
TDE .1101 TRA-1.1884 TC3 -.9077 BAU .9491
RDE .3621 RRA 1.4529 RC3 3.9060 FAU .41901
FDE-2.6904 FRA-8.0433 FC-20.4914 BSP 14251
BDE .3785 BRA 1.8770 BC3 4.0101 FSP 6220

MID-COURSE EXECUTION ACCURACY
SGT 1796.7 SGR 3868.6 SG3 1793.4
RRT -.8118 RRF -.9985 RTF .8143
SGB 4265.5 R23 .0879 R13 -.9946
SG1 4151.9 SG2 977.6 THA 111.94

ORBIT DETERMINATION ACCURACY
ST 508.9 SR 778.2 SS 1484.2
CRT -.5476 CRS .9892 CST -.4207
LSA 1689.5 MSA 461.3 SSA 15.9
EL1 842.5 EL2 393.3 ALF 115.69

LAUNCH DATE DEC 18 1964 FLIGHT TIME 256.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 557.676 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 32.937 GAL 4.97 AZL 93.02 HCA 166.15 SMA 184.72 ECC .22019 INC 3.0190 V1 30.269
RP 223.44 LAP -.72 LOP 252.28 VP 21.667 GAP -3.96 AZP 87.07 TAL 28.16 TAP 194.30 RCA 144.05 APO 225.39 V2 24.611
RC 258.763 GL -23.90 GP 29.74 ZAL 45.42 ZAP 102.33 ETS 171.52 ZAE 130.84 ETE 147.28 ZAC 115.97 ETC 254.99 CLP 104.24

PLANETOCENTRIC CONIC

C3 18.201 VHL 4.266 DLA -4.44 RAL 122.59 RAD 6567.7 VEL 11.815 PTH 2.09 VHP 3.521 DPA 29.47 RAP 191.10 ECC 1.2995

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 16 43	2054.33	-15.39	31.58	341.57	114.07	14 50 57	1454.3	-12.01	24.54
90.00	1 12 39	4973.99	22.19	217.88	343.51	71.95	2 35 33	4374.0	19.52	210.23
100.00	15 35 58	1798.65	-16.38	12.31	341.09	115.36	16 5 57	1198.6	-12.83	5.31
100.00	2 36 4	4704.91	23.23	197.71	343.13	70.64	3 54 29	4104.9	20.38	190.08
110.00	16 39 27	1599.94	-19.03	355.80	339.67	118.95	17 6 7	999.9	-15.03	348.97
110.00	3 49 6	4476.38	26.01	179.18	341.95	66.99	5 3 42	3876.4	22.66	171.61

DIFFERENTIAL CORRECTIONS
TDE .0630 TRA-1.3005 TC3-1.1088 BAU 1.0317
RDE .5142 RRA 1.6150 RC3 4.0923 FAU .40807
FDE-3.1381 FRA-8.0561 FC-19.4102 BSP 15262
BDE .5180 BRA 2.0736 BC3 4.2399 FSP 5932

MID-COURSE EXECUTION ACCURACY
SGT 1992.8 SGR 4171.6 SG3 1749.1
RRT -.8488 RRF -.9988 RTF .8508
SGB 4623.1 R23 .0861 R13 -.9951
SG1 4519.7 SG2 972.4 THA 113.21

ORBIT DETERMINATION ACCURACY
ST 533.1 SR 955.9 SS 1627.1
CRT -.5643 CRS .9950 CST -.4800
LSA 1905.4 MSA 463.4 SSA 13.4
EL1 1012.6 EL2 415.5 ALF 111.21

LAUNCH DATE DEC 18 1964 FLIGHT TIME 258.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 561.687 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 32.934 GAL 4.95 AZL 93.42 HCA 167.23 SMA 184.67 ECC .21984 INC 3.4170 V1 30.269
RP 223.05 LAP -.75 LOP 253.37 VP 21.711 GAP -4.21 AZP 86.67 TAL 28.05 TAP 195.28 RCA 144.07 APO 225.27 V2 24.653
RC 260.326 GL -26.75 GP 31.85 ZAL 46.70 ZAP 100.40 ETS 172.14 ZAE 128.16 ETE 147.73 ZAC 117.83 ETC 254.81 CLP 102.27

PLANETOCENTRIC CONIC

C3 18.883 VHL 4.345 DLA -7.20 RAL 121.89 RAD 6567.8 VEL 11.843 PTH 2.10 VHP 3.592 DPA 31.68 RAP 191.52 ECC 1.3108

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 34 59	1975.84	-13.15	26.90	341.14	115.30	15 7 54	1375.8	-9.64	19.99
90.00	0 48 49	5069.76	24.07	224.27	344.33	74.62	2 13 18	4469.8	21.73	216.38
100.00	15 52 52	1724.54	-14.17	7.91	340.63	116.60	16 21 37	1124.5	-10.49	1.06
100.00	2 13 36	4796.28	25.16	203.81	343.98	73.30	3 33 32	4196.3	22.63	195.93
110.00	16 53 14	1535.53	-16.87	352.06	339.12	120.18	17 18 50	935.5	-12.73	345.39
110.00	3 29 43	4558.06	28.06	184.64	342.89	69.63	4 45 41	3958.1	25.03	176.77

DIFFERENTIAL CORRECTIONS
TDE .0010 TRA-1.4249 TC3-1.2953 BAU 1.1169
RDE .6901 RRA 1.7910 RC3 4.2306 FAU .39087
FDE-3.5380 FRA-7.9577 FC-17.9204 BSP 16557
BDE .6901 BRA 2.2887 BC3 4.4244 FSP 5678

MID-COURSE EXECUTION ACCURACY
SGT 2203.0 SGR 4473.5 SG3 1675.7
RRT -.8772 RRF -.9990 RTF .8789
SGB 4986.5 R23 .0840 R13 -.9955
SG1 4891.8 SG2 967.2 THA 114.38

ORBIT DETERMINATION ACCURACY
ST 569.1 SR 1161.9 SS 1757.0
CRT -.6173 CRS .9976 CST -.5624
LSA 2132.3 MSA 462.7 SSA 11.3
EL1 1221.7 EL2 425.8 ALF 109.25

LAUNCH DATE DEC 18 1964 FLIGHT TIME 260.00 ARRIVAL DATE SEP 4 1965

DISTANCE 565.707

HELIOCENTRIC CONIC

RL 147.19 LAL .00 LOL 86.12 VL 32.932 GAL 4.92 AZL 93.89 HCA 168.32 SMA 184.63 ECC .21952 INC 3.8888 V1 30.269
RP 222.66 LAP -.79 LOP 254.46 VP 21.755 GAP -4.45 AZP 86.19 TAL 27.93 TAP 196.25 RCA 144.10 APO 225.16 V2 24.695
RC 261.869 GL -29.98 GP 34.17 ZAL 48.25 ZAP 98.52 ETS 172.84 ZAE 125.41 ETE 148.13 ZAC 119.91 ETC 254.57 CLP 100.31

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 19.830 VHL 4.453 DLA -10.33 RAL 121.06 RAD 6567.8 VEL 11.883 PTH 2.11 VHP 3.690 DPA 34.06 RAP 192.13 ECC 1.3264

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 27	1886.20	-10.49	21.67	340.92	116.45	15 27 54	1286.2	-6.85	14.88
90.00	0 20 44	5182.55	25.88	232.03	345.52	78.10	1 47 6	4582.6	23.98	223.88
100.00	16 12 40	1640.31	-11.55	3.03	340.36	117.76	16 40 1	1040.3	-7.74	356.31
100.00	1 47 12	4903.67	27.05	211.23	345.23	76.76	3 8 55	4303.7	24.96	203.05
110.00	17 9 17	1463.05	-14.34	347.96	338.74	121.37	17 33 40	863.1	-10.09	341.44
110.00	3 7 5	4653.70	30.15	191.30	344.28	73.07	4 24 39	4053.7	27.54	183.08

DIFFERENTIAL CORRECTIONS

TDE -.0805 TRA-1.5649 TC3-1.4603 BAU 1.2102
RDE .9071 RRA 1.9956 RC3 4.3249 FAU .36917
FDE-3.9181 FRA-7.7837 FC-16.1167 BSP 17911
BDE .9106 BRA 2.5360 BC3 4.5648 FSP 5353

MID-COURSE EXECUTION ACCURACY

SGT 2427.1 SGR 4797.0 SG3 1581.6
RRT -.8995 RRF -.9992 RTF .9009
SGB 5376.0 R23 .0810 R13 -.9960
SG1 5289.3 SG2 961.9 THA 115.37

ORBIT DETERMINATION ACCURACY

ST 623.9 SR 1410.1 SS 1884.1
CRT -.6890 CRS .9989 CST -.6547
LSA 2390.7 MSA 460.3 SSA 9.4
EL1 1480.6 EL2 430.7 ALF 108.58

LAUNCH DATE DEC 18 1964 FLIGHT TIME 262.00 ARRIVAL DATE SEP 6 1965

DISTANCE 569.735

HELIOCENTRIC CONIC

RL 147.19 LAL .00 LOL 86.12 VL 32.930 GAL 4.89 AZL 94.46 HCA 169.41 SMA 184.60 ECC .21922 INC 4.4583 V1 30.269
RP 222.28 LAP -.82 LOP 255.55 VP 21.800 GAP -4.69 AZP 85.62 TAL 27.80 TAP 197.21 RCA 144.13 APO 225.07 V2 24.737
RC 263.392 GL -33.67 GP 36.75 ZAL 50.14 ZAP 96.69 ETS 173.64 ZAE 122.59 ETE 148.50 ZAC 122.24 ETC 254.26 CLP 98.36

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 21.169 VHL 4.601 DLA -13.88 RAL 120.06 RAD 6567.9 VEL 11.939 PTH 2.12 VHP 3.822 DPA 36.64 RAP 192.98 ECC 1.3484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 22 30	1781.75	-7.26	15.69	341.03	117.45	15 52 12	1181.7	-3.53	9.00
90.00	23 42 46	5318.23	27.43	241.66	347.18	82.68	25 11 24	4718.2	26.13	233.23
100.00	16 36 31	1542.95	-8.41	357.52	340.41	118.79	17 2 14	943.0	-4.50	350.91
100.00	1 15 22	5032.26	28.72	220.42	346.98	81.32	2 39 14	4432.3	27.22	211.94
110.00	17 28 19	1380.71	-11.38	343.42	338.63	122.45	17 51 19	780.7	-7.02	337.05
110.00	2 40 4	4767.26	32.11	199.56	346.24	77.60	3 59 31	4167.3	30.07	190.94

DIFFERENTIAL CORRECTIONS

TDE -.1808 TRA-1.7201 TC3-1.5841 BAU 1.3121
RDE 1.1806 RRA 2.2387 RC3 4.3573 FAU .34271
FDE-4.2667 FRA-7.5248 FC-14.0156 BSP 19318
BDE 1.1944 BRA 2.8232 BC3 4.6364 FSP 4938

MID-COURSE EXECUTION ACCURACY

SGT 2654.0 SGR 5146.3 SG3 1465.6
RRT -.9160 RRF -.9994 RTF .9172
SGB 5790.4 R23 .0775 R13 -.9964
SG1 5710.4 SG2 959.3 THA 116.08

ORBIT DETERMINATION ACCURACY

ST 700.5 SR 1708.3 SS 2002.6
CRT -.7575 CRS .9995 CST -.7369
LSA 2684.8 MSA 459.4 SSA 7.8
EL1 1794.3 EL2 435.4 ALF 108.38

LAUNCH DATE DEC 18 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 8 1965

DISTANCE 573.770

HELIOCENTRIC CONIC

RL 147.19 LAL .00 LOL 86.12 VL 32.929 GAL 4.87 AZL 95.16 HCA 170.50 SMA 184.58 ECC .21893 INC 5.1592 V1 30.269
RP 221.89 LAP -.85 LOP 256.65 VP 21.845 GAP -4.92 AZP 84.91 TAL 27.66 TAP 198.16 RCA 144.17 APO 224.99 V2 24.779
RC 264.895 GL -37.87 GP 39.60 ZAL 52.42 ZAP 94.94 ETS 174.53 ZAE 119.71 ETE 148.85 ZAC 124.83 ETC 253.85 CLP 96.42

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 23.106 VHL 4.807 DLA -17.91 RAL 118.82 RAD 6567.9 VEL 12.020 PTH 2.15 VHP 4.003 DPA 39.42 RAP 194.17 ECC 1.3803

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 55 44	1655.42	-3.24	8.58	341.72	118.15	16 23 19	1055.4	.55	1.95
90.00	22 59 40	5486.95	28.29	253.91	349.34	88.76	24 31 7	4886.9	27.82	245.28
100.00	17 6 31	1427.01	-4.55	351.07	341.00	119.58	17 30 18	827.0	-.58	344.53
100.00	0 35 30	5190.58	29.79	232.06	349.28	87.35	2 2 1	4590.6	29.10	223.32
110.00	17 51 38	1285.62	-7.86	338.31	338.96	123.38	18 13 4	685.6	-3.41	332.04
110.00	2 6 52	4904.74	33.65	209.99	348.92	83.58	3 28 36	4304.7	32.39	200.98

DIFFERENTIAL CORRECTIONS

TDE -.3069 TRA-1.8982 TC3-1.6596 BAU 1.4243
RDE 1.5249 RRA 2.5314 RC3 4.3019 FAU .31104
FDE-4.5391 FRA-7.1598 FC-11.6543 BSP 20769
BDE 1.5554 BRA 3.1640 BC3 4.6110 FSP 4439

MID-COURSE EXECUTION ACCURACY

SGT 2886.8 SGR 5519.4 SG3 1325.2
RRT -.9291 RRF -.9995 RTF .9301
SGB 6228.7 R23 .0737 R13 -.9968
SG1 6154.7 SG2 957.4 THA 116.61

ORBIT DETERMINATION ACCURACY

ST 803.1 SR 2055.3 SS 2092.9
CRT -.8176 CRS .9998 CST -.8054
LSA 3006.5 MSA 458.9 SSA 6.4
EL1 2162.4 EL2 439.6 ALF 108.51

LAUNCH DATE DEC 18 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 10 1965

DISTANCE 577.811

HELIOCENTRIC CONIC

RL 147.19 LAL .00 LOL 86.12 VL 32.928 GAL 4.83 AZL 96.04 HCA 171.59 SMA 184.56 ECC .21866 INC 6.0439 V1 30.269
RP 221.51 LAP -.88 LOP 257.76 VP 21.891 GAP -5.15 AZP 84.02 TAL 27.50 TAP 199.09 RCA 144.21 APO 224.92 V2 24.820
RC 266.379 GL -42.66 GP 42.76 ZAL 55.15 ZAP 93.31 ETS 175.53 ZAE 116.76 ETE 149.19 ZAC 127.72 ETC 253.31 CLP 94.50

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 25.996 VHL 5.099 DLA -22.48 RAL 117.25 RAD 6568.1 VEL 12.140 PTH 2.18 VHP 4.251 DPA 42.40 RAP 195.76 ECC 1.4278

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 42 34	1489.11	2.12	359.30	343.49	118.24	17 7 23	889.1	5.88	352.64
90.00	22 0 19	5711.17	27.53	270.24	351.73	96.89	23 35 30	5111.2	28.20	261.64
100.00	17 47 26	1279.75	.43	342.97	342.55	119.89	18 8 46	679.7	4.40	336.44
100.00	23 38 8	5395.76	29.46	247.27	351.96	95.34	25 8 4	4795.8	29.88	238.50
110.00	18 21 45	1172.15	-3.57	332.33	340.06	124.02	18 41 18	572.2	.92	326.12
110.00	1 24 14	5076.12	34.16	223.33	352.29	91.45	2 48 50	4476.1	33.98	214.08

DIFFERENTIAL CORRECTIONS

TDE -.4599 TRA-2.1047 TC3-1.6682 BAU 1.5471
RDE 1.9597 RRA 2.8893 RC3 4.1271 FAU .27366
FDE-4.6819 FRA-6.6613 FC3-9.1136 BSP 22345
BDE 2.0129 BRA 3.5746 BC3 4.4515 FSP 3871

MID-COURSE EXECUTION ACCURACY

SGT 3116.6 SGR 5908.4 SG3 1158.1
RRT -.9391 RRF -.9996 RTF .9399
SGB 6680.0 R23 .0699 R13 -.9971
SG1 6611.0 SG2 957.4 THA 116.96

ORBIT DETERMINATION ACCURACY

ST 927.1 SR 2444.8 SS 2130.9
CRT -.8622 CRS .9999 CST -.8552
LSA 3341.3 MSA 460.9 SSA 5.3
EL1 2576.4 EL2 445.6 ALF 108.69

LAUNCH DATE DEC 18 1964 FLIGHT TIME 268.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 581.858 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.927	GAL	4.80	AZL	97.20	HCA	172.69	SMA	184.55	ECC	.21841	INC	7.1952	V1	30.269
RP	221.13	LAP	-.91	LOP	258.86	VP	21.937	GAP	-5.37	AZP	82.86	TAL	27.33	TAP	200.02	RCA	144.24	APO	224.86	V2	24.862
RC	267.844	GL	-48.10	GP	46.24	ZAL	58.39	ZAP	91.82	ETS	176.63	ZAE	113.77	ETE	149.53	ZAC	130.93	ETC	252.59	CLP	92.63

PLANETOCENTRIC CONIC

C3	30.494	VHL	5.522	DLA	-27.62	RAL	115.21	RAD	6568.2	VEL	12.323	PTH	2.22	VHP	4.599	DPA	45.57	RAP	197.89	ECC	1.5019		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 11	1175.33	11.93	341.46	348.31	115.87	18 37 46	575.3	15.31	334.42
90.00	20 8 24	816.49	21.39	319.41	352.38	109.01	20 22 0	216.5	23.79	311.56
100.00	18 57 2	1049.73	8.15	330.26	346.32	118.86	19 14 32	449.7	11.94	323.52
100.00	22 12 13	5705.37	25.45	269.34	353.79	106.23	23 47 18	5105.4	27.43	261.10
110.00	19 4 52	1025.13	2.05	324.65	342.58	124.13	19 21 57	425.1	6.52	318.41
110.00	0 24 48	5302.73	32.39	240.73	355.75	101.58	1 53 11	4702.7	33.64	231.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6467	TRA	-2.3554	TC3	-1.6045	BAU	1.6896	SGT	3346.3	SGR	6326.6	SG3	968.6	ST	1066.6	SR	2870.3	SS	2092.8
RDE	2.5203	RRA	3.3487	RC3	3.8213	FAU	.23157	RRT	-.9470	RRF	-.9996	RTF	.9477	CRT	-.8933	CRS	1.0000	CST	-.8892
FDE	-4.6440	FRA	-6.0223	FC3	-6.5745	BSP	23781	SGB	7157.1	R23	.0659	R13	-.9975	LSA	3679.5	MSA	466.0	SSA	4.3
BDE	2.6020	BRA	4.0941	BC3	4.1445	FSP	3198	SG1	7092.6	SG2	958.8	THA	117.14	EL1	3028.1	EL2	454.5	ALF	108.80

LAUNCH DATE DEC 18 1964 FLIGHT TIME 270.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 585.906 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.927	GAL	4.77	AZL	98.76	HCA	173.79	SMA	184.55	ECC	.21819	INC	8.7561	V1	30.269
RP	220.75	LAP	-.94	LOP	259.97	VP	21.984	GAP	-5.59	AZP	81.29	TAL	27.15	TAP	200.94	RCA	144.28	APO	224.82	V2	24.903
RC	269.292	GL	-54.24	GP	50.01	ZAL	62.16	ZAP	90.54	ETS	177.81	ZAE	110.78	ETE	149.89	ZAC	134.42	ETC	251.63	CLP	90.83

PLANETOCENTRIC CONIC

C3	37.896	VHL	6.156	DLA	-33.34	RAL	112.44	RAD	6568.5	VEL	12.620	PTH	2.29	VHP	5.104	DPA	48.86	RAP	200.70	ECC	1.6237		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.62	16 42 31	1496.51	18.04	8.53	352.74	118.52	17 7 27	896.5	21.71	1.39
108.38	21 21 57	604.91	18.06	302.21	352.75	118.51	21 32 2	4.9	21.72	295.07
71.62	16 42 31	1496.51	18.04	8.53	352.74	118.52	17 7 27	896.5	21.71	1.39
108.38	21 21 57	604.91	18.06	302.21	352.75	118.51	21 32 2	4.9	21.72	295.07
110.00	20 34 24	750.80	12.32	310.06	349.28	122.14	20 46 54	150.8	16.48	303.41
110.00	22 29 15	5686.66	23.97	267.31	355.95	115.14	24 4 1	5086.7	27.15	259.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8517	TRA	-2.6586	TC3	-1.4486	BAU	1.8474	SGT	3547.1	SGR	6721.7	SG3	753.5	ST	1192.0	SR	3274.4	SS	1925.9
RDE	3.2189	RRA	3.9363	RC3	3.3464	FAU	.18376	RRT	-.9526	RRF	-.9997	RTF	.9531	CRT	-.9097	CRS	1.0000	CST	-.9072
FDE	-4.3042	FRA	-5.1796	FC3	-4.1981	BSP	25676	SGB	7600.2	R23	.0625	R13	-.9977	LSA	3952.6	MSA	477.4	SSA	3.5
BDE	3.3296	BRA	4.7500	BC3	3.6464	FSP	2511	SG1	7539.0	SG2	962.4	THA	117.17	EL1	3452.8	EL2	469.4	ALF	108.68

LAUNCH DATE DEC 18 1964 FLIGHT TIME 296.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 639.982 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.955	GAL	4.02	AZL	81.29	HCA	188.74	SMA	185.02	ECC	.21567	INC	8.7130	V1	30.269
RP	216.05	LAP	-1.32	LOP	274.76	VP	22.611	GAP	-7.91	AZP	98.61	TAL	22.98	TAP	211.72	RCA	145.12	APO	224.92	V2	25.423
RC	286.520	GL	56.40	GP	-40.56	ZAL	65.83	ZAP	74.97	ETS	165.69	ZAE	98.48	ETE	185.61	ZAC	45.03	ETC	252.74	CLP	70.05

PLANETOCENTRIC CONIC

C3	35.752	VHL	5.979	DLA	69.50	RAL	169.03	RAD	6568.4	VEL	12.535	PTH	2.27	VHP	4.386	DPA	-29.43	RAP	149.30	ECC	1.5884		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
11.08	9 22 5	4313.25	-52.34	243.28	128.85	16.08	10 33 58	3713.3	-59.96	239.28
11.08	1 2 9	4845.61	-16.94	250.91	13.37	10.19	2 22 55	4245.6	-24.81	249.77
21.08	7 18 58	4428.12	-41.56	233.38	88.56	25.04	8 32 46	3828.1	-48.71	228.67
21.08	3 45 36	4694.43	-24.81	240.61	43.42	20.42	5 3 51	4094.4	-32.27	237.73
23.44	5 37 21	4555.06	-32.79	234.87	65.11	24.61	6 53 16	3955.1	-39.99	230.95
156.56	16 2 35	2804.97	-32.78	85.43	65.09	24.61	16 49 20	2205.0	-39.98	81.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	6.5720	TRA	-.0902	TC3	-3.2611	BAU	2.0257	SGT	7411.3	SGR	5141.5	SG3	998.3	ST	6299.0	SR	3918.0	SS	3197.6
RDE	4.0794	RRA	.3006	RC3	-2.7068	FAU	.26550	RRT	.9720	RRF	.9988	RTF	.9635	CRT	.9972	CRS	-1.0000	CST	-.9968
FDE	8.7820	FRA	.6912	FC3	-6.4291	BSP	30159	SGB	9020.1	R23	.1907	R13	.9810	LSA	8072.2	MSA	303.1	SSA	5.3
BDE	7.7351	BRA	.3138	BC3	4.2381	FSP	3580	SG1	8964.6	SG2	999.2	THA	34.48	EL1	7413.9	EL2	249.6	ALF	31.85

LAUNCH DATE DEC 18 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 644.166 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.959	GAL	3.95	AZL	82.15	HCA	189.89	SMA	185.09	ECC	.21559	INC	7.8506	V1	30.269
RP	215.71	LAP	-1.34	LOP	275.92	VP	22.659	GAP	-8.06	AZP	97.74	TAL	22.60	TAP	212.49	RCA	145.19	APO	224.99	V2	25.461
RC	287.729	GL	53.41	GP	-37.21	ZAL	64.47	ZAP	72.93	ETS	165.56	ZAE	97.30	ETE	184.00	ZAC	48.15	ETC	253.71	CLP	68.38

PLANETOCENTRIC CONIC

C3	31.293	VHL	5.594	DLA	66.75	RAL	165.23	RAD	6568.2	VEL	12.356	PTH	2.23	VHP	4.177	DPA	-26.26	RAP	150.60	ECC	1.5150		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
26.64	5 29 14	4511.79	-34.10	230.30	58.33	28.48	6 44 26	3911.8	-41.04	225.67
153.36	15 40 22	2781.08	-34.10	84.31	58.31	28.47	16 26 43	2181.1	-41.03	79.69
26.64	5 29 14	4511.79	-34.10	230.30	58.33	28.48	6 44 26	3911.8	-41.04	225.67
153.36	15 40 22	2781.08	-34.10	84.31	58.31	28.47	16 26 43	2181.1	-41.03	79.69
26.64	5 29 14	4511.79	-34.10	230.30	58.33	28.48	6 44 26	3911.8	-41.04	225.67
153.36	15 40 22	2781.08	-34.10	84.31	58.31	28.47	16 26 43	2181.1	-41.03	79.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	6.1498	TRA	-.2676	TC3	-3.7967	BAU	1.9707	SGT	7628.9	SGR	4749.9	SG3	1126.3	ST	6303.5	SR	3554.5	SS	3362.0
RDE	3.4665	RRA	.1825	RC3	-2.7882	FAU	.29196	RRT	.9738	RRF	.9988	RTF	.9660	CRT	.9973	CRS	-1.0000	CST	-.9971
FDE	9.0824	FRA	.5074	FC3	-8.0771	BSP	29962	SGB	8986.7	R23	.1937	R13	.9802	LSA	7974.2	MSA	288.1	SSA	6.2
BDE	7.0595	BRA	.3239	BC3	4.7106	FSP	4004	SG1	8939.3	SG2	922.4	THA	31.60	EL1	7233.1	EL2	226.8	ALF	29.38

LAUNCH DATE DEC 18 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 648.361 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 32.963 GAL 3.88 AZL 82.83 HCA 191.05 SMA 185.16 ECC .21552 INC 7.1654 V1 30.269
RP 215.38 LAP -1.37 LOP 277.09 VP 22.708 GAP -8.20 AZP 97.03 TAL 22.20 TAP 213.25 RCA 145.26 APO 225.07 V2 25.498
RC 288.924 GL 50.79 GP -34.22 ZAL 63.39 ZAP 70.98 ETS 165.53 ZAE 96.01 ETE 182.63 ZAC 50.95 ETC 254.45 CLP 66.79

PLANETOCENTRIC CONIC

C3 28.034 VHL 5.295 DLA 64.24 RAL 162.67 RAD 6568.1 VEL 12.223 PTH 2.20 VHP 4.033 DPA -23.42 RAP 151.70 ECC 1.4614

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
29.58	5 25 42	4474.00	-34.94	226.00	52.98	32.01	6 40 16	3874.0	-41.60	220.76
150.42	15 23 26	2763.78	-34.93	83.29	52.97	32.01	16 9 30	2163.8	-41.59	78.04
29.58	5 25 42	4474.00	-34.94	226.00	52.98	32.01	6 40 16	3874.0	-41.60	220.76
150.42	15 23 26	2763.78	-34.93	83.29	52.97	32.01	16 9 30	2163.8	-41.59	78.04
29.58	5 25 42	4474.00	-34.94	226.00	52.98	32.01	6 40 16	3874.0	-41.60	220.76
150.42	15 23 26	2763.78	-34.93	83.29	52.97	32.01	16 9 30	2163.8	-41.59	78.04

DIFFERENTIAL CORRECTIONS
TDE 5.8114 TRA -.4031 TC3-4.3200 BAU 1.9321
RDE 2.9656 RRA .1066 RC3-2.8129 FAU .31182
FDE 9.1266 FRA .3410 FC3-9.6295 BSP 30050
BDE 6.5243 BRA .4170 BC3 5.1551 FSP 4345

MID-COURSE EXECUTION ACCURACY
SGT 7841.1 SGR 4386.5 SG3 1228.7
RRT .9752 RRF .9986 RTF .9677
SGB 8984.7 R23 .1970 R13 .9794
SG1 8944.2 SG2 851.5 THA 28.90

ORBIT DETERMINATION ACCURACY
ST 6297.3 SR 3211.4 SS 3443.9
CRT .9973 CRS-1.0000 CST -.9972
LSA 7858.3 MSA 277.4 SSA 7.1
EL1 7065.8 EL2 208.4 ALF 26.98

LAUNCH DATE DEC 18 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 652.566 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 32.968 GAL 3.81 AZL 83.39 HCA 192.22 SMA 185.24 ECC .21545 INC 6.6076 V1 30.269
RP 215.05 LAP -1.40 LOP 278.26 VP 22.756 GAP -8.35 AZP 96.46 TAL 21.78 TAP 214.00 RCA 145.33 APO 225.15 V2 25.535
RC 290.105 GL 48.48 GP -31.56 ZAL 62.55 ZAP 69.12 ETS 165.58 ZAE 94.63 ETE 181.47 ZAC 53.46 ETC 255.03 CLP 65.28

PLANETOCENTRIC CONIC

C3 25.558 VHL 5.056 DLA 61.98 RAL 160.90 RAD 6568.0 VEL 12.122 PTH 2.17 VHP 3.933 DPA -20.89 RAP 152.64 ECC 1.4206

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
32.26	5 25 2	4440.42	-35.43	221.99	48.66	35.21	6 39 2	3840.4	-41.81	216.23
147.74	15 10 1	2751.45	-35.42	82.38	48.65	35.21	15 55 52	2151.5	-41.80	76.62
32.26	5 25 2	4440.42	-35.43	221.99	48.66	35.21	6 39 2	3840.4	-41.81	216.23
147.74	15 10 1	2751.45	-35.42	82.38	48.65	35.21	15 55 52	2151.5	-41.80	76.62
32.26	5 25 2	4440.42	-35.43	221.99	48.66	35.21	6 39 2	3840.4	-41.81	216.23
147.74	15 10 1	2751.45	-35.42	82.38	48.65	35.21	15 55 52	2151.5	-41.80	76.62

DIFFERENTIAL CORRECTIONS
TDE 5.5412 TRA -.5065 TC3-4.8312 BAU 1.9068
RDE 2.5603 RRA .0613 RC3-2.7928 FAU .32574
FDE 9.0116 FRA .2121 FC-11.0340 BSP 30389
BDE 6.1041 BRA .5102 BC3 5.5804 FSP 4630

MID-COURSE EXECUTION ACCURACY
SGT 8049.4 SGR 4051.6 SG3 1307.6
RRT .9762 RRF .9983 RTF .9687
SGB 9011.6 R23 .2003 R13 .9784
SG1 8977.0 SG2 788.5 THA 26.39

ORBIT DETERMINATION ACCURACY
ST 6292.4 SR 2903.2 SS 3472.4
CRT .9973 CRS-1.0000 CST -.9973
LSA 7746.4 MSA 271.2 SSA 8.0
EL1 6927.1 EL2 194.5 ALF 24.73

LAUNCH DATE DEC 18 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 656.778 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 32.972 GAL 3.74 AZL 83.86 HCA 193.39 SMA 185.31 ECC .21540 INC 6.1441 V1 30.269
RP 214.72 LAP -1.42 LOP 279.43 VP 22.804 GAP -8.48 AZP 95.98 TAL 21.35 TAP 214.74 RCA 145.40 APO 225.23 V2 25.572
RC 291.272 GL 46.44 GP -29.18 ZAL 61.91 ZAP 67.35 ETS 165.67 ZAE 93.20 ETE 180.49 ZAC 55.70 ETC 255.49 CLP 63.82

PLANETOCENTRIC CONIC

C3 23.616 VHL 4.860 DLA 59.92 RAL 159.68 RAD 6568.0 VEL 12.041 PTH 2.15 VHP 3.865 DPA -18.64 RAP 153.46 ECC 1.3887

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.70	5 26 16	4410.10	-35.68	218.27	45.13	38.10	6 39 46	3810.1	-41.80	212.08
145.30	14 59 4	2742.93	-35.66	81.62	45.11	38.09	15 44 47	2142.9	-41.78	75.43
34.70	5 26 16	4410.10	-35.68	218.27	45.13	38.10	6 39 46	3810.1	-41.80	212.08
145.30	14 59 4	2742.93	-35.66	81.62	45.11	38.09	15 44 47	2142.9	-41.78	75.43
34.70	5 26 16	4410.10	-35.68	218.27	45.13	38.10	6 39 46	3810.1	-41.80	212.08
145.30	14 59 4	2742.93	-35.66	81.62	45.11	38.09	15 44 47	2142.9	-41.78	75.43

DIFFERENTIAL CORRECTIONS
TDE 5.3286 TRA -.5813 TC3-5.3219 BAU 1.8881
RDE 2.2369 RRA .0424 RC3-2.7282 FAU .33319
FDE 8.8232 FRA .1494 FC-12.2147 BSP 31070
BDE 5.7791 BRA .5828 BC3 5.9805 FSP 4924

MID-COURSE EXECUTION ACCURACY
SGT 8251.9 SGR 3741.2 SG3 1364.1
RRT .9766 RRF .9980 RTF .9693
SGB 9060.4 R23 .2037 R13 .9773
SG1 9030.5 SG2 736.0 THA 24.05

ORBIT DETERMINATION ACCURACY
ST 6297.8 SR 2638.7 SS 3475.6
CRT .9971 CRS-1.0000 CST -.9971
LSA 7657.1 MSA 273.1 SSA 8.8
EL1 6825.7 EL2 186.6 ALF 22.69

LAUNCH DATE DEC 18 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 661.003 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 32.977 GAL 3.66 AZL 84.25 HCA 194.56 SMA 185.40 ECC .21535 INC 5.7527 V1 30.269
RP 214.40 LAP -1.44 LOP 280.61 VP 22.851 GAP -8.62 AZP 95.57 TAL 20.91 TAP 215.47 RCA 145.47 APO 225.32 V2 25.608
RC 292.426 GL 44.63 GP -27.07 ZAL 61.44 ZAP 65.65 ETS 165.81 ZAE 91.75 ETE 179.66 ZAC 57.71 ETC 255.86 CLP 62.42

PLANETOCENTRIC CONIC

C3 22.052 VHL 4.696 DLA 58.05 RAL 158.86 RAD 6567.9 VEL 11.976 PTH 2.13 VHP 3.820 DPA -16.63 RAP 154.18 ECC 1.3629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.95	5 28 45	4382.44	-35.74	214.83	42.20	40.70	6 41 48	3782.4	-41.61	208.28
143.05	14 49 59	2737.25	-35.73	81.00	42.18	40.69	15 35 36	2137.2	-41.60	74.45
36.95	5 28 45	4382.44	-35.74	214.83	42.20	40.70	6 41 48	3782.4	-41.61	208.28
143.05	14 49 59	2737.25	-35.73	81.00	42.18	40.69	15 35 36	2137.2	-41.60	74.45
36.95	5 28 45	4382.44	-35.74	214.83	42.20	40.70	6 41 48	3782.4	-41.61	208.28
143.05	14 49 59	2737.25	-35.73	81.00	42.18	40.69	15 35 36	2137.2	-41.60	74.45

DIFFERENTIAL CORRECTIONS
TDE 5.1296 TRA -.6615 TC3-5.8413 BAU 1.8942
RDE 1.9548 RRA .0168 RC3-2.6757 FAU .34076
FDE 8.4924 FRA .0321 FC-13.3780 BSP 31119
BDE 5.4894 BRA .6617 BC3 6.4250 FSP 4989

MID-COURSE EXECUTION ACCURACY
SGT 8461.3 SGR 3464.9 SG3 1407.1
RRT .9774 RRF .9976 RTF .9700
SGB 9143.3 R23 .2048 R13 .9766
SG1 9118.0 SG2 679.6 THA 21.94

ORBIT DETERMINATION ACCURACY
ST 6277.6 SR 2386.3 SS 3422.3
CRT .9970 CRS-1.0000 CST -.9971
LSA 7532.9 MSA 265.6 SSA 9.9
EL1 6713.6 EL2 173.9 ALF 20.77

LAUNCH DATE DEC 18 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 665.236 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.982	GAL	3.58	AZL	84.58	HCA	195.74	SMA	185.48	ECC	.21532	INC	5.4177
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.898	GAP	-8.75	AZP	95.22	TAL	20.45	TAP	216.20	RCA	145.55	APO	225.42
RC	293.566	GL	43.01	GP	-25.18	ZAL	61.13	ZAP	64.03	ETS	165.96	ZAE	90.27	ETE	178.95	ZAC	59.52	ETC	256.15

V1	30.269	V2	25.644	CLP	61.07														

PLANETOCENTRIC CONIC

C3	20.763	VHL	4.557	DLA	56.33	RAL	158.32	RAD	6567.8	VEL	11.922	PTH	2.12	VHP	3.794	DPA	-14.84	RAP	154.84
ECC	1.3417																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.03	5 32 12	4356.83	-35.68	211.64	39.76	43.04	6 44 49	3756.8	-41.32	204.79
140.97	14 42 18	2733.85	-35.67	80.51	39.75	43.03	15 27 52	2133.8	-41.31	73.66
39.03	5 32 12	4356.83	-35.68	211.64	39.76	43.04	6 44 49	3756.8	-41.32	204.79
140.97	14 42 18	2733.85	-35.67	80.51	39.75	43.03	15 27 52	2133.8	-41.31	73.66
39.03	5 32 12	4356.83	-35.68	211.64	39.76	43.04	6 44 49	3756.8	-41.32	204.79
140.97	14 42 18	2733.85	-35.67	80.51	39.75	43.03	15 27 52	2133.8	-41.31	73.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.9669	TRA	-.7208	TC3	-6.3452	BAU	1.9035	SGT	8667.0	SGR	3212.1	SG3	1435.0	ST	6267.2	SR	2168.8	SS	3356.2
RDE	1.7239	RRA	.0054	RC3	-2.6011	FAU	.34430	RRT	.9779	RRF	.9970	RTF	.9704	CRT	.9968	CRS	-1.0000	CST	-.9971
FDE	8.1368	FRA	-.0379	FC	-14.3563	BSP	31423	SGB	9243.1	R23	.2054	R13	.9759	LSA	7428.1	MSA	261.4	SSA	10.9
BDE	5.2576	BRA	.7208	BC3	6.8576	FSP	5041	SG1	9221.5	SG2	630.7	THA	20.02	EL1	6629.8	EL2	164.2	ALF	19.04

LAUNCH DATE DEC 18 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 669.477 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.987	GAL	3.50	AZL	84.87	HCA	196.92	SMA	185.57	ECC	.21530	INC	5.1275
RP	213.77	LAP	-1.49	LOP	282.97	VP	22.945	GAP	-8.88	AZP	94.91	TAL	19.98	TAP	216.91	RCA	145.62	APO	225.53
RC	294.693	GL	41.56	GP	-23.48	ZAL	60.95	ZAP	62.49	ETS	166.13	ZAE	88.80	ETE	178.36	ZAC	61.14	ETC	256.40

V1	30.269	V2	25.679	CLP	59.76														

PLANETOCENTRIC CONIC

C3	19.679	VHL	4.436	DLA	54.76	RAL	158.02	RAD	6567.8	VEL	11.877	PTH	2.11	VHP	3.781	DPA	-13.24	RAP	155.44
ECC	1.3239																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.96	5 36 22	4332.84	-35.53	208.67	37.73	45.16	6 48 35	3732.8	-40.95	201.58
139.04	14 35 43	2732.26	-35.52	80.13	37.72	45.15	15 21 16	2132.3	-40.94	73.04
40.96	5 36 22	4332.84	-35.53	208.67	37.73	45.16	6 48 35	3732.8	-40.95	201.58
139.04	14 35 43	2732.26	-35.52	80.13	37.72	45.15	15 21 16	2132.3	-40.94	73.04
40.96	5 36 22	4332.84	-35.53	208.67	37.73	45.16	6 48 35	3732.8	-40.95	201.58
139.04	14 35 43	2732.26	-35.52	80.13	37.72	45.15	15 21 16	2132.3	-40.94	73.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.8293	TRA	-.7654	TC3	-6.8399	BAU	1.9172	SGT	8869.4	SGR	2981.7	SG3	1450.7	ST	6261.2	SR	1979.3	SS	3278.8
RDE	1.5315	RRA	.0016	RC3	-2.5146	FAU	.34500	RRT	.9783	RRF	.9963	RTF	.9707	CRT	.9966	CRS	-1.0000	CST	-.9970
FDE	7.7639	FRA	-.0773	FC	-15.1777	BSP	31830	SGB	9357.2	R23	.2049	R13	.9752	LSA	7335.1	MSA	258.4	SSA	12.0
BDE	5.0663	BRA	.7654	BC3	7.2874	FSP	5064	SG1	9338.7	SG2	587.1	THA	18.28	EL1	6564.8	EL2	156.2	ALF	17.50

LAUNCH DATE DEC 18 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 673.726 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.993	GAL	3.42	AZL	85.13	HCA	198.11	SMA	185.66	ECC	.21528	INC	4.8735
RP	213.46	LAP	-1.51	LOP	284.16	VP	22.992	GAP	-9.00	AZP	94.63	TAL	19.50	TAP	217.61	RCA	145.69	APO	225.63
RC	295.805	GL	40.25	GP	-21.96	ZAL	60.89	ZAP	61.01	ETS	166.30	ZAE	87.34	ETE	177.85	ZAC	62.61	ETC	256.59

V1	30.269	V2	25.714	CLP	58.49														

PLANETOCENTRIC CONIC

C3	18.751	VHL	4.330	DLA	53.30	RAL	157.91	RAD	6567.8	VEL	11.838	PTH	2.10	VHP	3.780	DPA	-11.82	RAP	155.99
ECC	1.3086																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.76	5 41 6	4310.19	-35.32	205.88	36.04	47.09	6 52 56	3710.2	-40.53	198.59
137.24	14 30 4	2732.11	-35.31	79.86	36.03	47.08	15 15 36	2132.1	-40.51	72.57
42.76	5 41 6	4310.19	-35.32	205.88	36.04	47.09	6 52 56	3710.2	-40.53	198.59
137.24	14 30 4	2732.11	-35.31	79.86	36.03	47.08	15 15 36	2132.1	-40.51	72.57
42.76	5 41 6	4310.19	-35.32	205.88	36.04	47.09	6 52 56	3710.2	-40.53	198.59
137.24	14 30 4	2732.11	-35.31	79.86	36.03	47.08	15 15 36	2132.1	-40.51	72.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.7109	TRA	-.7984	TC3	-7.3284	BAU	1.9348	SGT	9069.7	SGR	2772.1	SG3	1456.6	ST	6258.6	SR	1814.0	SS	3194.4
RDE	1.3701	RRA	.0026	RC3	-2.4215	FAU	.34352	RRT	.9784	RRF	.9954	RTF	.9709	CRT	.9963	CRS	-.9999	CST	-.9969
FDE	7.3862	FRA	-.0930	FC	-15.8598	BSP	32295	SGB	9483.8	R23	.2032	R13	.9746	LSA	7252.5	MSA	256.3	SSA	13.0
BDE	4.9061	BRA	.7984	BC3	7.7181	FSP	5060	SG1	9468.0	SG2	548.5	THA	16.71	EL1	6514.5	EL2	149.5	ALF	16.12

LAUNCH DATE DEC 18 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 677.982 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	32.998	GAL	3.33	AZL	85.35	HCA	199.30	SMA	185.76	ECC	.21528	INC	4.6490
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.038	GAP	-9.12	AZP	94.39	TAL	19.00	TAP	218.30	RCA	145.77	APO	225.75
RC	296.904	GL	39.07	GP	-20.59	ZAL	60.94	ZAP	59.59	ETS	166.49	ZAE	85.88	ETE	177.42	ZAC	63.95	ETC	256.75

V1	30.269	V2	25.748	CLP	57.26														

PLANETOCENTRIC CONIC

C3	17.946	VHL	4.236	DLA	51.94	RAL	157.94	RAD	6567.7	VEL	11.804	PTH	2.09	VHP	3.787	DPA	-10.54	RAP	156.52
ECC	1.2954																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.45	5 46 17	4288.62	-35.05	203.27	34.63	48.86	6 57 46	3688.6	-40.07	195.81
135.55	14 25 9	2733.13	-35.04	79.68	34.62	48.85	15 10 42	2133.1	-40.06	72.23
44.45	5 46 17	4288.62	-35.05	203.27	34.63	48.86	6 57 46	3688.6	-40.07	195.81
135.55	14 25 9	2733.13	-35.04	79.68	34.62	48.85	15 10 42	2133.1	-40.06	72.23
44.45	5 46 17	4288.62	-35.05	203.27	34.63	48.86	6 57 46	3688.6	-40.07	195.81
135.55	14 25 9	2733.13	-35.04	79.68	34.62	48.85	15 10 42	2133.1	-40.06	72.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.6063	TRA	-.8207	TC3	-7.8130	BAU	1.9558	SGT	9266.9	SGR	2581.1	SG3	1454.3	ST	6256.5	SR	1668.7	SS	3103.9
RDE	1.2330	RRA	.0074	RC3	-2.3250	FAU	.34031	RRT	.9783	RRF	.9944	RTF	.9710	CRT	.9960	CRS	-.9999	CST	-.9967
FDE	7.0076	FRA	-.0848	FC	-16.4166	BSP	32794	SGB	9619.6	R23	.2005	R13	.9740	LSA	7176.2	MSA	255.5	SSA	14.1
BDE	4.7685	BRA	.8208	BC3	8.1516	FSP	5032	SG1	9605.8	SG2	515.5	THA	15.29	EL1	6473.6	EL2	144.1	ALF	14.88

LAUNCH DATE DEC 18 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 682.247 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.004	GAL	3.25	AZL	85.55	HCA	200.49	SMA	185.86	ECC	.21529	INC	4.4492
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.084	GAP	-9.24	AZP	94.17	TAL	18.49	TAP	218.98	RCA	145.84	APO	225.87
RC	297.989	GL	38.00	GP	-19.35	ZAL	61.08	ZAP	58.22	ETS	166.67	ZAE	84.45	ETE	177.06	ZAC	65.16	ETC	256.89

V1	30.269	V2	25.782	CLP	56.07														

PLANETOCENTRIC CONIC

C3	17.238	VHL	4.152	DLA	50.67	RAL	158.10	RAD	6567.7	VEL	11.774	PTH	2.08	VHP	3.801	DPA	-9.41	RAP	157.03
ECC	1.2837																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.04	5 51 55	4267.83	-34.76	200.78	33.47	50.48	7 3 2	3667.8	-39.59	193.19
133.96	14 20 50	2735.24	-34.75	79.60	33.46	50.47	15 6 25	2135.2	-39.58	72.01
46.04	5 51 55	4267.83	-34.76	200.78	33.47	50.48	7 3 2	3667.8	-39.59	193.19
133.96	14 20 50	2735.24	-34.75	79.60	33.46	50.47	15 6 25	2135.2	-39.58	72.01
46.04	5 51 55	4267.83	-34.76	200.78	33.47	50.48	7 3 2	3667.8	-39.59	193.19
133.96	14 20 50	2735.24	-34.75	79.60	33.46	50.47	15 6 25	2135.2	-39.58	72.01

DIFFERENTIAL CORRECTIONS

TDE	4.5143	TRA	-.8329	TC3	-8.2929	BAU	1.9790
RDE	1.1159	RRA	.0140	RC3	-2.2280	FAU	.33587
FDE	6.6337	FRA	-.0631	FC	-16.8680	BSP	33338
BDE	4.6502	BRA	.8330	BC3	8.5870	FSP	4982

MID-COURSE EXECUTION ACCURACY

SGT	9461.5	SGR	2407.3	SG3	1445.8		
RRT	.9781	RRF	.9931	RTF	.9710		
SGB	9762.9	R23	.1965	R13	.9735		
SG1	9750.8	SG2	485.9	THA	14.01		

ORBIT DETERMINATION ACCURACY

ST	6256.8	SR	1540.9	SS	3009.6		
CRT	.9957	CRS	-.9999	CST	-.9965		
LSA	7107.4	MSA	254.2	SSA	15.2		
EL1	6442.3	EL2	139.0	ALF	13.78		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 318.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 686.519 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.010	GAL	3.16	AZL	85.73	HCA	201.69	SMA	185.96	ECC	.21531	INC	4.2699
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.129	GAP	-9.35	AZP	93.97	TAL	17.97	TAP	219.65	RCA	145.92	APO	226.00
RC	299.061	GL	37.03	GP	-18.22	ZAL	61.32	ZAP	56.91	ETS	166.85	ZAE	83.04	ETE	176.75	ZAC	66.27	ETC	256.99

V1	30.269	V2	25.815	CLP	54.92														

PLANETOCENTRIC CONIC

C3	16.608	VHL	4.075	DLA	49.48	RAL	158.38	RAD	6567.7	VEL	11.747	PTH	2.07	VHP	3.821	DPA	-8.39	RAP	157.52
ECC	1.2733																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.56	5 57 53	4247.71	-34.44	198.42	32.52	51.98	7 8 40	3647.7	-39.10	190.71
132.44	14 17 1	2738.22	-34.42	79.58	32.51	51.96	15 2 40	2138.2	-39.09	71.88
47.56	5 57 53	4247.71	-34.44	198.42	32.52	51.98	7 8 40	3647.7	-39.10	190.71
132.44	14 17 1	2738.22	-34.42	79.58	32.51	51.96	15 2 40	2138.2	-39.09	71.88
47.56	5 57 53	4247.71	-34.44	198.42	32.52	51.98	7 8 40	3647.7	-39.10	190.71
132.44	14 17 1	2738.22	-34.42	79.58	32.51	51.96	15 2 40	2138.2	-39.09	71.88

DIFFERENTIAL CORRECTIONS

TDE	4.4284	TRA	-.8392	TC3	-8.7745	BAU	2.0049
RDE	1.0148	RRA	.0216	RC3	-2.1316	FAU	.33042
FDE	6.2667	FRA	-.0298	FC	-17.2235	BSP	33824

MID-COURSE EXECUTION ACCURACY

SGT	9654.4	SGR	2248.6	SG3	1432.0		
RRT	.9776	RRF	.9916	RTF	.9710		
SGB	9912.8	R23	.1912	R13	.9731		

ORBIT DETERMINATION ACCURACY

ST	6253.3	SR	1427.7	SS	2912.1		
CRT	.9953	CRS	-.9999	CST	-.9963		
LSA	7039.8	MSA	253.7	SSA	16.2		

HELIOCENTRIC CONIC DISTANCE 690.798 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.016	GAL	3.06	AZL	85.89	HCA	202.89	SMA	186.06	ECC	.21535	INC	4.1082
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.174	GAP	-9.46	AZP	93.79	TAL	17.43	TAP	220.32	RCA	145.99	APO	226.13
RC	300.120	GL	36.14	GP	-17.20	ZAL	61.63	ZAP	55.65	ETS	167.03	ZAE	81.65	ETE	176.48	ZAC	67.29	ETC	257.08

V1	30.269	V2	25.847	CLP	53.80														

PLANETOCENTRIC CONIC

C3	16.042	VHL	4.005	DLA	48.35	RAL	158.74	RAD	6567.6	VEL	11.723	PTH	2.07	VHP	3.846	DPA	-7.48	RAP	158.00
ECC	1.2640																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.01	6 4 11	4228.09	-34.09	196.15	31.75	53.37	7 14 39	3628.1	-38.60	188.35
130.99	14 13 39	2742.01	-34.08	79.64	31.74	53.35	14 59 21	2142.0	-38.59	71.85
49.01	6 4 11	4228.09	-34.09	196.15	31.75	53.37	7 14 39	3628.1	-38.60	188.35
130.99	14 13 39	2742.01	-34.08	79.64	31.74	53.35	14 59 21	2142.0	-38.59	71.85
49.01	6 4 11	4228.09	-34.09	196.15	31.75	53.37	7 14 39	3628.1	-38.60	188.35
130.99	14 13 39	2742.01	-34.08	79.64	31.74	53.35	14 59 21	2142.0	-38.59	71.85

DIFFERENTIAL CORRECTIONS

TDE	4.3531	TRA	-.8342	TC3	-9.2476	BAU	2.0308
RDE	.9281	RRA	.0309	RC3	-2.0348	FAU	.32388
FDE	5.9166	FRA	.0214	FC	-17.4785	BSP	34415
BDE	4.4510	BRA	.8348	BC3	9.4688	FSP	4833

MID-COURSE EXECUTION ACCURACY

SGT	9842.7	SGR	2103.3	SG3	1413.6		
RRT	.9768	RRF	.9898	RTF	.9709		
SGB	10064.9	R23	.1848	R13	.9726		
SG1	10055.3	SG2	440.7	THA	11.81		

ORBIT DETERMINATION ACCURACY

ST	6254.4	SR	1328.7	SS	2816.1		
CRT	.9949	CRS	-.9998	CST	-.9960		
LSA	6982.0	MSA	254.0	SSA	17.3		
EL1	6392.6	EL2	131.4	ALF	11.94		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 322.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 695.084 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.022	GAL	2.97	AZL	86.04	HCA	204.09	SMA	186.17	ECC	.21540	INC	3.9614
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.218	GAP	-9.57	AZP	93.62	TAL	16.88	TAP	220.97	RCA	146.07	APO	226.27
RC	301.167	GL	35.32	GP	-16.26	ZAL	62.02	ZAP	54.44	ETS	167.20	ZAE	80.28	ETE	176.26	ZAC	68.23	ETC	257.15

V1	30.269	V2	25.879	CLP	52.71														

PLANETOCENTRIC CONIC

C3	15.529	VHL	3.941	DLA	47.28	RAL	159.19	RAD	6567.6	VEL	11.701	PTH	2.06	VHP	3.876	DPA	-6.66	RAP	158.48
ECC	1.2556																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.41	6 10 48	4208.81	-33.73	193.96	31.14	54.66	7 20 57	3608.8	-38.09	186.09
129.59	14 10 38	2746.55	-33.72	79.77	31.13	54.65	14 56 25	2146.6	-38.08	71.90
50.41	6 10 48	4208.81	-33.73	193.96	31.14	54.66	7 20 57	3608.8	-38.09	186.09
129.59	14 10 38	2746.55	-33.72	79.77	31.13	54.65	14 56 25	2146.6	-38.08	71.90
50.41	6 10 48	4208.81	-33.73	193.96	31.14	54.66	7 20 57	3608.8	-38.09	186.09
129.59	14 10 38	2746.55	-33.72	79.77	31.13	54.65	14 56 25	2146.6	-38.08	71.90

DIFFERENTIAL CORRECTIONS

TDE	4.2823	TRA	-.8225	TC3	-9.7224	BAU	2.0583
RDE	.8524	RRA	.0404	RC3	-1.9409	FAU	.31685
FDE	5.5770	FRA	.0789	FC	-17.6645	BSP	34965
BDE	4.3663	BRA	.8235	BC3	9.9142	FSP	4742

MID-COURSE EXECUTION ACCURACY

SGT	10029.3	SGR	1970.7	SG3	1392.1		
RRT	.9758	RRF	.9877	RTF	.9707		
SGB	10221.1	R23	.1772	R13	.9722		
SG1	10212.3	SG2	423.6	THA	10.87		

ORBIT DETERMINATION ACCURACY

ST	6252.9	SR	1240.5	SS	2718.9		
CRT	.9944	CRS	-.9998	CST	-.9958		
LSA	6925.7	MSA	254.3	SSA	18.3		
EL1	6373.5	EL2	128.3	ALF	11.16		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 699.377 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.028 GAL 2.87 AZL 86.17 HCA 205.30 SMA 186.27 ECC .21546 INC 3.8274 V1 30.269
RP 211.73 LAP -1.63 LOP 291.36 VP 23.262 GAP -9.68 AZP 93.46 TAL 16.31 TAP 221.61 RCA 146.14 APO 226.41 V2 25.911
RC 302.203 GL 34.57 GP -15.40 ZAL 62.47 ZAP 53.27 ETS 167.37 ZAE 78.94 ETE 176.06 ZAC 69.09 ETC 257.20 CLP 51.66

PLANETOCENTRIC CONIC

C3 15.060 VHL 3.881 DLA 46.25 RAL 159.72 RAD 6567.6 VEL 11.681 PTH 2.05 VHP 3.909 DPA -5.94 RAP 158.95 ECC 1.2479

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.77	6 17 44	4189.73	-33.36	191.84	30.67	55.88	7 27 34	3589.7	-37.57	183.89
128.23	14 7 55	2751.85	-33.35	79.96	30.66	55.87	14 53 47	2151.9	-37.56	72.03
51.77	6 17 44	4189.73	-33.36	191.84	30.67	55.88	7 27 34	3589.7	-37.57	183.89
128.23	14 7 55	2751.85	-33.35	79.96	30.66	55.87	14 53 47	2151.9	-37.56	72.03
51.77	6 17 44	4189.73	-33.36	191.84	30.67	55.88	7 27 34	3589.7	-37.57	183.89
128.23	14 7 55	2751.85	-33.35	79.96	30.66	55.87	14 53 47	2151.9	-37.56	72.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 4.2157 TRA -.8027 TC-10.1939 BAU 2.0859 SGT10211.6 SGR 1848.9 SG3 1367.7 ST 6249.8 SR 1162.1 SS 2621.3
RDE .7862 RRA .0504 RC3-1.8490 FAU .30927 RRT .9743 RRF .9851 RTF .9705 CRT .9939 CRS -.9997 CST -.9954
FDE 5.2497 FRA .1460 FC-17.7785 BSP 35550 SGB10377.6 R23 .1688 R13 .9717 LSA 6871.4 MSA 255.1 SSA 19.3
BDE 4.2884 BRA .8043 BC310.3602 FSP 4647 SG110369.5 SG2 410.4 THA 10.02 EL1 6355.7 EL2 125.6 ALF 10.47

LAUNCH DATE DEC 18 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 703.676 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.034 GAL 2.77 AZL 86.30 HCA 206.51 SMA 186.38 ECC .21554 INC 3.7047 V1 30.269
RP 211.47 LAP -1.65 LOP 292.57 VP 23.305 GAP -9.78 AZP 93.32 TAL 15.74 TAP 222.24 RCA 146.21 APO 226.56 V2 25.941
RC 303.228 GL 33.88 GP -14.62 ZAL 63.00 ZAP 52.14 ETS 167.53 ZAE 77.63 ETE 175.90 ZAC 69.90 ETC 257.24 CLP 50.63

PLANETOCENTRIC CONIC

C3 14.629 VHL 3.825 DLA 45.26 RAL 160.32 RAD 6567.6 VEL 11.663 PTH 2.05 VHP 3.945 DPA -5.28 RAP 159.43 ECC 1.2408

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.08	6 24 58	4170.79	-32.97	189.76	30.33	57.03	7 34 29	3570.8	-37.05	181.77
126.92	14 5 27	2757.84	-32.96	80.22	30.32	57.02	14 51 24	2157.8	-37.04	72.23
53.08	6 24 58	4170.79	-32.97	189.76	30.33	57.03	7 34 29	3570.8	-37.05	181.77
126.92	14 5 27	2757.84	-32.96	80.22	30.32	57.02	14 51 24	2157.8	-37.04	72.23
53.08	6 24 58	4170.79	-32.97	189.76	30.33	57.03	7 34 29	3570.8	-37.05	181.77
126.92	14 5 27	2757.84	-32.96	80.22	30.32	57.02	14 51 24	2157.8	-37.04	72.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 4.1545 TRA -.7739 TC-10.6612 BAU 2.1133 SGT10390.1 SGR 1737.6 SG3 1341.4 ST 6247.8 SR 1092.7 SS 2525.8
RDE .7285 RRA .0606 RC3-1.7595 FAU .30132 RRT .9724 RRF .9822 RTF .9703 CRT .9934 CRS -.9997 CST -.9951
FDE 4.9390 FRA .2198 FC-17.8316 BSP 36181 SGB10534.4 R23 .1594 R13 .9713 LSA 6822.2 MSA 255.9 SSA 20.3
BDE 4.2179 BRA .7762 BC310.8054 FSP 4551 SG110526.8 SG2 399.9 THA 9.25 EL1 6341.4 EL2 123.1 ALF 9.86

LAUNCH DATE DEC 18 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 707.982 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.041 GAL 2.67 AZL 86.41 HCA 207.72 SMA 186.50 ECC .21563 INC 3.5916 V1 30.269
RP 211.20 LAP -1.67 LOP 293.79 VP 23.348 GAP -9.88 AZP 93.18 TAL 15.15 TAP 222.87 RCA 146.28 APO 226.71 V2 25.971
RC 304.242 GL 33.23 GP -13.90 ZAL 63.58 ZAP 51.05 ETS 167.69 ZAE 76.34 ETE 175.76 ZAC 70.65 ETC 257.27 CLP 49.64

PLANETOCENTRIC CONIC

C3 14.231 VHL 3.772 DLA 44.31 RAL 160.98 RAD 6567.6 VEL 11.645 PTH 2.04 VHP 3.983 DPA -4.70 RAP 159.91 ECC 1.2342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.38	6 32 32	4151.76	-32.58	187.72	30.11	58.13	7 41 44	3551.8	-36.52	179.68
125.62	14 3 8	2764.65	-32.57	80.54	30.10	58.11	14 49 13	2164.6	-36.51	72.51
54.38	6 32 32	4151.76	-32.58	187.72	30.11	58.13	7 41 44	3551.8	-36.52	179.68
125.62	14 3 8	2764.65	-32.57	80.54	30.10	58.11	14 49 13	2164.6	-36.51	72.51
54.38	6 32 32	4151.76	-32.58	187.72	30.11	58.13	7 41 44	3551.8	-36.52	179.68
125.62	14 3 8	2764.65	-32.57	80.54	30.10	58.11	14 49 13	2164.6	-36.51	72.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 4.0941 TRA -.7398 TC-11.1291 BAU 2.1412 SGT10565.8 SGR 1634.7 SG3 1312.9 ST 6241.0 SR 1030.3 SS 2430.0
RDE .6773 RRA .0705 RC3-1.6723 FAU .29301 RRT .9701 RRF .9786 RTF .9701 CRT .9929 CRS -.9996 CST -.9946
FDE 4.6396 FRA .2960 FC-17.8247 BSP 36767 SGB10691.5 R23 .1494 R13 .9709 LSA 6771.3 MSA 257.0 SSA 21.2
BDE 4.1497 BRA .7432 BC311.2541 FSP 4444 SG110684.3 SG2 392.5 THA 8.55 EL1 6324.4 EL2 120.9 ALF 9.31

LAUNCH DATE DEC 18 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 712.295 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.048 GAL 2.57 AZL 86.51 HCA 208.94 SMA 186.61 ECC .21573 INC 3.4869 V1 30.269
RP 210.95 LAP -1.69 LOP 295.01 VP 23.390 GAP -9.98 AZP 93.05 TAL 14.54 TAP 223.48 RCA 146.35 APO 226.87 V2 26.001
RC 305.247 GL 32.64 GP -13.23 ZAL 64.23 ZAP 49.99 ETS 167.84 ZAE 75.07 ETE 175.64 ZAC 71.35 ETC 257.29 CLP 48.67

PLANETOCENTRIC CONIC

C3 13.862 VHL 3.723 DLA 43.38 RAL 161.70 RAD 6567.5 VEL 11.630 PTH 2.04 VHP 4.025 DPA -4.19 RAP 160.40 ECC 1.2281

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.65	6 40 27	4132.61	-32.17	185.69	29.98	59.17	7 49 19	3532.6	-35.99	177.62
124.35	14 0 59	2772.22	-32.16	80.93	29.98	59.15	14 47 11	2172.2	-35.98	72.86
55.65	6 40 27	4132.61	-32.17	185.69	29.98	59.17	7 49 19	3532.6	-35.99	177.62
124.35	14 0 59	2772.22	-32.16	80.93	29.98	59.15	14 47 11	2172.2	-35.98	72.86
55.65	6 40 27	4132.61	-32.17	185.69	29.98	59.17	7 49 19	3532.6	-35.99	177.62
124.35	14 0 59	2772.22	-32.16	80.93	29.98	59.15	14 47 11	2172.2	-35.98	72.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 4.0338 TRA -.6991 TC-11.5999 BAU 2.1697 SGT10739.3 SGR 1540.6 SG3 1283.7 ST 6228.9 SR 974.2 SS 2334.0
RDE .6317 RRA .0802 RC3-1.5887 FAU .28467 RRT .9672 RRF .9745 RTF .9698 CRT .9923 CRS -.9996 CST -.9941
FDE 4.3513 FRA .3763 FC-17.7793 BSP 37344 SGB10849.3 R23 .1391 R13 .9705 LSA 6717.7 MSA 258.5 SSA 22.2
BDE 4.0829 BRA .7037 BC311.7082 FSP 4335 SG110842.3 SG2 387.9 THA 7.91 EL1 6303.5 EL2 118.9 ALF 8.83

LAUNCH DATE DEC 18 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 716.614 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.054	GAL	2.46	AZL	86.61	HCA	210.15	SMA	186.73	ECC	.21586	INC	3.3898	V1	30.269
RP	210.70	LAP	-1.70	LOP	296.23	VP	23.431	GAP	-10.08	AZP	92.93	TAL	13.93	TAP	224.08	RCA	146.42	APO	227.03	V2	26.029
RC	306.243	GL	32.08	GP	-12.62	ZAL	64.93	ZAP	48.98	ETS	167.98	ZAE	73.83	ETE	175.54	ZAC	72.01	ETC	257.30	CLP	47.73

PLANETOCENTRIC CONIC

C3	13.517	VHL	3.677	DLA	42.47	RAL	162.48	RAD	6567.5	VEL	11.615	PTH	2.04	VHP	4.068	DPA	-3.73	RAP	160.89	ECC	1.2225

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.92	6 48 41	4113.22	-31.75	183.68	29.96	60.16	7 57 14	3513.2	-35.45	175.58
123.08	13 58 55	2780.62	-31.74	81.39	29.95	60.15	14 45 16	2180.6	-35.44	73.29
56.92	6 48 41	4113.22	-31.75	183.68	29.96	60.16	7 57 14	3513.2	-35.45	175.58
123.08	13 58 55	2780.62	-31.74	81.39	29.95	60.15	14 45 16	2180.6	-35.44	73.29
56.92	6 48 41	4113.22	-31.75	183.68	29.96	60.16	7 57 14	3513.2	-35.45	175.58
123.08	13 58 55	2780.62	-31.74	81.39	29.95	60.15	14 45 16	2180.6	-35.44	73.29

DIFFERENTIAL CORRECTIONS

TDE	3.9731	TRA	-.6526	TC-12.0747	BAU	2.1991	
RDE	.5910	RRA	.0895	RC3-1.5089	FAU	.27642	
FDE	4.0726	FRA	.4555	FC-17.7035	BSP	37886	
BDE	4.0168	BRA	.6587	BC312.1686	FSP	4217	

MID-COURSE EXECUTION ACCURACY

SGT10911.9	SGR	1454.3	SG3	1254.0			
RRT	.9637	RRF	.9698	RTF	.9695		
SGB11008.4	R23	.1285	R13	.9701			
SG111001.7	SG2	385.1	THA	7.33			

ORBIT DETERMINATION ACCURACY

ST	6211.1	SR	923.3	SS	2237.1		
CRT	.9918	CRS	-.9996	CST	-.9936		
LSA	6660.8	MSA	259.9	SSA	23.1		
EL1	6278.2	EL2	116.8	ALF	8.39		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 720.938 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.061	GAL	2.35	AZL	86.70	HCA	211.38	SMA	186.85	ECC	.21600	INC	3.2994	V1	30.269
RP	210.46	LAP	-1.72	LOP	297.45	VP	23.472	GAP	-10.17	AZP	92.82	TAL	13.30	TAP	224.67	RCA	146.49	APO	227.21	V2	26.057
RC	307.229	GL	31.56	GP	-12.05	ZAL	65.69	ZAP	47.99	ETS	168.12	ZAE	72.61	ETE	175.46	ZAC	72.63	ETC	257.30	CLP	46.82

PLANETOCENTRIC CONIC

C3	13.196	VHL	3.633	DLA	41.58	RAL	163.30	RAD	6567.5	VEL	11.601	PTH	2.03	VHP	4.113	DPA	-3.33	RAP	161.39	ECC	1.2172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.18	6 57 19	4093.39	-31.32	181.66	30.02	61.12	8 5 33	3493.4	-34.90	173.53
121.82	13 56 53	2789.99	-31.31	81.92	30.01	61.11	14 43 23	2190.0	-34.89	73.80
58.18	6 57 19	4093.39	-31.32	181.66	30.02	61.12	8 5 33	3493.4	-34.90	173.53
121.82	13 56 53	2789.99	-31.31	81.92	30.01	61.11	14 43 23	2190.0	-34.89	73.80
58.18	6 57 19	4093.39	-31.32	181.66	30.02	61.12	8 5 33	3493.4	-34.90	173.53
121.82	13 56 53	2789.99	-31.31	81.92	30.01	61.11	14 43 23	2190.0	-34.89	73.80

DIFFERENTIAL CORRECTIONS

TDE	3.9145	TRA	-.5985	TC-12.5426	BAU	2.2271	
RDE	.5549	RRA	.0986	RC3-1.4302	FAU	.26785	
FDE	3.8103	FRA	.5385	FC-17.5727	BSP	38482	
BDE	3.9536	BRA	.6065	BC312.6238	FSP	4108	

MID-COURSE EXECUTION ACCURACY

SGT11079.3	SGR	1374.4	SG3	1223.1			
RRT	.9595	RRF	.9643	RTF	.9692		
SGB11164.2	R23	.1180	R13	.9697			
SG111157.6	SG2	384.6	THA	6.80			

ORBIT DETERMINATION ACCURACY

ST	6191.8	SR	878.0	SS	2143.5		
CRT	.9912	CRS	-.9995	CST	-.9929		
LSA	6605.6	MSA	261.7	SSA	24.1		
EL1	6252.7	EL2	114.9	ALF	8.00		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 725.265 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.068	GAL	2.24	AZL	86.79	HCA	212.60	SMA	186.97	ECC	.21615	INC	3.2149	V1	30.269
RP	210.22	LAP	-1.73	LOP	298.68	VP	23.512	GAP	-10.26	AZP	92.71	TAL	12.65	TAP	225.26	RCA	146.55	APO	227.38	V2	26.085
RC	308.206	GL	31.07	GP	-11.52	ZAL	66.51	ZAP	47.03	ETS	168.25	ZAE	71.42	ETE	175.39	ZAC	73.21	ETC	257.30	CLP	45.93

PLANETOCENTRIC CONIC

C3	12.895	VHL	3.591	DLA	40.70	RAL	164.18	RAD	6567.5	VEL	11.588	PTH	2.03	VHP	4.160	DPA	-2.97	RAP	161.91	ECC	1.2122

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.45	7 6 24	4072.98	-30.87	179.62	30.17	62.04	8 14 17	3473.0	-34.34	171.48
120.55	13 54 50	2800.44	-30.86	82.54	30.16	62.03	14 41 30	2200.4	-34.33	74.40
59.45	7 6 24	4072.98	-30.87	179.62	30.17	62.04	8 14 17	3473.0	-34.34	171.48
120.55	13 54 50	2800.44	-30.86	82.54	30.16	62.03	14 41 30	2200.4	-34.33	74.40
59.45	7 6 24	4072.98	-30.87	179.62	30.17	62.04	8 14 17	3473.0	-34.34	171.48
120.55	13 54 50	2800.44	-30.86	82.54	30.16	62.03	14 41 30	2200.4	-34.33	74.40

DIFFERENTIAL CORRECTIONS

TDE	3.8754	TRA	-.5178	TC-12.9506	BAU	2.2445	
RDE	.5257	RRA	.1108	RC3-1.3432	FAU	.25744	
FDE	3.5933	FRA	.6592	FC-17.2842	BSP	39521	
BDE	3.9109	BRA	.5295	BC313.0200	FSP	4066	

MID-COURSE EXECUTION ACCURACY

SGT11221.8	SGR	1299.5	SG3	1187.4			
RRT	.9536	RRF	.9579	RTF	.9687		
SGB11296.8	R23	.1100	R13	.9691			
SG111290.1	SG2	389.0	THA	6.31			

ORBIT DETERMINATION ACCURACY

ST	6198.4	SR	842.3	SS	2070.6		
CRT	.9907	CRS	-.9995	CST	-.9920		
LSA	6583.6	MSA	267.8	SSA	24.5		
EL1	6254.3	EL2	113.4	ALF	7.67		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 729.602 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.075	GAL	2.13	AZL	86.86	HCA	213.83	SMA	187.09	ECC	.21633	INC	3.1356	V1	30.269
RP	209.99	LAP	-1.75	LOP	299.90	VP	23.551	GAP	-10.35	AZP	92.61	TAL	12.00	TAP	225.83	RCA	146.62	APO	227.56	V2	26.111
RC	309.174	GL	30.60	GP	-11.03	ZAL	67.38	ZAP	46.11	ETS	168.38	ZAE	70.25	ETE	175.33	ZAC	73.77	ETC	257.28	CLP	45.06

PLANETOCENTRIC CONIC

C3	12.613	VHL	3.551	DLA	39.83	RAL	165.11	RAD	6567.5	VEL	11.576	PTH	2.02	VHP	4.209	DPA	-2.66	RAP	162.43	ECC	1.2076

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.73	7 15 54	4051.90	-30.41	177.55	30.39	62.93	8 23 25	3451.9	-33.77	169.39
119.27	13 52 42	2812.04	-30.40	83.25	30.38	62.92	14 39 34	2212.0	-33.76	75.10
60.73	7 15 54	4051.90	-30.41	177.55	30.39	62.93	8 23 25	3451.9	-33.77	169.39
119.27	13 52 42	2812.04	-30.40	83.25	30.38	62.92	14 39 34	2212.0	-33.76	75.10
60.73	7 15 54	4051.90	-30.41	177.55	30.39	62.93	8 23 25	3451.9	-33.77	169.39
119.27	13 52 42	2812.04	-30.40	83.25	30.38	62.92	14 39 34	2212.0	-33.76	75.10

DIFFERENTIAL CORRECTIONS

TDE	3.8063	TRA	-.4595	TC-13.4436	BAU	2.2771	
RDE	.4952	RRA	.1176	RC3-1.2750	FAU	.24984	
FDE	3.3373	FRA	.7247	FC-17.1488	BSP	39886	
BDE	3.8384	BRA	.4743	BC313.5039	FSP	3921	

MID-COURSE EXECUTION ACCURACY

SGT11393.9	SGR	1232.7	SG3	1158.1			
RRT	.9480	RRF	.9507	RTF	.9684		
SGB11460.4	R23	.0992	R13	.9688			
SG111453.8	SG2	390.2	THA	5.86			

ORBIT DETERMINATION ACCURACY

ST	6154.2	SR	802.8	SS	1969.4		
CRT	.9902	CRS	-.9994	CST	-.9911		
LSA	6505.8	MSA	268.1	SSA	25.6		
EL1	6205.4	EL2	111.2	ALF	7.36		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 733.944 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.082	GAL	2.01	AZL	86.94	HCA	215.06	SMA	187.21	ECC	.21652	INC	3.0612	V1	30.269
RP	209.77	LAP	-1.76	LOP	301.14	VP	23.590	GAP	-10.44	AZP	92.51	TAL	11.33	TAP	226.39	RCA	146.68	APO	227.75	V2	26.137
RC	310.132	GL	30.16	GP	-10.57	ZAL	68.30	ZAP	45.21	ETS	168.50	ZAE	69.10	ETE	175.28	ZAC	74.29	ETC	257.27	CLP	44.22

PLANETOCENTRIC CONIC

C3	12.349	VHL	3.514	DLA	38.96	RAL	166.07	RAD	6567.5	VEL	11.564	PTH	2.02	VHP	4.259	DPA	-2.40	RAP	162.96	ECC	1.2032

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.04	7 25 53	4029.93	-29.94	175.43	30.69	63.80	8 33 3	3429.9	-33.19	167.27
117.96	13 50 26	2824.99	-29.92	84.06	30.68	63.79	14 37 31	2225.0	-33.18	75.90
62.04	7 25 53	4029.93	-29.94	175.43	30.69	63.80	8 33 3	3429.9	-33.19	167.27
117.96	13 50 26	2824.99	-29.92	84.06	30.68	63.79	14 37 31	2225.0	-33.18	75.90
62.04	7 25 53	4029.93	-29.94	175.43	30.69	63.80	8 33 3	3429.9	-33.19	167.27
117.96	13 50 26	2824.99	-29.92	84.06	30.68	63.79	14 37 31	2225.0	-33.18	75.90

DIFFERENTIAL CORRECTIONS

TDE	3.7391	TRA	-.3912	TC-13.9252	BAU	2.3075	
RDE	.4681	RRA	.1248	RC3-1.2073	FAU	.24202	
FDE	3.0967	FRA	.7959	FC-16.9677	BSP	40323	
BDE	3.7683	BRA	.4106	BC313.9774	FSP	3786	

MID-COURSE EXECUTION ACCURACY

SGT11559.5	SGR	1170.9	SG3	1128.1			
RRT	.9415	RRF	.9425	RTF	.9681		
SGB11618.6	R23	.0889	R13	.9684			
SG111612.0	SG2	392.8	THA	5.45			

ORBIT DETERMINATION ACCURACY

ST	6108.5	SR	767.6	SS	1871.7		
CRT	.9897	CRS	-.9993	CST	-.9901		
LSA	6429.1	MSA	269.2	SSA	26.6		
EL1	6155.6	EL2	108.9	ALF	7.09		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 738.290 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.089	GAL	1.89	AZL	87.01	HCA	216.29	SMA	187.34	ECC	.21674	INC	2.9910	V1	30.269
RP	209.55	LAP	-1.77	LOP	302.37	VP	23.628	GAP	-10.53	AZP	92.41	TAL	10.65	TAP	226.94	RCA	146.74	APO	227.94	V2	26.162
RC	311.080	GL	29.74	GP	-10.14	ZAL	69.27	ZAP	44.34	ETS	168.61	ZAE	67.97	ETE	175.23	ZAC	74.79	ETC	257.24	CLP	43.40

PLANETOCENTRIC CONIC

C3	12.101	VHL	3.479	DLA	38.10	RAL	167.09	RAD	6567.5	VEL	11.554	PTH	2.02	VHP	4.311	DPA	-2.17	RAP	163.50	ECC	1.1992

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.37	7 36 27	4006.87	-29.44	173.25	31.05	64.65	8 43 14	3406.9	-32.59	165.08
116.63	13 47 57	2839.47	-29.43	84.99	31.04	64.63	14 35 16	2239.5	-32.58	76.82
63.37	7 36 27	4006.87	-29.44	173.25	31.05	64.65	8 43 14	3406.9	-32.59	165.08
116.63	13 47 57	2839.47	-29.43	84.99	31.04	64.63	14 35 16	2239.5	-32.58	76.82
63.37	7 36 27	4006.87	-29.44	173.25	31.05	64.65	8 43 14	3406.9	-32.59	165.08
116.63	13 47 57	2839.47	-29.43	84.99	31.04	64.63	14 35 16	2239.5	-32.58	76.82

DIFFERENTIAL CORRECTIONS

TDE	3.6721	TRA	-.3155	TC-14.4007	BAU	2.3370	
RDE	.4440	RRA	.1318	RC3-1.1406	FAU	.23409	
FDE	2.8722	FRA	.8684	FC-16.7474	BSP	40790	
BDE	3.6989	BRA	.3419	BC314.4458	FSP	3661	

MID-COURSE EXECUTION ACCURACY

SGT11721.7	SGR	1113.8	SG3	1097.8			
RRT	.9338	RRF	.9332	RTF	.9679		
SGB11774.5	R23	.0793	R13	.9681			
SG111767.8	SG2	397.0	THA	5.08			

ORBIT DETERMINATION ACCURACY

ST	6058.9	SR	736.4	SS	1778.4		
CRT	.9893	CRS	-.9992	CST	-.9889		
LSA	6351.5	MSA	270.7	SSA	27.5		
EL1	6102.6	EL2	106.6	ALF	6.86		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 742.641 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.097	GAL	1.77	AZL	87.08	HCA	217.53	SMA	187.47	ECC	.21697	INC	2.9247	V1	30.269
RP	209.34	LAP	-1.78	LOP	303.61	VP	23.665	GAP	-10.61	AZP	92.32	TAL	9.96	TAP	227.48	RCA	146.79	APO	228.14	V2	26.186
RC	312.019	GL	29.34	GP	-9.75	ZAL	70.30	ZAP	43.49	ETS	168.72	ZAE	66.86	ETE	175.20	ZAC	75.27	ETC	257.22	CLP	42.60

PLANETOCENTRIC CONIC

C3	11.869	VHL	3.445	DLA	37.23	RAL	168.14	RAD	6567.5	VEL	11.544	PTH	2.01	VHP	4.364	DPA	-1.97	RAP	164.06	ECC	1.1953

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.75	7 47 38	3982.40	-28.93	170.97	31.48	65.48	8 54 1	3382.4	-31.98	162.81
115.25	13 45 10	2855.78	-28.92	86.05	31.47	65.46	14 32 45	2255.8	-31.97	77.88
64.75	7 47 38	3982.40	-28.93	170.97	31.48	65.48	8 54 1	3382.4	-31.98	162.81
115.25	13 45 10	2855.78	-28.92	86.05	31.47	65.46	14 32 45	2255.8	-31.97	77.88
64.75	7 47 38	3982.40	-28.93	170.97	31.48	65.48	8 54 1	3382.4	-31.98	162.81
115.25	13 45 10	2855.78	-28.92	86.05	31.47	65.46	14 32 45	2255.8	-31.97	77.88

DIFFERENTIAL CORRECTIONS

TDE	3.6052	TRA	-.2312	TC-14.8641	BAU	2.3648	
RDE	.4223	RRA	.1388	RC3-1.0745	FAU	.22604	
FDE	2.6582	FRA	.9427	FC-16.4877	BSP	41306	
BDE	3.6299	BRA	.2696	BC314.9028	FSP	3544	

MID-COURSE EXECUTION ACCURACY

SGT11877.6	SGR	1060.9	SG3	1066.9			
RRT	.9249	RRF	.9226	RTF	.9675		
SGB11924.9	R23	.0704	R13	.9677			
SG111918.1	SG2	402.1	THA	4.73			

ORBIT DETERMINATION ACCURACY

ST	6005.4	SR	708.1	SS	1686.4		
CRT	.9890	CRS	-.9989	CST	-.9874		
LSA	6271.8	MSA	272.8	SSA	28.4		
EL1	6046.1	EL2	104.1	ALF	6.65		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 746.997 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.104	GAL	1.65	AZL	87.14	HCA	218.76	SMA	187.60	ECC	.21722	INC	2.8618	V1	30.269
RP	209.14	LAP	-1.79	LOP	304.84	VP	23.701	GAP	-10.70	AZP	92.23	TAL	9.25	TAP	228.01	RCA	146.85	APO	228.35	V2	26.209
RC	312.950	GL	28.95	GP	-9.37	ZAL	71.37	ZAP	42.67	ETS	168.82	ZAE	65.77	ETE	175.17	ZAC	75.73	ETC	257.19	CLP	41.82

PLANETOCENTRIC CONIC

C3	11.652	VHL	3.414	DLA	36.36	RAL	169.23	RAD	6567.4	VEL	11.534	PTH	2.01	VHP	4.418	DPA	-1.82	RAP	164.62	ECC	1.1918

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.18	7 59 32	3956.33	-28.40	168.59	31.97	66.28	9 5 28	3356.3	-31.35	160.43
113.82	13 41 59	2874.14	-28.39	87.26	31.97	66.27	14 29 53	2274.1	-31.34	79.10
66.18	7 59 32	3956.33	-28.40	168.59	31.97	66.28	9 5 28	3356.3	-31.35	160.43
113.82	13 41 59	2874.14	-28.39	87.26	31.97	66.27	14 29 53	2274.1	-31.34	79.10
66.18	7 59 32	3956.33	-28.40	168.59	31.97	66.28	9 5 28	3356.3	-31.35	160.43
113.82	13 41 59	2874.14	-28.39	87.26	31.97	66.27	14 29 53	2274.1	-31.34	79.10

DIFFERENTIAL CORRECTIONS

TDE	3.5343	TRA	-.1406	TC-15.3258	BAU	2.3927	
RDE	.4026	RRA	.1455	RC3-1.0101	FAU	.21809	
FDE	2.4521	FRA	1.0168	FC-16.2033	BSP	41798	
BDE	3.5571	BRA	.2023	BC315.3591	FSP	3428	

MID-COURSE EXECUTION ACCURACY

SGT12031.4	SGR	1012.0	SG3	1036.1			
RRT	.9145	RRF	.9107	RTF	.9672		
SGB12073.9	R23	.0623	R13	.9673			
SG112067.0	SG2	408.1	THA	4.40			

ORBIT DETERMINATION ACCURACY

ST	5941.2	SR	682.1	SS	1594.6		
CRT	.9887	CRS	-.9986	CST	-.9856		
LSA	6182.9	MSA	275.5	SSA	29.3		
EL1	5979.3	EL2	101.4	ALF	6.48		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 348.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 751.356 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.112	GAL	1.52	AZL	87.20	HCA	220.00	SMA	187.73	ECC	.21750	INC	2.8022	V1	30.269
RP	208.94	LAP	-1.80	LOP	306.09	VP	23.736	GAP	-10.78	AZP	92.15	TAL	8.53	TAP	228.53	RCA	146.90	APO	228.56	V2	26.232
RC	313.871	GL	28.57	GP	-9.03	ZAL	72.50	ZAP	41.87	ETS	168.92	ZAE	64.71	ETE	175.15	ZAC	76.17	ETC	257.15	CLP	41.06

PLANETOCENTRIC CONIC

C3	11.450	VHL	3.384	DLA	35.48	RAL	170.36	RAD	6567.4	VEL	11.526	PTH	2.01	VHP	4.473	DPA	-1.69	RAP	165.20	ECC	1.1884

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.68	8 12 17	3928.11	-27.85	166.07	32.53	67.08	9 17 45	3328.1	-30.70	157.91
112.32	13 38 16	2895.07	-27.84	88.66	32.52	67.06	14 26 31	2295.1	-30.69	80.51
67.68	8 12 17	3928.11	-27.85	166.07	32.53	67.08	9 17 45	3328.1	-30.70	157.91
112.32	13 38 16	2895.07	-27.84	88.66	32.52	67.06	14 26 31	2295.1	-30.69	80.51
67.68	8 12 17	3928.11	-27.85	166.07	32.53	67.08	9 17 45	3328.1	-30.70	157.91
112.32	13 38 16	2895.07	-27.84	88.66	32.52	67.06	14 26 31	2295.1	-30.69	80.51

DIFFERENTIAL CORRECTIONS

TDE	3.4629	TRA	-.0419	TC-15.7771	BAU	2.4195	
RDE	.3850	RRA	.1521	RC3 -.9470	FAU	.21018	
FDE	2.2591	FRA	1.0913	FC-15.8914	BSP	42331	
BDE	3.4842	BRA	.1578	BC315.8054	FSP	3321	

MID-COURSE EXECUTION ACCURACY

SGT	12181.7	SGR	967.3	SG3	1005.5		
RRT	.9028	RRF	.8975	RTF	.9668		
SGB	12220.1	R23	.0551	R13	.9669		
SG1	12213.0	SG2	415.0	THA	4.10		

ORBIT DETERMINATION ACCURACY

ST	5872.2	SR	659.0	SS	1506.7		
CRT	.9886	CRS	-.9981	CST	-.9834		
LSA	6091.7	MSA	278.7	SSA	30.1		
EL1	5908.2	EL2	98.5	ALF	6.33		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 350.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 755.720 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.119	GAL	1.39	AZL	87.25	HCA	221.25	SMA	187.86	ECC	.21780	INC	2.7454	V1	30.269
RP	208.76	LAP	-1.81	LOP	307.33	VP	23.771	GAP	-10.86	AZP	92.06	TAL	7.79	TAP	229.04	RCA	146.95	APO	228.78	V2	26.254
RC	314.784	GL	28.20	GP	-8.70	ZAL	73.67	ZAP	41.09	ETS	169.01	ZAE	63.66	ETE	175.13	ZAC	76.59	ETC	257.11	CLP	40.32

PLANETOCENTRIC CONIC

C3	11.263	VHL	3.356	DLA	34.59	RAL	171.53	RAD	6567.4	VEL	11.517	PTH	2.01	VHP	4.529	DPA	-1.59	RAP	165.79	ECC	1.1854

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.26	8 26 0	3897.35	-27.28	163.37	33.15	67.86	9 30 58	3297.4	-30.03	155.23
110.74	13 33 51	2918.99	-27.27	90.28	33.14	67.85	14 22 30	2319.0	-30.02	82.14
69.26	8 26 0	3897.35	-27.28	163.37	33.15	67.86	9 30 58	3297.4	-30.03	155.23
110.74	13 33 51	2918.99	-27.27	90.28	33.14	67.85	14 22 30	2319.0	-30.02	82.14
69.26	8 26 0	3897.35	-27.28	163.37	33.15	67.86	9 30 58	3297.4	-30.03	155.23
110.74	13 33 51	2918.99	-27.27	90.28	33.14	67.85	14 22 30	2319.0	-30.02	82.14

DIFFERENTIAL CORRECTIONS

TDE	3.3882	TRA	.0609	TC-16.2214	BAU	2.4462	
RDE	.3690	RRA	.1580	RC3 -.8858	FAU	.20248	
FDE	2.0748	FRA	1.1585	FC-15.5638	BSP	42826	
BDE	3.4082	BRA	.1693	BC316.2455	FSP	3209	

MID-COURSE EXECUTION ACCURACY

SGT	12329.7	SGR	926.1	SG3	975.4		
RRT	.8897	RRF	.8828	RTF	.9665		
SGB	12364.5	R23	.0479	R13	.9666		
SG1	12357.3	SG2	421.9	THA	3.83		

ORBIT DETERMINATION ACCURACY

ST	5793.7	SR	637.9	SS	1419.9		
CRT	.9887	CRS	-.9972	CST	-.9809		
LSA	5992.5	MSA	281.4	SSA	30.9		
EL1	5828.0	EL2	95.2	ALF	6.21		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 352.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 760.087 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.127	GAL	1.26	AZL	87.31	HCA	222.49	SMA	188.00	ECC	.21813	INC	2.6913	V1	30.269
RP	208.58	LAP	-1.82	LOP	308.58	VP	23.804	GAP	-10.94	AZP	91.99	TAL	7.05	TAP	229.54	RCA	146.99	APO	229.00	V2	26.274
RC	315.690	GL	27.84	GP	-8.39	ZAL	74.90	ZAP	40.34	ETS	169.10	ZAE	62.63	ETE	175.11	ZAC	77.00	ETC	257.07	CLP	39.60

PLANETOCENTRIC CONIC

C3	11.090	VHL	3.330	DLA	33.69	RAL	172.73	RAD	6567.4	VEL	11.510	PTH	2.00	VHP	4.587	DPA	-1.52	RAP	166.39	ECC	1.1825

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.94	8 40 57	3863.24	-26.68	160.44	33.82	68.63	9 45 20	3263.2	-29.34	152.31
109.06	13 28 31	2946.71	-26.67	92.18	33.81	68.62	14 17 37	2346.7	-29.33	84.05
70.94	8 40 57	3863.24	-26.68	160.44	33.82	68.63	9 45 20	3263.2	-29.34	152.31
109.06	13 28 31	2946.71	-26.67	92.18	33.81	68.62	14 17 37	2346.7	-29.33	84.05
110.00	14 18 26	2794.06	-30.11	81.66	35.17	72.99	15 5 0	2194.1	-32.14	73.04
110.00	12 50 12	3063.89	-23.35	99.70	32.22	64.29	13 41 16	2463.9	-26.61	92.05

DIFFERENTIAL CORRECTIONS

TDE	3.3094	TRA	.1713	TC-16.6565	BAU	2.4726	
RDE	.3543	RRA	.1637	RC3 -.8254	FAU	.19480	
FDE	1.8956	FRA	1.2263	FC-15.2065	BSP	43321	
BDE	3.3283	BRA	.2370	BC316.6769	FSP	3104	

MID-COURSE EXECUTION ACCURACY

SGT	12474.6	SGR	888.0	SG3	945.1		
RRT	.8748	RRF	.8663	RTF	.9661		
SGB	12506.2	R23	.0417	R13	.9662		
SG1	12498.8	SG2	429.4	THA	3.57		

ORBIT DETERMINATION ACCURACY

ST	5704.5	SR	618.3	SS	1332.7		
CRT	.9888	CRS	-.9959	CST	-.9775		
LSA	5883.6	MSA	285.1	SSA	31.8		
EL1	5737.1	EL2	91.7	ALF	6.12		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 764.458 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.134	GAL	1.13	AZL	87.36	HCA	223.74	SMA	188.13	ECC	.21848	INC	2.6397	V1	30.269
RP	208.40	LAP	-1.82	LOP	309.82	VP	23.837	GAP	-11.02	AZP	91.91	TAL	6.29	TAP	230.03	RCA	147.03	APO	229.24	V2	26.294
RC	316.588	GL	27.48	GP	-8.10	ZAL	76.17	ZAP	39.61	ETS	169.18	ZAE	61.62	ETE	175.10	ZAC	77.40	ETC	257.03	CLP	38.90

PLANETOCENTRIC CONIC

C3	10.931	VHL	3.306	DLA	32.77	RAL	173.97	RAD	6567.4	VEL	11.503	PTH	2.00	VHP	4.645	DPA	-1.47	RAP	167.00	ECC	1.1799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.77	8 57 24	3824.78	-26.06	157.21	34.55	69.39	10 1 9	3224.8	-28.62	149.09
107.23	13 21 55	2979.26	-26.05	94.43	34.54	69.38	14 11 34	2379.3	-28.62	86.31
72.77	8 57 24	3824.78	-26.06	157.21	34.55	69.39	10 1 9	3224.8	-28.62	149.09
107.23	13 21 55	2979.26	-26.05	94.43	34.54	69.38	14 11 34	2379.3	-28.62	86.31
110.00	14 53 23	2697.67	-31.82	74.68	36.55	76.80	15 38 21	2097.7	-33.31	65.76
110.00	12 25 6	3154.36	-20.57	105.25	31.85	62.07	13 17 41	2554.4	-24.13	97.92

DIFFERENTIAL CORRECTIONS

TDE	3.2286	TRA	.2884	TC-17.0813	BAU	2.4988	
RDE	.3411	RRA	.1690	RC3 -.7672	FAU	.18739	
FDE	1.7258	FRA	1.2895	FC-14.8409	BSP	43818	
BDE	3.2466	BRA	.3342	BC317.0985	FSP	2998	

MID-COURSE EXECUTION ACCURACY

SGT	12618.9	SGR	853.3	SG3	915.7		
RRT	.8585	RRF	.8484	RTF	.9658		
SGB	12647.7	R23	.0355	R13	.9659		
SG1	12640.1	SG2	436.8	THA	3.33		

ORBIT DETERMINATION ACCURACY

ST	5608.0	SR	600.5	SS	1247.9		
CRT	.9892	CRS	-.9939	CST	-.9735		
LSA	5769.2	MSA	288.6	SSA	32.6		
EL1	5639.4	EL2	87.6	ALF	6.05		

LAUNCH DATE DEC 18 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 768.832 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.142 GAL .99 AZL 87.41 HCA 224.99 SMA 188.27 ECC .21885 INC 2.5902 V1 30.269
RP 208.24 LAP -1.83 LOP 311.07 VP 23.869 GAP -11.10 AZP 91.83 TAL 5.51 TAP 230.50 RCA 147.07 APO 229.47 V2 26.314
RC 317.480 GL 27.13 GP -7.83 ZAL 77.49 ZAP 38.89 ETS 169.25 ZAE 60.62 ETE 175.09 ZAC 77.78 ETC 256.98 CLP 38.22

PLANETOCENTRIC CONIC

C3 10.787 VHL 3.284 DLA 31.84 RAL 175.24 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 4.705 DPA -1.45 RAP 167.62 ECC 1.1775

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.79	9 15 51	3780.37	-25.42	153.55	35.33	70.14	10 18 52	3180.4	-27.89	145.46
105.21	13 13 35	3018.24	-25.41	97.14	35.33	70.13	14 3 53	2418.2	-27.88	89.04
74.79	9 15 51	3780.37	-25.42	153.55	35.33	70.14	10 18 52	3180.4	-27.89	145.46
105.21	13 13 35	3018.24	-25.41	97.14	35.33	70.13	14 3 53	2418.2	-27.88	89.04
110.00	15 19 33	2627.86	-32.79	69.46	37.60	79.74	16 3 21	2027.9	-33.85	60.39
110.00	12 9 3	3218.74	-18.47	109.06	31.91	60.71	13 2 42	2618.7	-22.22	101.94

DIFFERENTIAL CORRECTIONS
TDE 3.1445 TRA .4124 TC-17.4894 BAU 2.5243
RDE .3293 RRA .1741 RC3 -.7099 FAU .18008
FDE 1.5649 FRA 1.3515 FC-14.4520 BSP 44329
BDE 3.1617 BRA .4476 BC317.5038 FSP 2893

MID-COURSE EXECUTION ACCURACY
SGT12759.0 SGR 821.8 SG3 886.5
RRT .8404 RRF .8287 RTF .9654
SGB12785.5 R23 .0302 R13 .9655
SG112777.7 SG2 444.7 THA 3.10

ORBIT DETERMINATION ACCURACY
ST 5502.3 SR 584.6 SS 1165.9
CRT .9897 CRS -.9910 CST -.9685
LSA 5647.1 MSA 292.9 SSA 33.4
EL1 5532.6 EL2 83.1 ALF 6.00

LAUNCH DATE DEC 18 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 773.209 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.150 GAL .85 AZL 87.46 HCA 226.24 SMA 188.41 ECC .21925 INC 2.5428 V1 30.269
RP 208.08 LAP -1.84 LOP 312.33 VP 23.900 GAP -11.18 AZP 91.76 TAL 4.73 TAP 230.97 RCA 147.10 APO 229.72 V2 26.332
RC 318.367 GL 26.77 GP -7.57 ZAL 78.86 ZAP 38.20 ETS 169.32 ZAE 59.65 ETE 175.08 ZAC 78.15 ETC 256.94 CLP 37.55

PLANETOCENTRIC CONIC

C3 10.658 VHL 3.265 DLA 30.90 RAL 176.54 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 4.765 DPA -1.45 RAP 168.25 ECC 1.1754

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.10	9 37 8	3727.29	-24.75	149.28	36.17	70.89	10 39 15	3127.3	-27.12	141.20
102.90	13 2 40	3066.40	-24.74	100.52	36.17	70.87	13 53 46	2466.4	-27.12	92.44
77.10	9 37 8	3727.29	-24.75	149.28	36.17	70.89	10 39 15	3127.3	-27.12	141.20
102.90	13 2 40	3066.40	-24.74	100.52	36.17	70.87	13 53 46	2466.4	-27.12	92.44
110.00	15 42 5	2569.09	-33.41	64.99	38.53	82.32	16 24 55	1969.1	-34.11	55.82
110.00	11 56 52	3272.59	-16.64	112.17	32.19	59.70	12 51 25	2672.6	-20.54	105.22

DIFFERENTIAL CORRECTIONS
TDE 3.0571 TRA .5419 TC-17.8866 BAU 2.5502
RDE .3187 RRA .1786 RC3 -.6545 FAU .17301
FDE 1.4121 FRA 1.4075 FC-14.0537 BSP 44834
BDE 3.0737 BRA .5705 BC317.8986 FSP 2797

MID-COURSE EXECUTION ACCURACY
SGT12899.8 SGR 793.0 SG3 858.1
RRT .8208 RRF .8074 RTF .9652
SGB12924.1 R23 .0249 R13 .9652
SG112916.2 SG2 452.4 THA 2.89

ORBIT DETERMINATION ACCURACY
ST 5387.1 SR 570.1 SS 1086.5
CRT .9905 CRS -.9867 CST -.9624
LSA 5516.9 MSA 297.0 SSA 34.2
EL1 5416.6 EL2 78.1 ALF 5.99

LAUNCH DATE DEC 18 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 777.588 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.158 GAL .71 AZL 87.50 HCA 227.49 SMA 188.55 ECC .21969 INC 2.4973 V1 30.269
RP 207.93 LAP -1.84 LOP 313.58 VP 23.930 GAP -11.25 AZP 91.69 TAL 3.93 TAP 231.42 RCA 147.13 APO 229.97 V2 26.349
RC 319.247 GL 26.42 GP -7.33 ZAL 80.27 ZAP 37.52 ETS 169.39 ZAE 58.68 ETE 175.08 ZAC 78.51 ETC 256.89 CLP 36.90

PLANETOCENTRIC CONIC

C3 10.543 VHL 3.247 DLA 29.93 RAL 177.86 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 4.827 DPA -1.47 RAP 168.90 ECC 1.1735

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.87	10 2 56	3659.91	-24.05	143.99	37.07	71.62	11 3 56	3059.9	-26.34	135.93
100.13	12 47 26	3129.38	-24.04	104.96	37.06	71.61	13 39 35	2529.4	-26.33	96.91
79.87	10 2 56	3659.91	-24.05	143.99	37.07	71.62	11 3 56	3059.9	-26.34	135.93
100.13	12 47 26	3129.38	-24.04	104.96	37.06	71.61	13 39 35	2529.4	-26.33	96.91
110.00	16 2 33	2516.70	-33.82	60.95	39.40	84.67	16 44 30	1916.7	-34.18	51.73
110.00	11 47 0	3320.59	-14.98	114.89	32.64	58.91	12 42 21	2720.6	-18.99	108.07

DIFFERENTIAL CORRECTIONS
TDE 2.9640 TRA .6780 TC-18.2643 BAU 2.5757
RDE .3089 RRA .1830 RC3 -.6000 FAU .16602
FDE 1.2616 FRA 1.4635 FC-13.6331 BSP 45305
BDE 2.9800 BRA .7023 BC318.2742 FSP 2697

MID-COURSE EXECUTION ACCURACY
SGT13036.1 SGR 766.6 SG3 829.7
RRT .7992 RRF .7842 RTF .9647
SGB13058.6 R23 .0204 R13 .9647
SG113050.5 SG2 460.3 THA 2.69

ORBIT DETERMINATION ACCURACY
ST 5258.6 SR 556.5 SS 1006.5
CRT .9913 CRS -.9800 CST -.9540
LSA 5374.3 MSA 302.6 SSA 35.0
EL1 5287.5 EL2 72.7 ALF 5.99

LAUNCH DATE DEC 18 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 781.970 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.166 GAL .56 AZL 87.55 HCA 228.75 SMA 188.69 ECC .22015 INC 2.4535 V1 30.269
RP 207.79 LAP -1.84 LOP 314.83 VP 23.959 GAP -11.33 AZP 91.62 TAL 3.12 TAP 231.86 RCA 147.15 APO 230.23 V2 26.366
RC 320.122 GL 26.06 GP -7.10 ZAL 81.73 ZAP 36.86 ETS 169.45 ZAE 57.74 ETE 175.07 ZAC 78.87 ETC 256.84 CLP 36.26

PLANETOCENTRIC CONIC

C3 10.443 VHL 3.232 DLA 28.95 RAL 179.22 RAD 6567.4 VEL 11.482 PTH 2.00 VHP 4.889 DPA -1.51 RAP 169.55 ECC 1.1719

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.71	10 38 29	3561.26	-23.33	136.43	38.01	72.35	11 37 51	2961.3	-25.52	128.40
96.29	12 22 41	3224.19	-23.32	111.72	38.01	72.34	13 16 25	2624.2	-25.52	103.69
100.00	13 54 54	2928.05	-27.66	91.10	39.27	78.18	14 43 42	2328.1	-29.01	82.56
100.00	11 48 57	3332.63	-19.13	118.04	36.32	66.58	12 44 30	2732.6	-22.13	110.53
110.00	16 21 38	2468.56	-34.06	57.22	40.25	86.87	17 2 47	1868.6	-34.12	47.97
110.00	11 38 42	3364.89	-13.40	117.36	33.21	58.26	12 34 47	2764.9	-17.50	110.65

DIFFERENTIAL CORRECTIONS
TDE 2.8696 TRA .8208 TC-18.6162 BAU 2.6003
RDE .3005 RRA .1868 RC3 -.5462 FAU .15908
FDE 1.1241 FRA 1.5130 FC-13.1875 BSP 45792
BDE 2.8853 BRA .8417 BC318.6242 FSP 2604

MID-COURSE EXECUTION ACCURACY
SGT13169.0 SGR 742.8 SG3 801.3
RRT .7757 RRF .7593 RTF .9644
SGB13189.9 R23 .0163 R13 .9645
SG113181.6 SG2 468.4 THA 2.51

ORBIT DETERMINATION ACCURACY
ST 5124.9 SR 544.9 SS 933.4
CRT .9924 CRS -.9709 CST -.9440
LSA 5228.5 MSA 307.7 SSA 35.7
EL1 5153.4 EL2 66.6 ALF 6.02

LAUNCH DATE DEC 18 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 786.353 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.174 GAL .41 AZL 87.59 HCA 230.00 SMA 188.83 ECC .22064 INC 2.4113 V1 30.269
RP 207.66 LAP -1.85 LOP 316.09 VP 23.987 GAP -11.41 AZP 91.55 TAL 2.29 TAP 232.30 RCA 147.17 APO 230.50 V2 26.381
RC 320.992 GL 25.70 GP -6.89 ZAL 83.23 ZAP 36.22 ETS 169.51 ZAE 56.81 ETE 175.07 ZAC 79.21 ETC 256.79 CLP 35.64

PLANETOCENTRIC CONIC

C3 10.359 VHL 3.219 DLA 27.95 RAL 180.59 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 4.952 DPA -1.57 RAP 170.22 ECC 1.1705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 16 10	3260.84	-25.20	114.98	39.79	76.64	13 10 31	2660.8	-26.79	106.67
90.00	10 55 59	3521.35	-19.99	132.27	38.07	69.52	11 54 41	2921.3	-22.60	124.57
100.00	14 27 44	2836.72	-28.76	84.54	40.56	81.46	15 15 0	2236.7	-29.64	75.85
100.00	11 27 7	3420.70	-16.66	123.41	36.59	64.81	12 24 8	2820.7	-19.91	116.13
110.00	16 39 46	2423.47	-34.17	53.70	41.09	88.95	17 20 9	1823.5	-33.94	44.46
110.00	11 31 34	3406.72	-11.89	119.66	33.90	57.71	12 28 21	2806.7	-16.07	113.04

DIFFERENTIAL CORRECTIONS
TDE 2.7699 TRA .9685 TC-18.9469 BAU 2.6249
RDE .2930 RRA .1900 RC3 -.4937 FAU .15229
FDE .9909 FRA 1.5549 FC-12.7268 BSP 46267
BDE 2.7853 BRA .9869 BC318.9533 FSP 2510

MID-COURSE EXECUTION ACCURACY
SGT13299.5 SGR 720.9 SG3 773.0
RRT .7505 RRF .7323 RTF .9642
SGB13319.0 R23 .0118 R13 .9642
SG113310.5 SG2 476.0 THA 2.33

ORBIT DETERMINATION ACCURACY
ST 4978.9 SR 534.2 SS 861.6
CRT .9936 CRS -.9578 CST -.9313
LSA 5071.3 MSA 312.7 SSA 36.4
EL1 5007.1 EL2 60.0 ALF 6.09

LAUNCH DATE DEC 18 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 790.738 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.182 GAL .26 AZL 87.63 HCA 231.26 SMA 188.97 ECC .22116 INC 2.3705 V1 30.269
RP 207.54 LAP -1.85 LOP 317.35 VP 24.014 GAP -11.49 AZP 91.48 TAL 1.46 TAP 232.72 RCA 147.18 APO 230.77 V2 26.396
RC 321.856 GL 25.33 GP -6.68 ZAL 84.78 ZAP 35.59 ETS 169.56 ZAE 55.89 ETE 175.06 ZAC 79.55 ETC 256.74 CLP 35.04

PLANETOCENTRIC CONIC

C3 10.291 VHL 3.208 DLA 26.93 RAL 181.99 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 5.016 DPA -1.65 RAP 170.89 ECC 1.1694

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 59 26	3135.50	-26.88	106.19	41.32	80.74	13 51 42	2535.5	-27.88	97.66
90.00	10 23 54	3644.04	-16.89	139.94	38.20	66.93	11 24 38	3044.0	-19.87	132.53
100.00	14 54 23	2764.93	-29.37	79.29	41.69	84.16	15 40 28	2164.9	-29.87	70.52
100.00	11 11 38	3489.85	-14.61	127.52	37.11	63.63	12 9 48	2889.8	-18.03	120.41
110.00	16 57 10	2380.72	-34.17	50.36	41.94	90.93	17 36 51	1780.7	-33.67	41.15
110.00	11 25 20	3446.82	-10.43	121.84	34.68	57.26	12 22 47	2846.8	-14.67	115.31

DIFFERENTIAL CORRECTIONS
TDE 2.6626 TRA 1.1211 TC-19.2583 BAU 2.6504
RDE .2858 RRA .1926 RC3 -.4442 FAU .14602
FDE .8531 FRA 1.5874 FC-12.2839 BSP 46683
BDE 2.6779 BRA 1.1375 BC319.2634 FSP 2404

MID-COURSE EXECUTION ACCURACY
SGT13428.9 SGR 700.4 SG3 746.0
RRT .7246 RRF .7029 RTF .9640
SGB13447.1 R23 .0051 R13 .9640
SG113438.5 SG2 482.3 THA 2.17

ORBIT DETERMINATION ACCURACY
ST 4817.3 SR 523.4 SS 785.8
CRT .9948 CRS -.9379 CST -.9132
LSA 4898.5 MSA 318.4 SSA 37.2
EL1 4845.4 EL2 53.1 ALF 6.17

LAUNCH DATE DEC 18 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 795.125 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.190 GAL .11 AZL 87.67 HCA 232.52 SMA 189.12 ECC 2.3311 V1 30.269
RP 207.42 LAP -1.85 LOP 318.61 VP 24.040 GAP -11.56 AZP 91.42 TAL .61 TAP 233.12 RCA 147.19 APO 231.05 V2 26.409
RC 322.714 GL 24.95 GP -6.49 ZAL 86.37 ZAP 34.98 ETS 169.61 ZAE 54.99 ETE 175.06 ZAC 79.88 ETC 256.69 CLP 34.45

PLANETOCENTRIC CONIC

C3 10.240 VHL 3.200 DLA 25.89 RAL 183.42 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 5.081 DPA -1.75 RAP 171.58 ECC 1.1685

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 30 5	3050.73	-27.66	100.11	42.57	83.69	14 20 56	2450.7	-28.25	91.49
90.00	10 4 36	3726.80	-14.61	144.95	38.72	65.47	11 6 43	3126.8	-17.80	137.72
100.00	15 17 59	2702.88	-29.71	74.71	42.77	86.55	16 3 1	2102.9	-29.87	65.91
100.00	10 59 23	3549.88	-12.76	131.03	37.80	62.74	11 58 33	2949.9	-16.32	124.04
110.00	17 14 1	2339.81	-34.08	47.17	42.80	92.81	17 53 1	1739.8	-33.32	38.01
110.00	11 19 50	3485.71	-8.99	123.93	35.56	56.88	12 17 56	2885.7	-13.28	117.47

DIFFERENTIAL CORRECTIONS
TDE 2.5531 TRA 1.2866 TC-19.5355 BAU 2.6749
RDE .2796 RRA .1965 RC3 -.3945 FAU .13958
FDE .7248 FRA 1.6455 FC-11.8006 BSP 47132
BDE 2.5684 BRA 1.3015 BC319.5395 FSP 2320

MID-COURSE EXECUTION ACCURACY
SGT13556.2 SGR 683.7 SG3 720.0
RRT .6957 RRF .6736 RTF .9626
SGB13573.4 R23 .0043 R13 .9626
SG113564.6 SG2 490.8 THA 2.01

ORBIT DETERMINATION ACCURACY
ST 4650.6 SR 514.3 SS 721.5
CRT .9958 CRS -.9072 CST -.8861
LSA 4722.4 MSA 332.0 SSA 37.9
EL1 4678.7 EL2 46.8 ALF 6.29

LAUNCH DATE DEC 18 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 799.511 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.198 GAL -.05 AZL 87.71 HCA 233.78 SMA 189.26 ECC .22231 INC 2.2930 V1 30.269
RP 207.31 LAP -1.85 LOP 319.87 VP 24.065 GAP -11.64 AZP 91.36 TAL 359.74 TAP 233.52 RCA 147.19 APO 231.34 V2 26.422
RC 323.566 GL 24.57 GP -6.30 ZAL 87.99 ZAP 34.38 ETS 169.66 ZAE 54.10 ETE 175.06 ZAC 80.20 ETC 256.64 CLP 33.87

PLANETOCENTRIC CONIC

C3 10.206 VHL 3.195 DLA 24.83 RAL 184.86 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 5.147 DPA -1.86 RAP 172.27 ECC 1.1680

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 56 7	2980.81	-28.08	95.03	43.73	86.20	14 45 47	2380.8	-28.31	86.38
90.00	9 50 4	3795.37	-12.64	149.01	39.43	64.45	10 53 19	3195.4	-15.98	141.92
100.00	15 39 40	2646.93	-29.87	70.56	43.82	88.73	16 23 47	2046.9	-29.72	61.76
100.00	10 49 11	3604.49	-11.04	134.16	38.61	62.04	11 49 16	3004.5	-14.69	127.28
110.00	17 30 25	2300.44	-33.91	44.11	43.68	94.62	18 8 45	1700.4	-32.90	35.01
110.00	11 14 56	3523.74	-7.57	125.96	36.52	56.56	12 13 40	2923.7	-11.91	119.56

DIFFERENTIAL CORRECTIONS
TDE 2.4470 TRA 1.4667 TC-19.7747 BAU 2.6985
RDE .2764 RRA .2008 RC3 -.3452 FAU .13306
FDE .6371 FRA 1.7138 FC-11.2877 BSP 47854
BDE 2.4626 BRA 1.4803 BC319.7778 FSP 2305

MID-COURSE EXECUTION ACCURACY
SGT13685.6 SGR 672.1 SG3 695.4
RRT .6645 RRF .6471 RTF .9618
SGB13702.0 R23 .0095 R13 .9618
SG113692.8 SG2 502.0 THA 1.87

ORBIT DETERMINATION ACCURACY
ST 4490.1 SR 509.8 SS 686.7
CRT .9966 CRS -.8748 CST -.8625
LSA 4557.6 MSA 344.7 SSA 38.5
EL1 4518.7 EL2 41.5 ALF 6.46

LAUNCH DATE DEC 18 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 803.899 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.206 GAL -.21 AZL 87.74 HCA 235.04 SMA 189.41 ECC .22294 INC 2.2561 V1 30.269
RP 207.21 LAP -1.85 LOP 321.13 VP 24.089 GAP -11.72 AZP 91.29 TAL 358.87 TAP 233.91 RCA 147.18 APO 231.64 V2 26.434
RC 324.413 GL 24.18 GP -6.13 ZAL 89.65 ZAP 33.80 ETS 169.70 ZAE 53.22 ETE 175.06 ZAC 80.52 ETC 256.58 CLP 33.31

PLANETOCENTRIC CONIC

C3 10.189 VHL 3.192 DLA 23.75 RAL 186.31 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 5.214 DPA -1.99 RAP 172.98 ECC 1.1677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 19 33	2919.22	-28.28	90.54	44.85	88.44	15 8 13	2319.2	-28.19	81.88
90.00	9 38 15	3856.32	-10.82	152.57	40.28	63.67	10 42 31	3256.3	-14.27	145.59
100.00	16 0 3	2595.22	-29.88	66.72	44.87	90.75	16 43 18	1995.2	-29.46	57.94
100.00	10 40 26	3655.55	-9.40	137.06	39.53	61.49	11 41 22	3055.5	-13.13	130.27
110.00	17 46 26	2262.36	-33.66	41.16	44.59	96.35	18 24 9	1662.4	-32.42	32.15
110.00	11 10 32	3561.17	-6.16	127.94	37.55	56.31	12 9 53	2961.2	-10.54	121.59

DIFFERENTIAL CORRECTIONS
TDE 2.3357 TRA 1.6356 TC-19.9836 BAU 2.7225
RDE .2721 RRA .2012 RC3 -.2992 FAU .12710
FDE .5226 FRA 1.7157 FC-10.7989 BSP 48176
BDE 2.3515 BRA 1.6480 BC319.9858 FSP 2179

MID-COURSE EXECUTION ACCURACY
SGT13806.6 SGR 656.3 SG3 667.7
RRT .6346 RRF .6117 RTF .9623
SGB13822.2 R23 .0003 R13 .9623
SG113812.9 SG2 507.0 THA 1.73

ORBIT DETERMINATION ACCURACY
ST 4318.4 SR 502.6 SS 627.7
CRT .9969 CRS -.8265 CST -.8282
LSA 4378.6 MSA 349.3 SSA 39.0
EL1 4347.4 EL2 39.0 ALF 6.62

LAUNCH DATE DEC 18 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 808.286 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.214 GAL -.37 AZL 87.78 HCA 236.30 SMA 189.56 ECC .22360 INC 2.2203 V1 30.269
RP 207.12 LAP -1.85 LOP 322.40 VP 24.112 GAP -11.79 AZP 91.23 TAL 357.98 TAP 234.28 RCA 147.17 APO 231.94 V2 26.444
RC 325.253 GL 23.77 GP -5.96 ZAL 91.35 ZAP 33.24 ETS 169.74 ZAE 52.36 ETE 175.05 ZAC 80.84 ETC 256.53 CLP 32.76

PLANETOCENTRIC CONIC

C3 10.191 VHL 3.192 DLA 22.65 RAL 187.79 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 5.282 DPA -2.13 RAP 173.69 ECC 1.1677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 41 19	2863.14	-28.31	86.44	45.97	90.50	15 29 2	2263.1	-27.94	77.79
90.00	9 28 14	3912.48	-9.11	155.80	41.24	63.07	10 33 27	3312.5	-12.65	148.91
100.00	16 19 27	2546.71	-29.79	63.11	45.93	92.64	17 1 54	1946.7	-29.10	54.38
100.00	10 32 47	3704.14	-7.81	139.79	40.54	61.05	11 34 31	3104.1	-11.61	133.07
110.00	18 2 9	2225.42	-33.35	38.32	45.54	98.00	18 39 14	1625.4	-31.88	29.40
110.00	11 6 35	3598.19	-4.75	129.00	38.66	56.11	12 6 33	2998.2	-9.17	123.59

DIFFERENTIAL CORRECTIONS
TDE 2.2231 TRA 1.8209 TC-20.1479 BAU 2.7453
RDE .2697 RRA .2032 RC3 -.2528 FAU .12083
FDE .4330 FRA 1.7486 FC-10.2648 BSP 48607
BDE 2.2394 BRA 1.8322 BC320.1495 FSP 2080

MID-COURSE EXECUTION ACCURACY
SGT13926.2 SGR 645.4 SG3 641.5
RRT .6016 RRF .5797 RTF .9619
SGB13941.2 R23 .0004 R13 .9619
SG113931.6 SG2 515.4 THA 1.60

ORBIT DETERMINATION ACCURACY
ST 4146.9 SR 498.4 SS 592.1
CRT .9963 CRS -.7702 CST -.7918
LSA 4203.0 MSA 359.9 SSA 39.6
EL1 4176.6 EL2 42.4 ALF 6.83

LAUNCH DATE DEC 18 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 812.673 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.223 GAL -.54 AZL 87.81 HCA 237.57 SMA 189.71 ECC .22431 INC 2.1854 V1 30.269
RP 207.04 LAP -1.84 LOP 323.66 VP 24.134 GAP -11.87 AZP 91.17 TAL 357.07 TAP 234.64 RCA 147.15 APO 232.26 V2 26.454
RC 326.088 GL 23.36 GP -5.81 ZAL 93.08 ZAP 32.68 ETS 169.77 ZAE 51.51 ETE 175.05 ZAC 81.15 ETC 256.48 CLP 32.22

PLANETOCENTRIC CONIC

C3 10.212 VHL 3.196 DLA 21.54 RAL 189.27 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 5.351 DPA -2.29 RAP 174.41 ECC 1.1681

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 1 52	2811.05	-28.22	82.63	47.10	92.41	15 48 43	2211.0	-27.59	74.02
90.00	9 19 32	3965.40	-7.46	158.82	42.30	62.61	10 25 38	3365.4	-11.08	152.00
100.00	16 38 6	2500.73	-29.59	59.71	47.01	94.43	17 19 47	1900.7	-28.66	51.03
100.00	10 25 59	3750.95	-6.25	142.40	41.64	60.71	11 28 30	3151.0	-10.11	135.74
110.00	18 17 35	2189.50	-32.97	35.59	46.52	99.58	18 54 4	1589.5	-31.30	26.76
110.00	11 3 0	3634.94	-3.36	131.82	39.85	55.96	12 3 35	3034.9	-7.80	125.55

DIFFERENTIAL CORRECTIONS
TDE 2.0983 TRA 2.0093 TC-20.2880 BAU 2.7701
RDE .2671 RRA .2043 RC3 -.2100 FAU .11517
FDE .3299 FRA 1.7685 FC3-9.7635 BSP 49065
BDE 2.1152 BRA 2.0197 BC320.2891 FSP 2002

MID-COURSE EXECUTION ACCURACY
SGT14046.1 SGR 634.4 SG3 616.5
RRT .5687 RRF .5442 RTF .9613
SGB14060.4 R23 -.0039 R13 .9613
SG114050.7 SG2 521.7 THA 1.47

ORBIT DETERMINATION ACCURACY
ST 3956.6 SR 493.3 SS 552.9
CRT .9943 CRS -.6862 CST -.7367
LSA 4007.8 MSA 373.9 SSA 40.0
EL1 3986.9 EL2 52.3 ALF 7.07

LAUNCH DATE DEC 18 1964 FLIGHT TIME 378.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 817.060 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.231 GAL -.71 AZL 87.85 HCA 238.83 SMA 189.86 ECC .22505 INC 2.1515 V1 30.269
RP 206.96 LAP -1.84 LOP 324.93 VP 24.155 GAP -11.95 AZP 91.11 TAL 356.16 TAP 234.99 RCA 147.13 APO 232.58 V2 26.463
RC 326.917 GL 22.93 GP -5.66 ZAL 94.83 ZAP 32.14 ETS 169.81 ZAE 50.67 ETE 175.05 ZAC 81.45 ETC 256.43 CLP 31.69

PLANETOCENTRIC CONIC

C3 10.254 VHL 3.202 DLA 20.41 RAL 190.77 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 5.420 DPA -2.46 RAP 175.15 ECC 1.1688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 29	2762.06	-28.03	79.06	48.24	94.19	16 7 31	2162.1	-27.16	70.50
90.00	9 11 51	4016.01	-5.87	161.68	43.44	62.25	10 18 47	3416.0	-9.54	154.93
100.00	16 56 9	2456.85	-29.32	56.48	48.11	96.11	17 37 5	1856.8	-28.16	47.86
100.00	10 19 53	3796.46	-4.73	144.92	42.82	60.45	11 23 9	3196.5	-8.63	138.31
110.00	18 32 46	2154.53	-32.54	32.95	47.54	101.08	19 8 41	1554.5	-30.68	24.23
110.00	10 59 45	3671.53	-1.96	133.73	41.10	55.87	12 0 56	3071.5	-6.43	127.49

DIFFERENTIAL CORRECTIONS
TDE 1.9765 TRA 2.2072 TC-20.3762 BAU 2.7933
RDE .2659 RRA .2053 RC3 -.1680 FAU .10942
FDE .2429 FRA 1.7884 FC3-9.2387 BSP 49517
BDE 1.9944 BRA 2.2168 BC320.3769 FSP 1921

MID-COURSE EXECUTION ACCURACY
SGT14161.7 SGR 625.8 SG3 591.4
RRT .5347 RRF .5094 RTF .9608
SGB14175.5 R23 -.0060 R13 .9608
SG114165.6 SG2 528.7 THA 1.36

ORBIT DETERMINATION ACCURACY
ST 3776.1 SR 490.1 SS 527.6
CRT .9902 CRS -.5936 CST -.6819
LSA 3824.3 MSA 388.7 SSA 40.3
EL1 3807.2 EL2 67.9 ALF 7.33

LAUNCH DATE DEC 18 1964 FLIGHT TIME 380.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 821.445 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.239 GAL -.88 AZL 87.88 HCA 240.10 SMA 190.01 ECC .22584 INC 2.1185 V1 30.269
RP 206.89 LAP -1.84 LOP 326.20 VP 24.175 GAP -12.03 AZP 91.06 TAL 355.23 TAP 235.33 RCA 147.10 APO 232.92 V2 26.471
RC 327.742 GL 22.49 GP -5.51 ZAL 96.62 ZAP 31.62 ETS 169.83 ZAE 49.85 ETE 175.05 ZAC 81.75 ETC 256.38 CLP 31.18

PLANETOCENTRIC CONIC

C3 10.316 VHL 3.212 DLA 19.26 RAL 192.27 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 5.491 DPA -2.64 RAP 175.89 ECC 1.1698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 40 23	2715.58	-27.75	75.69	49.41	95.86	16 25 38	2115.6	-26.65	67.19
90.00	9 4 58	4064.92	-4.31	164.43	44.67	61.99	10 12 43	3464.9	-8.02	157.72
100.00	17 13 40	2414.76	-28.97	53.39	49.25	97.69	17 53 55	1814.8	-27.61	44.86
100.00	10 14 22	3840.98	-3.23	147.38	44.08	60.27	11 18 23	3241.0	-7.17	140.80
110.00	18 47 44	2120.46	-32.07	30.40	48.61	102.52	19 23 4	1520.5	-30.01	21.79
110.00	10 56 47	3708.04	-.56	135.63	42.41	55.82	11 58 35	3108.0	-5.05	129.41

DIFFERENTIAL CORRECTIONS
TDE 1.8488 TRA 2.4110 TC-20.4279 BAU 2.8174
RDE .2652 RRA .2059 RC3 -.1283 FAU .10393
FDE .1566 FRA 1.8032 FC3-8.7216 BSP 49964
BDE 1.8678 BRA 2.4197 BC320.4283 FSP 1845

MID-COURSE EXECUTION ACCURACY
SGT14276.9 SGR 618.1 SG3 567.1
RRT .5003 RRF .4732 RTF .9601
SGB14290.2 R23 -.0090 R13 .9601
SG114280.2 SG2 535.1 THA 1.24

ORBIT DETERMINATION ACCURACY
ST 3591.7 SR 487.3 SS 509.0
CRT .9832 CRS -.4817 CST -.6187
LSA 3637.3 MSA 406.9 SSA 40.5
EL1 3623.6 EL2 88.1 ALF 7.60

LAUNCH DATE DEC 18 1964 FLIGHT TIME 382.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 825.828 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.248 GAL -1.05 AZL 87.91 HCA 241.36 SMA 190.16 ECC .22667 INC 2.0863 V1 30.269
RP 206.84 LAP -1.83 LOP 327.46 VP 24.194 GAP -12.11 AZP 91.00 TAL 354.29 TAP 235.66 RCA 147.05 APO 233.26 V2 26.477
RC 328.562 GL 22.04 GP -5.38 ZAL 98.42 ZAP 31.10 ETS 169.86 ZAE 49.04 ETE 175.04 ZAC 82.05 ETC 256.33 CLP 30.68

PLANETOCENTRIC CONIC

C3 10.400 VHL 3.225 DLA 18.11 RAL 193.78 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 5.562 DPA -2.83 RAP 176.64 ECC 1.1712

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 58 40	2671.23	-27.40	72.49	50.61	97.42	16 43 11	2071.2	-26.09	64.07
90.00	8 58 44	4112.55	-2.78	167.10	45.98	61.81	10 7 17	3512.6	-6.53	160.43
100.00	17 30 45	2374.26	-28.57	50.45	50.42	99.19	18 10 19	1774.3	-27.00	42.00
100.00	10 9 20	3884.75	-1.75	149.78	45.41	60.15	11 14 5	3284.8	-5.71	143.23
110.00	19 2 29	2087.25	-31.55	27.95	49.71	103.89	19 37 16	1487.3	-29.32	19.45
110.00	10 54 5	3744.53	.83	137.54	43.79	55.83	11 56 30	3144.5	-3.66	131.33

DIFFERENTIAL CORRECTIONS
TDE 1.7206 TRA 2.6233 TC-20.4342 BAU 2.8413
RDE .2655 RRA .2062 RC3 -.0904 FAU .09855
FDE .0794 FRA 1.8170 FC3-8.2032 BSP 50404
BDE 1.7410 BRA 2.6314 BC320.4344 FSP 1767

MID-COURSE EXECUTION ACCURACY
SGT14390.9 SGR 612.0 SG3 543.4
RRT .4656 RRF .4376 RTF .9593
SGB14403.9 R23 -.0110 R13 .9593
SG114393.7 SG2 541.5 THA 1.14

ORBIT DETERMINATION ACCURACY
ST 3415.4 SR 485.7 SS 500.2
CRT .9723 CRS -.3652 CST -.5606
LSA 3459.4 MSA 427.1 SSA 40.5
EL1 3448.0 EL2 112.6 ALF 7.88

LAUNCH DATE DEC 18 1964 FLIGHT TIME 384.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 830.209 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.256 GAL -1.23 AZL 87.95 HCA 242.63 SMA 190.31 ECC .22755 INC 2.0549 V1 30.269
RP 206.79 LAP -1.82 LOP 328.73 VP 24.212 GAP -12.19 AZP 90.94 TAL 353.34 TAP 235.97 RCA 147.01 APO 233.61 V2 26.483
RC 329.378 GL 21.58 GP -5.25 ZAL 100.25 ZAP 30.60 ETS 169.88 ZAE 48.23 ETE 175.04 ZAC 82.34 ETC 256.29 CLP 30.19

PLANETOCENTRIC CONIC

C3 10.508 VHL 3.242 DLA 16.94 RAL 195.30 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 5.635 DPA -3.04 RAP 177.40 ECC 1.1729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 16 25	2628.74	-26.99	69.45	51.84	98.90	17 0 14	2028.7	-25.49	61.10
90.00	8 53 4	4159.19	-1.28	169.70	47.35	61.71	10 2 23	3559.2	-5.05	163.06
100.00	17 47 26	2335.21	-28.11	47.64	51.63	100.60	18 26 22	1735.2	-26.36	39.28
100.00	10 4 43	3927.95	-.29	152.15	46.80	60.11	11 10 11	3327.9	-4.26	145.62
110.00	19 17 2	2054.90	-31.00	25.59	50.87	105.18	19 51 17	1454.9	-28.61	17.21
110.00	10 51 37	3781.03	2.23	139.44	45.23	55.88	11 54 38	3181.0	-2.27	133.24

DIFFERENTIAL CORRECTIONS
TDE 1.5892 TRA 2.8426 TC-20.3913 BAU 2.8645
RDE .2666 RRA .2062 RC3 -.0544 FAU .09325
FDE .0058 FRA 1.8267 FC3-7.6831 BSP 50866
BDE 1.6114 BRA 2.8500 BC320.3914 FSP 1694

MID-COURSE EXECUTION ACCURACY
SGT14499.7 SGR 607.0 SG3 519.9
RRT .4307 RRF .4015 RTF .9583
SGB14512.4 R23 -.0131 R13 .9583
SG114502.0 SG2 547.7 THA 1.03

ORBIT DETERMINATION ACCURACY
ST 3245.0 SR 484.8 SS 498.3
CRT .9559 CRS -.2432 CST -.5068
LSA 3287.7 MSA 450.5 SSA 40.4
EL1 3278.0 EL2 140.9 ALF 8.14

LAUNCH DATE DEC 18 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 834.588 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.264 GAL -1.42 AZL 87.98 HCA 243.90 SMA 190.46 ECC .22847 INC 2.0241 V1 30.269
RP 206.75 LAP -1.82 LOP 330.00 VP 24.229 GAP -12.28 AZP 90.89 TAL 352.37 TAP 236.27 RCA 146.95 APO 233.98 V2 26.488
RC 330.190 GL 21.11 GP -5.13 ZAL 102.09 ZAP 30.11 ETS 169.90 ZAE 47.44 ETE 175.03 ZAC 82.63 ETC 256.24 CLP 29.71

PLANETOCENTRIC CONIC

C3 10.639 VHL 3.262 DLA 15.77 RAL 196.82 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 5.708 DPA -3.26 RAP 178.17 ECC 1.1751

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 43	2587.93	-26.53	66.55	53.11	100.28	17 16 51	1987.9	-24.84	58.29
90.00	8 47 52	4205.04	.20	172.26	48.80	61.68	9 57 57	3605.0	-3.59	165.63
100.00	18 3 47	2297.50	-27.61	44.95	52.88	101.94	18 42 4	1697.5	-25.69	36.68
100.00	10 0 29	3970.69	1.16	154.50	48.26	60.13	11 6 40	3370.7	-2.82	147.98
110.00	19 31 23	2023.40	-30.42	23.32	52.07	106.41	20 5 7	1423.4	-27.87	15.05
110.00	10 49 22	3817.56	3.62	141.35	46.73	55.99	11 53 0	3217.6	-.87	135.14

DIFFERENTIAL CORRECTIONS
TDE 1.4561 TRA 3.0693 TC-20.3050 BAU 2.8880
RDE .2686 RRA .2057 RC3 -.0204 FAU .08809
FDE -.0593 FRA 1.8310 FC3-7.1683 BSP 51313
BDE 1.4807 BRA 3.0761 BC320.3050 FSP 1622

MID-COURSE EXECUTION ACCURACY
SGT14607.5 SGR 603.1 SG3 496.7
RRT .3958 RRF .3657 RTF .9574
SGB14620.0 R23 -.0149 R13 .9574
SG114609.5 SG2 553.7 THA .94

ORBIT DETERMINATION ACCURACY
ST 3086.3 SR 485.0 SS 501.9
CRT .9327 CRS -.1293 CST -.4694
LSA 3128.2 MSA 474.7 SSA 40.1
EL1 3119.4 EL2 173.1 ALF 8.36

LAUNCH DATE DEC 18 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 838.963 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.273	GAL	-1.60	AZL	88.01	HCA	245.17	SMA	190.62	ECC	.22944	INC	1.9940	V1	30.269
RP	206.71	LAP	-1.81	LOP	331.27	VP	24.245	GAP	-12.36	AZP	90.84	TAL	351.40	TAP	236.56	RCA	146.88	APO	234.35	V2	26.492
RC	331.000	GL	20.62	GP	-5.01	ZAL	103.94	ZAP	29.63	ETS	169.92	ZAE	46.66	ETE	175.02	ZAC	82.92	ETC	256.20	CLP	29.24

PLANETOCENTRIC CONIC

C3	10.795	VHL	3.286	DLA	14.59	RAL	198.33	RAD	6567.4	VEL	11.497	PTH	2.00	VHP	5.782	DPA	-3.48	RAP	178.94	ECC	1.1777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 37	2548.65	-26.02	63.79	54.42	101.57	17 33 6	1948.6	-24.17	55.61
90.00	8 43 4	4250.25	1.66	174.78	50.31	61.73	9 53 54	3650.3	-2.13	168.16
100.00	18 19 48	2261.07	-27.07	42.38	54.16	103.19	18 57 29	1661.1	-24.99	34.20
100.00	9 56 35	4013.07	2.60	156.83	49.79	60.21	11 3 28	3413.1	-1.39	150.30
110.00	19 45 33	1992.76	-29.81	21.14	53.31	107.56	20 18 45	1392.8	-27.12	12.99
110.00	10 47 19	3854.15	5.01	143.27	48.29	56.14	11 51 33	3254.1	.53	137.05

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.3198	TRA	3.3036	TC-20.1757	BAU 2.9118	SGT14714.1	SGR	600.0	SG3	474.1		ST	2940.2	SR	485.7	SS	510.6
RDE	.2712	RRA	.2049	RC3 .0115	FAU .08304	RRT	.3609	RRF	.3298	RTF	.9561	CRT	.9006	CRS	-.0179	CST	-.4429
FDE	-.1223	FRA	1.8330	FC3-6.6593	BSP 51756	SGB14726.3	R23	-.0169	R13	.9561		LSA	2981.2	MSA	502.5	SSA	39.7
BDE	1.3474	BRA	3.3100	BC320.1757	FSP 1554	SG114715.7	SG2	559.5	THA	.84		EL1	2972.7	EL2	208.8	ALF	8.50

LAUNCH DATE DEC 18 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 843.335 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.281	GAL	-1.79	AZL	88.04	HCA	246.44	SMA	190.77	ECC	.23047	INC	1.9645	V1	30.269
RP	206.69	LAP	-1.80	LOP	332.54	VP	24.259	GAP	-12.45	AZP	90.79	TAL	350.41	TAP	236.84	RCA	146.80	APO	234.74	V2	26.494
RC	331.806	GL	20.13	GP	-4.90	ZAL	105.80	ZAP	29.17	ETS	169.93	ZAE	45.89	ETE	175.01	ZAC	83.21	ETC	256.15	CLP	28.79

PLANETOCENTRIC CONIC

C3	10.978	VHL	3.313	DLA	13.41	RAL	199.85	RAD	6567.4	VEL	11.505	PTH	2.00	VHP	5.858	DPA	-3.72	RAP	179.73	ECC	1.1807

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 8	2510.82	-25.48	61.15	55.77	102.79	17 48 59	1910.8	-23.47	53.06
90.00	8 38 38	4294.96	3.10	177.28	51.88	61.84	9 50 13	3695.0	-.69	170.65
100.00	18 35 30	2225.86	-26.50	39.92	55.49	104.36	19 12 36	1625.9	-24.27	31.83
100.00	9 52 57	4055.15	4.02	159.14	51.37	60.35	11 0 33	3455.1	.04	152.61
110.00	19 59 31	1962.99	-29.18	19.06	54.60	108.65	20 32 14	1363.0	-26.35	11.01
110.00	10 45 26	3890.78	6.40	145.20	49.90	56.35	11 50 17	3290.8	1.93	138.96

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.1837	TRA	3.5454	TC-20.0011	BAU 2.9354	SGT14818.2	SGR	597.9	SG3	451.9		ST	2814.8	SR	487.3	SS	521.5
RDE	.2747	RRA	.2037	RC3 .0410	FAU .07813	RRT	.3267	RRF	.2949	RTF	.9548	CRT	.8584	CRS	.0781	CST	-.4377
FDE	-.1767	FRA	1.8307	FC3-6.1616	BSP 52190	SGB14830.3	R23	-.0185	R13	.9548		LSA	2854.9	MSA	529.9	SSA	39.1
BDE	1.2152	BRA	3.5512	BC320.0011	FSP 1484	SG114819.5	SG2	565.1	THA	.76		EL1	2846.0	EL2	247.3	ALF	8.52

LAUNCH DATE DEC 18 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 847.703 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.290	GAL	-1.99	AZL	88.06	HCA	247.71	SMA	190.93	ECC	.23154	INC	1.9355	V1	30.269
RP	206.68	LAP	-1.79	LOP	333.81	VP	24.273	GAP	-12.54	AZP	90.73	TAL	349.40	TAP	237.11	RCA	146.72	APO	235.13	V2	26.496
RC	332.609	GL	19.63	GP	-4.79	ZAL	107.66	ZAP	28.71	ETS	169.94	ZAE	45.13	ETE	175.00	ZAC	83.49	ETC	256.11	CLP	28.34

PLANETOCENTRIC CONIC

C3	11.188	VHL	3.345	DLA	12.23	RAL	201.36	RAD	6567.4	VEL	11.514	PTH	2.01	VHP	5.934	DPA	-3.96	RAP	180.52	ECC	1.1841

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 19	2474.37	-24.91	58.63	57.15	103.92	18 4 33	1874.4	-22.75	50.63
90.00	8 34 31	4339.22	4.52	179.76	53.51	62.02	9 46 50	3739.2	.74	173.12
100.00	18 50 55	2191.86	-25.90	37.56	56.86	105.46	19 27 27	1591.9	-23.53	29.57
100.00	9 49 36	4096.96	5.42	161.45	53.01	60.56	10 57 53	3497.0	1.46	154.91
110.00	20 13 17	1934.12	-28.53	17.06	55.93	109.68	20 45 31	1334.1	-25.58	9.12
110.00	10 43 43	3927.46	7.77	147.15	51.57	56.61	11 49 11	3327.5	3.33	140.88

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.0456	TRA	3.7954	TC-19.7826	BAU 2.9590	SGT14919.8	SGR	596.5	SG3	429.9		ST	2710.8	SR	489.5	SS	534.5
RDE	.2789	RRA	.2021	RC3 .0686	FAU .07325	RRT	.2926	RRF	.2598	RTF	.9531	CRT	.8044	CRS	.1673	CST	-.4452
FDE	-.2286	FRA	1.8243	FC3-5.6684	BSP 52645	SGB14931.7	R23	-.0203	R13	.9531		LSA	2749.6	MSA	558.6	SSA	38.4
BDE	1.0822	BRA	3.8008	BC319.7827	FSP 1417	SG114920.8	SG2	570.4	THA	.67		EL1	2739.6	EL2	287.8	ALF	8.36

LAUNCH DATE DEC 18 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 852.066 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.298	GAL	-2.18	AZL	88.09	HCA	248.97	SMA	191.08	ECC	.23268	INC	1.9071	V1	30.269
RP	206.67	LAP	-1.78	LOP	335.08	VP	24.285	GAP	-12.63	AZP	90.68	TAL	348.39	TAP	237.36	RCA	146.62	APO	235.54	V2	26.497
RC	333.409	GL	19.12	GP	-4.69	ZAL	109.53	ZAP	28.26	ETS	169.95	ZAE	44.38	ETE	174.99	ZAC	83.77	ETC	256.08	CLP	27.90

PLANETOCENTRIC CONIC

C3	11.428	VHL	3.380	DLA	11.05	RAL	202.86	RAD	6567.4	VEL	11.525	PTH	2.01	VHP	6.012	DPA	-4.22	RAP	181.32	ECC	1.1881

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 10	2439.26	-24.31	56.23	58.58	104.99	18 19 49	1839.3	-22.02	48.31
90.00	8 30 40	4383.09	5.91	182.23	55.20	62.26	9 43 43	3783.1	2.15	175.57
100.00	19 6 3	2159.04	-25.29	35.32	58.28	106.49	19 42 2	1559.0	-22.79	27.41
100.00	9 46 28	4138.55	6.81	163.76	54.71	60.82	10 55 27	3538.5	2.87	157.19
110.00	20 26 51	1906.18	-27.88	15.15	57.31	110.63	20 58 37	1306.2	-24.81	7.31
110.00	10 42 9	3964.18	9.15	149.11	53.29	56.92	11 48 13	3364.2	4.73	142.80

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.9066	TRA	4.0516	TC-19.5292	BAU 2.9836	SGT15021.7	SGR	595.8	SG3	408.5		ST	2631.4	SR	492.3	SS	547.3
RDE	.2840	RRA	.2000	RC3 .0937	FAU .06857	RRT	.2592	RRF	.2255	RTF	.9513	CRT	.7382	CRS	.2444	CST	-.4684
FDE	-.2745	FRA	1.8133	FC3-5.1947	BSP 53066	SGB15033.5	R23	-.0222	R13	.9513		LSA	2668.7	MSA	585.4	SSA	37.6
BDE	.9501	BRA	4.0565	BC319.5294	FSP 1352	SG115022.5	SG2	575.4	THA	.59		EL1	2656.8	EL2	328.9	ALF	7.99

LAUNCH DATE DEC 18 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 856.423 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.307	GAL	-2.39	AZL	88.12	HCA	250.24	SMA	191.24	ECC	.23387	INC	1.8791
RP	206.67	LAP	-1.77	LOP	336.35	VP	24.297	GAP	-12.72	AZP	90.64	TAL	347.36	TAP	237.61	RCA	146.51	APO	235.96
RC	334.204	GL	18.61	GP	-4.59	ZAL	111.39	ZAP	27.83	ETS	169.96	ZAE	43.64	ETE	174.98	ZAC	84.05	ETC	256.04

V1	30.269	V2	26.497	CLP	27.48														

PLANETOCENTRIC CONIC

C3	11.697	VHL	3.420	DLA	9.88	RAL	204.36	RAD	6567.4	VEL	11.536	PTH	2.01	VHP	6.091	DPA	-4.48	RAP	182.12
ECC	1.1925																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 42	2405.46	-23.70	53.95	60.05	105.97	18 34 47	1805.5	-21.28	46.11
90.00	8 27 5	4426.62	7.29	184.69	56.94	62.56	9 40 52	3826.6	3.55	178.00
100.00	19 20 55	2127.39	-24.66	33.18	59.73	107.45	19 56 22	1527.4	-22.04	25.36
100.00	9 43 33	4179.92	8.17	166.07	56.46	61.15	10 53 13	3579.9	4.26	159.47
110.00	20 40 14	1879.17	-27.22	13.33	58.72	111.53	21 11 33	1279.2	-24.05	5.59
110.00	10 40 43	4000.91	10.50	151.08	55.06	57.28	11 47 24	3400.9	6.12	144.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7662	TRA	4.3168	TC-19.2330	BAU	3.0078	SGT15119.8	SGR	595.7	SG3	387.6	ST	2579.3	SR	495.7	SS	560.0
RDE	.2897	RRA	.1976	RC3 .1166	FAU	.06396	RRT .2265	RRF	.1919	RTF	.9491	CRT	.6601	CRS	.3124	CST	-.5027
FDE	-.3162	FRA	1.7992	FC3-4.7334	BSP	53474	SGB15131.5	R23	-.0241	R13	.9491	LSA	2615.2	MSA	609.6	SSA	36.7
BDE	.8192	BRA	4.3213	BC319.2333	FSP	1288	SG115120.4	SG2	580.2	THA	.51	EL1	2600.4	EL2	369.3	ALF	7.38

LAUNCH DATE DEC 18 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 860.775 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.315	GAL	-2.59	AZL	88.15	HCA	251.51	SMA	191.39	ECC	.23512	INC	1.8516
RP	206.68	LAP	-1.76	LOP	337.62	VP	24.307	GAP	-12.82	AZP	90.59	TAL	346.32	TAP	237.84	RCA	146.40	APO	236.39
RC	334.996	GL	18.09	GP	-4.49	ZAL	113.24	ZAP	27.41	ETS	169.96	ZAE	42.91	ETE	174.96	ZAC	84.33	ETC	256.00

V1	30.269	V2	26.495	CLP	27.06														

PLANETOCENTRIC CONIC

C3	11.999	VHL	3.464	DLA	8.71	RAL	205.85	RAD	6567.5	VEL	11.549	PTH	2.02	VHP	6.171	DPA	-4.75	RAP	182.94
ECC	1.1975																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 55	2372.95	-23.07	51.77	61.55	106.89	18 49 28	1772.9	-20.54	44.01
90.00	8 23 43	4469.83	8.63	187.15	58.74	62.93	9 38 13	3869.8	4.94	180.42
100.00	19 35 30	2096.93	-24.02	31.14	61.22	108.35	20 10 27	1496.9	-21.29	23.41
100.00	9 40 50	4221.08	9.52	168.39	58.27	61.53	10 51 11	3621.1	5.64	161.74
110.00	20 53 24	1853.14	-26.55	11.59	60.18	112.36	21 24 17	1253.1	-23.29	3.95
110.00	10 39 25	4037.63	11.85	153.08	56.88	57.70	11 46 43	3437.6	7.50	146.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6256	TRA	4.5889	TC-18.9043	BAU	3.0327	SGT15217.2	SGR	596.1	SG3	367.2	ST	2555.7	SR	499.7	SS	571.1
RDE	.2962	RRA	.1948	RC3 .1370	FAU	.05950	RRT .1947	RRF	.1589	RTF	.9467	CRT	.5725	CRS	.3715	CST	-.5443
FDE	-.3529	FRA	1.7805	FC3-4.2930	BSP	53873	SGB15228.9	R23	-.0262	R13	.9467	LSA	2590.4	MSA	629.2	SSA	35.7
BDE	.6922	BRA	4.5930	BC318.9048	FSP	1222	SG115217.6	SG2	584.7	THA	.44	EL1	2572.1	EL2	407.0	ALF	6.55

LAUNCH DATE DEC 18 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 865.120 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.324	GAL	-2.80	AZL	88.18	HCA	252.78	SMA	191.55	ECC	.23643	INC	1.8245
RP	206.70	LAP	-1.74	LOP	338.89	VP	24.316	GAP	-12.91	AZP	90.54	TAL	345.27	TAP	238.05	RCA	146.26	APO	236.84
RC	335.784	GL	17.56	GP	-4.40	ZAL	115.09	ZAP	26.99	ETS	169.97	ZAE	42.19	ETE	174.95	ZAC	84.61	ETC	255.97

V1	30.269	V2	26.493	CLP	26.66														

PLANETOCENTRIC CONIC

C3	12.335	VHL	3.512	DLA	7.56	RAL	207.33	RAD	6567.5	VEL	11.564	PTH	2.02	VHP	6.252	DPA	-5.03	RAP	183.76
ECC	1.2030																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 52	2341.71	-22.44	49.70	63.09	107.74	19 3 53	1741.7	-19.80	42.02
90.00	8 20 34	4512.73	9.95	189.61	60.59	63.35	9 35 47	3912.7	6.30	182.84
100.00	19 49 50	2067.64	-23.38	29.20	62.75	109.17	20 24 18	1467.6	-20.55	21.55
100.00	9 38 17	4262.04	10.84	170.71	60.13	61.97	10 49 19	3662.0	7.01	164.02
110.00	21 6 22	1828.11	-25.89	9.94	61.68	113.14	21 36 51	1228.1	-22.54	2.40
110.00	10 38 14	4074.33	13.17	155.09	58.75	58.17	11 46 8	3474.3	8.87	148.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4847	TRA	4.8690	TC-18.5433	BAU	3.0580	SGT15312.9	SGR	597.0	SG3	347.2	ST	2560.6	SR	504.1	SS	580.2
RDE	.3035	RRA	.1916	RC3 .1554	FAU	.05512	RRT .1636	RRF	.1270	RTF	.9439	CRT	.4785	CRS	.4227	CST	-.5898
FDE	-.3846	FRA	1.7581	FC3-3.8686	BSP	54279	SGB15324.6	R23	-.0280	R13	.9439	LSA	2594.7	MSA	643.3	SSA	34.8
BDE	.5719	BRA	4.8728	BC318.5439	FSP	1160	SG115313.2	SG2	589.0	THA	.37	EL1	2572.3	EL2	440.7	ALF	5.54

LAUNCH DATE DEC 18 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 869.458 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.333	GAL	-3.01	AZL	88.20	HCA	254.05	SMA	191.71	ECC	.23780	INC	1.7978
RP	206.73	LAP	-1.73	LOP	340.16	VP	24.324	GAP	-13.02	AZP	90.49	TAL	344.21	TAP	238.26	RCA	146.12	APO	237.30
RC	336.567	GL	17.04	GP	-4.32	ZAL	116.92	ZAP	26.59	ETS	169.97	ZAE	41.48	ETE	174.93	ZAC	84.88	ETC	255.94

V1	30.269	V2	26.490	CLP	26.26														

PLANETOCENTRIC CONIC

C3	12.705	VHL	3.564	DLA	6.42	RAL	208.79	RAD	6567.5	VEL	11.580	PTH	2.03	VHP	6.334	DPA	-5.32	RAP	184.59
ECC	1.2091																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 30	2311.75	-21.80	47.73	64.67	108.53	19 18 2	1711.7	-19.07	40.12
90.00	8 17 37	4555.32	11.24	192.08	62.49	63.84	9 33 32	3955.3	7.64	185.25
100.00	20 3 54	2039.54	-22.74	27.36	64.32	109.94	20 37 54	1439.5	-19.82	19.78
100.00	9 35 54	4302.76	12.13	173.05	62.03	62.47	10 47 37	3702.8	8.35	166.30
110.00	21 19 8	1804.10	-25.24	8.38	63.22	113.85	21 49 12	1204.1	-21.80	.92
110.00	10 37 10	4110.96	14.48	157.13	60.67	58.69	11 45 41	3511.0	10.23	150.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3446	TRA	5.1578	TC-18.1507	BAU	3.0832	SGT15406.0	SGR	598.4	SG3	327.7	ST	2592.7	SR	508.9	SS	587.2
RDE	.3115	RRA	.1879	RC3 .1715	FAU	.05083	RRT .1336	RRF	.0959	RTF	.9405	CRT	.3821	CRS	.4680	CST	-.6344
FDE	-.4124	FRA	1.7317	FC3-3.4635	BSP	54694	SGB15417.6	R23	-.0302	R13	.9405	LSA	2626.7	MSA	652.0	SSA	33.7
BDE	.4645	BRA	5.1613	BC318.1515	FSP	1100	SG115406.2	SG2	593.0	THA	.30	EL1	2600.2	EL2	469.0	ALF	4.43

LAUNCH DATE DEC 18 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 873.788 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.341 GAL -3.23 AZL 88.23 HCA 255.32 SMA 191.87 ECC .23924 INC 1.7714 V1 30.269
RP 206.77 LAP -1.71 LOP 341.43 VP 24.331 GAP -13.12 AZP 90.45 TAL 343.14 TAP 238.45 RCA 145.97 APO 237.77 V2 26.485
RC 337.346 GL 16.51 GP -4.23 ZAL 118.73 ZAP 26.19 ETS 169.97 ZAE 40.78 ETE 174.91 ZAC 85.16 ETC 255.92 CLP 25.87

PLANETOCENTRIC CONIC

C3 13.113 VHL 3.621 DLA 5.29 RAL 210.24 RAD 6567.5 VEL 11.597 PTH 2.03 VHP 6.417 DPA -5.61 RAP 185.42 ECC 1.2158

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 52	2283.04	-21.17	45.86	66.29	109.26	19 31 56	1683.0	-18.35	38.33
90.00	8 14 50	4597.61	12.50	194.55	64.44	64.38	9 31 27	3997.6	8.95	187.66
100.00	20 17 43	2012.62	-22.11	25.61	65.92	110.65	20 51 15	1412.6	-19.10	18.11
100.00	9 33 40	4343.27	13.39	175.39	63.99	63.02	10 46 4	3743.3	9.67	168.58
110.00	21 31 41	1781.13	-24.60	6.91	64.79	114.52	22 1 22	1181.1	-21.08	359.52
110.00	10 36 12	4147.52	15.76	159.19	62.64	59.27	11 45 19	3547.5	11.57	152.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2047 TRA 5.4543 TC-17.7346 BAU 3.1092 SGT15498.2 SGR 600.0 SG3 308.6 ST 2648.4 SR 514.1 SS 591.4
RDE .3202 RRA .1839 RC3 .1855 FAU .04664 RRT .1043 RRF .0657 RTF .9367 CRT .2867 CRS .5078 CST -.6767
FDE -.4357 FRA 1.7015 FC3-3.0794 BSP 55069 SGB15509.8 R23 -.0323 R13 .9367 LSA 2682.8 MSA 655.4 SSA 32.7
BDE .3800 BRA 5.4574 BC317.7356 FSP 1039 SG115498.3 SG2 596.8 THA .23 EL1 2652.6 EL2 491.8 ALF 3.30

LAUNCH DATE DEC 18 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 878.110 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.350 GAL -3.45 AZL 88.25 HCA 256.59 SMA 192.03 ECC .24075 INC 1.7453 V1 30.269
RP 206.81 LAP -1.70 LOP 342.70 VP 24.337 GAP -13.23 AZP 90.41 TAL 342.05 TAP 238.64 RCA 145.80 APO 238.26 V2 26.480
RC 338.120 GL 15.98 GP -4.16 ZAL 120.53 ZAP 25.81 ETS 169.96 ZAE 40.09 ETE 174.89 ZAC 85.43 ETC 255.89 CLP 25.49

PLANETOCENTRIC CONIC

C3 13.560 VHL 3.682 DLA 4.19 RAL 211.68 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 6.502 DPA -5.91 RAP 186.27 ECC 1.2232

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 58	2255.60	-20.54	44.10	67.94	109.93	19 45 33	1655.6	-17.64	36.62
90.00	8 12 12	4639.60	13.72	197.02	66.44	64.99	9 29 32	4039.6	10.24	190.08
100.00	20 31 16	1986.90	-21.48	23.96	67.56	111.31	21 4 23	1386.9	-18.39	16.52
100.00	9 31 35	4383.53	14.62	177.75	65.99	63.64	10 44 39	3783.5	10.97	170.87
110.00	21 44 1	1759.23	-23.98	5.51	66.40	115.13	22 13 20	1159.2	-20.39	358.20
110.00	10 35 20	4183.97	17.02	161.26	64.65	59.90	11 45 4	3584.0	12.89	154.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0636 TRA 5.7578 TC-17.2991 BAU 3.1362 SGT15589.0 SGR 601.9 SG3 290.0 ST 2723.6 SR 519.5 SS 593.7
RDE .3295 RRA .1793 RC3 .1975 FAU .04255 RRT .0758 RRF .0357 RTF .9321 CRT .1945 CRS .5448 CST -.7138
FDE -.4567 FRA 1.6664 FC3-2.7169 BSP 55433 SGB15600.6 R23 -.0352 R13 .9321 LSA 2758.6 MSA 655.3 SSA 31.7
BDE .3356 BRA 5.7606 BC317.3003 FSP 980 SG115589.1 SG2 600.2 THA .17 EL1 2725.6 EL2 509.3 ALF 2.20

LAUNCH DATE DEC 18 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 882.422 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.358 GAL -3.68 AZL 88.28 HCA 257.85 SMA 192.19 ECC .24233 INC 1.7195 V1 30.269
RP 206.87 LAP -1.68 LOP 343.96 VP 24.342 GAP -13.34 AZP 90.36 TAL 340.95 TAP 238.81 RCA 145.62 APO 238.76 V2 26.474
RC 338.890 GL 15.46 GP -4.08 ZAL 122.30 ZAP 25.43 ETS 169.96 ZAE 39.40 ETE 174.86 ZAC 85.70 ETC 255.87 CLP 25.12

PLANETOCENTRIC CONIC

C3 14.047 VHL 3.748 DLA 3.10 RAL 213.10 RAD 6567.6 VEL 11.638 PTH 2.04 VHP 6.588 DPA -6.21 RAP 187.12 ECC 1.2312

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 47	2229.41	-19.93	42.42	69.62	110.55	19 58 56	1629.4	-16.95	35.01
90.00	8 9 44	4681.26	14.91	199.51	68.47	65.64	9 27 45	4081.3	11.50	192.49
100.00	20 44 34	1962.37	-20.86	22.40	69.23	111.91	21 17 16	1362.4	-17.71	15.02
100.00	9 29 38	4423.53	15.82	180.12	68.03	64.30	10 43 21	3823.5	12.23	173.16
110.00	21 56 8	1738.39	-23.37	4.20	68.04	115.69	22 25 6	1138.4	-19.72	356.96
110.00	10 34 33	4220.27	18.25	163.36	66.71	60.58	11 44 53	3620.3	14.19	156.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0756 TRA 6.0709 TC-16.8434 BAU 3.1634 SGT15678.2 SGR 604.1 SG3 272.0 ST 2816.3 SR 525.3 SS 592.5
RDE .3396 RRA .1744 RC3 .2075 FAU .03857 RRT .0484 RRF .0072 RTF .9270 CRT .1093 CRS .5765 CST -.7466
FDE -.4724 FRA 1.6281 FC3-2.3774 BSP 55806 SGB15689.8 R23 -.0378 R13 .9269 LSA 2851.8 MSA 651.4 SSA 30.7
BDE .3479 BRA 6.0734 BC316.8447 FSP 921 SG115678.2 SG2 603.4 THA .11 EL1 2816.9 EL2 522.0 ALF 1.21

LAUNCH DATE DEC 18 1964 FLIGHT TIME 410.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 886.725 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.367 GAL -3.91 AZL 88.31 HCA 259.12 SMA 192.35 ECC .24398 INC 1.6940 V1 30.269
RP 206.93 LAP -1.66 LOP 345.23 VP 24.346 GAP -13.45 AZP 90.32 TAL 339.84 TAP 238.96 RCA 145.42 APO 239.28 V2 26.466
RC 339.657 GL 14.94 GP -4.01 ZAL 124.05 ZAP 25.07 ETS 169.95 ZAE 38.73 ETE 174.84 ZAC 85.97 ETC 255.85 CLP 24.76

PLANETOCENTRIC CONIC

C3 14.578 VHL 3.818 DLA 2.03 RAL 214.50 RAD 6567.6 VEL 11.660 PTH 2.05 VHP 6.676 DPA -6.53 RAP 187.97 ECC 1.2399

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 19	2204.47	-19.32	40.84	71.33	111.11	20 12 4	1604.5	-16.28	33.49
90.00	8 7 23	4722.60	16.05	202.00	70.56	66.36	9 26 6	4122.6	12.72	194.91
100.00	20 57 36	1939.04	-20.26	20.92	70.93	112.46	21 29 55	1339.0	-17.04	13.61
100.00	9 27 47	4463.26	16.98	182.50	70.12	65.02	10 42 11	3863.3	13.47	175.46
110.00	22 8 1	1718.65	-22.78	2.97	69.70	116.20	22 36 40	1118.6	-19.07	355.79
110.00	10 33 52	4256.43	19.44	165.49	68.81	61.31	11 44 48	3656.4	15.46	158.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2139 TRA 6.3911 TC-16.3722 BAU 3.1911 SGT15764.0 SGR 606.5 SG3 254.3 ST 2921.0 SR 531.1 SS 588.8
RDE .3503 RRA .1691 RC3 .2157 FAU .03466 RRT .0218 RRF -.0209 RTF .9207 CRT .0314 CRS .6059 CST -.7737
FDE -.4852 FRA 1.5851 FC3-2.0584 BSP 56148 SGB15775.7 R23 -.0410 R13 .9207 LSA 2956.9 MSA 645.7 SSA 29.7
BDE .4104 BRA 6.3933 BC316.3736 FSP 864 SG115764.0 SG2 606.4 THA .05 EL1 2921.1 EL2 530.8 ALF .34

LAUNCH DATE DEC 18 1964 FLIGHT TIME 412.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 891.016 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.376 GAL -4.15 AZL 88.33 HCA 260.38 SMA 192.51 ECC .24571 INC 1.6687 V1 30.269
RP 207.00 LAP -1.65 LOP 346.50 VP 24.349 GAP -13.57 AZP 90.28 TAL 338.73 TAP 239.11 RCA 145.21 APO 239.81 V2 26.458
RC 340.420 GL 14.42 GP -3.94 ZAL 125.77 ZAP 24.71 ETS 169.95 ZAE 38.06 ETE 174.81 ZAC 86.24 ETC 255.84 CLP 24.41

PLANETOCENTRIC CONIC

C3 15.154 VHL 3.893 DLA .99 RAL 215.89 RAD 6567.6 VEL 11.685 PTH 2.06 VHP 6.764 DPA -6.84 RAP 188.84 ECC 1.2494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 35	2180.76	-18.73	39.35	73.06	111.63	20 24 56	1580.8	-15.63	32.05
90.00	8 5 11	4763.61	17.16	204.51	72.68	67.12	9 24 35	4163.6	13.91	197.34
100.00	21 10 24	1916.90	-19.68	19.54	72.65	112.96	21 42 20	1316.9	-16.40	12.28
100.00	9 26 4	4502.70	18.10	184.89	72.25	65.79	10 41 7	3902.7	14.67	177.77
110.00	22 19 41	1700.00	-22.21	1.82	71.40	116.68	22 48 1	1100.0	-18.45	354.70
110.00	10 33 15	4292.37	20.60	167.63	70.95	62.10	11 44 48	3692.4	16.71	160.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3520 TRA 6.7193 TC-15.8948 BAU 3.2205 SGT15850.8 SGR 609.0 SG3 237.2 ST 3035.0 SR 537.1 SS 582.3
RDE .3616 RRA .1633 RC3 .2222 FAU .03085 RRT -.0040 RRF -.0481 RTF .9134 CRT -.0390 CRS .6327 CST -.7963
FDE -.4944 FRA 1.5380 FC3-1.7624 BSP 56449 SGB15862.4 R23 .0444 R13 -.9134 LSA 3070.8 MSA 638.7 SSA 28.7
BDE .5046 BRA 6.7213 BC315.8963 FSP 807 SG115850.8 SG2 609.0 THA 179.99 EL1 3035.1 EL2 536.7 ALF 179.59

LAUNCH DATE DEC 18 1964 FLIGHT TIME 414.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 895.296 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.384 GAL -4.39 AZL 88.36 HCA 261.65 SMA 192.67 ECC .24751 INC 1.6436 V1 30.269
RP 207.08 LAP -1.63 LOP 347.76 VP 24.351 GAP -13.69 AZP 90.24 TAL 337.59 TAP 239.24 RCA 144.99 APO 240.36 V2 26.449
RC 341.179 GL 13.91 GP -3.87 ZAL 127.47 ZAP 24.36 ETS 169.94 ZAE 37.41 ETE 174.78 ZAC 86.51 ETC 255.83 CLP 24.07

PLANETOCENTRIC CONIC

C3 15.778 VHL 3.972 DLA -.03 RAL 217.26 RAD 6567.6 VEL 11.712 PTH 2.06 VHP 6.855 DPA -7.17 RAP 189.71 ECC 1.2597

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 36	2158.28	-18.16	37.95	74.83	112.10	20 37 34	1558.3	-15.01	30.69
90.00	8 3 6	4804.27	18.21	207.02	74.84	67.94	9 23 10	4204.3	15.06	199.77
100.00	21 22 56	1895.95	-19.12	18.23	74.40	113.43	21 54 32	1295.9	-15.79	11.02
100.00	9 24 27	4541.84	19.17	187.30	74.42	66.62	10 40 9	3941.8	15.84	180.09
110.00	22 31 8	1682.44	-21.67	.74	73.12	117.10	22 59 11	1082.4	-17.87	353.68
110.00	10 32 44	4328.11	21.72	169.79	73.13	62.94	11 44 52	3728.1	17.92	162.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4880 TRA 7.0563 TC-15.4072 BAU 3.2503 SGT15934.5 SGR 611.7 SG3 220.6 ST 3155.0 SR 543.1 SS 572.8
RDE .3735 RRA .1571 RC3 .2271 FAU .02712 RRT -.0288 RRF -.0742 RTF .9048 CRT -.1014 CRS .6569 CST -.8145
FDE -.5000 FRA 1.4868 FC3-1.4880 BSP 56766 SGB15946.3 R23 .0481 R13 -.9048 LSA 3190.4 MSA 631.0 SSA 27.9
BDE .6146 BRA 7.0580 BC315.4089 FSP 752 SG115934.5 SG2 611.5 THA 179.94 EL1 3155.5 EL2 540.2 ALF 178.97

LAUNCH DATE DEC 18 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 7 1966

HELIOCENTRIC CONIC DISTANCE 899.563 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.393 GAL -4.64 AZL 88.38 HCA 262.91 SMA 192.84 ECC .24940 INC 1.6187 V1 30.269
RP 207.17 LAP -1.61 LOP 349.03 VP 24.352 GAP -13.81 AZP 90.20 TAL 336.45 TAP 239.37 RCA 144.74 APO 240.93 V2 26.438
RC 341.936 GL 13.40 GP -3.81 ZAL 129.13 ZAP 24.02 ETS 169.93 ZAE 36.76 ETE 174.74 ZAC 86.78 ETC 255.82 CLP 23.74

PLANETOCENTRIC CONIC

C3 16.452 VHL 4.056 DLA -1.03 RAL 218.61 RAD 6567.7 VEL 11.740 PTH 2.07 VHP 6.946 DPA -7.49 RAP 190.59 ECC 1.2708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 14 21	2137.02	-17.61	36.63	76.62	112.54	20 49 58	1537.0	-14.41	29.42
90.00	8 1 7	4844.57	19.23	209.55	77.04	68.80	9 21 52	4244.6	16.17	202.20
100.00	21 35 13	1876.17	-18.58	17.01	76.18	113.85	22 6 29	1276.2	-15.20	9.85
100.00	9 22 56	4580.65	20.20	189.72	76.62	67.49	10 39 17	3980.7	16.97	182.42
110.00	22 42 22	1665.97	-21.16	359.74	74.86	117.50	23 10 8	1066.0	-17.31	352.73
110.00	10 32 17	4363.62	22.81	171.98	75.36	63.82	11 45 0	3763.6	19.10	164.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.6231 TRA 7.4025 TC-14.9168 BAU 3.2812 SGT16018.2 SGR 614.5 SG3 204.4 ST 3278.8 SR 549.1 SS 561.1
RDE .3861 RRA .1505 RC3 .2305 FAU .02346 RRT -.0528 RRF -.0996 RTF .8943 CRT -.1566 CRS .6798 CST -.8287
FDE -.5030 FRA 1.4316 FC3-1.2345 BSP 57040 SGB16029.9 R23 .0524 R13 -.8943 LSA 3313.3 MSA 623.3 SSA 27.0
BDE .7330 BRA 7.4041 BC314.9186 FSP 696 SG116018.2 SG2 613.6 THA 179.88 EL1 3280.0 EL2 542.2 ALF 178.46

LAUNCH DATE DEC 18 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 9 1966

HELIOCENTRIC CONIC DISTANCE 903.817 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.402 GAL -4.89 AZL 88.41 HCA 264.17 SMA 193.00 ECC .25138 INC 1.5940 V1 30.269
RP 207.27 LAP -1.59 LOP 350.29 VP 24.351 GAP -13.94 AZP 90.16 TAL 335.30 TAP 239.48 RCA 144.48 APO 241.52 V2 26.427
RC 342.690 GL 12.91 GP -3.74 ZAL 130.77 ZAP 23.69 ETS 169.92 ZAE 36.12 ETE 174.71 ZAC 87.04 ETC 255.82 CLP 23.41

PLANETOCENTRIC CONIC

C3 17.178 VHL 4.145 DLA -1.99 RAL 219.94 RAD 6567.7 VEL 11.771 PTH 2.08 VHP 7.040 DPA -7.82 RAP 191.47 ECC 1.2827

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 26 50	2116.96	-17.09	35.39	78.43	112.93	21 2 7	1517.0	-13.83	28.23
90.00	7 59 15	4884.50	20.19	212.08	79.27	69.71	9 20 40	4284.5	17.24	204.64
100.00	21 47 15	1857.56	-18.06	15.87	77.98	114.23	22 18 12	1257.6	-14.64	8.75
100.00	9 21 31	4619.13	21.18	192.16	78.86	68.40	10 38 31	4019.1	18.06	184.75
110.00	22 53 22	1650.59	-20.67	358.81	76.63	117.85	23 20 52	1050.6	-16.78	351.84
110.00	10 31 54	4398.86	23.85	174.19	77.61	64.75	11 45 13	3798.9	20.25	166.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.7557 TRA 7.7569 TC-14.4247 BAU 3.3132 SGT16099.4 SGR 617.3 SG3 188.9 ST 3403.1 SR 555.1 SS 546.9
RDE .3992 RRA .1434 RC3 .2326 FAU .01988 RRT -.0758 RRF -.1240 RTF .8817 CRT -.2049 CRS .7012 CST -.8395
FDE -.5029 FRA 1.3725 FC3-1.0020 BSP 57315 SGB16111.2 R23 .0572 R13 -.8817 LSA 3436.3 MSA 616.0 SSA 26.2
BDE .8547 BRA 7.7582 BC314.4266 FSP 643 SG116099.4 SG2 615.5 THA 179.83 EL1 3405.1 EL2 543.0 ALF 178.04

LAUNCH DATE DEC 18 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 11 1966

HELIOCENTRIC CONIC DISTANCE 908.057 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.411	GAL	-5.14	AZL	88.43	HCA	265.44	SMA	193.16	ECC	.25344	INC	1.5694
RP	207.37	LAP	-1.56	LOP	351.55	VP	24.350	GAP	-14.07	AZP	90.12	TAL	334.14	TAP	239.58	RCA	144.21	APO	242.12
RC	343.441	GL	12.42	GP	-3.68	ZAL	132.37	ZAP	23.37	ETS	169.91	ZAE	35.49	ETE	174.67	ZAC	87.31	ETC	255.82

V1	30.269	V2	26.415	CLP	23.10														

PLANETOCENTRIC CONIC

C3	17.961	VHL	4.238	DLA	-2.93	RAL	221.25	RAD	6567.7	VEL	11.804	PTH	2.09	VHP	7.135	DPA	-8.16	RAP	192.36

ECC	1.2956	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	20 39 4	2098.08	-16.58	34.24	80.26	113.29	21 14 2	1498.1	-13.29	27.11							
		90.00	7 57 29	4924.04	21.10	214.62	81.54	70.67	9 19 33	4324.0	18.27	207.09							
		100.00	21 59 2	1840.09	-17.57	14.81	79.80	114.58	22 29 42	1240.1	-14.11	7.73							
		100.00	9 20 12	4657.26	22.12	194.60	81.14	69.36	10 37 49	4057.3	19.11	187.10							
		110.00	23 4 8	1636.29	-20.22	357.95	78.41	118.17	23 31 25	1036.3	-16.29	351.03							
		110.00	10 31 35	4433.83	24.85	176.42	79.91	65.73	11 45 29	3833.8	21.36	169.00							

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.8863	TRA	8.1202	TC	-13.9315	BAU	3.3457	SGT	16177.4	SGR	620.2	SG3	173.8	ST	3526.5	SR	561.0
RDE	.4129	RRA	.1359	RC3	.2334	FAU	.01637	RRT	-.0980	RRF	-.1473	RTF	.8664	CRT	-.2472	CRS	.7215
FDE	-.5001	FRA	1.3092	FC3	-.7891	BSP	57563	SGB	16189.3	R23	.0626	R13	-.8664	LSA	3558.2	MSA	609.0
BDE	.9778	BRA	8.1214	BC3	13.9334	FSP	589	SG1	16177.5	SG2	617.2	THA	179.78	EL1	3529.3	EL2	543.2

CST	-.8472	LSA	25.5	SSA	177.69												

LAUNCH DATE DEC 18 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 13 1966

HELIOCENTRIC CONIC DISTANCE 912.281 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.419	GAL	-5.41	AZL	88.46	HCA	266.70	SMA	193.33	ECC	.25559	INC	1.5448
RP	207.48	LAP	-1.54	LOP	352.81	VP	24.348	GAP	-14.21	AZP	90.09	TAL	332.97	TAP	239.66	RCA	143.92	APO	242.74
RC	344.188	GL	11.94	GP	-3.63	ZAL	133.94	ZAP	23.06	ETS	169.90	ZAE	34.87	ETE	174.63	ZAC	87.57	ETC	255.82

V1	30.269	V2	26.402	CLP	22.79														

PLANETOCENTRIC CONIC

C3	18.802	VHL	4.336	DLA	-3.85	RAL	222.55	RAD	6567.8	VEL	11.840	PTH	2.10	VHP	7.231	DPA	-8.50	RAP	193.26

ECC	1.3094	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	20 51 2	2080.35	-16.10	33.16	82.11	113.61	21 25 43	1480.3	-12.77	26.06							
		90.00	7 55 49	4963.20	21.96	217.17	83.83	71.66	9 18 32	4363.2	19.25	209.55							
		100.00	22 10 35	1823.76	-17.11	13.82	81.63	114.89	22 40 59	1223.8	-13.61	6.77							
		100.00	9 18 58	4695.03	23.01	197.06	83.44	70.37	10 37 13	4095.0	20.12	189.45							
		110.00	23 14 42	1623.04	-19.79	357.16	80.21	118.46	23 41 45	1023.0	-15.83	350.27							
		110.00	10 31 20	4468.51	25.80	178.66	82.24	66.75	11 45 49	3868.5	22.43	171.13							

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.0164	TRA	8.4913	TC	-13.4451	BAU	3.3801	SGT	16254.8	SGR	623.1	SG3	159.2	ST	3648.0	SR	566.8
RDE	.4272	RRA	.1279	RC3	.2332	FAU	.01293	RRT	-.1196	RRF	-.1696	RTF	.8474	CRT	-.2847	CRS	.7410
FDE	-.4946	FRA	1.2414	FC3	-.5954	BSP	57770	SGB	16266.7	R23	.0686	R13	-.8474	LSA	3677.9	MSA	602.4
BDE	1.1025	BRA	8.4923	BC3	13.4472	FSP	536	SG1	16254.9	SG2	618.6	THA	179.74	EL1	3651.6	EL2	542.7

CST	-.8526	LSA	24.8	SSA	171.13												

LAUNCH DATE DEC 18 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 15 1966

HELIOCENTRIC CONIC DISTANCE 916.489 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.428	GAL	-5.67	AZL	88.48	HCA	267.95	SMA	193.49	ECC	.25783	INC	1.5204
RP	207.61	LAP	-1.52	LOP	354.07	VP	24.344	GAP	-14.36	AZP	90.05	TAL	331.78	TAP	239.74	RCA	143.60	APO	243.38
RC	344.932	GL	11.47	GP	-3.57	ZAL	135.48	ZAP	22.76	ETS	169.89	ZAE	34.25	ETE	174.59	ZAC	87.83	ETC	255.82

V1	30.269	V2	26.387	CLP	22.49														

PLANETOCENTRIC CONIC

C3	19.704	VHL	4.439	DLA	-4.73	RAL	223.62	RAD	6567.8	VEL	11.878	PTH	2.11	VHP	7.329	DPA	-8.84	RAP	194.17

ECC	1.3243	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	21 2 46	2063.75	-15.65	32.15	83.97	113.91	21 37 10	1463.8	-12.28	25.09							
		90.00	7 54 14	5001.96	22.77	219.73	86.15	72.70	9 17 36	4402.0	20.19	212.01							
		100.00	22 21 53	1808.53	-16.67	12.90	83.49	115.18	22 52 2	1208.5	-13.14	5.89							
		100.00	9 17 48	4732.42	23.84	199.53	85.77	71.41	10 36 41	4132.4	21.08	191.82							
		110.00	23 25 2	1610.85	-19.39	356.44	82.03	118.72	23 51 53	1010.9	-15.41	349.58							
		110.00	10 31 9	4502.87	26.70	180.92	84.60	67.82	11 46 12	3902.9	23.45	173.27							

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.1435	TRA	8.8719	TC	-12.9633	BAU	3.4154	SGT	16329.8	SGR	625.9	SG3	145.3	ST	3765.8	SR	572.3
RDE	.4419	RRA	.1195	RC3	.2321	FAU	.00955	RRT	-.1403	RRF	-.1905	RTF	.8237	CRT	-.3173	CRS	.7600
FDE	-.4868	FRA	1.1697	FC3	-.4195	BSP	57986	SGB	16341.8	R23	.0756	R13	-.8237	LSA	3793.9	MSA	596.4
BDE	1.2260	BRA	8.8727	BC3	12.9654	FSP	485	SG1	16330.0	SG2	619.7	THA	179.69	EL1	3770.2	EL2	542.1

CST	-.8553	LSA	24.1	SSA	177.18												

LAUNCH DATE DEC 18 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 17 1966

HELIOCENTRIC CONIC DISTANCE 920.680 EARTH TO MARS

RL	147.19	LAL	.00	LOL	86.12	VL	33.437	GAL	-5.95	AZL	88.50	HCA	269.21	SMA	193.66	ECC	.26018	INC	1.4961
RP	207.74	LAP	-1.50	LOP	355.33	VP	24.340	GAP	-14.51	AZP	90.02	TAL	330.59	TAP	239.80	RCA	143.27	APO	244.04
RC	345.671	GL	11.01	GP	-3.52	ZAL	136.99	ZAP	22.46	ETS	169.87	ZAE	33.64	ETE	174.54	ZAC	88.10	ETC	255.83

V1	30.269	V2	26.372	CLP	22.20														

PLANETOCENTRIC CONIC

C3	20.672	VHL	4.547	DLA	-5.59	RAL	225.07	RAD	6567.8	VEL	11.919	PTH	2.12	VHP	7.430	DPA	-9.19	RAP	195.08

ECC	1.3402	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	21 14 15	2048.26	-15.22	31.22	85.85	114.17	21 48 23	1448.3	-11.82	24.18							
		90.00	7 52 45	5040.32	23.52	222.28	88.49	73.77	9 16 45	4440.3	21.07	214.47							
		100.00	22 32 57	1794.38	-16.26	12.05	85.35	115.44	23 2 51	1194.4	-12.70	5.07							
		100.00	9 16 44	4769.43	24.62	202.00	88.13	72.49	10 36 13	4169.4	21.99	194.19							
		110.00	23 35 9	1599.66	-19.02	355.78	83.86	118.95	24 1 48	999.7	-15.02	348.96							
		110.00	10 31 2	4536.91	27.55	183.20	86.99	68.92	11 46 38	3936.9	24.44	175.42							

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.2681	TRA	9.2617	TC	-12.4891	BAU	3.4521	SGT	16402.9	SGR	628.7	SG3	132.0	ST	3879.0	SR	577.7
RDE	.4571	RRA	.1107	RC3	.2300	FAU	.00622	RRT	-.1602	RRF	-.2095	RTF	.7937	CRT	-.3458	CRS	.7787
FDE	-.4765	FRA	1.0939	FC3	-.2606	BSP	58157	SGB	16414.9	R23	.0833	R13	-.7937	LSA	3905.2	MSA	591.0
BDE	1.3479	BRA	9.2624	BC3	12.4912	FSP	434	SG1	16403.2	SG2	620.6	THA	179.65	EL1	3884.3	EL2	541.3

CST	-.8557	LSA	23.5	SSA	176.99												

LAUNCH DATE DEC 18 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 19 1966

HELIOCENTRIC CONIC DISTANCE 924.852 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.446 GAL -6.23 AZL 88.53 HCA 270.47 SMA 193.83 ECC .26262 INC 1.4718 V1 30.269
RP 207.87 LAP -1.47 LOP 356.58 VP 24.335 GAP -14.66 AZP 89.99 TAL 329.39 TAP 239.85 RCA 142.92 APO 244.73 V2 26.356
RC 346.405 GL 10.56 GP -3.47 ZAL 138.46 ZAP 22.17 ETS 169.86 ZAE 33.04 ETE 174.50 ZAC 88.36 ETC 255.85 CLP 21.91

PLANETOCENTRIC CONIC

C3 21.708 VHL 4.659 DLA -6.42 RAL 226.30 RAD 6567.9 VEL 11.962 PTH 2.13 VHP 7.532 DPA -9.54 RAP 196.00 ECC 1.3573

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 25 30	2033.85	-14.81	30.35	87.74	114.41	21 59 24	1433.8	-11.39	23.34
90.00	7 51 20	5078.25	24.22	224.85	90.86	74.87	9 15 58	4478.3	21.91	216.94
100.00	22 43 47	1781.29	-15.87	11.27	87.23	115.67	23 13 28	1181.3	-12.29	4.31
100.00	9 15 44	4806.05	25.35	204.48	90.51	73.60	10 35 50	4206.0	22.86	196.56
110.00	23 45 3	1589.48	-18.69	355.18	85.70	119.16	24 11 32	989.5	-14.66	348.38
110.00	10 30 58	4570.61	28.36	185.49	89.40	70.06	11 47 8	3970.6	25.38	177.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.3904 TRA 9.6614 TC-12.0237 BAU 3.4901 SGT16474.2 SGR 631.5 SG3 119.4 ST 3987.6 SR 582.7 SS 445.0
RDE .4729 RRA .1014 RC3 .2273 FAU .00295 RRT -.1794 RRF -.2267 RTF .7552 CRT -.3706 CRS .7978 CST -.8533
FDE -.4644 FRA 1.0135 FC3 -.1176 BSP 58306 SGB16486.3 R23 .0925 R13 -.7552 LSA 4011.8 MSA 586.2 SSA 22.9
BDE 1.4686 BRA 9.6619 BC312.0258 FSP 384 SG116474.6 SG2 621.2 THA 179.61 EL1 3993.6 EL2 540.4 ALF 176.84

LAUNCH DATE DEC 18 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 21 1966

HELIOCENTRIC CONIC DISTANCE 929.004 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.454 GAL -6.51 AZL 88.55 HCA 271.72 SMA 193.99 ECC .26516 INC 1.4475 V1 30.269
RP 208.02 LAP -1.45 LOP 357.84 VP 24.328 GAP -14.82 AZP 89.96 TAL 328.18 TAP 239.90 RCA 142.55 APO 245.43 V2 26.339
RC 347.135 GL 10.12 GP -3.42 ZAL 139.90 ZAP 21.89 ETS 169.85 ZAE 32.45 ETE 174.45 ZAC 88.62 ETC 255.87 CLP 21.64

PLANETOCENTRIC CONIC

C3 22.817 VHL 4.777 DLA -7.22 RAL 227.52 RAD 6567.9 VEL 12.008 PTH 2.14 VHP 7.635 DPA -9.89 RAP 196.93 ECC 1.3755

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 36 30	2020.47	-14.43	29.55	89.65	114.63	22 10 11	1420.5	-10.99	22.56
90.00	7 50 0	5115.77	24.86	227.41	93.24	75.99	9 15 16	4515.8	22.69	219.41
100.00	22 54 23	1769.21	-15.51	10.55	89.12	115.88	23 23 53	1169.2	-11.91	3.61
100.00	9 14 48	4842.26	26.02	206.96	92.91	74.74	10 35 30	4242.3	23.67	198.94
110.00	23 54 44	1580.28	-18.38	354.65	87.55	119.34	24 21 4	980.3	-14.33	347.87
110.00	10 30 57	4603.96	29.11	187.80	91.84	71.24	11 47 41	4004.0	26.27	179.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.5110 TRA10.0690 TC-11.5720 BAU 3.5306 SGT16544.2 SGR 634.2 SG3 107.7 ST 4090.7 SR 587.6 SS 419.8
RDE .4890 RRA .0918 RC3 .2239 FAU-.00027 RRT -.1980 RRF -.2402 RTF .7055 CRT -.3926 CRS .8168 CST -.8487
FDE -.4500 FRA .9292 FC3 .0101 BSP 58426 SGB16556.3 R23 .1024 R13 -.7056 LSA 4112.9 MSA 581.7 SSA 22.3
BDE 1.5881 BRA10.0694 BC311.5741 FSP 335 SG116544.6 SG2 621.6 THA 179.56 EL1 4097.3 EL2 539.5 ALF 176.72

LAUNCH DATE DEC 18 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 23 1966

HELIOCENTRIC CONIC DISTANCE 933.135 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.463 GAL -6.80 AZL 88.58 HCA 272.97 SMA 194.16 ECC .26782 INC 1.4232 V1 30.269
RP 208.17 LAP -1.42 LOP 359.09 VP 24.321 GAP -14.99 AZP 89.93 TAL 326.95 TAP 239.93 RCA 142.16 APO 246.16 V2 26.322
RC 347.858 GL 9.70 GP -3.37 ZAL 141.31 ZAP 21.62 ETS 169.84 ZAE 31.87 ETE 174.39 ZAC 88.88 ETC 255.89 CLP 21.37

PLANETOCENTRIC CONIC

C3 24.002 VHL 4.899 DLA -7.99 RAL 228.71 RAD 6568.0 VEL 12.057 PTH 2.16 VHP 7.741 DPA -10.25 RAP 197.86 ECC 1.3950

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 17	2008.11	-14.08	28.81	91.56	114.82	22 20 45	1408.1	-10.62	21.85
90.00	7 48 45	5152.86	25.45	229.96	95.64	77.15	9 14 38	4552.9	23.43	221.88
100.00	23 4 46	1758.13	-15.18	9.89	91.02	116.06	23 34 4	1158.1	-11.56	2.98
100.00	9 13 57	4878.06	26.64	209.44	95.32	75.91	10 35 15	4278.1	24.44	201.33
110.00	0 8 9	1572.01	-18.10	354.16	89.41	119.50	0 34 21	972.0	-14.04	347.41
110.00	10 31 0	4636.95	29.81	190.11	94.30	72.44	11 48 17	4037.0	27.12	181.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.6283 TRA10.4880 TC-11.1291 BAU 3.5718 SGT16611.8 SGR 636.7 SG3 96.9 ST 4188.1 SR 592.1 SS 393.6
RDE .5056 RRA .0816 RC3 .2200 FAU-.00343 RRT -.2158 RRF -.2497 RTF .6408 CRT -.4116 CRS .8367 CST -.8406
FDE -.4341 FRA .8405 FC3 .1239 BSP 58528 SGB16624.0 R23 .1140 R13 -.6408 LSA 4208.5 MSA 577.8 SSA 21.8
BDE 1.7050 BRA10.4883 BC311.1313 FSP 287 SG116612.4 SG2 621.7 THA 179.53 EL1 4195.4 EL2 538.7 ALF 176.61

LAUNCH DATE DEC 18 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 25 1966

HELIOCENTRIC CONIC DISTANCE 937.244 EARTH TO MARS

RL 147.19 LAL .00 LOL 86.12 VL 33.472 GAL -7.10 AZL 88.60 HCA 274.22 SMA 194.33 ECC .27058 INC 1.3990 V1 30.269
RP 208.33 LAP -1.40 LOP .34 VP 24.313 GAP -15.16 AZP 89.90 TAL 325.72 TAP 239.94 RCA 141.75 APO 246.91 V2 26.303
RC 348.577 GL 9.28 GP -3.32 ZAL 142.69 ZAP 21.36 ETS 169.82 ZAE 31.30 ETE 174.34 ZAC 89.14 ETC 255.91 CLP 21.12

PLANETOCENTRIC CONIC

C3 25.267 VHL 5.027 DLA -8.74 RAL 229.88 RAD 6568.0 VEL 12.110 PTH 2.17 VHP 7.849 DPA -10.61 RAP 198.80 ECC 1.4158

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 50	1996.72	-13.76	28.14	93.48	115.00	22 31 7	1396.7	-10.27	21.19
90.00	7 47 34	5189.51	25.98	232.52	98.05	78.32	9 14 3	4589.5	24.11	224.35
100.00	23 14 55	1748.01	-14.88	9.29	92.92	116.23	23 44 4	1148.0	-11.24	2.40
100.00	9 13 9	4913.45	27.20	211.92	97.75	77.10	10 35 3	4313.4	25.15	203.72
110.00	0 17 25	1564.65	-17.86	353.74	91.28	119.64	0 43 29	964.7	-13.78	347.00
110.00	10 31 5	4669.57	30.46	192.43	96.78	73.68	11 48 55	4069.6	27.92	184.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.7427 TRA10.9161 TC-10.6990 BAU 3.6148 SGT16676.7 SGR 639.2 SG3 87.2 ST 4279.3 SR 596.3 SS 366.4
RDE .5226 RRA .0711 RC3 .2156 FAU-.00657 RRT -.2329 RRF -.2525 RTF .5560 CRT -.4282 CRS .8573 CST -.8289
FDE -.4162 FRA .7475 FC3 .2250 BSP 58609 SGB16689.0 R23 .1263 R13 -.5560 LSA 4297.9 MSA 574.2 SSA 21.3
BDE 1.8194 BRA10.9163 BC310.7011 FSP 240 SG116677.4 SG2 621.6 THA 179.49 EL1 4287.1 EL2 537.9 ALF 176.53

LAUNCH DATE DEC 19 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 351.970 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	35.230	GAL	2.29	AZL	88.91	HCA	108.17	SMA	236.01	ECC	.37822	INC	1.0886
RP	243.38	LAP	1.03	LOP	195.31	VP	22.985	GAP	22.16	AZP	90.34	TAL	8.37	TAP	116.54	RCA	146.75	APO	325.28
RC	140.134	GL	7.38	GP	2.49	ZAL	72.78	ZAP	172.70	ETS	158.72	ZAE	152.05	ETE	3.15	ZAC	91.97	ETC	255.92

V1 30.271 V2 22.547 CLP 173.14

PLANETOCENTRIC CONIC

C3	27.074	VHL	5.203	DLA	14.74	RAL	164.18	RAD	6568.1	VEL	12.184	PTH	2.19	VHP	10.201	DPA	.03	RAP	189.27

ECC 1.4456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 29 7	2764.63	-28.04	79.25	36.30	94.10	15 15 12	2164.6	-27.18	70.69
90.00	6 24 14	4455.79	8.20	186.35	28.91	62.80	7 38 30	3855.8	4.49	179.63
100.00	15 58 24	2476.71	-29.45	57.94	36.17	95.35	16 39 41	1876.7	-28.40	49.29
100.00	7 37 39	4218.94	9.45	168.27	28.25	61.51	8 47 58	3618.9	5.57	161.63
110.00	17 24 23	2207.69	-33.17	36.97	35.63	98.78	18 1 10	1607.7	-31.60	28.09
110.00	8 28 9	4060.73	12.68	154.34	26.32	57.99	9 35 50	3460.7	8.36	147.91

DIFFERENTIAL CORRECTIONS

TDE	.2683	TRA	-.9615	TC3	1.2360	BAU	.4474
RDE	-.5557	RRA	-.2204	RC3	.0095	FAU	.06475
FDE	.1437	FRA	.1374	FC3	-2.0706	BSP	5457
BDE	.6171	BRA	.9865	BC3	1.2361	FSP	507

MID-COURSE EXECUTION ACCURACY

SGT	1714.8	SGR	661.4	SG3	187.2		
RRT	.0940	RRF	-.1098	RTF	-.7797		
SGB	1837.9	R23	-.0239	R13	-.7802		
SG1	1716.1	SG2	658.0	THA	2.44		

ORBIT DETERMINATION ACCURACY

ST	443.5	SR	616.5	SS	156.2
CRT	-.5708	CRS	.9185	CST	-.3669
LSA	697.7	MSA	334.3	SSA	52.0
EL1	685.1	EL2	327.7	ALF	119.78

LAUNCH DATE DEC 19 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 354.349 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	35.111	GAL	2.43	AZL	88.93	HCA	109.08	SMA	232.56	ECC	.36924	INC	1.0684
RP	243.12	LAP	1.01	LOP	196.22	VP	22.827	GAP	21.52	AZP	90.35	TAL	9.01	TAP	118.09	RCA	146.69	APO	318.43
RC	142.373	GL	7.35	GP	2.56	ZAL	71.56	ZAP	172.10	ETS	159.76	ZAE	152.15	ETE	3.44	ZAC	92.11	ETC	255.91

V1 30.271 V2 22.572 CLP 172.52

PLANETOCENTRIC CONIC

C3	26.110	VHL	5.110	DLA	15.18	RAL	163.00	RAD	6568.1	VEL	12.144	PTH	2.18	VHP	9.946	DPA	-.03	RAP	189.57

ECC 1.4297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 20 23	2771.40	-28.08	79.74	34.63	93.85	15 6 34	2171.4	-27.25	71.17
90.00	6 23 34	4431.03	7.43	184.94	27.24	62.60	7 37 25	3831.0	3.70	178.25
100.00	15 49 59	2482.43	-29.49	58.36	34.50	95.13	16 31 22	1882.4	-28.47	49.70
100.00	7 36 39	4195.24	8.68	166.93	26.56	61.28	8 46 34	3595.2	4.78	160.31
110.00	17 16 39	2211.27	-33.21	37.24	33.98	98.62	17 53 30	1611.3	-31.66	28.36
110.00	8 26 29	4039.16	11.90	153.16	24.63	57.72	9 33 48	3439.2	7.56	146.76

DIFFERENTIAL CORRECTIONS

TDE	.2485	TRA	-.9301	TC3	1.3140	BAU	.4587
RDE	-.5457	RRA	-.2128	RC3	.0151	FAU	.06715
FDE	.1639	FRA	.1070	FC3	-2.2267	BSP	5592
BDE	.5996	BRA	.9542	BC3	1.3141	FSP	540

MID-COURSE EXECUTION ACCURACY

SGT	1746.1	SGR	660.2	SG3	197.5		
RRT	.1019	RRF	-.1181	RTF	-.7863		
SGB	1866.7	R23	-.0249	R13	-.7868		
SG1	1747.6	SG2	656.2	THA	2.57		

ORBIT DETERMINATION ACCURACY

ST	429.4	SR	616.4	SS	171.5
CRT	-.5532	CRS	.9370	CST	-.4244
LSA	693.8	MSA	330.8	SSA	54.5
EL1	676.9	EL2	325.7	ALF	118.13

LAUNCH DATE DEC 19 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 356.839 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	34.998	GAL	2.55	AZL	88.95	HCA	110.00	SMA	229.36	ECC	.36073	INC	1.0478
RP	242.87	LAP	.98	LOP	197.14	VP	22.678	GAP	20.89	AZP	90.36	TAL	9.65	TAP	119.66	RCA	146.63	APO	312.10
RC	144.629	GL	7.31	GP	2.64	ZAL	70.33	ZAP	171.48	ETS	160.66	ZAE	152.29	ETE	3.75	ZAC	92.25	ETC	255.90

V1 30.271 V2 22.598 CLP 171.90

PLANETOCENTRIC CONIC

C3	25.231	VHL	5.023	DLA	15.61	RAL	161.81	RAD	6568.0	VEL	12.108	PTH	2.17	VHP	9.697	DPA	-.08	RAP	189.87

ECC 1.4152

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 11 40	2778.42	-28.11	80.25	32.98	93.60	14 57 58	2178.4	-27.31	71.68
90.00	6 22 49	4407.09	6.67	183.58	25.59	62.42	7 36 16	3807.1	2.93	176.91
100.00	15 41 36	2488.40	-29.52	58.80	32.86	94.90	16 23 4	1888.4	-28.53	50.13
100.00	7 35 34	4172.35	7.93	165.65	24.91	61.08	8 45 6	3572.3	4.01	159.05
110.00	17 8 56	2215.10	-33.24	37.53	32.35	98.45	17 45 51	1615.1	-31.72	28.64
110.00	8 24 43	4018.41	11.15	152.03	22.97	57.47	9 31 41	3418.4	6.78	145.66

DIFFERENTIAL CORRECTIONS

TDE	.2301	TRA	-.8982	TC3	1.3926	BAU	.4698
RDE	-.5363	RRA	-.2054	RC3	.0212	FAU	.06965
FDE	.1844	FRA	.0741	FC3	-2.3900	BSP	5718
BDE	.5835	BRA	.9214	BC3	1.3928	FSP	574

MID-COURSE EXECUTION ACCURACY

SGT	1777.1	SGR	658.6	SG3	208.4		
RRT	.1094	RRF	-.1267	RTF	-.7927		
SGB	1895.2	R23	-.0265	R13	-.7932		
SG1	1778.7	SG2	654.1	THA	2.69		

ORBIT DETERMINATION ACCURACY

ST	415.3	SR	616.0	SS	187.6
CRT	-.5363	CRS	.9472	CST	-.4707
LSA	691.0	MSA	326.3	SSA	57.1
EL1	669.2	EL2	322.7	ALF	116.48

LAUNCH DATE DEC 19 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 359.427 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	34.890	GAL	2.68	AZL	88.97	HCA	110.92	SMA	226.41	ECC	.35268	INC	1.0271
RP	242.60	LAP	.96	LOP	198.06	VP	22.537	GAP	20.26	AZP	90.37	TAL	10.30	TAP	121.23	RCA	146.56	APO	306.26
RC	146.900	GL	7.26	GP	2.72	ZAL	69.11	ZAP	170.86	ETS	161.43	ZAE	152.47	ETE	4.07	ZAC	92.38	ETC	255.89

V1 30.271 V2 22.624 CLP 171.27

PLANETOCENTRIC CONIC

C3	24.431	VHL	4.943	DLA	16.03	RAL	160.62	RAD	6568.0	VEL	12.075	PTH	2.16	VHP	9.456	DPA	-.13	RAP	190.17

ECC 1.4021

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 2 59	2785.63	-28.14	80.78	31.36	93.33	14 49 25	2185.6	-27.38	72.19
90.00	6 21 57	4384.02	5.94	182.28	23.97	62.26	7 35 1	3784.0	2.18	175.62
100.00	15 33 15	2494.55	-29.56	59.25	31.25	94.66	16 14 49	1894.6	-28.60	50.58
100.00	7 34 23	4150.33	7.20	164.42	23.29	60.91	8 43 33	3550.3	3.27	157.84
110.00	17 1 16	2219.13	-33.28	37.84	30.76	98.28	17 38 15	1619.1	-31.78	28.93
110.00	8 22 51	3998.52	10.42	150.95	21.34	57.26	9 29 29	3398.5	6.03	144.61

DIFFERENTIAL CORRECTIONS

TDE	.2109	TRA	-.8669	TC3	1.4720	BAU	.4809
RDE	-.5275	RRA	-.1980	RC3	.0282	FAU	.07232
FDE	.2069	FRA	.0388	FC3	-2.5627	BSP	5852
BDE	.5681	BRA	.8892	BC3	1.4723	FSP	611

MID-COURSE EXECUTION ACCURACY

SGT	1808.4	SGR	657.0	SG3	219.9		
RRT	.1184	RRF	-.1365	RTF	-.7988		
SGB	1924.1	R23	-.0280	R13	-.7995		
SG1	1810.3	SG2	651.7	THA	2.83		

ORBIT DETERMINATION ACCURACY

ST	400.0	SR	615.6	SS	205.8
CRT	-.5155	CRS	.9522	CST	-.5050
LSA	688.9	MSA	321.4	SSA	59.8
EL1	661.2	EL2	319.2	ALF	114.62

LAUNCH DATE DEC 19 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 362.107 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	34.787	GAL	2.80	AZL	88.99	HCA	111.84	SMA	223.67	ECC	.34506	INC	1.0060	V1	30.271
RP	242.34	LAP	.93	LOP	198.98	VP	22.404	GAP	19.63	AZP	90.37	TAL	10.95	TAP	122.80	RCA	146.49	APO	300.85	V2	22.651
RC	149.184	GL	7.20	GP	2.80	ZAL	67.89	ZAP	170.22	ETS	162.10	ZAE	152.69	ETE	4.41	ZAC	92.53	ETC	255.88	CLP	170.62

PLANETOCENTRIC CONIC

C3	23.703	VHL	4.869	DLA	16.43	RAL	159.42	RAD	6568.0	VEL	12.045	PTH	2.15	VHP	9.221	DPA	-.17	RAP	190.45	ECC	1.3901

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 54 23	2792.95	-28.16	81.31	29.77	93.07	14 40 56	2193.0	-27.44	72.72
90.00	6 21 0	4361.87	5.24	181.03	22.39	62.13	7 33 42	3761.9	1.47	174.38
100.00	15 24 58	2500.83	-29.59	59.72	29.66	94.42	16 6 39	1900.8	-28.67	51.03
100.00	7 33 6	4129.23	6.50	163.24	21.70	60.76	8 41 55	3529.2	2.55	156.68
110.00	16 53 40	2223.31	-33.33	38.16	29.18	98.09	17 30 43	1623.3	-31.85	29.24
110.00	8 20 53	3979.52	9.71	149.93	19.75	57.06	9 27 13	3379.5	5.31	143.61

DIFFERENTIAL CORRECTIONS

TDE	.1924	TRA	-.8349	TC3	1.5507	BAU	.4915
RDE	-.5192	RRA	-.1907	RC3	.0358	FAU	.07510
FDE	.2299	FRA	.0005	FC3	-2.7428	BSP	5971
BDE	.5537	BRA	.8564	BC3	1.5512	FSP	650

MID-COURSE EXECUTION ACCURACY

SGT	1838.7	SGR	655.2	SG3	231.9		
RRT	.1277	RRF	-.1470	RTF	-.8047		
SGB	1951.9	R23	-.0298	R13	-.8054		
SG1	1840.9	SG2	649.0	THA	2.98		

ORBIT DETERMINATION ACCURACY

ST	384.4	SR	615.0	SS	224.8
CRT	-.4938	CRS	.9531	CST	-.5309
LSA	687.8	MSA	315.7	SSA	62.7
EL1	653.5	EL2	314.6	ALF	112.69

LAUNCH DATE DEC 19 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 364.868 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	34.688	GAL	2.92	AZL	89.02	HCA	112.77	SMA	221.13	ECC	.33785	INC	.9846	V1	30.271
RP	242.06	LAP	.91	LOP	199.91	VP	22.279	GAP	19.01	AZP	90.38	TAL	11.61	TAP	124.38	RCA	146.42	APO	295.83	V2	22.678
RC	151.478	GL	7.12	GP	2.88	ZAL	66.68	ZAP	169.57	ETS	162.69	ZAE	152.95	ETE	4.77	ZAC	92.67	ETC	255.87	CLP	169.97

PLANETOCENTRIC CONIC

C3	23.041	VHL	4.800	DLA	16.81	RAL	158.22	RAD	6567.9	VEL	12.017	PTH	2.14	VHP	8.992	DPA	-.21	RAP	190.74	ECC	1.3792

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 45 53	2800.31	-28.19	81.85	28.21	92.80	14 32 33	2200.3	-27.50	73.25
90.00	6 19 56	4340.69	4.56	179.84	20.85	62.02	7 32 16	3740.7	.79	173.20
100.00	15 16 47	2507.15	-29.63	60.18	28.11	94.18	15 58 34	1907.1	-28.73	51.49
100.00	7 31 42	4109.08	5.83	162.12	20.15	60.63	8 40 11	3509.1	1.87	155.57
110.00	16 46 9	2227.56	-33.37	38.49	27.64	97.90	17 23 16	1627.6	-31.91	29.56
110.00	8 18 50	3961.43	9.04	148.96	18.19	56.89	9 24 51	3361.4	4.62	142.66

DIFFERENTIAL CORRECTIONS

TDE	.1748	TRA	-.8027	TC3	1.6299	BAU	.5022
RDE	-.5114	RRA	-.1834	RC3	.0442	FAU	.07805
FDE	.2534	FRA	-.0414	FC3	-2.9327	BSP	6092
BDE	.5404	BRA	.8234	BC3	1.6305	FSP	691

MID-COURSE EXECUTION ACCURACY

SGT	1869.1	SGR	653.2	SG3	244.7		
RRT	.1375	RRF	-.1580	RTF	-.8105		
SGB	1980.0	R23	-.0317	R13	-.8113		
SG1	1871.6	SG2	646.2	THA	3.12		

ORBIT DETERMINATION ACCURACY

ST	368.7	SR	614.3	SS	244.3
CRT	-.4713	CRS	.9510	CST	-.5504
LSA	687.7	MSA	309.3	SSA	65.7
EL1	646.3	EL2	309.0	ALF	110.74

LAUNCH DATE DEC 19 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 367.706 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	34.595	GAL	3.04	AZL	89.04	HCA	113.70	SMA	218.76	ECC	.33103	INC	.9629	V1	30.271
RP	241.79	LAP	.88	LOP	200.83	VP	22.161	GAP	18.40	AZP	90.39	TAL	12.27	TAP	125.96	RCA	146.34	APO	291.17	V2	22.706
RC	153.781	GL	7.04	GP	2.97	ZAL	65.48	ZAP	168.91	ETS	163.20	ZAE	153.25	ETE	5.15	ZAC	92.81	ETC	255.87	CLP	169.31

PLANETOCENTRIC CONIC

C3	22.440	VHL	4.737	DLA	17.18	RAL	157.02	RAD	6567.9	VEL	11.992	PTH	2.14	VHP	8.769	DPA	-.24	RAP	191.01	ECC	1.3693

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 37 30	2807.64	-28.21	82.38	26.67	92.53	14 24 18	2207.6	-27.56	73.78
90.00	6 18 45	4320.51	3.92	178.71	19.33	61.93	7 30 45	3720.5	.14	172.07
100.00	15 8 44	2513.45	-29.66	60.65	26.58	93.94	15 50 37	1913.5	-28.79	51.95
100.00	7 30 12	4089.93	5.19	161.06	18.64	60.52	8 38 22	3489.9	1.22	154.52
110.00	16 38 44	2231.85	-33.41	38.81	26.13	97.71	17 15 56	1631.8	-31.98	29.87
110.00	8 16 41	3944.30	8.40	148.04	16.66	56.74	9 22 26	3344.3	3.97	141.76

DIFFERENTIAL CORRECTIONS

TDE	.1577	TRA	-.7709	TC3	1.7067	BAU	.5123
RDE	-.5041	RRA	-.1761	RC3	.0533	FAU	.08112
FDE	.2779	FRA	-.0858	FC3	-3.1297	BSP	6208
BDE	.5282	BRA	.7907	BC3	1.7075	FSP	734

MID-COURSE EXECUTION ACCURACY

SGT	1898.2	SGR	651.1	SG3	258.0		
RRT	.1481	RRF	-.1700	RTF	-.8158		
SGB	2006.8	R23	-.0339	R13	-.8166		
SG1	1901.0	SG2	643.0	THA	3.28		

ORBIT DETERMINATION ACCURACY

ST	352.7	SR	613.4	SS	264.6
CRT	-.4465	CRS	.9472	CST	-.5628
LSA	688.7	MSA	302.7	SSA	68.8
EL1	639.5	EL2	302.7	ALF	108.75

LAUNCH DATE DEC 19 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 370.612 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	34.505	GAL	3.16	AZL	89.06	HCA	114.62	SMA	216.55	ECC	.32458	INC	.9408	V1	30.271
RP	241.51	LAP	.86	LOP	201.76	VP	22.050	GAP	17.79	AZP	90.39	TAL	12.92	TAP	127.54	RCA	146.26	APO	286.84	V2	22.734
RC	156.092	GL	6.94	GP	3.07	ZAL	64.29	ZAP	168.23	ETS	163.66	ZAE	153.58	ETE	5.55	ZAC	92.96	ETC	255.86	CLP	168.63

PLANETOCENTRIC CONIC

C3	21.895	VHL	4.679	DLA	17.52	RAL	155.83	RAD	6567.9	VEL	11.970	PTH	2.13	VHP	8.552	DPA	-.26	RAP	191.28	ECC	1.3603

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 29 17	2814.86	-28.23	82.91	25.17	92.27	14 16 12	2214.9	-27.62	74.30
90.00	6 17 27	4301.37	3.31	177.64	17.86	61.86	7 29 8	3701.4	-.48	171.01
100.00	15 0 50	2519.67	-29.68	61.11	25.09	93.69	15 42 49	1919.7	-28.86	52.40
100.00	7 28 36	4071.79	4.58	160.06	17.15	60.43	8 36 27	3471.8	.61	153.53
110.00	16 31 28	2236.10	-33.44	39.14	24.65	97.52	17 8 44	1636.1	-32.04	30.19
110.00	8 14 27	3928.13	7.80	147.18	15.17	56.61	9 19 55	3328.1	3.35	140.91

DIFFERENTIAL CORRECTIONS

TDE	.1405	TRA	-.7388	TC3	1.7832	BAU	.5223
RDE	-.4972	RRA	-.1688	RC3	.0634	FAU	.08439
FDE	.3036	FRA	-.1341	FC3	-3.3369	BSP	6329
BDE	.5167	BRA	.7578	BC3	1.7843	FSP	780

MID-COURSE EXECUTION ACCURACY

SGT	1927.2	SGR	649.0	SG3	272.1		
RRT	.1598	RRF	-.1831	RTF	-.8211		
SGB	2033.6	R23	-.0361	R13	-.8220		
SG1	1930.4	SG2	639.6	THA	3.46		

ORBIT DETERMINATION ACCURACY

ST	336.3	SR	612.3	SS	285.8
CRT	-.4183	CRS	.9421	CST	-.5685
LSA	690.7	MSA	295.9	SSA	71.9
EL1	633.0	EL2	295.5	ALF	106.67

LAUNCH DATE DEC 19 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 373.583 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 34.420 GAL 3.27 AZL 89.08 HCA 115.55 SMA 214.50 ECC .31847 INC .9183 V1 30.271
RP 241.22 LAP .83 LOP 202.69 VP 21.946 GAP 17.18 AZP 90.40 TAL 13.58 TAP 129.13 RCA 146.18 APO 282.81 V2 22.762
RC 158.408 GL 6.84 GP 3.16 ZAL 63.11 ZAP 167.54 ETS 164.07 ZAE 153.95 ETE 5.98 ZAC 93.11 ETC 255.85 CLP 167.94

PLANETOCENTRIC CONIC

C3 21.401 VHL 4.626 DLA 17.85 RAL 154.65 RAD 6567.9 VEL 11.949 PTH 2.13 VHP 8.341 DPA -.27 RAP 191.54 ECC 1.3522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 21 15	2821.94	-28.25	83.43	23.70	92.01	14 8 17	2221.9	-27.67	74.81
90.00	6 16 2	4283.29	2.72	176.63	16.41	61.80	7 27 25	3683.3	-1.07	170.00
100.00	14 53 5	2525.77	-29.71	61.56	23.62	93.46	15 35 11	1925.8	-28.91	52.85
100.00	7 26 52	4054.69	4.00	159.12	15.71	60.35	8 34 27	3454.7	.03	152.59
110.00	16 24 20	2240.29	-33.48	39.46	23.20	97.34	17 1 40	1640.3	-32.10	30.50
110.00	8 12 7	3912.93	7.23	146.37	13.71	56.50	9 17 20	3312.9	2.78	140.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1326 TRA -.6984 TC3 1.8726 BAU .5362 SGT 1963.3 SGR 646.9 SG3 286.7 ST 322.5 SR 611.2 SS 308.0
RDE -.4909 RRA -.1616 RC3 .0741 FAU .08775 RRT .1653 RRF -.1972 RTF -.8295 CRT -.4188 CRS .9365 CST -.5938
FDE .3307 FRA -.1852 FC3-3.5497 BSP 6244 SGB 2067.1 R23 -.0446 R13 -.8305 LSA 696.6 MSA 285.6 SSA 75.2
BDE .5085 BRA .7168 BC3 1.8740 FSP 830 SG1 1966.5 SG2 637.0 THA 3.48 EL1 630.0 EL2 284.1 ALF 105.74

LAUNCH DATE DEC 19 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 376.612 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 34.339 GAL 3.38 AZL 89.10 HCA 116.49 SMA 212.58 ECC .31270 INC .8954 V1 30.271
RP 240.93 LAP .80 LOP 203.62 VP 21.849 GAP 16.58 AZP 90.40 TAL 14.23 TAP 130.71 RCA 146.10 APO 279.05 V2 22.791
RC 160.729 GL 6.72 GP 3.26 ZAL 61.96 ZAP 166.84 ETS 164.43 ZAE 154.36 ETE 6.44 ZAC 93.26 ETC 255.85 CLP 167.24

PLANETOCENTRIC CONIC

C3 20.954 VHL 4.578 DLA 18.16 RAL 153.47 RAD 6567.9 VEL 11.930 PTH 2.12 VHP 8.136 DPA -.27 RAP 191.79 ECC 1.3448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 13 26	2828.73	-28.27	83.92	22.27	91.76	14 0 35	2228.7	-27.72	75.30
90.00	6 14 29	4266.35	2.18	175.68	15.01	61.76	7 25 36	3666.3	-1.61	169.05
100.00	14 45 34	2531.61	-29.73	61.99	22.19	93.23	15 27 46	1931.6	-28.97	53.27
100.00	7 25 2	4038.70	3.46	158.24	14.30	60.29	8 32 21	3438.7	-.52	151.71
110.00	16 17 24	2244.31	-33.52	39.77	21.79	97.16	16 54 48	1644.3	-32.16	30.80
110.00	8 9 42	3898.76	6.70	145.62	12.30	56.40	9 14 41	3298.8	2.23	139.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1129 TRA -.6712 TC3 1.9367 BAU .5431 SGT 1986.3 SGR 644.7 SG3 302.4 ST 305.2 SR 609.8 SS 328.9
RDE -.4847 RRA -.1542 RC3 .0859 FAU .09139 RRT .1822 RRF -.2118 RTF -.8321 CRT -.3731 CRS .9293 CST -.5801
FDE .3565 FRA -.2415 FC3-3.7759 BSP 6462 SGB 2088.3 R23 -.0438 R13 -.8332 LSA 698.7 MSA 280.9 SSA 78.3
BDE .4977 BRA .6887 BC3 1.9386 FSP 880 SG1 1990.2 SG2 632.6 THA 3.77 EL1 623.1 EL2 277.2 ALF 103.24

LAUNCH DATE DEC 19 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 379.695 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 34.261 GAL 3.48 AZL 89.13 HCA 117.42 SMA 210.78 ECC .30725 INC .8721 V1 30.271
RP 240.64 LAP .77 LOP 204.56 VP 21.758 GAP 15.99 AZP 90.40 TAL 14.87 TAP 132.30 RCA 146.02 APO 275.54 V2 22.821
RC 163.052 GL 6.59 GP 3.37 ZAL 60.82 ZAP 166.12 ETS 164.75 ZAE 154.80 ETE 6.94 ZAC 93.41 ETC 255.84 CLP 166.53

PLANETOCENTRIC CONIC

C3 20.550 VHL 4.533 DLA 18.44 RAL 152.31 RAD 6567.8 VEL 11.913 PTH 2.12 VHP 7.935 DPA -.27 RAP 192.04 ECC 1.3382

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 5 51	2835.21	-28.28	84.40	20.87	91.52	13 53 6	2235.2	-27.77	75.77
90.00	6 12 49	4250.52	1.67	174.80	13.64	61.73	7 23 40	3650.5	-2.12	168.17
100.00	14 38 16	2537.18	-29.75	62.41	20.80	93.02	15 20 33	1937.2	-29.02	53.68
100.00	7 23 5	4023.79	2.96	157.41	12.93	60.24	8 30 9	3423.8	-1.02	150.89
110.00	16 10 39	2248.15	-33.55	40.07	20.41	96.98	16 48 7	1648.2	-32.22	31.09
110.00	8 7 12	3885.58	6.20	144.93	10.92	56.32	9 11 57	3285.6	1.73	138.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0956 TRA -.6418 TC3 2.0024 BAU .5500 SGT 2010.4 SGR 642.5 SG3 318.9 ST 288.7 SR 608.3 SS 350.8
RDE -.4790 RRA -.1468 RC3 .0986 FAU .09520 RRT .1985 RRF -.2278 RTF -.8356 CRT -.3300 CRS .9219 CST -.5659
FDE .3838 FRA -.3016 FC3-4.0108 BSP 6632 SGB 2110.5 R23 -.0449 R13 -.8368 LSA 702.7 MSA 275.7 SSA 81.2
BDE .4885 BRA .6584 BC3 2.0048 FSP 934 SG1 2014.9 SG2 628.3 THA 4.02 EL1 617.5 EL2 268.5 ALF 101.01

LAUNCH DATE DEC 19 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 382.829 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 34.187 GAL 3.58 AZL 89.15 HCA 118.36 SMA 209.10 ECC .30209 INC .8483 V1 30.271
RP 240.34 LAP .75 LOP 205.49 VP 21.673 GAP 15.40 AZP 90.40 TAL 15.52 TAP 133.88 RCA 145.93 APO 272.27 V2 22.851
RC 165.375 GL 6.46 GP 3.48 ZAL 59.70 ZAP 165.38 ETS 165.04 ZAE 155.27 ETE 7.47 ZAC 93.56 ETC 255.83 CLP 165.80

PLANETOCENTRIC CONIC

C3 20.185 VHL 4.493 DLA 18.70 RAL 151.17 RAD 6567.8 VEL 11.898 PTH 2.11 VHP 7.740 DPA -.25 RAP 192.27 ECC 1.3322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 58 31	2841.32	-28.29	84.84	19.50	91.30	13 45 52	2241.3	-27.81	76.21
90.00	6 11 1	4235.86	1.20	173.98	12.31	61.71	7 21 37	3635.9	-2.60	167.35
100.00	14 31 12	2542.44	-29.77	62.80	19.44	92.81	15 13 35	1942.4	-29.06	54.06
100.00	7 21 1	4009.98	2.49	156.66	11.59	60.20	8 27 51	3410.0	-1.49	150.13
110.00	16 4 6	2251.77	-33.58	40.34	19.06	96.82	16 41 38	1651.8	-32.27	31.36
110.00	8 4 36	3873.41	5.74	144.28	9.58	56.24	9 9 9	3273.4	1.27	138.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0806 TRA -.6114 TC3 2.0675 BAU .5587 SGT 2034.5 SGR 640.4 SG3 336.1 ST 273.2 SR 606.6 SS 373.0
RDE -.4736 RRA -.1393 RC3 .1123 FAU .09919 RRT .2147 RRF -.2451 RTF -.8393 CRT -.2897 CRS .9145 CST -.5518
FDE .4120 FRA -.3656 FC3-4.2544 BSP 6743 SGB 2133.0 R23 -.0473 R13 -.8406 LSA 708.2 MSA 270.6 SSA 83.9
BDE .4804 BRA .6271 BC3 2.0705 FSP 990 SG1 2039.7 SG2 623.9 THA 4.27 EL1 612.9 EL2 258.8 ALF 99.06

LAUNCH DATE DEC 19 1964 FLIGHT TIME 164.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 386.009 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	34.117	GAL	3.68	AZL	89.18	HCA	119.30	SMA	207.53	ECC	.29721	INC	.8241	V1	30.271
RP	240.04	LAP	.72	LOP	206.43	VP	21.593	GAP	14.82	AZP	90.40	TAL	16.15	TAP	135.45	RCA	145.85	APO	269.21	V2	22.881
RC	167.697	GL	6.31	GP	3.60	ZAL	58.61	ZAP	164.64	ETS	165.30	ZAE	155.78	ETE	8.05	ZAC	93.72	ETC	255.83	CLP	165.05

PLANETOCENTRIC CONIC

C3	19.856	VHL	4.456	DLA	18.94	RAL	150.04	RAD	6567.8	VEL	11.884	PTH	2.11	VHP	7.551	DPA	-.22	RAP	192.50	ECC	1.3268

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 51 28	2847.01	-28.30	85.26	18.17	91.09	13 38 55	2247.0	-27.85	76.62
90.00	6 9 5	4222.35	.76	173.23	11.02	61.69	7 19 27	3622.4	-3.03	166.60
100.00	14 24 24	2547.31	-29.79	63.16	18.12	92.62	15 6 51	1947.3	-29.11	54.42
100.00	7 18 50	3997.28	2.06	155.96	10.29	60.17	8 25 27	3397.3	-1.92	149.44
110.00	15 57 47	2255.11	-33.60	40.60	17.75	96.67	16 35 23	1655.1	-32.32	31.61
110.00	8 1 55	3862.24	5.32	143.70	8.27	56.18	9 6 18	3262.2	.84	137.47

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0671	TRA	-.5805	TC3	2.1308	BAU	.5666	SGT	2058.2	SGR	638.5	SG3	354.2	ST	258.3	SR	604.8	SS	395.0
RDE	-.4685	RRA	-.1317	RC3	.1269	FAU	.10339	RRT	.2314	RRF	-.2635	RTF	-.8431	CRT	-.2501	CRS	.9067	CST	-.5366
FDE	.4404	FRA	-.4343	FC3	-4.5081	BSP	6858	SGB	2155.0	R23	-.0503	R13	-.8445	LSA	714.3	MSA	266.0	SSA	86.4
BDE	.4733	BRA	.5952	BC3	2.1346	FSP	1050	SG1	2064.1	SG2	619.4	THA	4.51	EL1	608.9	EL2	248.4	ALF	97.32

LAUNCH DATE DEC 19 1964 FLIGHT TIME 166.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 389.233 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	34.050	GAL	3.78	AZL	89.20	HCA	120.24	SMA	206.05	ECC	.29261	INC	.7994	V1	30.271
RP	239.73	LAP	.69	LOP	207.38	VP	21.520	GAP	14.24	AZP	90.40	TAL	16.78	TAP	137.02	RCA	145.76	APO	266.34	V2	22.912
RC	170.016	GL	6.15	GP	3.72	ZAL	57.55	ZAP	163.87	ETS	165.53	ZAE	156.31	ETE	8.68	ZAC	93.88	ETC	255.82	CLP	164.30

PLANETOCENTRIC CONIC

C3	19.560	VHL	4.423	DLA	19.16	RAL	148.93	RAD	6567.8	VEL	11.872	PTH	2.11	VHP	7.366	DPA	-.19	RAP	192.72	ECC	1.3219

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 44 42	2852.20	-28.30	85.64	16.88	90.90	13 32 14	2252.2	-27.88	77.00
90.00	6 7 1	4210.02	.36	172.54	9.76	61.69	7 17 11	3610.0	-3.43	165.91
100.00	14 17 52	2551.75	-29.80	63.49	16.83	92.45	15 0 24	1951.8	-29.14	54.74
100.00	7 16 31	3985.70	1.67	155.32	9.03	60.15	8 22 57	3385.7	-2.31	148.80
110.00	15 51 43	2258.14	-33.63	40.83	16.48	96.54	16 29 21	1658.1	-32.36	31.83
110.00	7 59 10	3852.08	4.93	143.16	7.00	56.13	9 3 22	3252.1	.45	136.94

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0545	TRA	-.5504	TC3	2.1897	BAU	.5738	SGT	2080.0	SGR	636.8	SG3	373.2	ST	244.2	SR	602.8	SS	417.2
RDE	-.4636	RRA	-.1240	RC3	.1425	FAU	.10777	RRT	.2492	RRF	-.2832	RTF	-.8464	CRT	-.2081	CRS	.8991	CST	-.5174
FDE	.4696	FRA	-.5070	FC3	-4.7701	BSP	6964	SGB	2175.3	R23	-.0538	R13	-.8480	LSA	721.4	MSA	262.5	SSA	88.4
BDE	.4668	BRA	.5642	BC3	2.1943	FSP	1114	SG1	2086.6	SG2	614.8	THA	4.78	EL1	605.4	EL2	237.9	ALF	95.70

LAUNCH DATE DEC 19 1964 FLIGHT TIME 168.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 392.498 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.986	GAL	3.87	AZL	89.23	HCA	121.18	SMA	204.67	ECC	.28826	INC	.7740	V1	30.271
RP	239.42	LAP	.66	LOP	208.32	VP	21.452	GAP	13.67	AZP	90.40	TAL	17.41	TAP	138.59	RCA	145.67	APO	263.66	V2	22.943
RC	172.331	GL	5.99	GP	3.85	ZAL	56.51	ZAP	163.09	ETS	165.74	ZAE	156.88	ETE	9.37	ZAC	94.04	ETC	255.82	CLP	163.52

PLANETOCENTRIC CONIC

C3	19.293	VHL	4.392	DLA	19.35	RAL	147.85	RAD	6567.8	VEL	11.861	PTH	2.10	VHP	7.186	DPA	-.14	RAP	192.92	ECC	1.3175

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 38 15	2856.86	-28.31	85.98	15.62	90.73	13 25 52	2256.9	-27.91	77.34
90.00	6 4 48	4198.87	.00	171.92	8.54	61.68	7 14 47	3598.9	-3.78	165.28
100.00	14 11 38	2555.72	-29.81	63.78	15.58	92.29	14 54 14	1955.7	-29.18	55.03
100.00	7 14 6	3975.24	1.32	154.75	7.81	60.13	8 20 21	3375.2	-2.67	148.23
110.00	15 45 54	2260.82	-33.65	41.04	15.23	96.42	16 23 34	1660.8	-32.39	32.03
110.00	7 56 20	3842.91	4.58	142.68	5.77	56.09	9 0 23	3242.9	.10	136.47

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0431	TRA	-.5203	TC3	2.2467	BAU	.5810	SGT	2101.5	SGR	635.4	SG3	393.2	ST	230.7	SR	600.7	SS	439.0
RDE	-.4590	RRA	-.1161	RC3	.1593	FAU	.11242	RRT	.2680	RRF	-.3042	RTF	-.8498	CRT	-.1663	CRS	.8911	CST	-.4970
FDE	.4988	FRA	-.5849	FC3	-5.0444	BSP	7058	SGB	2195.5	R23	-.0576	R13	-.8516	LSA	728.8	MSA	259.9	SSA	90.0
BDE	.4610	BRA	.5331	BC3	2.2524	FSP	1181	SG1	2109.0	SG2	610.0	THA	5.06	EL1	602.1	EL2	227.0	ALF	94.26

LAUNCH DATE DEC 19 1964 FLIGHT TIME 170.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 395.801 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.925	GAL	3.96	AZL	89.25	HCA	122.13	SMA	203.36	ECC	.28414	INC	.7481	V1	30.271
RP	239.11	LAP	.63	LOP	209.27	VP	21.389	GAP	13.11	AZP	90.40	TAL	18.02	TAP	140.15	RCA	145.58	APO	261.15	V2	22.975
RC	174.639	GL	5.81	GP	3.99	ZAL	55.50	ZAP	162.29	ETS	165.92	ZAE	157.48	ETE	10.13	ZAC	94.21	ETC	255.81	CLP	162.73

PLANETOCENTRIC CONIC

C3	19.055	VHL	4.365	DLA	19.53	RAL	146.78	RAD	6567.8	VEL	11.851	PTH	2.10	VHP	7.010	DPA	-.08	RAP	193.12	ECC	1.3136

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 32 6	2860.99	-28.31	86.28	14.40	90.58	13 19 47	2261.0	-27.93	77.64
90.00	6 2 27	4188.87	-.32	171.36	7.35	61.68	7 12 16	3588.9	-4.10	164.72
100.00	14 5 41	2559.22	-29.82	64.04	14.36	92.16	14 48 20	1959.2	-29.20	55.29
100.00	7 11 33	3965.87	1.00	154.23	6.61	60.12	8 17 39	3365.9	-2.98	147.71
110.00	15 40 19	2263.16	-33.67	41.22	14.02	96.31	16 18 2	1663.2	-32.43	32.21
110.00	7 53 25	3834.70	4.27	142.25	4.57	56.05	8 57 19	3234.7	-.21	136.04

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0462	TRA	-.4770	TC3	2.3279	BAU	.5947	SGT	2139.0	SGR	634.4	SG3	414.5	ST	217.0	SR	598.3	SS	459.6
RDE	-.4545	RRA	-.1079	RC3	.1772	FAU	.11736	RRT	-.2786	RRF	-.3261	RTF	-.8574	CRT	-.2071	CRS	.8821	CST	-.5414
FDE	.5267	FRA	-.6700	FC3	-5.3321	BSP	6823	SGB	2231.1	R23	-.0690	R13	-.8594	LSA	737.5	MSA	252.7	SSA	92.6
BDE	.4569	BRA	.4890	BC3	2.3346	FSP	1248	SG1	2146.9	SG2	607.0	THA	5.14	EL1	600.3	EL2	211.6	ALF	94.91

LAUNCH DATE DEC 19 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 399.138 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.866	GAL	4.04	AZL	89.28	HCA	123.08	SMA	202.14	ECC	.28026	INC	.7217	V1	30.271
RP	238.79	LAP	.60	LOP	210.22	VP	21.332	GAP	12.55	AZP	90.39	TAL	18.62	TAP	141.70	RCA	145.49	APO	258.80	V2	23.007
RC	176.939	GL	5.63	GP	4.13	ZAL	54.52	ZAP	161.47	ETS	166.09	ZAE	158.11	ETE	10.95	ZAC	94.38	ETC	255.81	CLP	161.92

PLANETOCENTRIC CONIC

C3	18.840	VHL	4.341	DLA	19.67	RAL	145.75	RAD	6567.8	VEL	11.842	PTH	2.10	VHP	6.840	DPA	-.01	RAP	193.31	ECC	1.3101

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 26 20	2864.41	-28.31	86.53	13.22	90.45	13 14 4	2264.4	-27.95	77.88
90.00	5 59 58	4180.11	-.60	170.87	6.20	61.69	7 9 38	3580.1	-4.38	164.23
100.00	14 0 5	2562.09	-29.83	64.25	13.18	92.05	14 42 47	1962.1	-29.23	55.50
100.00	7 8 54	3957.66	.72	153.78	5.46	60.12	8 14 51	3357.7	-3.26	147.26
110.00	15 35 2	2265.02	-33.68	41.36	12.85	96.23	16 12 47	1665.0	-32.45	32.35
110.00	7 50 26	3827.49	4.00	141.87	3.42	56.02	8 54 14	3227.5	-.49	135.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0249	TRA	-.4597	TC3	2.3521	BAU	.5945	SGT	2141.4	SGR	633.9	SG3	436.4	ST	205.5	SR	595.9	SS	482.3
RDE	-.4503	RRA	-.0996	RC3	.1962	FAU	.12241	RRT	.3081	RRF	-.3503	RTF	-.8563	CRT	-.0910	CRS	.8750	CST	-.4581
FDE	.5584	FRA	-.7568	FC3	-5.6248	BSP	7177	SGB	2233.3	R23	-.0673	R13	-.8585	LSA	745.2	MSA	257.1	SSA	92.0
BDE	.4510	BRA	.4704	BC3	2.3603	FSP	1325	SG1	2151.1	SG2	600.4	THA	5.65	EL1	596.2	EL2	204.5	ALF	92.04

LAUNCH DATE DEC 19 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 402.508 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.811	GAL	4.13	AZL	89.31	HCA	124.03	SMA	201.00	ECC	.27660	INC	.6945	V1	30.271
RP	238.47	LAP	.58	LOP	211.17	VP	21.279	GAP	12.00	AZP	90.39	TAL	19.21	TAP	143.25	RCA	145.40	APO	256.59	V2	23.040
RC	179.231	GL	5.43	GP	4.27	ZAL	53.57	ZAP	160.63	ETS	166.24	ZAE	158.77	ETE	11.87	ZAC	94.55	ETC	255.80	CLP	161.09

PLANETOCENTRIC CONIC

C3	18.648	VHL	4.318	DLA	19.80	RAL	144.74	RAD	6567.8	VEL	11.833	PTH	2.10	VHP	6.673	DPA	.07	RAP	193.48	ECC	1.3069

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 20 54	2867.20	-28.31	86.74	12.07	90.35	13 8 41	2267.2	-27.97	78.09
90.00	5 57 20	4172.49	-.85	170.45	5.09	61.69	7 6 53	3572.5	-4.63	163.80
100.00	13 54 48	2564.41	-29.83	64.43	12.04	91.95	14 37 32	1964.4	-29.24	55.67
100.00	7 6 7	3950.52	.48	153.39	4.35	60.11	8 11 58	3350.5	-3.50	146.87
110.00	15 30 2	2266.47	-33.69	41.48	11.72	96.16	16 7 48	1666.5	-32.47	32.46
110.00	7 47 23	3821.22	3.76	141.54	2.30	56.00	8 51 4	3221.2	-.73	135.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0146	TRA	-.4330	TC3	2.3936	BAU	.5992	SGT	2155.7	SGR	634.0	SG3	459.6	ST	194.4	SR	593.3	SS	503.9
RDE	-.4462	RRA	-.0910	RC3	.2165	FAU	.12776	RRT	.3318	RRF	-.3756	RTF	-.8584	CRT	-.0353	CRS	.8672	CST	-.4210
FDE	.5890	FRA	-.8505	FC3	-5.9315	BSP	7281	SGB	2247.0	R23	-.0714	R13	-.8609	LSA	754.0	MSA	258.4	SSA	92.0
BDE	.4465	BRA	.4425	BC3	2.4034	FSP	1402	SG1	2166.7	SG2	595.0	THA	6.03	EL1	593.4	EL2	194.2	ALF	90.74

LAUNCH DATE DEC 19 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 405.911 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.758	GAL	4.21	AZL	89.33	HCA	124.99	SMA	199.92	ECC	.27314	INC	.6666	V1	30.271
RP	238.14	LAP	.55	LOP	212.12	VP	21.231	GAP	11.46	AZP	90.38	TAL	19.79	TAP	144.78	RCA	145.31	APO	254.52	V2	23.073
RC	181.513	GL	5.23	GP	4.43	ZAL	52.65	ZAP	159.78	ETS	166.37	ZAE	159.45	ETE	12.88	ZAC	94.72	ETC	255.80	CLP	160.25

PLANETOCENTRIC CONIC

C3	18.476	VHL	4.298	DLA	19.90	RAL	143.75	RAD	6567.7	VEL	11.826	PTH	2.09	VHP	6.512	DPA	.17	RAP	193.64	ECC	1.3041

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 15 49	2869.32	-28.32	86.89	10.96	90.27	13 3 38	2269.3	-27.98	78.24
90.00	5 54 34	4166.04	-1.06	170.09	4.00	61.70	7 4 0	3566.0	-4.83	163.44
100.00	13 49 50	2566.13	-29.84	64.55	10.93	91.89	14 32 36	1966.1	-29.26	55.80
100.00	7 3 14	3944.46	.27	153.06	3.26	60.11	8 8 58	3344.5	-3.71	146.53
110.00	15 25 18	2267.47	-33.70	41.55	10.61	96.12	16 3 5	1667.5	-32.48	32.53
110.00	7 44 16	3815.89	3.56	141.26	1.22	55.98	8 47 52	3215.9	-.93	135.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0071	TRA	-.4059	TC3	2.4335	BAU	.6040	SGT	2169.8	SGR	634.8	SG3	483.9	ST	183.9	SR	590.6	SS	525.0
RDE	-.4422	RRA	-.0821	RC3	.2381	FAU	.13338	RRT	.3554	RRF	-.4022	RTF	-.8607	CRT	.0075	CRS	.8594	CST	-.3929
FDE	.6195	FRA	-.9496	FC3	-6.2499	BSP	7352	SGB	2260.7	R23	-.0769	R13	-.8634	LSA	763.1	MSA	259.9	SSA	91.8
BDE	.4423	BRA	.4141	BC3	2.4451	FSP	1486	SG1	2182.4	SG2	589.9	THA	6.41	EL1	590.6	EL2	183.9	ALF	89.85

LAUNCH DATE DEC 19 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 409.342 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.708	GAL	4.29	AZL	89.36	HCA	125.94	SMA	198.90	ECC	.26987	INC	.6381	V1	30.271
RP	237.81	LAP	.52	LOP	213.08	VP	21.187	GAP	10.93	AZP	90.37	TAL	20.36	TAP	146.31	RCA	145.22	APO	252.58	V2	23.106
RC	183.786	GL	5.02	GP	4.59	ZAL	51.76	ZAP	158.90	ETS	166.50	ZAE	160.16	ETE	14.02	ZAC	94.90	ETC	255.79	CLP	159.38

PLANETOCENTRIC CONIC

C3	18.323	VHL	4.281	DLA	19.98	RAL	142.80	RAD	6567.7	VEL	11.820	PTH	2.09	VHP	6.354	DPA	.28	RAP	193.80	ECC	1.3016

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 11 6	2870.72	-28.32	86.99	9.89	90.22	12 58 56	2270.7	-27.99	78.34
90.00	5 51 40	4160.74	-1.23	169.79	2.96	61.71	7 1 1	3560.7	-5.00	163.14
100.00	13 45 13	2567.22	-29.84	64.64	9.86	91.85	14 28 0	1967.2	-29.27	55.88
100.00	7 0 14	3939.47	.10	152.79	2.22	60.11	8 5 53	3339.5	-3.87	146.26
110.00	15 20 51	2268.00	-33.70	41.59	9.54	96.09	15 58 39	1668.0	-32.49	32.57
110.00	7 41 5	3811.46	3.39	141.03	.17	55.96	8 44 36	3211.5	-1.10	134.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0038	TRA	-.3760	TC3	2.4763	BAU	.6100	SGT	2186.6	SGR	636.4	SG3	509.6	ST	172.9	SR	587.6	SS	545.5
RDE	-.4384	RRA	-.0728	RC3	.2612	FAU	.13934	RRT	.3784	RRF	-.4300	RTF	-.8637	CRT	.0239	CRS	.8511	CST	-.3854
FDE	.6491	FRA	-1.0564	FC3	-6.5835	BSP	7345	SGB	2277.3	R23	-.0842	R13	-.8668	LSA	772.1	MSA	261.1	SSA	91.5
BDE	.4384	BRA	.3830	BC3	2.4900	FSP	1571	SG1	2200.8	SG2	585.3	THA	6.77	EL1	587.6	EL2	172.8	ALF	89.56

LAUNCH DATE DEC 19 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 412.801 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.660	GAL	4.36	AZL	89.39	HCA	126.90	SMA	197.95	ECC	.26679	INC	.6086	V1	30.271
RP	237.48	LAP	.49	LOP	214.04	VP	21.148	GAP	10.40	AZP	90.37	TAL	20.92	TAP	147.82	RCA	145.14	APO	250.76	V2	23.140
RC	186.049	GL	4.80	GP	4.77	ZAL	50.90	ZAP	158.00	ETS	166.60	ZAE	160.90	ETE	15.28	ZAC	95.09	ETC	255.79	CLP	158.50

PLANETOCENTRIC CONIC

C3	18.186	VHL	4.265	DLA	20.04	RAL	141.87	RAD	6567.7	VEL	11.814	PTH	2.09	VHP	6.201	DPA	.41	RAP	193.93	ECC	1.2993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 6 45	2871.38	-28.32	87.04	8.85	90.20	12 54 36	2271.4	-27.99	78.39
90.00	5 48 37	4156.58	-1.36	169.56	1.95	61.71	6 57 54	3556.6	-5.13	162.91
100.00	13 40 56	2567.65	-29.84	64.67	8.82	91.83	14 23 44	1967.7	-29.27	55.91
100.00	6 57 7	3935.53	-.03	152.57	1.20	60.11	8 2 43	3335.5	-4.01	146.04
110.00	15 16 43	2268.02	-33.70	41.60	8.50	96.09	15 54 31	1668.0	-32.49	32.57
110.00	7 37 50	3807.93	3.25	140.85	359.16	55.95	8 41 18	3207.9	-1.24	134.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0047	TRA	-.3534	TC3	2.5005	BAU	.6119	SGT	2191.8	SGR	639.1	SG3	536.3	ST	164.7	SR	584.5	SS	566.2
RDE	-.4346	RRA	-.0632	RC3	.2856	FAU	.14550	RRT	.4061	RRF	-.4592	RTF	-.8645	CRT	.0856	CRS	.8435	CST	-.3383
FDE	.6799	FRA	-1.1675	FC3	-6.9265	BSP	7465	SGB	2283.1	R23	-.0894	R13	-.8680	LSA	781.6	MSA	265.1	SSA	90.3
BDE	.4346	BRA	.3590	BC3	2.5168	FSP	1663	SG1	2208.3	SG2	579.6	THA	7.26	EL1	584.7	EL2	164.0	ALF	88.50

LAUNCH DATE DEC 19 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 416.287 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.615	GAL	4.43	AZL	89.42	HCA	127.87	SMA	197.05	ECC	.26388	INC	.5785	V1	30.271
RP	237.15	LAP	.46	LOP	215.00	VP	21.113	GAP	9.88	AZP	90.36	TAL	21.46	TAP	149.32	RCA	145.05	APO	249.04	V2	23.174
RC	188.300	GL	4.57	GP	4.95	ZAL	50.07	ZAP	157.08	ETS	166.70	ZAE	161.65	ETE	16.71	ZAC	95.28	ETC	255.78	CLP	157.59

PLANETOCENTRIC CONIC

C3	18.065	VHL	4.250	DLA	20.07	RAL	140.97	RAD	6567.7	VEL	11.809	PTH	2.09	VHP	6.052	DPA	.55	RAP	194.06	ECC	1.2973

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 2 46	2871.28	-28.32	87.03	7.84	90.20	12 50 37	2271.3	-27.99	78.38
90.00	5 45 27	4153.53	-1.46	169.39	.97	61.72	6 54 40	3553.5	-5.23	162.74
100.00	13 37 0	2567.42	-29.84	64.65	7.81	91.84	14 19 47	1967.4	-29.27	55.89
100.00	6 53 54	3932.62	-.13	152.41	.22	60.11	7 59 26	3332.6	-4.11	145.88
110.00	15 12 51	2267.54	-33.70	41.56	7.50	96.11	15 50 39	1667.5	-32.49	32.53
110.00	7 34 32	3805.27	3.15	140.71	358.18	55.94	8 37 57	3205.3	-1.34	134.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0088	TRA	-.3284	TC3	2.5269	BAU	.6149	SGT	2199.2	SGR	642.9	SG3	564.3	ST	155.9	SR	581.3	SS	586.1
RDE	-.4308	RRA	-.0531	RC3	.3116	FAU	.15198	RRT	.4327	RRF	-.4894	RTF	-.8661	CRT	.1172	CRS	.8355	CST	-.3151
FDE	.7097	FRA	-1.2865	FC3	-7.2835	BSP	7505	SGB	2291.2	R23	-.0966	R13	-.8700	LSA	791.0	MSA	268.5	SSA	89.2
BDE	.4309	BRA	.3327	BC3	2.5461	FSP	1759	SG1	2218.0	SG2	574.7	THA	7.73	EL1	581.6	EL2	154.7	ALF	88.06

LAUNCH DATE DEC 19 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 419.797 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.571	GAL	4.50	AZL	89.45	HCA	128.83	SMA	196.20	ECC	.26114	INC	.5473	V1	30.271
RP	236.81	LAP	.43	LOP	215.97	VP	21.082	GAP	9.37	AZP	90.34	TAL	21.96	TAP	150.81	RCA	144.96	APO	247.43	V2	23.209
RC	190.540	GL	4.33	GP	5.14	ZAL	49.28	ZAP	156.13	ETS	166.79	ZAE	162.42	ETE	18.32	ZAC	95.47	ETC	255.78	CLP	156.66

PLANETOCENTRIC CONIC

C3	17.956	VHL	4.237	DLA	20.09	RAL	140.11	RAD	6567.7	VEL	11.804	PTH	2.09	VHP	5.907	DPA	.71	RAP	194.17	ECC	1.2955

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 59 10	2870.42	-28.32	86.97	6.87	90.23	12 47 0	2270.4	-27.98	78.32
90.00	5 42 8	4151.58	-1.52	169.28	.02	61.72	6 51 19	3551.6	-5.29	162.63
100.00	13 33 24	2566.51	-29.84	64.58	6.84	91.87	14 16 1[illegible]	1966.5	-29.26	55.83
100.00	6 50 34	3930.72	-.19	152.31	359.28	60.11	7 56 5	3330.7	-4.17	145.78
110.00	15 9 17	2266.53	-33.69	41.48	6.52	96.16	15 47 4	1666.5	-32.47	32.46
110.00	7 31 10	3803.47	3.08	140.61	357.23	55.94	8 3[illegible] 34	3203.5	-1.41	134.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0117	TRA	-.3049	TC3	2.5488	BAU	.6173	SGT	2204.3	SGR	648.1	SG3	593.7	ST	147.6	SR	577.9	SS	605.6
RDE	-.4271	RRA	-.0426	RC3	.3393	FAU	.15878	RRT	.4601	RRF	-.5206	RTF	-.8673	CRT	.1422	CRS	.8276	CST	-.2960
FDE	.7389	FRA	-1.4118	FC3	-7.6555	BSP	7538	SGB	2297.6	R23	-.1046	R13	-.8718	LSA	800.4	MSA	272.3	SSA	87.9
BDE	.4273	BRA	.3079	BC3	2.5713	FSP	1860	SG1	2225.8	SG2	569.9	THA	8.25	EL1	578.3	EL2	146.0	ALF	87.78

LAUNCH DATE DEC 19 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 423.332 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.530	GAL	4.56	AZL	89.48	HCA	129.80	SMA	195.40	ECC	.25855	INC	.5153	V1	30.271
RP	236.46	LAP	.40	LOP	216.93	VP	21.055	GAP	8.86	AZP	90.33	TAL	22.49	TAP	152.29	RCA	144.88	APO	245.92	V2	23.244
RC	192.768	GL	4.08	GP	5.34	ZAL	48.52	ZAP	155.16	ETS	166.86	ZAE	163.21	ETE	20.15	ZAC	95.67	ETC	255.77	CLP	155.70

PLANETOCENTRIC CONIC

C3	17.859	VHL	4.226	DLA	20.08	RAL	139.27	RAD	6567.7	VEL	11.800	PTH	2.09	VHP	5.766	DPA	.88	RAP	194.26	ECC	1.2939

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 55 55	2868.78	-28.32	86.85	5.93	90.29	12 43 44	2268.8	-27.97	78.20
90.00	5 38 41	4150.70	-1.55	169.23	359.10	61.72	6 47 52	3550.7	-5.32	162.58
100.00	13 30 9	2564.90	-29.84	64.46	5.90	91.94	14 12 54	1964.9	-29.25	55.71
100.00	6 47 8	3929.81	-.22	152.26	358.36	60.11	7 52 38	3329.8	-4.20	145.73
110.00	15 6 1	2264.99	-33.68	41.36	5.58	96.23	15 43 46	1665.0	-32.45	32.34
110.00	7 27 45	3802.49	3.04	140.56	356.32	55.94	8 31 8	3202.5	-1.45	134.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0133	TRA	-.2822	TC3	2.5670	BAU	.6192	SGT	2207.6	SGR	654.9	SG3	624.6	ST	139.6	SR	574.4	SS	624.8
RDE	-.4235	RRA	-.0315	RC3	.3689	FAU	.16592	RRT	.4878	RRF	-.5525	RTF	-.8684	CRT	.1579	CRS	.8198	CST	-.2834
FDE	.7680	FRA	-1.5446	FC3	-8.0428	BSP	7552	SGB	2302.7	R23	-.1135	R13	-.8735	LSA	810.0	MSA	276.1	SSA	86.6
BDE	.4237	BRA	.2839	BC3	2.5934	FSP	1966	SG1	2232.2	SG2	565.4	THA	8.80	EL1	574.8	EL2	137.8	ALF	87.67

LAUNCH DATE DEC 19 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 426.888 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.491	GAL	4.63	AZL	89.52	HCA	130.77	SMA	194.65	ECC	.25611	INC	.4821	V1	30.271
RP	236.12	LAP	.37	LOP	217.90	VP	21.031	GAP	8.36	AZP	90.31	TAL	22.99	TAP	153.76	RCA	144.79	APO	244.50	V2	23.279
RC	194.983	GL	3.82	GP	5.55	ZAL	47.79	ZAP	154.16	ETS	166.93	ZAE	164.01	ETE	22.25	ZAC	95.87	ETC	255.77	CLP	154.73

PLANETOCENTRIC CONIC

C3	17.773	VHL	4.216	DLA	20.05	RAL	138.46	RAD	6567.7	VEL	11.796	PTH	2.09	VHP	5.628	DPA	1.08	RAP	194.34	ECC	1.2925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 53 3	2866.36	-28.31	86.67	5.03	90.38	12 40 49	2268.4	-27.96	78.03
90.00	5 35 6	4150.88	-1.55	169.24	358.22	61.72	6 44 17	3550.9	-5.32	162.59
100.00	13 27 15	2562.60	-29.83	64.29	4.99	92.03	14 9 57	1962.6	-29.23	55.54
100.00	6 43 35	3929.87	-.22	152.26	357.48	60.11	7 49 5	3329.9	-4.20	145.73
110.00	15 3 2	2262.91	-33.66	41.20	4.66	96.32	15 40 45	1662.9	-32.42	32.19
110.00	7 24 17	3802.32	3.04	140.55	355.44	55.94	8 27 40	3202.3	-1.45	134.35

DIFFERENTIAL CORRECTIONS

TDE	-.0100	TRA	-.2368	TC3	2.5875	BAU	.6221	SGT	2213.1	SGR	663.4	SG3	657.3	ST	130.0	SR	570.5	SS	642.0
RDE	-.4196	RRA	-.0197	RC3	.4005	FAU	.17348	RRT	.5143	RRF	-.5847	RTF	-.8701	CRT	.1260	CRS	.8104	CST	-.3092
FDE	.7926	FRA	-1.6876	FC3	-8.4494	BSP	7464	SGB	2310.4	R23	-.1239	R13	-.8760	LSA	817.9	MSA	279.6	SSA	85.5
BDE	.4198	BRA	.2576	BC3	2.6183	FSP	2071	SG1	2241.1	SG2	561.9	THA	9.36	EL1	570.7	EL2	128.9	ALF	88.27

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 19 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 430.466 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.454	GAL	4.69	AZL	89.55	HCA	131.74	SMA	193.94	ECC	.25381	INC	.4481	V1	30.271
RP	235.77	LAP	.33	LOP	218.88	VP	21.012	GAP	7.87	AZP	90.30	TAL	23.47	TAP	155.21	RCA	144.71	APO	243.16	V2	23.315
RC	197.185	GL	3.55	GP	5.77	ZAL	47.09	ZAP	153.14	ETS	167.00	ZAE	164.81	ETE	24.66	ZAC	96.08	ETC	255.76	CLP	153.72

PLANETOCENTRIC CONIC

C3	17.696	VHL	4.207	DLA	19.99	RAL	137.68	RAD	6567.7	VEL	11.793	PTH	2.09	VHP	5.495	DPA	1.29	RAP	194.41	ECC	1.2912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 50 33	2863.11	-28.31	86.44	4.15	90.50	12 38 16	2263.1	-27.94	77.79
90.00	5 31 24	4152.10	-1.51	169.31	357.36	61.72	6 40 36	3552.1	-5.28	162.66
100.00	13 24 41	2559.56	-29.82	64.07	4.11	92.14	14 7 21	1959.6	-29.21	55.32
100.00	6 39 57	3930.88	-.19	152.32	356.63	60.11	7 45 28	3330.9	-4.16	145.78
110.00	15 0 21	2260.25	-33.64	41.00	3.77	96.44	15 38 2	1660.3	-32.39	31.99
110.00	7 20 46	3802.96	3.06	140.59	354.60	55.94	8 24 0	3203.0	-1.43	134.38

DIFFERENTIAL CORRECTIONS

TDE	-.0153	TRA	-.2431	TC3	2.5813	BAU	.6192	SGT	2200.2	SGR	674.1	SG3	690.3	ST	125.9	SR	566.9	SS	661.7
RDE	-.4161	RRA	-.0076	RC3	.4335	FAU	.18106	RRT	.5447	RRF	-.6173	RTF	-.8688	CRT	.1805	CRS	.8045	CST	-.2633
FDE	.8236	FRA	-1.8309	FC3	-8.8579	BSP	7594	SGB	2301.2	R23	-.1331	R13	-.8756	LSA	828.9	MSA	284.6	SSA	83.6
BDE	.4164	BRA	.2433	BC3	2.6174	FSP	2194	SG1	2232.7	SG2	557.1	THA	10.11	EL1	567.4	EL2	123.7	ALF	87.59

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 19 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 434.064 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.418	GAL	4.74	AZL	89.59	HCA	132.72	SMA	193.27	ECC	.25164	INC	.4128	V1	30.271
RP	235.42	LAP	.30	LOP	219.85	VP	20.995	GAP	7.39	AZP	90.28	TAL	23.93	TAP	156.65	RCA	144.64	APO	241.90	V2	23.351
RC	199.372	GL	3.28	GP	6.00	ZAL	46.43	ZAP	152.09	ETS	167.05	ZAE	165.61	ETE	27.44	ZAC	96.30	ETC	255.76	CLP	152.70

PLANETOCENTRIC CONIC

C3	17.627	VHL	4.199	DLA	19.92	RAL	136.93	RAD	6567.7	VEL	11.790	PTH	2.08	VHP	5.366	DPA	1.53	RAP	194.46	ECC	1.2901

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 48 25	2859.08	-28.31	86.14	3.30	90.65	12 36 4	2259.1	-27.92	77.50
90.00	5 27 34	4154.33	-1.44	169.43	356.53	61.72	6 36 48	3554.3	-5.21	162.78
100.00	13 22 27	2555.82	-29.81	63.79	3.26	92.29	14 5 3	1955.8	-29.18	55.04
100.00	6 36 12	3932.82	-.12	152.42	355.80	60.11	7 41 45	3332.8	-4.10	145.89
110.00	14 57 57	2257.04	-33.62	40.75	2.91	96.59	15 35 34	1657.0	-32.34	31.75
110.00	7 17 12	3804.37	3.12	140.66	353.78	55.94	8 20 36	3204.4	-1.37	134.46

DIFFERENTIAL CORRECTIONS

TDE	-.0139	TRA	-.2252	TC3	2.5825	BAU	.6186	SGT	2193.1	SGR	687.0	SG3	725.5	ST	119.2	SR	562.9	SS	679.2
RDE	-.4124	RRA	.0054	RC3	.4691	FAU	.18917	RRT	.5724	RRF	-.6497	RTF	-.8687	CRT	.1671	CRS	.7968	CST	-.2726
FDE	.8493	FRA	-1.9860	FC3	-9.2909	BSP	7588	SGB	2298.2	R23	-.1446	R13	-.8765	LSA	838.0	MSA	288.6	SSA	82.2
BDE	.4126	BRA	.2253	BC3	2.6248	FSP	2316	SG1	2230.5	SG2	553.9	THA	10.84	EL1	563.3	EL2	117.4	ALF	87.88

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 19 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 437.682 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.385	GAL	4.80	AZL	89.62	HCA	133.70	SMA	192.64	ECC	.24959	INC	.3764	V1	30.271
RP	235.06	LAP	.27	LOP	220.83	VP	20.982	GAP	6.92	AZP	90.26	TAL	24.37	TAP	158.07	RCA	144.56	APO	240.72	V2	23.387
RC	201.544	GL	2.99	GP	6.25	ZAL	45.79	ZAP	151.02	ETS	167.10	ZAE	166.40	ETE	30.67	ZAC	96.52	ETC	255.75	CLP	151.64

PLANETOCENTRIC CONIC

C3	17.566	VHL	4.191	DLA	19.82	RAL	136.22	RAD	6567.7	VEL	11.788	PTH	2.08	VHP	5.241	DPA	1.78	RAP	194.49	ECC	1.2891

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 46 38	2854.23	-28.31	85.79	2.48	90.83	12 34 12	2254.2	-27.89	77.15
90.00	5 23 36	4157.56	-1.33	169.61	355.73	61.71	6 32 54	3557.6	-5.10	162.96
100.00	13 20 34	2551.54	-29.80	63.46	2.49	92.46	14 3 5	1951.3	-29.14	54.71
100.00	6 32 22	3935.67	-.03	152.58	355.01	60.11	7 37 57	3335.7	-4.00	146.05
110.00	14 55 51	2253.24	-33.59	40.46	2.07	96.76	15 33 24	1653.2	-32.29	31.47
110.00	7 13 34	3806.54	3.20	140.77	352.99	55.95	8 17 1	3206.5	-1.29	134.57

DIFFERENTIAL CORRECTIONS

TDE	-.0116	TRA	-.2094	TC3	2.5774	BAU	.6169	SGT	2181.9	SGR	702.4	SG3	762.1	ST	113.1	SR	558.8	SS	696.2
RDE	-.4086	RRA	.0192	RC3	.5070	FAU	.19760	RRT	.5993	RRF	-.6816	RTF	-.8680	CRT	.1411	CRS	.7894	CST	-.2915
FDE	.8738	FRA	-2.1482	FC3	-9.7386	BSP	7571	SGB	2292.1	R23	-.1571	R13	-.8772	LSA	847.1	MSA	292.4	SSA	80.8
BDE	.4088	BRA	.2103	BC3	2.6268	FSP	2443	SG1	2224.8	SG2	551.4	THA	11.65	EL1	559.0	EL2	111.9	ALF	88.30

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 19 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 441.319 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.353	GAL	4.85	AZL	89.66	HCA	134.68	SMA	192.05	ECC	.24766	INC	.3383
RP	234.71	LAP	.24	LOP	221.82	VP	20.973	GAP	6.45	AZP	90.24	TAL	24.80	TAP	159.48	RCA	144.48	APO	239.61
RC	203.699	GL	2.69	GP	6.51	ZAL	45.19	ZAP	149.91	ETS	167.15	ZAE	167.17	ETE	34.43	ZAC	96.76	ETC	255.74

V1 30.271 V2 23.424 CLP 150.56

PLANETOCENTRIC CONIC

C3 17.511 VHL 4.185 DLA 19.70 RAL 135.53 RAD 6567.7 VEL 11.785 PTH 2.08 VHP 5.119 DPA 2.06 RAP 194.51 ECC 1.2882

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 45 13	2848.57	-28.30	85.37	1.69	91.04	12 32 41	2248.6	-27.86	76.74
90.00	5 19 31	4161.76	-1.20	169.85	354.96	61.71	6 28 53	3561.8	-4.97	163.20
100.00	13 19 0	2546.14	-29.78	63.07	1.63	92.67	14 1 26	1946.1	-29.10	54.33
100.00	6 28 25	3939.42	.10	152.78	354.24	60.11	7 34 5	3339.4	-3.88	146.26
110.00	14 54 1	2248.86	-33.55	40.12	1.26	96.95	15 31 30	1648.9	-32.23	31.14
110.00	7 9 53	3809.47	3.31	140.93	352.24	55.96	8 13 23	3209.5	-1.18	134.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0073	TRA	-.1947	TC3	2.5686	BAU	.6148	SGT	2168.3	SGR	720.6	SG3	800.4	ST	107.1	SR	554.4	SS	712.0
RDE	-.4046	RRA	.0338	RC3	.5474	FAU	.20641	RRT	.6250	RRF	-.7127	RTF	-.8671	CRT	.0873	CRS	.7814	CST	-.3314
FDE	.8951	FRA	-2.3194	FC	-10.2049	BSP	7525	SGB	2284.9	R23	-.1707	R13	-.8778	LSA	855.4	MSA	296.1	SSA	79.5
BDE	.4047	BRA	.1976	BC3	2.6263	FSP	2574	SG1	2217.7	SG2	550.0	THA	12.52	EL1	554.5	EL2	106.7	ALF	89.00

LAUNCH DATE DEC 19 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 444.974 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.323	GAL	4.90	AZL	89.70	HCA	135.67	SMA	191.49	ECC	.24584	INC	.2992
RP	234.35	LAP	.21	LOP	222.80	VP	20.966	GAP	5.99	AZP	90.21	TAL	25.21	TAP	160.87	RCA	144.41	APO	238.56
RC	205.837	GL	2.38	GP	6.79	ZAL	44.62	ZAP	148.77	ETS	167.19	ZAE	167.90	ETE	38.83	ZAC	97.00	ETC	255.74

V1 30.271 V2 23.461 CLP 149.44

PLANETOCENTRIC CONIC

C3 17.462 VHL 4.179 DLA 19.56 RAL 134.86 RAD 6567.7 VEL 11.783 PTH 2.08 VHP 5.001 DPA 2.36 RAP 194.51 ECC 1.2874

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 44 8	2842.11	-28.29	84.90	.92	91.27	12 31 30	2242.1	-27.81	76.27
90.00	5 15 19	4166.91	-1.03	170 14	354.21	61.70	6 24 46	3566.9	-4.81	163.49
100.00	13 17 45	2540.20	-29.76	62.63	.85	92.90	14 0 6	1940.2	-29.05	53.90
100.00	6 24 22	3944.05	.26	153.04	353.50	60.11	7 30 6	3344.1	-3.72	146.51
110.00	14 52 28	2243.89	-33.51	39.74	.47	97.18	15 29 52	1643.9	-32.16	30.77
110.00	7 6 9	3813.13	3.45	141.12	351.51	55.97	8 9 42	3213.1	-1.04	134.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0071	TRA	-.1727	TC3	2.5743	BAU	.6166	SGT	2166.1	SGR	742.1	SG3	841.9	ST	99.7	SR	549.2	SS	724.4
RDE	-.4001	RRA	.0498	RC3	.5917	FAU	.21597	RRT	.6472	RRF	-.7427	RTF	-.8682	CRT	-.1098	CRS	.7695	CST	-.4622
FDE	.9049	FRA	-2.5082	FC	-10.7078	BSP	7251	SGB	2289.7	R23	-.1858	R13	-.8806	LSA	860.4	MSA	299.7	SSA	78.5
BDE	.4001	BRA	.1797	BC3	2.6414	FSP	2693	SG1	2222.3	SG2	551.4	THA	13.34	EL1	549.3	EL2	99.1	ALF	91.18

LAUNCH DATE DEC 19 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 448.645 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.294	GAL	4.94	AZL	89.74	HCA	136.66	SMA	190.96	ECC	.24413	INC	.2583
RP	233.98	LAP	.18	LOP	223.79	VP	20.962	GAP	5.54	AZP	90.19	TAL	25.60	TAP	162.25	RCA	144.34	APO	237.58
RC	207.958	GL	2.05	GP	7.08	ZAL	44.08	ZAP	147.60	ETS	167.23	ZAE	168.56	ETE	43.92	ZAC	97.25	ETC	255.73

V1 30.271 V2 23.498 CLP 148.30

PLANETOCENTRIC CONIC

C3 17.416 VHL 4.173 DLA 19.40 RAL 134.23 RAD 6567.7 VEL 11.781 PTH 2.08 VHP 4.887 DPA 2.69 RAP 194.49 ECC 1.2866

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 43 25	2834.77	-28.28	84.36	.17	91.54	12 30 40	2234.8	-27.77	75.74
90.00	5 10 59	4173.03	-.83	170.48	353.50	61.69	6 20 32	3573.0	-4.61	163.83
100.00	13 16 52	2533.46	-29.74	62.13	.10	93.16	13 59 5	1933.5	-28.99	53.41
100.00	6 20 14	3949.57	.45	153.34	352.78	60.11	7 26 3	3349.6	-3.53	146.81
110.00	14 51 13	2238.26	-33.46	39.31	359.70	97.43	15 28 31	1638.3	-32.07	30.35
110.00	7 2 22	3817.54	3.62	141.35	350.81	55.99	8 5 59	3217.5	-.87	135.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0013	TRA	-.1739	TC3	2.5257	BAU	.6064	SGT	2123.2	SGR	766.5	SG3	881.1	ST	98.9	SR	545.5	SS	743.1
RDE	-.3966	RRA	.0657	RC3	.6361	FAU	.22491	RRT	.6723	RRF	-.7710	RTF	-.8628	CRT	-.0399	CRS	.7672	CST	-.4232
FDE	.9344	FRA	-2.6840	FC	-11.1803	BSP	7472	SGB	2257.3	R23	-.2012	R13	-.8778	LSA	872.9	MSA	302.9	SSA	76.8
BDE	.3966	BRA	.1859	BC3	2.6046	FSP	2863	SG1	2189.2	SG2	550.3	THA	14.58	EL1	545.5	EL2	98.8	ALF	90.43

LAUNCH DATE DEC 19 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 452.333 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.267	GAL	4.98	AZL	89.78	HCA	137.65	SMA	190.47	ECC	.24251	INC	.2155
RP	233.62	LAP	.15	LOP	224.78	VP	20.961	GAP	5.09	AZP	90.16	TAL	25.97	TAP	163.62	RCA	144.28	APO	236.66
RC	210.060	GL	1.72	GP	7.38	ZAL	43.57	ZAP	146.40	ETS	167.27	ZAE	169.14	ETE	49.82	ZAC	97.51	ETC	255.73

V1 30.271 V2 23.536 CLP 147.13

PLANETOCENTRIC CONIC

C3 17.374 VHL 4.168 DLA 19.21 RAL 133.62 RAD 6567.7 VEL 11.780 PTH 2.08 VHP 4.777 DPA 3.04 RAP 194.46 ECC 1.2859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 43 2	2826.62	-28.26	83.77	359.45	91.84	12 30 9	2226.6	-27.71	75.15
90.00	5 6 31	4180.08	-.60	170.87	352.80	61.69	6 16 11	3580.1	-4.38	164.23
100.00	13 16 16	2525.98	-29.71	61.58	359.37	93.45	13 58 22	1926.0	-28.92	52.86
100.00	6 15 58	3955.95	.66	153.69	352.10	60.11	7 21 54	3356.0	-3.32	147.17
110.00	14 50 14	2232.02	-33.41	38.83	358.95	97.70	15 27 26	1632.0	-31.98	29.89
110.00	6 58 30	3822.68	3.81	141.62	350.13	56.00	8 2 13	3222.7	-.67	135.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0082	TRA	-.1660	TC3	2.4975	BAU	.6016	SGT	2096.1	SGR	794.7	SG3	923.9	ST	96.3	SR	540.6	SS	757.1
RDE	-.3922	RRA	.0833	RC3	.6851	FAU	.23472	RRT	.6927	RRF	-.7978	RTF	-.8599	CRT	-.1473	CRS	.7596	CST	-.4958
FDE	.9481	FRA	-2.8795	FC	-11.6959	BSP	7397	SGB	2241.7	R23	-.2180	R13	-.8778	LSA	880.6	MSA	305.9	SSA	75.6
BDE	.3923	BRA	.1857	BC3	2.5898	FSP	3011	SG1	2172.4	SG2	553.1	THA	15.76	EL1	540.8	EL2	95.3	ALF	91.55

LAUNCH DATE DEC 19 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 456.037 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.241	GAL	5.02	AZL	89.83	HCA	138.64	SMA	190.00	ECC	.24098	INC	.1722
RP	233.25	LAP	.11	LOP	225.77	VP	20.963	GAP	4.66	AZP	90.13	TAL	26.32	TAP	164.97	RCA	144.21	APO	235.79
RC	212.144	GL	1.37	GP	7.71	ZAL	43.09	ZAP	145.17	ETS	167.30	ZAE	169.60	ETE	56.53	ZAC	97.78	ETC	255.72

V1	30.271	V2	23.574	CLP	145.93														

PLANETOCENTRIC CONIC

C3	17.336	VHL	4.164	DLA	19.00	RAL	133.04	RAD	6567.7	VEL	11.778	PTH	2.08	VHP	4.670	DPA	3.42	RAP	194.40
ECC	1.2853																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 43 0	2817.63	-28.24	83.11	358.74	92.17	12 29 58	2217.6	-27.64	74.50
90.00	5 1 56	4188.06	-.35	171.32	352.13	61.68	6 11 44	3588.1	-4.13	164.68
100.00	13 16 0	2517.72	-29.68	60.96	358.66	93.77	13 57 58	1917.7	-28.84	52.26
100.00	6 11 37	3963.20	.91	154.09	351.43	60.12	7 17 40	3363.2	-3.07	147.56
110.00	14 49 31	2225.13	-33.34	38.30	358.21	98.01	15 26 36	1625.1	-31.88	29.38
110.00	6 54 35	3828.56	4.04	141.93	349.48	56.03	7 58 24	3228.6	-.45	135.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0158	TRA	-.1606	TC3	2.4633	BAU	.5960	SGT	2064.7	SGR	826.9	SG3	968.1	ST	95.8	SR	535.8
RDE	-.3878	RRA	.1019	RC3	.7374	FAU	.24486	RRT	.7107	RRF	-.8228	RTF	-.8563	CRT	-.2643	CRS	.7528
FDE	.9603	FRA	-3.0822	FC	-12.2279	BSP	7317	SGB	2224.1	R23	-.2356	R13	-.8777	LSA	888.8	MSA	308.4
BDE	.3881	BRA	.1902	BC3	2.5713	FSP	3168	SG1	2153.0	SG2	557.9	THA	17.07	EL1	536.4	EL2	92.3

SS	770.9	CST	-.5696	SSA	74.4	ALF	92.79										

LAUNCH DATE DEC 19 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 459.757 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.217	GAL	5.06	AZL	89.87	HCA	139.64	SMA	189.56	ECC	.23954	INC	.1253
RP	232.88	LAP	.08	LOP	226.77	VP	20.968	GAP	4.23	AZP	90.10	TAL	26.66	TAP	166.30	RCA	144.15	APO	234.97
RC	214.210	GL	1.00	GP	8.05	ZAL	42.64	ZAP	143.90	ETS	167.34	ZAE	169.90	ETE	64.01	ZAC	98.06	ETC	255.71

V1	30.271	V2	23.612	CLP	144.69														

PLANETOCENTRIC CONIC

C3	17.301	VHL	4.159	DLA	18.77	RAL	132.49	RAD	6567.7	VEL	11.776	PTH	2.08	VHP	4.567	DPA	3.83	RAP	194.33
ECC	1.2847																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 43 18	2807.77	-28.21	82.39	358.05	92.53	12 30 5	2207.8	-27.56	73.79
90.00	4 57 13	4196.98	-.06	171.81	351.48	61.68	6 7 10	3597.0	-3.84	165.18
100.00	13 16 3	2508.66	-29.63	60.29	357.96	94.12	13 57 52	1908.7	-28.75	51.60
100.00	6 7 9	3971.32	1.18	154.53	350.79	60.13	7 13 20	3371.3	-2.80	148.01
110.00	14 49 5	2217.57	-33.27	37.72	357.49	98.35	15 26 3	1617.6	-31.76	28.82
110.00	6 50 36	3835.18	4.29	142.27	348.85	56.05	7 54 31	3235.2	-.20	136.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0246	TRA	-.1579	TC3	2.4210	BAU	.5893	SGT	2027.4	SGR	863.3	SG3	1014.0	ST	97.7	SR	530.5
RDE	-.3829	RRA	.1220	RC3	.7933	FAU	.25534	RRT	.7260	RRF	-.8457	RTF	-.8516	CRT	-.3919	CRS	.7451
FDE	.9657	FRA	-3.2952	FC	-12.7771	BSP	7233	SGB	2203.5	R23	-.2540	R13	-.8775	LSA	895.6	MSA	311.2
BDE	.3837	BRA	.1996	BC3	2.5477	FSP	3328	SG1	2129.8	SG2	565.1	THA	18.53	EL1	531.9	EL2	89.6

SS	783.2	CST	-.6438	SSA	73.2	ALF	94.25										

LAUNCH DATE DEC 19 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 463.492 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.194	GAL	5.09	AZL	89.92	HCA	140.64	SMA	189.15	ECC	.23819	INC	.0757
RP	232.51	LAP	.05	LOP	227.77	VP	20.975	GAP	3.81	AZP	90.06	TAL	26.98	TAP	167.62	RCA	144.10	APO	234.20
RC	216.258	GL	.61	GP	8.41	ZAL	42.22	ZAP	142.60	ETS	167.37	ZAE	170.03	ETE	72.07	ZAC	98.35	ETC	255.71

V1	30.271	V2	23.650	CLP	143.42														

PLANETOCENTRIC CONIC

C3	17.268	VHL	4.156	DLA	18.51	RAL	131.96	RAD	6567.7	VEL	11.775	PTH	2.08	VHP	4.468	DPA	4.27	RAP	194.24
ECC	1.2842																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 43 55	2797.04	-28.18	81.61	357.38	92.92	12 30 32	2197.0	-27.48	73.01
90.00	4 52 22	4206.83	.26	172.36	350.85	61.68	6 2 28	3606.8	-3.53	165.73
100.00	13 16 25	2498.79	-29.58	59.56	357.28	94.50	13 58 3	1898.8	-28.64	50.89
100.00	6 2 33	3980.32	1.49	155.03	350.17	60.14	7 8 54	3380.3	-2.50	148.51
110.00	14 48 56	2209.32	-33.19	37.09	356.79	98.71	15 25 45	1609.3	-31.63	28.21
110.00	6 46 32	3842.55	4.57	142.66	348.25	56.09	7 50 34	3242.5	.09	136.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0337	TRA	-.1585	TC3	2.3711	BAU	.5817	SGT	1984.6	SGR	904.0	SG3	1060.9	ST	102.1	SR	525.1
RDE	-.3778	RRA	.1433	RC3	.8528	FAU	.26605	RRT	.7383	RRF	-.8664	RTF	-.8456	CRT	-.5080	CRS	.7381
FDE	.9680	FRA	-3.5139	FC	-13.3381	BSP	7145	SGB	2180.8	R23	-.2727	R13	-.8772	LSA	902.7	MSA	313.4
BDE	.3793	BRA	.2137	BC3	2.5198	FSP	3495	SG1	2103.6	SG2	575.2	THA	20.16	EL1	527.7	EL2	87.5

SS	795.0	CST	-.7049	SSA	72.1	ALF	95.80										

LAUNCH DATE DEC 19 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 467.242 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.172	GAL	5.12	AZL	89.97	HCA	141.64	SMA	188.76	ECC	.23691	INC	.0262
RP	232.14	LAP	.02	LOP	228.78	VP	20.984	GAP	3.40	AZP	90.02	TAL	27.27	TAP	168.92	RCA	144.04	APO	233.48
RC	218.287	GL	.21	GP	8.79	ZAL	41.83	ZAP	141.26	ETS	167.41	ZAE	169.94	ETE	80.43	ZAC	98.66	ETC	255.70

V1	30.271	V2	23.689	CLP	142.12														

PLANETOCENTRIC CONIC

C3	17.237	VHL	4.152	DLA	18.22	RAL	131.45	RAD	6567.7	VEL	11.774	PTH	2.08	VHP	4.373	DPA	4.74	RAP	194.13
ECC	1.2837																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 44 53	2785.40	-28.14	80.76	356.73	93.34	12 31 18	2185.4	-27.37	72.18
90.00	4 47 22	4217.64	.61	172.96	350.25	61.69	5 57 40	3617.6	-3.18	166.33
100.00	13 17 5	2488.07	-29.52	58.77	356.61	94.91	13 58 33	1888.1	-28.53	50.11
100.00	5 57 51	3990.20	1.82	155.57	349.57	60.16	7 4 21	3390.2	-2.16	149.05
110.00	14 49 3	2200.36	-33.09	36.41	356.10	99.10	15 25 43	1600.4	-31.48	27.55
110.00	6 42 23	3850.68	4.88	143.09	347.67	56.12	7 46 33	3250.7	.40	136.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0438	TRA	-.1615	TC3	2.3150	BAU	.5738	SGT	1937.5	SGR	949.5	SG3	1109.3	ST	109.3	SR	519.5
RDE	-.3724	RRA	.1662	RC3	.9165	FAU	.27709	RRT	.7475	RRF	-.8852	RTF	-.8384	CRT	-.6141	CRS	.7311
FDE	.9649	FRA	-3.7412	FC	-13.9167	BSP	7050	SGB	2157.7	R23	-.2911	R13	-.8772	LSA	909.4	MSA	315.5
BDE	.3749	BRA	.2317	BC3	2.4899	FSP	3669	SG1	2075.8	SG2	588.7	THA	21.98	EL1	523.9	EL2	85.5

SS	806.1	CST	-.7520	SSA	71.0	ALF	97.56										

LAUNCH DATE DEC 19 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 471.005 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.152 GAL 5.15 AZL 90.03 HCA 142.65 SMA 188.40 ECC .23570 INC .0280 V1 30.271
RP 231.76 LAP -.02 LOP 229.78 VP 20.996 GAP 2.99 AZP 89.98 TAL 27.55 TAP 170.21 RCA 143.99 APO 232.80 V2 23.728
RC 220.299 GL -.21 GP 9.20 ZAL 41.47 ZAP 139.89 ETS 167.45 ZAE 169.63 ETE 88.71 ZAC 98.98 ETC 255.69 CLP 140.78

PLANETOCENTRIC CONIC

C3 17.208 VHL 4.148 DLA 17.91 RAL 130.97 RAD 6567.7 VEL 11.772 PTH 2.08 VHP 4.281 DPA 5.25 RAP 194.00 ECC 1.2832

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 46 10	2772.85	-28.08	79.85	356.08	93.80	12 32 23	2172.8	-27.26	71.28
90.00	4 42 13	4229.40	.99	173.62	349.67	61.70	5 52 43	3629.4	-2.80	166.99
100.00	13 18 5	2476.49	-29.45	57.92	355.96	95.36	13 59 21	1876.5	-28.40	49.27
100.00	5 53 0	4001.00	2.19	156.16	349.00	60.18	6 59 41	3401.0	-1.80	149.64
110.00	14 49 26	2190.65	-32.98	35.67	355.42	99.53	15 25 57	1590.6	-31.32	26.84
110.00	6 38 8	3859.60	5.22	143.56	347.12	56.17	7 42 28	3259.6	.74	137.34

DIFFERENTIAL CORRECTIONS
TDE .0547 TRA -.1677 TC3 2.2508 BAU .5652
RDE -.3665 RRA .1906 RC3 .9843 FAU .28830
FDE .9561 FRA-3.9751 FC-14.5042 BSP 6941
BDE .3706 BRA .2539 BC3 2.4566 FSP 3846

MID-COURSE EXECUTION ACCURACY
SGT 1884.7 SGR 999.9 SG3 1158.7
RRT .7532 RRF -.9018 RTF -.8295
SGB 2133.5 R23 -.3089 R13 -.8775
SG1 2045.6 SG2 606.0 THA 24.02

ORBIT DETERMINATION ACCURACY
ST 119.1 SR 513.6 SS 816.5
CRT -.7021 CRS .7244 CST -.7838
LSA 915.8 MSA 317.4 SSA 69.8
EL1 520.6 EL2 83.7 ALF 99.49

LAUNCH DATE DEC 19 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 474.782 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.132 GAL 5.18 AZL 90.08 HCA 143.66 SMA 188.06 ECC .23456 INC .0816 V1 30.271
RP 231.38 LAP -.05 LOP 230.79 VP 21.010 GAP 2.59 AZP 89.93 TAL 27.82 TAP 171.48 RCA 143.95 APO 232.17 V2 23.768
RC 222.292 GL -.65 GP 9.63 ZAL 41.14 ZAP 138.48 ETS 167.49 ZAE 169.09 ETE 96.58 ZAC 99.32 ETC 255.69 CLP 139.41

PLANETOCENTRIC CONIC

C3 17.180 VHL 4.145 DLA 17.57 RAL 130.51 RAD 6567.7 VEL 11.771 PTH 2.08 VHP 4.193 DPA 5.79 RAP 193.85 ECC 1.2827

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 47 48	2759.34	-28.02	78.86	355.45	94.29	12 33 47	2159.3	-27.13	70.31
90.00	4 36 55	4242.16	1.40	174.33	349.10	61.71	5 47 38	3642.2	-2.39	167.70
100.00	13 19 23	2464.01	-29.37	57.00	355.31	95.83	14 0 27	1864.0	-28.25	48.38
100.00	5 48 2	4012.73	2.59	156.81	348.44	60.21	6 54 54	3412.7	-1.40	150.29
110.00	14 50 6	2180.16	-32.86	34.88	354.75	99.98	15 26 26	1580.2	-31.14	26.08
110.00	6 33 48	3869.34	5.59	144.07	346.58	56.22	7 38 17	3269.3	1.11	137.84

DIFFERENTIAL CORRECTIONS
TDE .0668 TRA -.1766 TC3 2.1801 BAU .5565
RDE -.3601 RRA .2169 RC3 1.0572 FAU .29983
FDE .9387 FRA-4.2184 FC-15.1090 BSP 6826
BDE .3662 BRA .2797 BC3 2.4229 FSP 4025

MID-COURSE EXECUTION ACCURACY
SGT 1827.6 SGR 1055.8 SG3 1209.5
RRT .7553 RRF -.9165 RTF -.8188
SGB 2110.7 R23 -.3248 R13 -.8785
SG1 2015.2 SG2 627.6 THA 26.32

ORBIT DETERMINATION ACCURACY
ST 131.7 SR 507.3 SS 825.6
CRT -.7744 CRS .7171 CST -.8006
LSA 921.6 MSA 319.6 SSA 68.6
EL1 517.7 EL2 81.7 ALF 101.66

LAUNCH DATE DEC 19 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 478.573 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.114 GAL 5.20 AZL 90.14 HCA 144.68 SMA 187.74 ECC .23348 INC .1413 V1 30.271
RP 231.01 LAP -.08 LOP 231.81 VP 21.026 GAP 2.20 AZP 89.89 TAL 28.06 TAP 172.73 RCA 143.90 APO 231.57 V2 23.807
RC 224.266 GL -1.12 GP 10.09 ZAL 40.84 ZAP 137.03 ETS 167.54 ZAE 168.33 ETE 103.77 ZAC 99.68 ETC 255.68 CLP 138.00

PLANETOCENTRIC CONIC

C3 17.153 VHL 4.142 DLA 17.20 RAL 130.07 RAD 6567.7 VEL 11.770 PTH 2.08 VHP 4.109 DPA 6.36 RAP 193.69 ECC 1.2823

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 49 45	2744.84	-27.94	77.81	354.83	94.81	12 35 30	2144.8	-26.98	69.27
90.00	4 31 28	4255.94	1.84	175.10	348.56	61.74	5 42 23	3655.9	-1.95	168.47
100.00	13 21 0	2450.59	-29.27	56.02	354.68	96.34	14 1 51	1850.6	-28.09	47.41
100.00	5 42 54	4025.43	3.02	157.51	347.91	60.25	6 49 59	3425.4	-.97	150.98
110.00	14 51 3	2168.85	-32.73	34.02	354.08	100.47	15 27 12	1568.9	-30.94	25.26
110.00	6 29 20	3879.93	5.99	144.63	346.07	56.28	7 34 0	3279.9	1.51	138.40

DIFFERENTIAL CORRECTIONS
TDE .0791 TRA -.1895 TC3 2.1005 BAU .5475
RDE -.3532 RRA .2449 RC3 1.1346 FAU .31143
FDE .9152 FRA-4.4650 FC-15.7179 BSP 6715
BDE .3619 BRA .3096 BC3 2.3873 FSP 4209

MID-COURSE EXECUTION ACCURACY
SGT 1764.8 SGR 1117.0 SG3 1260.7
RRT .7530 RRF -.9293 RTF -.8054
SGB 2088.6 R23 -.3384 R13 -.8803
SG1 1983.6 SG2 653.9 THA 28.92

ORBIT DETERMINATION ACCURACY
ST 146.5 SR 500.8 SS 834.1
CRT -.8277 CRS .7106 CST -.8071
LSA 927.4 MSA 321.5 SSA 67.5
EL1 515.7 EL2 79.9 ALF 103.95

LAUNCH DATE DEC 19 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 482.376 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.097 GAL 5.22 AZL 90.20 HCA 145.69 SMA 187.44 ECC .23247 INC .2026 V1 30.271
RP 230.62 LAP -.11 LOP 232.83 VP 21.044 GAP 1.82 AZP 89.83 TAL 28.28 TAP 173.97 RCA 143.86 APO 231.01 V2 23.847
RC 226.222 GL -1.61 GP 10.57 ZAL 40.56 ZAP 135.54 ETS 167.59 ZAE 167.38 ETE 110.16 ZAC 100.06 ETC 255.67 CLP 136.56

PLANETOCENTRIC CONIC

C3 17.128 VHL 4.139 DLA 16.80 RAL 129.65 RAD 6567.7 VEL 11.769 PTH 2.08 VHP 4.030 DPA 6.98 RAP 193.51 ECC 1.2819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 52 3	2729.32	-27.85	76.68	354.21	95.37	12 37 32	2129.3	-26.81	68.17
90.00	4 25 49	4270.78	2.32	175.93	348.03	61.77	5 37 0	3670.8	-1.47	169.30
100.00	13 22 57	2436.19	-29.16	54.96	354.05	96.89	14 3 33	1836.2	-27.90	46.38
100.00	5 37 36	4039.13	3.48	158.26	347.39	60.29	6 44 55	3439.1	-.50	151.73
110.00	14 52 17	2156.68	-32.57	33.11	353.42	100.99	15 28 13	1556.7	-30.72	24.38
110.00	6 24 46	3891.41	6.42	145.23	345.57	56.35	7 29 37	3291.4	1.95	139.00

DIFFERENTIAL CORRECTIONS
TDE .0918 TRA -.2058 TC3 2.0124 BAU .5386
RDE -.3455 RRA .2749 RC3 1.2175 FAU .32319
FDE .8818 FRA-4.7184 FC-16.3361 BSP 6618
BDE .3575 BRA .3434 BC3 2.3520 FSP 4398

MID-COURSE EXECUTION ACCURACY
SGT 1696.9 SGR 1184.2 SG3 1312.8
RRT .7462 RRF -.9405 RTF -.7888
SGB 2069.2 R23 -.3482 R13 -.8834
SG1 1952.5 SG2 685.1 THA 31.89

ORBIT DETERMINATION ACCURACY
ST 163.2 SR 493.9 SS 841.7
CRT -.8679 CRS .7038 CST -.8052
LSA 932.7 MSA 323.8 SSA 66.2
EL1 514.3 EL2 77.9 ALF 106.39

LAUNCH DATE DEC 19 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 486.192 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.081 GAL 5.24 AZL 90.27 HCA 146.71 SMA 187.16 ECC .23151 INC .2676 V1 30.271
RP 230.24 LAP -.15 LOP 233.85 VP 21.065 GAP 1.44 AZP 89.78 TAL 28.49 TAP 175.20 RCA 143.83 APO 230.49 V2 23.887
RC 228.159 GL -2.13 GP 11.08 ZAL 40.32 ZAP 134.02 ETS 167.65 ZAE 166.26 ETE 115.73 ZAC 100.46 ETC 255.66 CLP 135.08

PLANETOCENTRIC CONIC

C3 17.103 VHL 4.136 DLA 16.36 RAL 129.25 RAD 6567.7 VEL 11.768 PTH 2.08 VHP 3.954 DPA 7.63 RAP 193.31 ECC 1.2815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 54 41	2712.71	-27.73	75.48	353.60	95.96	12 39 54	2112.7	-26.62	66.99
90.00	4 19 59	4286.73	2.84	176.82	347.53	61.81	5 31 25	3686.7	-.96	170.19
100.00	13 25 13	2420.77	-29.03	53.83	353.43	97.47	14 5 33	1820.8	-27.69	45.28
100.00	5 32 8	4053.90	3.98	159.07	346.90	60.35	6 39 42	3453.9	-.00	152.54
110.00	14 53 48	2143.61	-32.40	32.13	352.77	101.55	15 29 31	1543.6	-30.47	23.44
110.00	6 20 2	3903.82	6.89	145.89	345.10	56.43	7 25 6	3303.8	2.43	139.64

DIFFERENTIAL CORRECTIONS
TDE .1051 TRA -.2257 TC3 1.9160 BAU .5302
RDE -.3369 RRA .3072 RC3 1.3059 FAU .33500
FDE .8390 FRA-4.9764 FC-16.9568 BSP 6524
BDE .3530 BRA .3812 BC3 2.3187 FSP 4586

MID-COURSE EXECUTION ACCURACY
SGT 1624.5 SGR 1257.5 SG3 1365.3
RRT .7339 RRF -.9501 RTF -.7681
SGB 2054.3 R23 -.3528 R13 -.8883
SG1 1923.5 SG2 721.3 THA 35.29

ORBIT DETERMINATION ACCURACY
ST 181.7 SR 486.5 SS 848.8
CRT -.8986 CRS .6974 CST -.7972
LSA 937.8 MSA 326.3 SSA 64.8
EL1 513.8 EL2 75.5 ALF 108.98

LAUNCH DATE DEC 19 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 490.021 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.066 GAL 5.26 AZL 90.34 HCA 147.74 SMA 186.89 ECC .23060 INC .3370 V1 30.271
RP 229.86 LAP -.18 LOP 234.87 VP 21.087 GAP 1.07 AZP 89.71 TAL 28.67 TAP 176.41 RCA 143.80 APO 229.99 V2 23.927
RC 230.076 GL -2.69 GP 11.62 ZAL 40.11 ZAP 132.45 ETS 167.72 ZAE 164.98 ETE 120.53 ZAC 100.88 ETC 255.66 CLP 133.56

PLANETOCENTRIC CONIC

C3 17.080 VHL 4.133 DLA 15.88 RAL 128.86 RAD 6567.7 VEL 11.767 PTH 2.08 VHP 3.882 DPA 8.33 RAP 193.10 ECC 1.2811

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 57 40	2694.96	-27.60	74.20	352.99	96.59	12 42 35	2095.0	-26.40	65.74
90.00	4 13 55	4303.85	3.39	177.78	347.04	61.87	5 25 39	3703.9	-.40	171.15
100.00	13 27 49	2404.26	-28.88	52.63	352.81	98.09	14 7 53	1804.3	-27.46	44.11
100.00	5 26 28	4069.79	4.51	159.95	346.42	60.42	6 34 18	3469.8	.54	153.42
110.00	14 55 36	2129.57	-32.20	31.08	352.12	102.14	15 31 6	1529.6	-30.20	22.44
110.00	6 15 10	3917.24	7.39	146.60	344.64	56.53	7 20 27	3317.2	2.94	140.35

DIFFERENTIAL CORRECTIONS
TDE .1192 TRA -.2490 TC3 1.8113 BAU .5228
RDE -.3272 RRA .3419 RC3 1.4003 FAU .34681
FDE .7822 FRA-5.2393 FC-17.5784 BSP 6445
BDE .3482 BRA .4229 BC3 2.2894 FSP 4774

MID-COURSE EXECUTION ACCURACY
SGT 1548.4 SGR 1337.3 SG3 1417.9
RRT .7153 RRF -.9583 RTF -.7423
SGB 2045.9 R23 -.3503 R13 -.8957
SG1 1898.7 SG2 762.1 THA 39.19

ORBIT DETERMINATION ACCURACY
ST 202.3 SR 478.4 SS 855.0
CRT -.9231 CRS .6904 CST -.7826
LSA 942.4 MSA 329.7 SSA 63.2
EL1 514.3 EL2 72.4 ALF 111.78

LAUNCH DATE DEC 19 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 493.862 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.052 GAL 5.27 AZL 90.41 HCA 148.76 SMA 186.65 ECC .22975 INC .4104 V1 30.271
RP 229.47 LAP -.21 LOP 235.90 VP 21.111 GAP .71 AZP 89.65 TAL 28.84 TAP 177.60 RCA 143.77 APO 229.53 V2 23.968
RC 231.973 GL -3.27 GP 12.20 ZAL 39.93 ZAP 130.85 ETS 167.80 ZAE 163.57 ETE 124.64 ZAC 101.33 ETC 255.65 CLP 132.01

PLANETOCENTRIC CONIC

C3 17.059 VHL 4.130 DLA 15.37 RAL 128.50 RAD 6567.7 VEL 11.766 PTH 2.08 VHP 3.814 DPA 9.07 RAP 192.87 ECC 1.2807

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 1 0	2676.02	-27.45	72.83	352.38	97.26	12 45 36	2076.0	-26.16	64.40
90.00	4 7 39	4322.23	3.97	178.81	346.57	61.94	5 19 41	3722.2	.19	172.17
100.00	13 30 45	2386.59	-28.70	51.35	352.18	98.74	14 10 32	1786.6	-27.19	42.87
100.00	5 20 35	4086.88	5.08	160.89	345.96	60.50	6 28 42	3486.9	1.12	154.35
110.00	14 57 43	2114.51	-31.98	29.96	351.46	102.77	15 32 57	1514.5	-29.89	21.37
110.00	6 10 7	3931.73	7.93	147.37	344.21	56.64	7 15 39	3331.7	3.49	141.10

DIFFERENTIAL CORRECTIONS
TDE .1328 TRA -.2768 TC3 1.6966 BAU .5166
RDE -.3165 RRA .3789 RC3 1.5007 FAU .35842
FDE .7162 FRA-5.5029 FC-18.1897 BSP 6408
BDE .3432 BRA .4693 BC3 2.2650 FSP 4966

MID-COURSE EXECUTION ACCURACY
SGT 1468.5 SGR 1423.6 SG3 1469.9
RRT .6884 RRF -.9653 RTF -.7093
SGB 2045.3 R23 -.3391 R13 -.9059
SG1 1879.5 SG2 806.8 THA 43.71

ORBIT DETERMINATION ACCURACY
ST 223.5 SR 470.0 SS 861.3
CRT -.9408 CRS .6850 CST -.7665
LSA 947.6 MSA 333.3 SSA 61.5
EL1 515.8 EL2 69.0 ALF 114.57

LAUNCH DATE DEC 19 1964 FLIGHT TIME 226.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 497.714 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.039 GAL 5.28 AZL 90.49 HCA 149.79 SMA 186.42 ECC .22894 INC .4889 V1 30.271
RP 229.09 LAP -.25 LOP 236.93 VP 21.136 GAP .36 AZP 89.58 TAL 28.99 TAP 178.78 RCA 143.74 APO 229.10 V2 24.009
RC 233.848 GL -3.90 GP 12.82 ZAL 39.79 ZAP 129.21 ETS 167.89 ZAE 162.05 ETE 128.16 ZAC 101.80 ETC 255.64 CLP 130.42

PLANETOCENTRIC CONIC

C3 17.040 VHL 4.128 DLA 14.81 RAL 128.14 RAD 6567.7 VEL 11.765 PTH 2.08 VHP 3.751 DPA 9.85 RAP 192.63 ECC 1.2804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 4 43	2655.78	-27.26	71.38	351.78	97.96	12 48 58	2055.8	-25.88	62.99
90.00	4 1 6	4341.94	4.60	179.91	346.12	62.03	5 13 28	3741.9	.83	173.27
100.00	13 34 3	2367.70	-28.50	49.98	351.56	99.43	14 13 30	1767.7	-26.90	41.54
100.00	5 14 28	4105.26	5.70	161.91	345.52	60.61	6 22 53	3505.3	1.74	155.36
110.00	15 0 8	2098.34	-31.73	28.77	350.81	103.43	15 35 6	1498.3	-29.56	20.23
110.00	6 4 52	3947.38	8.52	148.21	343.79	56.77	7 10 39	3347.4	4.09	141.92

DIFFERENTIAL CORRECTIONS
TDE .1465 TRA -.3084 TC3 1.5739 BAU .5126
RDE -.3043 RRA .4189 RC3 1.6081 FAU .36996
FDE .6356 FRA-5.7693 FC-18.7964 BSP 6390
BDE .3377 BRA .5202 BC3 2.2501 FSP 5149

MID-COURSE EXECUTION ACCURACY
SGT 1387.7 SGR 1517.4 SG3 1521.7
RRT .6520 RRF -.9712 RTF -.6676
SGB 2056.3 R23 -.3169 R13 -.9192
SG1 1870.8 SG2 853.5 THA 48.91

ORBIT DETERMINATION ACCURACY
ST 246.0 SR 461.0 SS 867.7
CRT -.9550 CRS .6801 CST -.7460
LSA 953.0 MSA 337.9 SSA 59.6
EL1 518.5 EL2 64.9 ALF 117.47

LAUNCH DATE DEC 19 1964 FLIGHT TIME 228.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 501.586 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.027	GAL	5.29	AZL	90.57	HCA	150.83	SMA	186.21	ECC	.22818	INC	.5725
RP	228.70	LAP	-.28	LOP	237.96	VP	21.163	GAP	.01	AZP	89.50	TAL	29.12	TAP	179.95	RCA	143.72	APO	228.70
RC	235.703	GL	-4.57	GP	13.47	ZAL	39.68	ZAP	127.53	ETS	167.99	ZAE	160.41	ETE	131.17	ZAC	102.31	ETC	255.64

V1 30.271 V2 24.049 CLP 128.79

PLANETOCENTRIC CONIC

C3	17.023	VHL	4.126	DLA	14.20	RAL	127.80	RAD	6567.7	VEL	11.765	PTH	2.08	VHP	3.692	DPA	10.69	RAP	192.38

ECC 1.2802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 8 48	2634.18	-27.05	69.84	351.17	98.71	12 52 42	2034.2	-25.57	61.48
90.00	3 54 17	4363.10	5.28	181.10	345.69	62.14	5 7 1	3763.1	1.51	174.45
100.00	13 37 42	2347.49	-28.26	48.52	350.94	100.16	14 16 50	1747.5	-26.57	40.13
100.00	5 8 5	4125.02	6.36	163.01	345.10	60.73	6 16 50	3525.0	2.41	156.45
110.00	15 2 52	2081.00	-31.45	27.49	350.15	104.14	15 37 33	1481.0	-29.19	19.02
110.00	5 59 24	3964.28	9.15	149.11	343.40	56.92	7 5 28	3364.3	4.73	142.81

DIFFERENTIAL CORRECTIONS

TDE	.1600	TRA	-.3442	TC3	1.4416	BAU	.5112
RDE	-.2903	RRA	.4618	RC3	1.7224	FAU	.38119
FDE	.5393	FRA	-6.0348	FC	-19.3857	BSP	6430
BDE	.3315	BRA	.5760	BC3	2.2461	FSP	5332

MID-COURSE EXECUTION ACCURACY

SGT	1306.8	SGR	1618.7	SG3	1572.4		
RRT	.6028	RRF	-.9762	RTF	-.6140		
SGB	2080.4	R23	-.2821	R13	-.9351		
SG1	1875.7	SG2	899.9	THA	54.85		

ORBIT DETERMINATION ACCURACY

ST	269.3	SR	451.4	SS	874.5		
CRT	-.9659	CRS	.6764	CST	-.7217		
LSA	959.0	MSA	343.8	SSA	57.4		
EL1	522.2	EL2	60.3	ALF	120.40		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 230.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 505.454 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.015	GAL	5.30	AZL	90.66	HCA	151.87	SMA	186.01	ECC	.22746	INC	.6622
RP	228.31	LAP	-.31	LOP	239.00	VP	21.192	GAP	-.32	AZP	89.42	TAL	29.24	TAP	181.10	RCA	143.70	APO	228.32
RC	237.537	GL	-5.28	GP	14.16	ZAL	39.60	ZAP	125.82	ETS	168.11	ZAE	158.69	ETE	133.76	ZAC	102.85	ETC	255.63

V1 30.271 V2 24.090 CLP 127.13

PLANETOCENTRIC CONIC

C3	17.011	VHL	4.124	DLA	13.55	RAL	127.47	RAD	6567.7	VEL	11.764	PTH	2.08	VHP	3.637	DPA	11.58	RAP	192.12

ECC 1.2800

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 13 18	2611.10	-26.80	68.19	350.55	99.50	12 56 49	2011.1	-25.22	59.88
90.00	3 47 10	4385.83	6.00	182.38	345.28	62.27	5 0 15	3785.8	2.24	175.72
100.00	13 41 44	2325.85	-27.99	46.97	350.31	100.94	14 20 30	1725.9	-26.20	38.63
100.00	5 1 24	4146.31	7.07	164.19	344.70	60.88	6 10 30	3546.3	3.13	157.62
110.00	15 5 57	2062.37	-31.13	26.13	349.48	104.89	15 40 19	1462.4	-28.78	17.72
110.00	5 53 41	3982.55	9.83	150.09	343.02	57.09	7 0 3	3382.6	5.42	143.77

DIFFERENTIAL CORRECTIONS

TDE	.1729	TRA	-.3843	TC3	1.2995	BAU	.5130
RDE	-.2746	RRA	.5080	RC3	1.8437	FAU	.39194
FDE	.4286	FRA	-6.2981	FC	-19.9472	BSP	6532
BDE	.3245	BRA	.6369	BC3	2.2556	FSP	5512

MID-COURSE EXECUTION ACCURACY

SGT	1228.1	SGR	1727.8	SG3	1621.2		
RRT	.5373	RRF	-.9804	RTF	-.5447		
SGB	2119.8	R23	-.2348	R13	-.9521		
SG1	1898.7	SG2	942.6	THA	61.47		

ORBIT DETERMINATION ACCURACY

ST	293.0	SR	441.6	SS	882.6		
CRT	-.9739	CRS	.6754	CST	-.6949		
LSA	966.4	MSA	350.7	SSA	54.9		
EL1	527.0	EL2	55.7	ALF	123.30		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 509.343 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.005	GAL	5.30	AZL	90.76	HCA	152.91	SMA	185.83	ECC	.22678	INC	.7578
RP	227.92	LAP	-.35	LOP	240.04	VP	21.223	GAP	-.66	AZP	89.33	TAL	29.33	TAP	182.24	RCA	143.69	APO	227.97
RC	239.350	GL	-6.05	GP	14.91	ZAL	39.56	ZAP	124.07	ETS	168.24	ZAE	156.87	ETE	136.00	ZAC	103.43	ETC	255.62

V1 30.271 V2 24.132 CLP 125.43

PLANETOCENTRIC CONIC

C3	17.003	VHL	4.123	DLA	12.83	RAL	127.14	RAD	6567.7	VEL	11.764	PTH	2.08	VHP	3.588	DPA	12.52	RAP	191.86

ECC 1.2798

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 18 11	2586.45	-26.51	66.45	349.93	100.33	13 1 18	1986.5	-24.82	58.19
90.00	3 39 41	4410.27	6.77	183.76	344.89	62.44	4 53 11	3810.3	3.03	177.08
100.00	13 46 10	2302.71	-27.68	45.32	349.67	101.75	14 24 33	1702.7	-25.78	37.03
100.00	4 54 23	4169.25	7.82	165.47	344.32	61.06	6 3 52	3569.2	3.90	158.88
110.00	15 9 22	2042.39	-30.77	24.69	348.81	105.67	15 43 24	1442.4	-28.32	16.35
110.00	5 47 41	4002.34	10.56	151.16	342.67	57.30	6 54 23	3402.3	6.17	144.81

DIFFERENTIAL CORRECTIONS

TDE	.1939	TRA	-.4200	TC3	1.1693	BAU	.5230
RDE	-.2524	RRA	.5615	RC3	1.9814	FAU	.40400
FDE	.2568	FRA	-6.5977	FC	-20.5703	BSP	6533
BDE	.3183	BRA	.7011	BC3	2.3007	FSP	5594

MID-COURSE EXECUTION ACCURACY

SGT	1166.5	SGR	1852.9	SG3	1676.1		
RRT	.4638	RRF	-.9840	RTF	-.4700		
SGB	2189.5	R23	-.1795	R13	-.9676		
SG1	1959.3	SG2	977.4	THA	67.98		

ORBIT DETERMINATION ACCURACY

ST	325.1	SR	427.8	SS	895.3		
CRT	-.9792	CRS	.6694	CST	-.6260		
LSA	974.9	MSA	370.5	SSA	51.0		
EL1	534.7	EL2	52.8	ALF	127.08		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 513.240 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.995	GAL	5.30	AZL	90.86	HCA	153.95	SMA	185.66	ECC	.22613	INC	.8614
RP	227.53	LAP	-.38	LOP	241.09	VP	21.254	GAP	-.98	AZP	89.23	TAL	29.41	TAP	183.36	RCA	143.68	APO	227.65
RC	241.142	GL	-6.88	GP	15.70	ZAL	39.56	ZAP	122.28	ETS	168.39	ZAE	154.98	ETE	137.93	ZAC	104.05	ETC	255.61

V1 30.271 V2 24.173 CLP 123.70

PLANETOCENTRIC CONIC

C3	17.001	VHL	4.123	DLA	12.05	RAL	126.83	RAD	6567.7	VEL	11.764	PTH	2.08	VHP	3.543	DPA	13.52	RAP	191.59

ECC 1.2798

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 23 33	2560.02	-26.18	64.58	349.30	101.20	13 6 13	1960.0	-24.37	56.38
90.00	3 31 48	4436.63	7.60	185.26	344.52	62.64	4 45 45	3836.6	3.88	178.56
100.00	13 51 3	2277.86	-27.33	43.56	349.03	102.61	14 29 0	1677.9	-25.31	35.34
100.00	4 47 0	4194.03	8.64	166.86	343.96	61.27	5 56 54	3594.0	4.74	160.25
110.00	15 13 10	2020.86	-30.37	23.14	348.13	106.50	15 46 51	1420.9	-27.81	14.88
110.00	5 41 21	4023.80	11.34	152.32	342.34	57.54	6 48 25	3423.8	6.98	145.95

DIFFERENTIAL CORRECTIONS

TDE	.2009	TRA	-.4734	TC3	.9990	BAU	.5317
RDE	-.2325	RRA	.6137	RC3	2.1153	FAU	.41288
FDE	.1223	FRA	-6.8360	FC	-21.0253	BSP	6855
BDE	.3073	BRA	.7751	BC3	2.3393	FSP	5785

MID-COURSE EXECUTION ACCURACY

SGT	1099.6	SGR	1976.8	SG3	1717.2		
RRT	.3497	RRF	-.9868	RTF	-.3524		
SGB	2262.0	R23	-.1195	R13	-.9796		
SG1	2026.6	SG2	1004.8	THA	75.30		

ORBIT DETERMINATION ACCURACY

ST	345.4	SR	419.0	SS	907.6		
CRT	-.9792	CRS	.6797	CST	-.6080		
LSA	987.3	MSA	376.2	SSA	48.5		
EL1	540.3	EL2	54.3	ALF	129.38		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 517.149 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.986	GAL	5.30	AZL	90.97	HCA	155.00	SMA	185.51	ECC	.22552	INC	.9735	V1	30.271
RP	227.14	LAP	-.41	LOP	242.14	VP	21.287	GAP	-1.30	AZP	89.12	TAL	29.47	TAP	184.47	RCA	143.67	APO	227.34	V2	24.214
RC	242.914	GL	-7.78	GP	16.54	ZAL	39.61	ZAP	120.47	ETS	168.57	ZAE	153.02	ETE	139.61	ZAC	104.72	ETC	255.60	CLP	121.93

PLANETOCENTRIC CONIC

C3	17.006	VHL	4.124	DLA	11.21	RAL	126.52	RAD	6567.7	VEL	11.764	PTH	2.08	VHP	3.503	DPA	14.57	RAP	191.33	ECC	1.2799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 29 23	2531.70	-25.79	62.60	348.66	102.12	13 11 35	1931.7	-23.86	54.46
90.00	3 23 29	4465.11	8.49	186.88	344.17	62.88	4 37 54	3865.1	4.79	180.16
100.00	13 56 22	2251.18	-26.92	41.68	348.38	103.52	14 33 53	1651.2	-24.79	33.53
100.00	4 39 11	4220.86	9.51	168.38	343.63	61.53	5 49 32	3620.9	5.64	161.73
110.00	15 17 23	1997.68	-29.91	21.49	347.44	107.38	15 50 40	1397.7	-27.24	13.32
110.00	5 34 40	4047.12	12.19	153.60	342.03	57.82	6 42 7	3447.1	7.86	147.19

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2079	TRA	-.5298	TC3	.8227	BAU	.5463	SGT	1052.1	SGR	2110.5	SG3	1755.7	ST	366.8	SR	410.6	SS	923.7
RDE	-.2089	RRA	.6707	RC3	2.2578	FAU	.42110	RRT	.2102	RRF	-.9892	RTF	-.2103	CRT	-.9752	CRS	.6948	CST	-.5809
FDE	-.0383	FRA	-7.0712	FC	-21.4372	BSP	7224	SGB	2358.3	R23	-.0625	R13	-.9872	LSA	1003.0	MSA	385.1	SSA	45.6
BDE	.2947	BRA	.8547	BC3	2.4030	FSP	5948	SG1	2125.6	SG2	1021.3	THA	82.21	EL1	547.2	EL2	61.0	ALF	131.70

LAUNCH DATE DEC 19 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 521.068 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.977	GAL	5.30	AZL	91.10	HCA	156.05	SMA	185.37	ECC	.22494	INC	1.0949	V1	30.271
RP	226.75	LAP	-.44	LOP	243.19	VP	21.322	GAP	-1.61	AZP	89.00	TAL	29.52	TAP	185.57	RCA	143.67	APO	227.06	V2	24.256
RC	244.666	GL	-8.75	GP	17.44	ZAL	39.71	ZAP	118.62	ETS	168.77	ZAE	150.98	ETE	141.08	ZAC	105.44	ETC	255.58	CLP	120.14

PLANETOCENTRIC CONIC

C3	17.022	VHL	4.126	DLA	10.28	RAL	126.21	RAD	6567.7	VEL	11.765	PTH	2.08	VHP	3.469	DPA	15.69	RAP	191.07	ECC	1.2801

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 35 44	2501.28	-25.34	60.49	348.02	103.09	13 17 26	1901.3	-23.28	52.42
90.00	3 14 40	4495.95	9.44	188.65	343.86	63.18	4 29 36	3896.0	5.77	181.89
100.00	14 2 11	2222.48	-26.44	39.68	347.71	104.47	14 39 13	1622.5	-24.19	31.60
100.00	4 30 54	4249.97	10.45	170.03	343.32	61.83	5 41 44	3650.0	6.61	163.35
110.00	15 22 1	1972.69	-29.39	19.73	346.73	108.30	15 54 53	1372.7	-26.61	11.65
110.00	5 27 34	4072.54	13.11	155.00	341.75	58.14	6 35 27	3472.5	8.80	148.54

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2134	TRA	-.5905	TC3	.6383	BAU	.5670	SGT	1029.5	SGR	2254.3	SG3	1790.3	ST	388.1	SR	403.8	SS	944.8
RDE	-.1811	RRA	.7326	RC3	2.4085	FAU	.42835	RRT	.0476	RRF	-.9912	RTF	-.0457	CRT	-.9647	CRS	.7174	CST	-.5499
FDE	-.2222	FRA	-7.2980	FC	-21.7859	BSP	7673	SGB	2478.3	R23	-.0139	R13	-.9911	LSA	1023.7	MSA	395.5	SSA	42.4
BDE	.2799	BRA	.9409	BC3	2.4917	FSP	6093	SG1	2255.0	SG2	1028.1	THA	88.43	EL1	555.1	EL2	74.4	ALF	133.83

LAUNCH DATE DEC 19 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 524.998 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.970	GAL	5.29	AZL	91.23	HCA	157.11	SMA	185.24	ECC	.22439	INC	1.2275	V1	30.271
RP	226.36	LAP	-.48	LOP	244.24	VP	21.357	GAP	-1.92	AZP	88.87	TAL	29.54	TAP	186.65	RCA	143.67	APO	226.80	V2	24.297
RC	246.398	GL	-9.81	GP	18.41	ZAL	39.86	ZAP	116.75	ETS	169.00	ZAE	148.88	ETE	142.37	ZAC	106.22	ETC	255.57	CLP	118.32

PLANETOCENTRIC CONIC

C3	17.051	VHL	4.129	DLA	9.27	RAL	125.90	RAD	6567.7	VEL	11.766	PTH	2.08	VHP	3.441	DPA	16.88	RAP	190.83	ECC	1.2806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 42 39	2468.55	-24.81	58.23	347.36	104.10	13 23 47	1868.6	-22.63	50.24
90.00	3 5 16	4529.47	10.46	190.58	343.57	63.54	4 20 45	3929.5	6.83	183.79
100.00	14 8 32	2191.57	-25.90	37.54	347.04	105.47	14 45 3	1591.6	-23.52	29.55
100.00	4 22 4	4281.68	11.46	171.84	343.05	62.20	5 33 26	3681.7	7.66	165.12
110.00	15 27 6	1945.69	-28.80	17.85	346.02	109.27	15 59 32	1345.7	-25.90	9.88
110.00	5 19 59	4100.33	14.10	156.54	341.51	58.53	6 28 19	3500.3	9.84	150.03

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2173	TRA	-.6559	TC3	.4478	BAU	.5942	SGT	1038.3	SGR	2409.1	SG3	1820.3	ST	409.4	SR	400.1	SS	972.3
RDE	-.1482	RRA	.7996	RC3	2.5680	FAU	.43455	RRT	-.1257	RRF	-.9928	RTF	.1288	CRT	-.9439	CRS	.7486	CST	-.5146
FDE	-.4335	FRA	-7.5109	FC	-22.0640	BSP	8201	SGB	2623.3	R23	.0240	R13	-.9925	LSA	1051.2	MSA	408.0	SSA	39.0
BDE	.2630	BRA	1.0342	BC3	2.6068	FSP	6213	SG1	2413.5	SG2	1028.2	THA	93.79	EL1	564.3	EL2	95.8	ALF	135.70

LAUNCH DATE DEC 19 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 528.938 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.963	GAL	5.28	AZL	91.37	HCA	158.16	SMA	185.12	ECC	.22387	INC	1.3724	V1	30.271
RP	225.97	LAP	-.51	LOP	245.30	VP	21.394	GAP	-2.21	AZP	88.73	TAL	29.55	TAP	187.72	RCA	143.68	APO	226.56	V2	24.339
RC	248.110	GL	-10.96	GP	19.45	ZAL	40.07	ZAP	114.85	ETS	169.25	ZAE	146.72	ETE	143.51	ZAC	107.06	ETC	255.55	CLP	116.47

PLANETOCENTRIC CONIC

C3	17.097	VHL	4.135	DLA	8.16	RAL	125.58	RAD	6567.7	VEL	11.768	PTH	2.08	VHP	3.419	DPA	18.14	RAP	190.60	ECC	1.2814

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 50 10	2433.24	-24.20	55.83	346.69	105.16	13 30 44	1833.2	-21.89	47.92
90.00	2 55 12	4566.02	11.56	192.70	343.32	63.97	4 11 18	3966.0	7.97	185.86
100.00	14 15 28	2158.17	-25.27	35.26	346.35	106.52	14 51 26	1558.2	-22.77	27.36
100.00	4 12 36	4316.33	12.56	173.83	342.81	62.65	5 24 32	3716.3	8.79	167.06
110.00	15 32 42	1916.46	-28.12	15.85	345.29	110.29	16 4 38	1316.5	-25.10	7.98
110.00	5 11 51	4130.80	15.18	158.24	341.30	59.00	6 20 42	3530.8	10.96	151.68

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2175	TRA	-.7268	TC3	.2479	BAU	.6275	SGT	1080.7	SGR	2574.4	SG3	1844.0	ST	429.0	SR	402.5	SS	1007.4
RDE	-.1098	RRA	.8725	RC3	2.7343	FAU	.43921	RRT	-.2965	RRF	-.9941	RTF	.3003	CRT	-.9108	CRS	.7888	CST	-.4825
FDE	-.6666	FRA	-7.7061	FC	-22.2402	BSP	8816	SGB	2792.0	R23	.0519	R13	-.9928	LSA	1087.7	MSA	420.0	SSA	35.6
BDE	.2436	BRA	1.1355	BC3	2.7455	FSP	6309	SG1	2598.0	SG2	1022.8	THA	98.41	EL1	575.0	EL2	124.0	ALF	137.01

LAUNCH DATE DEC 19 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 532.888 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.957	GAL	5.27	AZL	91.53	HCA	159.23	SMA	185.01	ECC	.22338	INC	1.5321	V1	30.271
RP	225.58	LAP	-.54	LOP	246.37	VP	21.432	GAP	-2.50	AZP	88.57	TAL	29.55	TAP	188.77	RCA	143.68	APO	226.34	V2	24.381
RC	249.803	GL	-12.23	GP	20.56	ZAL	40.35	ZAP	112.93	ETS	169.54	ZAE	144.49	ETE	144.52	ZAC	107.97	ETC	255.52	CLP	114.59

PLANETOCENTRIC CONIC

C3	17.166	VHL	4.143	DLA	6.93	RAL	125.25	RAD	6567.7	VEL	11.771	PTH	2.08	VHP	3.404	DPA	19.48	RAP	190.40	ECC	1.2825

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 58 23	2395.06	-23.50	53.25	346.01	106.27	13 38 18	1795.1	-21.05	45.44
90.00	2 44 23	4606.06	12.75	195.04	343.12	64.50	4 1 9	4006.1	9.21	188.15
100.00	14 23 2	2122.02	-24.55	32.82	345.66	107.61	14 58 24	1522.0	-21.91	25.02
100.00	4 2 24	4354.33	13.73	176.04	342.62	63.19	5 14 59	3754.3	10.03	169.21
110.00	15 38 51	1884.75	-27.35	13.70	344.55	111.35	16 10 16	1284.8	-24.21	5.95
110.00	5 3 5	4164.36	16.35	160.14	341.15	59.55	6 12 29	3564.4	12.18	153.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2156	TRA	-.8013	TC3	.0452	BAU	.6681	SGT	1156.0	SGR	2754.6	SG3	1862.8	ST	448.3	SR	414.1	SS	1054.3
RDE	-.0632	RRA	.9530	RC3	2.9107	FAU	.44274	RRT	-.4452	RRF	-.9953	RTF	.4490	CRT	-.8582	CRS	.8355	CST	-.4469
FDE	-.9348	FRA	-7.8904	FC	-22.3290	BSP	9498	SGB	2987.3	R23	.0709	R13	-.9928	LSA	1137.8	MSA	434.1	SSA	32.0
BDE	.2246	BRA	1.2451	BC3	2.9111	FSP	6362	SG1	2809.6	SG2	1014.8	THA	102.20	EL1	588.5	EL2	161.9	ALF	137.64

LAUNCH DATE DEC 19 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 536.849 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.951	GAL	5.26	AZL	91.71	HCA	160.29	SMA	184.91	ECC	.22292	INC	1.7090	V1	30.271
RP	225.19	LAP	-.58	LOP	247.43	VP	21.471	GAP	-2.79	AZP	88.39	TAL	29.53	TAP	189.82	RCA	143.69	APO	226.13	V2	24.423
RC	251.477	GL	-13.62	GP	21.77	ZAL	40.71	ZAP	111.00	ETS	169.87	ZAE	142.21	ETE	145.41	ZAC	108.97	ETC	255.49	CLP	112.70

PLANETOCENTRIC CONIC

C3	17.263	VHL	4.155	DLA	5.58	RAL	124.91	RAD	6567.7	VEL	11.775	PTH	2.08	VHP	3.396	DPA	20.90	RAP	190.23	ECC	1.2841

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 7 21	2353.61	-22.68	50.49	345.32	107.42	13 46 35	1753.6	-20.08	42.78
90.00	2 32 40	4650.13	14.03	197.65	342.97	65.15	3 50 10	4050.1	10.56	190.69
100.00	14 31 20	2082.74	-23.72	30.20	344.95	108.75	15 6 3	1482.7	-20.94	22.50
100.00	3 51 22	4396.23	15.01	178.50	342.49	63.84	5 4 38	3796.2	11.37	171.59
110.00	15 45 37	1850.25	-26.48	11.40	343.81	112.45	16 16 27	1250.3	-23.20	3.77
110.00	4 53 34	4201.48	17.61	162.27	341.05	60.22	6 3 36	3601.5	13.52	155.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2079	TRA	-.8825	TC3	-.1661	BAU	.7141	SGT	1263.5	SGR	2944.3	SG3	1871.2	ST	465.6	SR	439.3	SS	1109.8
RDE	-.0094	RRA	1.0400	RC3	3.0898	FAU	.44382	RRT	-.5699	RRF	-.9962	RTF	.5736	CRT	-.7950	CRS	.8822	CST	-.4238
FDE	-1.2192	FRA	-8.0417	FC	-22.2572	BSP	10291	SGB	3203.9	R23	.0836	R13	-.9927	LSA	1201.1	MSA	445.1	SSA	28.5
BDE	.2081	BRA	1.3640	BC3	3.0942	FSP	6402	SG1	3042.3	SG2	1004.7	THA	105.47	EL1	606.6	EL2	204.5	ALF	137.09

LAUNCH DATE DEC 19 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 540.820 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.946	GAL	5.24	AZL	91.91	HCA	161.36	SMA	184.83	ECC	.22248	INC	1.9057	V1	30.271
RP	224.80	LAP	-.61	LOP	248.50	VP	21.511	GAP	-3.07	AZP	88.19	TAL	29.49	TAP	190.85	RCA	143.71	APO	225.95	V2	24.465
RC	253.132	GL	-15.16	GP	23.07	ZAL	41.16	ZAP	109.05	ETS	170.23	ZAE	139.87	ETE	146.21	ZAC	110.06	ETC	255.44	CLP	110.78

PLANETOCENTRIC CONIC

C3	17.399	VHL	4.171	DLA	4.08	RAL	124.54	RAD	6567.7	VEL	11.781	PTH	2.08	VHP	3.397	DPA	22.42	RAP	190.11	ECC	1.2863

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 17 11	2308.49	-21.73	47.52	344.63	108.61	13 55 40	1708.5	-18.99	39.92
90.00	2 19 54	4698.88	15.40	200.57	342.90	65.94	3 38 12	4098.9	12.02	193.52
100.00	14 40 27	2039.95	-22.75	27.39	344.25	109.93	15 14 27	1439.9	-19.83	19.81
100.00	3 39 19	4442.65	16.38	181.26	342.43	64.64	4 53 22	3842.7	12.83	174.26
110.00	15 53 5	1812.62	-25.48	8.93	343.06	113.60	16 23 17	1212.6	-22.06	1.44
110.00	4 43 11	4242.74	18.99	164.68	341.02	61.03	5 53 53	3642.7	14.98	157.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1972	TRA	-.9674	TC3	-.3757	BAU	.7681	SGT	1395.1	SGR	3155.6	SG3	1875.3	ST	482.9	SR	484.3	SS	1185.0
RDE	.0583	RRA	1.1390	RC3	3.2808	FAU	.44384	RRT	-.6646	RRF	-.9969	RTF	.6677	CRT	-.7147	CRS	.9245	CST	-.3995
FDE	-1.5543	FRA	-8.1878	FC	-22.0839	BSP	11098	SGB	3450.2	R23	.0908	R13	-.9928	LSA	1289.0	MSA	458.1	SSA	25.0
BDE	.2056	BRA	1.4944	BC3	3.3023	FSP	6355	SG1	3303.4	SG2	995.8	THA	108.07	EL1	633.3	EL2	258.3	ALF	134.88

LAUNCH DATE DEC 19 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 544.799 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.941	GAL	5.22	AZL	92.13	HCA	162.43	SMA	184.75	ECC	.22206	INC	2.1264	V1	30.271
RP	224.41	LAP	-.64	LOP	249.58	VP	21.551	GAP	-3.34	AZP	87.97	TAL	29.43	TAP	191.86	RCA	143.73	APO	225.78	V2	24.506
RC	254.766	GL	-16.87	GP	24.48	ZAL	41.72	ZAP	107.10	ETS	170.65	ZAE	137.47	ETE	146.91	ZAC	111.25	ETC	255.39	CLP	108.86

PLANETOCENTRIC CONIC

C3	17.584	VHL	4.193	DLA	2.42	RAL	124.14	RAD	6567.7	VEL	11.788	PTH	2.08	VHP	3.407	DPA	24.03	RAP	190.05	ECC	1.2894

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 28 3	2259.09	-20.62	44.32	343.95	109.85	14 5 42	1659.1	-17.73	36.84
90.00	2 5 53	4753.18	16.88	203.87	342.91	66.92	3 25 6	4153.2	13.61	196.72
100.00	14 50 31	1993.08	-21.63	24.35	343.55	111.15	15 23 44	1393.1	-18.56	16.90
100.00	3 26 6	4494.42	17.86	184.39	342.46	65.63	4 41 0	3894.4	14.42	177.28
110.00	16 1 21	1771.39	-24.33	6.28	342.31	114.79	16 30 52	1171.4	-20.78	358.94
110.00	4 31 45	4288.88	20.49	167.42	341.09	62.02	5 43 14	3688.9	16.59	160.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1734	TRA	-1.0652	TC3	-.6025	BAU	.8245	SGT	1560.0	SGR	3362.0	SG3	1856.9	ST	497.3	SR	545.6	SS	1254.0
RDE	.1297	RRA	1.2397	RC3	3.4553	FAU	.43886	RRT	-.7421	RRF	-.9975	RTF	.7451	CRT	-.6694	CRS	.9535	CST	-.4183
FDE	-1.8538	FRA	-8.2438	FC	-21.6064	BSP	12146	SGB	3706.3	R23	.0957	R13	-.9929	LSA	1380.4	MSA	459.8	SSA	22.2
BDE	.2165	BRA	1.6345	BC3	3.5074	FSP	6388	SG1	3573.4	SG2	983.8	THA	110.64	EL1	675.2	EL2	298.5	ALF	131.06

LAUNCH DATE DEC 19 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 548.788 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.937	GAL	5.20	AZL	92.38	HCA	163.51	SMA	184.68	ECC	.22166	INC	2.3758
RP	224.02	LAP	-.67	LOP	250.66	VP	21.593	GAP	-3.60	AZP	87.72	TAL	29.36	TAP	192.87	RCA	143.75	APO	225.62
RC	256.380	GL	-18.78	GP	26.02	ZAL	42.41	ZAP	105.16	ETS	171.11	ZAE	135.02	ETE	147.55	ZAC	112.57	ETC	255.31

V1	30.271	V2	24.548	CLP	106.91														

PLANETOCENTRIC CONIC

C3	17.836	VHL	4.223	DLA	.56	RAL	123.71	RAD	6567.7	VEL	11.799	PTH	2.09	VHP	3.428	DPA	25.75	RAP	190.06
ECC	1.2935																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 40 5	2204.83	-19.33	40.86	343.28	111.10	14 16 49	1604.8	-16.29	33.51
90.00	1 50 22	4814.05	18.46	207.63	343.04	68.14	3 10 36	4214.1	15.33	200.35
100.00	15 1 41	1941.61	-20.33	21.08	342.86	112.40	15 34 2	1341.6	-17.12	13.76
100.00	3 11 27	4552.51	19.46	187.96	342.60	66.85	4 27 19	3952.5	16.16	180.73
110.00	16 10 31	1726.12	-23.00	3.43	341.57	116.01	16 39 18	1126.1	-19.32	356.24
110.00	4 19 5	4340.76	22.11	170.57	341.28	63.24	5 31 26	3740.8	18.35	163.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1457	TRA	-1.1658	TC3	-.8181	BAU	.8893	SGT	1737.3	SGR	3595.4	SG3	1833.3	ST	514.4	SR	635.7	SS	1347.1
RDE	.2217	RRA	1.3573	RC3	3.6585	FAU	.43258	RRT	-.7968	RRF	-.9980	RTF	.7993	CRT	-.6256	CRS	.9742	CST	-.4359
FDE	-2.2119	FRA	-8.2964	FC	-20.9963	BSP	13173	SGB	3993.1	R23	.0970	R13	-.9933	LSA	1505.6	MSA	465.2	SSA	19.2
BDE	.2653	BRA	1.7892	BC3	3.7293	FSP	6300	SG1	3872.3	SG2	974.7	THA	112.56	EL1	742.0	EL2	343.9	ALF	125.59

LAUNCH DATE DEC 19 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 552.786 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.934	GAL	5.18	AZL	92.66	HCA	164.59	SMA	184.63	ECC	.22128	INC	2.6596
RP	223.63	LAP	-.71	LOP	251.74	VP	21.635	GAP	-3.86	AZP	87.44	TAL	29.27	TAP	193.86	RCA	143.77	APO	225.48
RC	257.974	GL	-20.92	GP	27.69	ZAL	43.25	ZAP	103.22	ETS	171.63	ZAE	132.52	ETE	148.12	ZAC	114.02	ETC	255.22

V1	30.271	V2	24.590	CLP	104.97														

PLANETOCENTRIC CONIC

C3	18.177	VHL	4.263	DLA	-1.52	RAL	123.22	RAD	6567.7	VEL	11.814	PTH	2.09	VHP	3.462	DPA	27.59	RAP	190.17
ECC	1.2991																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 53 32	2144.83	-17.82	37.11	342.65	112.38	14 29 17	1544.8	-14.63	29.89
90.00	1 33 1	4882.87	20.15	211.98	343.32	69.67	2 54 24	4282.9	17.20	204.54
100.00	15 14 10	1884.72	-18.81	17.54	342.21	113.67	15 45 35	1284.7	-15.46	10.36
100.00	2 55 4	4618.22	21.16	192.10	342.91	68.38	4 12 2	4018.2	18.04	184.70
110.00	16 20 48	1676.16	-21.48	.36	340.86	117.26	16 48 44	1076.2	-17.65	353.32
110.00	4 4 55	4399.55	23.87	174.23	341.64	64.77	5 18 15	3799.5	20.27	166.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1038	TRA	-1.2790	TC3	-1.0394	BAU	.9579	SGT	1939.5	SGR	3831.3	SG3	1789.2	ST	535.0	SR	748.0	SS	1439.4
RDE	.3264	RRA	1.4828	RC3	3.8025	FAU	.42180	RRT	-.8398	RRF	-.9984	RTF	.8421	CRT	-.6245	CRS	.9860	CST	-.4877
FDE	-2.5533	FRA	-8.2699	FC	-20.0895	BSP	14379	SGB	4294.2	R23	.0971	R13	-.9937	LSA	1643.9	MSA	463.7	SSA	16.7
BDE	.3425	BRA	1.9582	BC3	3.9420	FSP	6232	SG1	4184.6	SG2	964.1	THA	114.41	EL1	841.2	EL2	371.5	ALF	120.67

LAUNCH DATE DEC 19 1964 FLIGHT TIME 256.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 556.796 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.931	GAL	5.16	AZL	92.99	HCA	165.67	SMA	184.58	ECC	.22093	INC	2.9869
RP	223.24	LAP	-.74	LOP	252.82	VP	21.679	GAP	-4.12	AZP	87.11	TAL	29.17	TAP	194.85	RCA	143.80	APO	225.36
RC	259.547	GL	-23.32	GP	29.53	ZAL	44.27	ZAP	101.29	ETS	172.22	ZAE	129.96	ETE	148.64	ZAC	115.62	ETC	255.09

V1	30.271	V2	24.632	CLP	103.01														

PLANETOCENTRIC CONIC

C3	18.641	VHL	4.318	DLA	-3.85	RAL	122.66	RAD	6567.8	VEL	11.833	PTH	2.10	VHP	3.511	DPA	29.57	RAP	190.39
ECC	1.3068																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 8 42	2078.14	-16.04	33.02	342.09	113.65	14 43 20	1478.1	-12.71	25.93
90.00	1 13 23	4961.38	21.92	217.05	343.80	71.61	2 36 4	4361.4	19.21	209.43
100.00	15 28 14	1821.56	-17.04	13.68	341.61	114.93	15 58 36	1221.6	-13.54	6.84
100.00	2 36 32	4693.19	22.96	196.94	343.42	70.32	3 54 45	4093.2	20.07	189.34
110.00	16 32 21	1620.86	-19.72	357.03	340.20	118.51	16 59 21	1020.9	-15.76	350.15
110.00	3 48 55	4466.65	25.75	178.54	342.21	66.70	5 3 21	3866.7	22.37	171.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0588	TRA	-1.3922	TC3	-1.2300	BAU	1.0382	SGT	2136.1	SGR	4117.3	SG3	1744.7	ST	561.9	SR	908.0	SS	1568.8
RDE	.4681	RRA	1.6393	RC3	3.9801	FAU	.41071	RRT	-.8686	RRF	-.9987	RTF	.8704	CRT	-.6238	CRS	.9932	CST	-.5299
FDE	-2.9784	FRA	-8.2656	FC	-19.0745	BSP	15437	SGB	4638.4	R23	.0944	R13	-.9942	LSA	1838.7	MSA	469.3	SSA	14.1
BDE	.4718	BRA	2.1507	BC3	4.1658	FSP	5963	SG1	4537.9	SG2	960.3	THA	115.48	EL1	988.6	EL2	403.3	ALF	115.68

LAUNCH DATE DEC 19 1964 FLIGHT TIME 258.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 560.813 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.929	GAL	5.13	AZL	93.37	HCA	166.76	SMA	184.54	ECC	.22059	INC	3.3675
RP	222.85	LAP	-.77	LOP	253.91	VP	21.722	GAP	-4.36	AZP	86.72	TAL	29.06	TAP	195.82	RCA	143.83	APO	225.24
RC	261.100	GL	-26.03	GP	31.54	ZAL	45.51	ZAP	99.40	ETS	172.88	ZAE	127.34	ETE	149.10	ZAC	117.40	ETC	254.93

V1	30.271	V2	24.674	CLP	101.05														

PLANETOCENTRIC CONIC

C3	19.273	VHL	4.390	DLA	-6.49	RAL	122.01	RAD	6567.8	VEL	11.860	PTH	2.10	VHP	3.580	DPA	31.70	RAP	190.76
ECC	1.3172																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 26 4	2003.24	-13.94	28.52	341.63	114.90	14 59 27	1403.2	-10.47	21.57
90.00	0 50 51	5052.00	23.74	223.07	344.55	74.10	2 15 3	4452.0	21.33	215.23
100.00	15 44 19	1750.79	-14.96	9.46	341.13	116.18	16 13 30	1150.8	-11.33	2.56
100.00	2 15 17	4779.68	24.83	202.69	344.20	72.79	3 34 56	4179.7	22.24	194.85
110.00	16 45 30	1559.24	-17.67	353.42	339.63	119.75	17 11 29	959.2	-13.58	346.70
110.00	3 30 35	4544.01	27.73	183.68	343.08	69.16	4 46 19	3944.0	24.64	175.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0057	TRA	-1.5215	TC3	-1.4168	BAU	1.1227	SGT	2354.1	SGR	4407.6	SG3	1675.6	ST	600.8	SR	1097.2	SS	1691.4
RDE	.6334	RRA	1.8103	RC3	4.1205	FAU	.39425	RRT	-.8924	RRF	-.9990	RTF	.8938	CRT	-.6644	CRS	.9967	CST	-.6023
FDE	-3.3699	FRA	-8.1635	FC	-17.7093	BSP	16652	SGB	4996.9	R23	.0915	R13	-.9948	LSA	2050.9	MSA	468.4	SSA	11.9
BDE	.6334	BRA	2.3648	BC3	4.3573	FSP	5701	SG1	4904.8	SG2	954.7	THA	116.57	EL1	1179.1	EL2	417.8	ALF	113.05

LAUNCH DATE DEC 19 1964 FLIGHT TIME 260.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 564.838 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 32.927 GAL 5.10 AZL 93.82 HCA 167.85 SMA 184.50 ECC .22027 INC 3.8167 V1 30.271
RP 222.47 LAP -.80 LOP 255.01 VP 21.767 GAP -4.61 AZP 86.27 TAL 28.93 TAP 196.78 RCA 143.86 APO 225.14 V2 24.716
RC 262.633 GL -29.10 GP 33.77 ZAL 47.01 ZAP 97.56 ETS 173.62 ZAE 124.67 ETE 149.53 ZAC 119.39 ETC 254.72 CLP 99.11

PLANETOCENTRIC CONIC

C3 20.146 VHL 4.488 DLA -9.46 RAL 121.24 RAD 6567.8 VEL 11.897 PTH 2.11 VHP 3.673 DPA 33.98 RAP 191.31 ECC 1.3316

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 46 18	1918.20	-11.45	23.52	341.35	116.08	15 18 17	1318.2	-7.85	16.69
90.00	0 24 30	5158.08	25.53	230.33	345.64	77.31	1 50 28	4558.1	23.53	222.23
100.00	16 3 0	1670.76	-12.51	4.79	340.80	117.37	16 30 51	1070.8	-8.74	358.02
100.00	1 50 29	4880.75	26.68	209.62	345.34	76.00	3 11 49	4280.7	24.49	201.51
110.00	17 0 41	1490.15	-15.30	349.48	339.20	120.95	17 25 31	890.2	-11.08	342.91
110.00	3 9 17	4634.12	29.75	189.91	344.35	72.34	4 26 32	4034.1	27.05	181.76

DIFFERENTIAL CORRECTIONS
TDE -.0852 TRA-1.6624 TC3-1.5754 BAU 1.2128
RDE .8340 RRA 2.0051 RC3 4.2184 FAU .37309
FDE-3.7381 FRA-7.9784 FC-16.0325 BSP 18006
BDE .8383 BRA 2.6046 BC3 4.5029 FSP 5394

MID-COURSE EXECUTION ACCURACY
SGT 2576.9 SGR 4712.4 SG3 1584.9
RRT -.9103 RRF -.9992 RTF .9115
SGB 5370.9 R23 .0882 R13 -.9953
SG1 5286.0 SG2 951.1 THA 117.43

ORBIT DETERMINATION ACCURACY
ST 655.9 SR 1323.7 SS 1810.3
CRT -.7176 CRS .9984 CST -.6778
LSA 2289.3 MSA 467.5 SSA 10.0
EL1 1414.0 EL2 427.6 ALF 111.65

LAUNCH DATE DEC 19 1964 FLIGHT TIME 262.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 568.872 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 32.925 GAL 5.07 AZL 94.35 HCA 168.94 SMA 184.48 ECC .21997 INC 4.3546 V1 30.271
RP 222.08 LAP -.83 LOP 256.10 VP 21.812 GAP -4.84 AZP 85.73 TAL 28.79 TAP 197.72 RCA 143.90 APO 225.06 V2 24.758
RC 264.145 GL -32.60 GP 36.22 ZAL 48.83 ZAP 95.78 ETS 174.44 ZAE 121.95 ETE 149.93 ZAC 121.60 ETC 254.44 CLP 97.17

PLANETOCENTRIC CONIC

C3 21.370 VHL 4.623 DLA -12.84 RAL 120.32 RAD 6567.9 VEL 11.948 PTH 2.13 VHP 3.797 DPA 36.45 RAP 192.10 ECC 1.3517

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 10 33	1819.93	-8.45	17.86	341.35	117.13	15 40 53	1219.9	-4.75	11.14
90.00	23 48 57	5284.58	27.12	239.24	347.17	81.51	25 17 2	4684.6	25.66	230.88
100.00	16 25 15	1578.92	-9.58	359.54	340.75	118.45	16 51 34	978.9	-5.71	352.89
100.00	1 20 52	5000.83	28.37	218.15	346.94	80.17	2 44 13	4400.8	26.72	209.73
110.00	17 18 32	1412.04	-12.52	345.13	339.00	122.07	17 42 4	812.0	-8.19	338.71
110.00	2 44 4	4740.48	31.70	197.58	346.14	76.49	4 3 5	4140.5	29.52	189.05

DIFFERENTIAL CORRECTIONS
TDE -.1863 TRA-1.8208 TC3-1.7016 BAU 1.3119
RDE 1.0859 RRA 2.2373 RC3 4.2653 FAU .34773
FDE-4.0836 FRA-7.7227 FC-14.0875 BSP 19349
BDE 1.1017 BRA 2.8845 BC3 4.5922 FSP 4993

MID-COURSE EXECUTION ACCURACY
SGT 2808.1 SGR 5044.9 SG3 1475.5
RRT -.9245 RRF -.9993 RTF .9255
SGB 5773.7 R23 .0842 R13 -.9958
SG1 5695.4 SG2 948.0 THA 118.08

ORBIT DETERMINATION ACCURACY
ST 733.3 SR 1597.9 SS 1925.5
CRT -.7757 CRS .9993 CST -.7511
LSA 2565.4 MSA 466.1 SSA 8.3
EL1 1703.7 EL2 434.1 ALF 111.02

LAUNCH DATE DEC 19 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 572.913 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 32.924 GAL 5.04 AZL 95.01 HCA 170.03 SMA 184.46 ECC .21968 INC 5.0114 V1 30.271
RP 221.70 LAP -.87 LOP 257.20 VP 21.858 GAP -5.07 AZP 85.06 TAL 28.63 TAP 198.66 RCA 143.94 APO 224.98 V2 24.799
RC 265.639 GL -36.57 GP 38.93 ZAL 51.02 ZAP 94.08 ETS 175.36 ZAE 119.17 ETE 150.30 ZAC 124.07 ETC 254.08 CLP 95.25

PLANETOCENTRIC CONIC

C3 23.120 VHL 4.808 DLA -16.66 RAL 119.19 RAD 6567.9 VEL 12.021 PTH 2.15 VHP 3.965 DPA 39.10 RAP 193.19 ECC 1.3805

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 40 50	1702.93	-4.76	11.24	341.83	117.95	16 9 13	1102.9	-.99	4.60
90.00	23 9 37	5439.73	28.17	250.46	349.17	87.03	24 40 16	4839.7	27.46	241.87
100.00	16 52 44	1470.93	-6.02	353.50	341.14	119.33	17 17 15	870.9	-2.07	346.94
100.00	0 44 20	5146.96	29.60	228.83	349.07	85.66	2 10 7	4547.0	28.69	220.14
110.00	17 40 7	1322.49	-9.23	340.28	339.18	123.06	18 2 9	722.5	-4.81	333.97
110.00	2 13 26	4868.17	33.33	207.18	348.59	81.95	3 34 34	4268.2	31.86	198.26

DIFFERENTIAL CORRECTIONS
TDE -.3101 TRA-1.9986 TC3-1.7784 BAU 1.4188
RDE 1.3985 RRA 2.5114 RC3 4.2319 FAU .31719
FDE-4.3586 FRA-7.3585 FC-11.8777 BSP 20804
BDE 1.4324 BRA 3.2096 BC3 4.5904 FSP 4530

MID-COURSE EXECUTION ACCURACY
SGT 3040.0 SGR 5394.2 SG3 1341.9
RRT -.9356 RRF -.9994 RTF .9363
SGB 6191.9 R23 .0802 R13 -.9962
SG1 6119.1 SG2 946.4 THA 118.55

ORBIT DETERMINATION ACCURACY
ST 833.9 SR 1915.7 SS 2015.9
CRT -.8269 CRS .9996 CST -.8120
LSA 2865.7 MSA 465.6 SSA 6.9
EL1 2042.5 EL2 439.9 ALF 110.81

LAUNCH DATE DEC 19 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 576.960 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 32.923 GAL 5.01 AZL 95.83 HCA 171.13 SMA 184.45 ECC .21942 INC 5.8315 V1 30.271
RP 221.32 LAP -.90 LOP 258.31 VP 21.904 GAP -5.30 AZP 84.24 TAL 28.46 TAP 199.59 RCA 143.98 APO 224.92 V2 24.841
RC 267.114 GL -41.10 GP 41.94 ZAL 53.64 ZAP 92.50 ETS 176.38 ZAE 116.35 ETE 150.67 ZAC 126.82 ETC 253.59 CLP 93.37

PLANETOCENTRIC CONIC

C3 25.694 VHL 5.069 DLA -21.00 RAL 117.76 RAD 6568.0 VEL 12.127 PTH 2.17 VHP 4.192 DPA 41.95 RAP 194.66 ECC 1.4229

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 21 41	1554.63	.00	2.95	343.17	118.32	16 47 36	954.6	3.79	356.32
90.00	22 17 21	5639.86	28.01	265.08	351.53	94.34	23 51 21	5039.9	28.32	256.43
100.00	17 28 57	1337.63	-1.53	346.14	342.31	119.86	17 51 14	737.6	2.45	339.62
100.00	23 52 48	5332.10	29.77	242.57	351.65	92.88	25 21 40	4732.1	29.85	233.76
110.00	18 7 21	1217.21	-5.28	334.69	339.98	123.82	18 27 38	617.2	-.80	328.47
110.00	1 34 48	5025.29	34.17	219.35	351.74	89.10	2 58 33	4425.3	33.67	210.15

DIFFERENTIAL CORRECTIONS
TDE -.4615 TRA-2.2041 TC3-1.7943 BAU 1.5363
RDE 1.7920 RRA 2.8451 RC3 4.0966 FAU .28157
FDE-4.5277 FRA-6.8761 FC3-9.4872 BSP 22314
BDE 1.8505 BRA 3.5990 BC3 4.4723 FSP 3990

MID-COURSE EXECUTION ACCURACY
SGT 3271.4 SGR 5763.4 SG3 1184.7
RRT -.9443 RRF -.9995 RTF .9448
SGB 6627.1 R23 .0761 R13 -.9966
SG1 6559.2 SG2 946.3 THA 118.85

ORBIT DETERMINATION ACCURACY
ST 957.1 SR 2277.3 SS 2065.3
CRT -.8675 CRS .9998 CST -.8585
LSA 3185.9 MSA 466.7 SSA 5.7
EL1 2429.6 EL2 446.3 ALF 110.76

LAUNCH DATE DEC 19 1964 FLIGHT TIME 268.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 581.014 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.923	GAL	4.97	AZL	96.88	HCA	172.23	SMA	184.44	ECC	.21917	INC	6.8855	V1	30.271
RP	220.94	LAP	-.93	LOP	259.42	VP	21.951	GAP	-5.52	AZP	83.18	TAL	28.28	TAP	200.51	RCA	144.02	APO	224.87	V2	24.883
RC	268.570	GL	-46.25	GP	45.24	ZAL	56.74	ZAP	91.08	ETS	177.50	ZAE	113.50	ETE	151.02	ZAC	129.87	ETC	252.95	CLP	91.53

PLANETOCENTRIC CONIC

C3	29.624	VHL	5.443	DLA	-25.88	RAL	115.91	RAD	6568.2	VEL	12.288	PTH	2.21	VHP	4.507	DPA	44.98	RAP	196.63	ECC	1.4875

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 11	1327.45	7.27	350.21	346.40	117.44	17 51 18	727.5	10.89	343.40
90.00	20 55 7	649.86	24.66	308.29	353.27	104.37	21 5 57	49.9	26.40	300.06
100.00	18 24 1	1150.35	4.80	335.86	345.05	119.54	18 43 12	550.4	8.70	329.24
100.00	22 42 57	5590.23	27.40	261.34	354.00	102.45	24 16 8	4990.2	28.84	252.84
110.00	18 44 32	1086.00	-.28	327.83	341.89	124.18	19 2 38	486.0	4.21	321.62
110.00	0 42 52	5227.35	33.28	235.03	355.25	98.31	2 9 59	4627.3	34.07	225.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6531	TRA	-2.4379	TC3	-1.7234	BAU	1.6595	SGT	3478.4	SGR	6123.0	SG3	999.8	ST	1086.1	SR	2658.2	SS	2037.1
RDE	2.2777	RRA	3.2499	RC3	3.8192	FAU	.23988	RRT	-.9505	RRF	-.9996	RTF	.9508	CRT	-.8941	CRS	.9999	CST	-.8884
FDE	-4.5095	FRA	-6.2303	FC3	-7.0101	BSP	24247	SGB	7042.1	R23	.0726	R13	-.9970	LSA	3488.9	MSA	471.7	SSA	4.6
BDE	2.3641	BRA	4.0626	BC3	4.1901	FSP	3419	SG1	6977.9	SG2	948.9	THA	118.95	EL1	2835.0	EL2	456.2	ALF	110.62

LAUNCH DATE DEC 19 1964 FLIGHT TIME 270.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 585.070 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.923	GAL	4.94	AZL	98.29	HCA	173.33	SMA	184.45	ECC	.21894	INC	8.2873	V1	30.271
RP	220.56	LAP	-.96	LOP	260.53	VP	21.998	GAP	-5.73	AZP	81.77	TAL	28.09	TAP	201.42	RCA	144.06	APO	224.83	V2	24.924
RC	270.009	GL	-52.07	GP	48.85	ZAL	60.36	ZAP	89.85	ETS	178.68	ZAE	110.66	ETE	151.38	ZAC	133.21	ETC	252.09	CLP	89.77

PLANETOCENTRIC CONIC

C3	35.930	VHL	5.994	DLA	-31.32	RAL	113.44	RAD	6568.4	VEL	12.542	PTH	2.27	VHP	4.955	DPA	48.14	RAP	199.23	ECC	1.5913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.02	17 11 45	1392.23	17.45	.25	352.33	116.43	17 34 57	792.2	20.85	353.00
103.98	20 52 51	682.26	17.46	307.79	352.34	116.43	21 4 13	82.3	20.87	300.54
76.02	17 11 45	1392.23	17.45	.25	352.33	116.43	17 34 57	792.2	20.85	353.00
103.98	20 52 51	682.26	17.46	307.79	352.34	116.43	21 4 13	82.3	20.87	300.54
110.00	19 46 44	888.64	7.23	317.48	346.32	123.50	20 1 33	288.6	11.59	311.09
110.00	23 17 2	5521.89	28.29	256.46	357.37	110.04	24 49 4	4921.9	30.75	248.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8505	TRA	-2.7424	TC3	-1.5949	BAU	1.8214	SGT	3705.8	SGR	6556.5	SG3	804.2	ST	1229.5	SR	3078.6	SS	1932.1
RDE	2.9272	RRA	3.8074	RC3	3.4401	FAU	.19619	RRT	-.9562	RRF	-.9996	RTF	.9564	CRT	-.9137	CRS	1.0000	CST	-.9101
FDE	-4.3087	FRA	-5.4766	FC3	-4.7272	BSP	25375	SGB	7531.3	R23	.0683	R13	-.9973	LSA	3806.8	MSA	480.0	SSA	3.8
BDE	3.0482	BRA	4.6922	BC3	3.7918	FSP	2676	SG1	7470.9	SG2	951.8	THA	118.90	EL1	3281.7	EL2	468.8	ALF	110.48

LAUNCH DATE DEC 19 1964 FLIGHT TIME 296.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 639.224 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.954	GAL	4.17	AZL	80.74	HCA	188.31	SMA	184.97	ECC	.21635	INC	9.2554	V1	30.271
RP	215.88	LAP	-1.33	LOP	275.34	VP	22.628	GAP	-8.01	AZP	99.16	TAL	23.79	TAP	212.10	RCA	144.95	APO	224.99	V2	25.442
RC	287.127	GL	57.81	GP	-42.19	ZAL	66.16	ZAP	74.88	ETS	164.77	ZAE	97.69	ETE	185.29	ZAC	43.45	ETC	252.25	CLP	69.38

PLANETOCENTRIC CONIC

C3	39.021	VHL	6.247	DLA	70.72	RAL	171.36	RAD	6568.5	VEL	12.664	PTH	2.30	VHP	4.572	DPA	-30.86	RAP	148.37	ECC	1.6422

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
11.22	9 17 53	4356.75	-49.45	244.15	129.83	15.28	10 30 29	3756.8	-57.11	240.69
11.22	1 17 39	4845.97	-16.90	250.80	18.14	10.32	2 38 25	4246.0	-24.76	249.65
21.22	6 42 3	4506.00	-36.67	235.69	82.93	23.41	7 57 9	3906.0	-43.94	231.71
21.22	4 33 51	4660.07	-26.95	239.70	55.45	20.95	5 51 31	4060.1	-34.38	236.67
22.03	5 39 43	4580.93	-31.69	236.98	68.90	22.84	6 56 4	3980.9	-39.00	233.41
157.97	16 10 57	2823.32	-31.68	86.06	68.88	22.84	16 58 0	2223.3	-38.99	82.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	7.0431	TRA	-.0189	TC3	-3.0751	BAU	2.0953	SGT	7516.3	SGR	5239.7	SG3	892.1	ST	6461.1	SR	4022.8	SS	2994.2
RDE	4.3731	RRA	.3501	RC3	-2.5838	FAU	.24360	RRT	.9715	RRF	.9987	RTF	.9617	CRT	.9972	CRS	-1.0000	CST	-.9967
FDE	8.2359	FRA	.7163	FC3	-5.4046	BSP	30812	SGB	9162.4	R23	.1964	R13	.9798	LSA	8173.1	MSA	307.6	SSA	5.1
BDE	8.2903	BRA	.3507	BC3	4.0165	FSP	3228	SG1	9104.9	SG2	1024.7	THA	34.61	EL1	7606.8	EL2	257.0	ALF	31.88

LAUNCH DATE DEC 19 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 643.411 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.958	GAL	4.10	AZL	81.72	HCA	189.47	SMA	185.04	ECC	.21626	INC	8.2844	V1	30.271
RP	215.54	LAP	-1.36	LOP	276.50	VP	22.677	GAP	-8.16	AZP	98.17	TAL	23.40	TAP	212.86	RCA	145.03	APO	225.06	V2	25.480
RC	288.329	GL	54.65	GP	-38.70	ZAL	64.65	ZAP	72.77	ETS	164.64	ZAE	96.52	ETE	183.66	ZAC	46.69	ETC	253.34	CLP	67.69

PLANETOCENTRIC CONIC

C3	33.729	VHL	5.808	DLA	67.84	RAL	166.88	RAD	6568.3	VEL	12.454	PTH	2.25	VHP	4.324	DPA	-27.56	RAP	149.78	ECC	1.5551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
25.37	5 29 2	4534.70	-33.27	232.34	61.39	26.82	6 44 36	3934.7	-40.32	228.03
154.63	15 45 50	2795.92	-33.26	84.96	61.37	26.81	16 32 26	2195.9	-40.32	80.65
25.37	5 29 2	4534.70	-33.27	232.34	61.39	26.82	6 44 36	3934.7	-40.32	228.03
154.63	15 45 50	2795.92	-33.26	84.96	61.37	26.81	16 32 26	2195.9	-40.32	80.65
25.37	5 29 2	4534.70	-33.27	232.34	61.39	26.82	6 44 36	3934.7	-40.32	228.03
154.63	15 45 50	2795.92	-33.26	84.96	61.37	26.81	16 32 26	2195.9	-40.32	80.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	6.5582	TRA	-.2234	TC3	-3.6121	BAU	2.0300	SGT	7733.5	SGR	4840.9	SG3	1025.5	ST	6473.7	SR	3663.9	SS	3202.4
RDE	3.7088	RRA	.2120	RC3	-2.6868	FAU	.27179	RRT	.9734	RRF	.9987	RTF	.9646	CRT	.9974	CRS	-1.0000	CST	-.9970
FDE	8.6750	FRA	.5387	FC3	-6.9763	BSP	30582	SGB	9123.7	R23	.1981	R13	.9794	LSA	8093.4	MSA	290.1	SSA	5.9
BDE	7.5343	BRA	.3080	BC3	4.5018	FSP	3676	SG1	9074.6	SG2	944.4	THA	31.74	EL1	7434.9	EL2	231.9	ALF	29.47

LAUNCH DATE DEC 19 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 647.609 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.963	GAL	4.03	AZL	82.48	HCA	190.63	SMA	185.12	ECC	.21619	INC	7.5212
RP	215.21	LAP	-1.38	LOP	277.67	VP	22.725	GAP	-8.30	AZP	97.39	TAL	22.99	TAP	213.62	RCA	145.10	APO	225.14
RC	289.516	GL	51.88	GP	-35.56	ZAL	63.44	ZAP	70.75	ETS	164.62	ZAE	95.24	ETE	182.28	ZAC	49.63	ETC	254.17

PLANETOCENTRIC CONIC

C3	29.928	VHL	5.471	DLA	65.22	RAL	163.89	RAD	6568.2	VEL	12.300	PTH	2.22	VHP	4.152	DPA	-24.59	RAP	150.97

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
28.43	5 24 0	4494.53	-34.31	227.92	55.55	30.49	6 38 55	3894.5	-41.09	222.96
151.57	15 27 4	2775.94	-34.30	83.91	55.53	30.48	16 13 19	2175.9	-41.08	78.95
28.43	5 24 0	4494.53	-34.31	227.92	55.55	30.49	6 38 55	3894.5	-41.09	222.96
151.57	15 27 4	2775.94	-34.30	83.91	55.53	30.48	16 13 19	2175.9	-41.08	78.95
28.43	5 24 0	4494.53	-34.31	227.92	55.55	30.49	6 38 55	3894.5	-41.09	222.96
151.57	15 27 4	2775.94	-34.30	83.91	55.53	30.48	16 13 19	2175.9	-41.08	78.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	6.1644	TRA	-.3798	TC3	-4.1407	BAU	1.9846	SGT	7944.1	SGR	4471.7	SG3	1134.4	ST	6463.9	SR	3315.2	SS	3316.4
RDE	3.1630	RRA	.1237	RC3	-2.7307	FAU	.29340	RRT	.9748	RRF	.9985	RTF	.9665	CRT	.9974	CRS	-1.0000	CST	-.9972
FDE	8.8182	FRA	.3728	FC3	-8.4871	BSP	30646	SGB	9116.2	R23	.2008	R13	.9786	LSA	7980.8	MSA	279.2	SSA	6.7
BDE	6.9286	BRA	.3995	BC3	4.9600	FSP	4051	SG1	9074.3	SG2	872.7	THA	29.05	EL1	7261.4	EL2	213.2	ALF	27.12

LAUNCH DATE DEC 19 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 651.818 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.968	GAL	3.96	AZL	83.09	HCA	191.79	SMA	185.20	ECC	.21612	INC	6.9053
RP	214.88	LAP	-1.41	LOP	278.84	VP	22.773	GAP	-8.44	AZP	96.76	TAL	22.57	TAP	214.36	RCA	145.17	APO	225.22
RC	290.691	GL	49.45	GP	-32.76	ZAL	62.48	ZAP	68.84	ETS	164.69	ZAE	93.87	ETE	181.12	ZAC	52.26	ETC	254.81

PLANETOCENTRIC CONIC

C3	27.082	VHL	5.204	DLA	62.85	RAL	161.85	RAD	6568.1	VEL	12.184	PTH	2.19	VHP	4.034	DPA	-21.95	RAP	152.00

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
31.22	5 22 25	4459.02	-34.95	223.79	50.87	33.83	6 36 44	3859.0	-41.45	218.27
148.78	15 12 22	2761.55	-34.94	82.97	50.85	33.82	15 58 24	2161.6	-41.44	77.45
31.22	5 22 25	4459.02	-34.95	223.79	50.87	33.83	6 36 44	3859.0	-41.45	218.27
148.78	15 12 22	2761.55	-34.94	82.97	50.85	33.82	15 58 24	2161.6	-41.44	77.45
31.22	5 22 25	4459.02	-34.95	223.79	50.87	33.83	6 36 44	3859.0	-41.45	218.27
148.78	15 12 22	2761.55	-34.94	82.97	50.85	33.82	15 58 24	2161.6	-41.44	77.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	5.8483	TRA	-.5007	TC3	-4.6567	BAU	1.9542	SGT	8149.2	SGR	4129.7	SG3	1219.6	ST	6450.7	SR	2995.1	SS	3365.1
RDE	2.7189	RRA	.0674	RC3	-2.7288	FAU	.30918	RRT	.9759	RRF	.9983	RTF	.9678	CRT	.9974	CRS	-1.0000	CST	-.9973
FDE	8.7644	FRA	.2287	FC3	-9.8836	BSP	30906	SGB	9135.9	R23	.2037	R13	.9778	LSA	7863.4	MSA	271.1	SSA	7.7
BDE	6.4494	BRA	.5052	BC3	5.3974	FSP	4346	SG1	9100.2	SG2	806.3	THA	26.54	EL1	7109.4	EL2	197.5	ALF	24.87

LAUNCH DATE DEC 19 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 656.034 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.972	GAL	3.88	AZL	83.60	HCA	192.96	SMA	185.28	ECC	.21605	INC	6.3973
RP	214.56	LAP	-1.43	LOP	280.02	VP	22.821	GAP	-8.58	AZP	96.24	TAL	22.13	TAP	215.10	RCA	145.25	APO	225.31
RC	291.851	GL	47.30	GP	-30.27	ZAL	61.74	ZAP	67.03	ETS	164.82	ZAE	92.46	ETE	180.14	ZAC	54.63	ETC	255.31

PLANETOCENTRIC CONIC

C3	24.876	VHL	4.988	DLA	60.70	RAL	160.45	RAD	6568.0	VEL	12.094	PTH	2.16	VHP	3.952	DPA	-19.59	RAP	152.90

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
33.77	5 23 1	4427.16	-35.30	219.95	47.05	36.85	6 36 49	3827.2	-41.54	213.96
146.23	15 0 33	2751.38	-35.29	82.16	47.03	36.84	15 46 24	2151.4	-41.53	76.18
33.77	5 23 1	4427.16	-35.30	219.95	47.05	36.85	6 36 49	3827.2	-41.54	213.96
146.23	15 0 33	2751.38	-35.29	82.16	47.03	36.84	15 46 24	2151.4	-41.53	76.18
33.77	5 23 1	4427.16	-35.30	219.95	47.05	36.85	6 36 49	3827.2	-41.54	213.96
146.23	15 0 33	2751.38	-35.29	82.16	47.03	36.84	15 46 24	2151.4	-41.53	76.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	5.5959	TRA	-.5916	TC3	-5.1575	BAU	1.9332	SGT	8349.9	SGR	3813.1	SG3	1282.5	ST	6443.7	SR	2717.5	SS	3380.7
RDE	2.3644	RRA	.0409	RC3	-2.6812	FAU	.31858	RRT	.9764	RRF	.9980	RTF	.9684	CRT	.9972	CRS	-1.0000	CST	-.9971
FDE	8.6135	FRA	.1462	FC	-11.0871	BSP	31451	SGB	9179.4	R23	.2069	R13	.9767	LSA	7762.8	MSA	271.9	SSA	8.5
BDE	6.0750	BRA	.5931	BC3	5.8128	FSP	4637	SG1	9148.5	SG2	752.0	THA	24.20	EL1	6990.8	EL2	188.9	ALF	22.83

LAUNCH DATE DEC 19 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 660.263 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.977	GAL	3.80	AZL	84.03	HCA	194.14	SMA	185.37	ECC	.21600	INC	5.9711
RP	214.24	LAP	-1.46	LOP	281.20	VP	22.869	GAP	-8.71	AZP	95.79	TAL	21.68	TAP	215.82	RCA	145.33	APO	225.41
RC	292.998	GL	45.39	GP	-28.05	ZAL	61.18	ZAP	65.30	ETS	164.99	ZAE	91.01	ETE	179.31	ZAC	56.74	ETC	255.72

PLANETOCENTRIC CONIC

C3	23.118	VHL	4.808	DLA	58.74	RAL	159.48	RAD	6567.9	VEL	12.021	PTH	2.15	VHP	3.898	DPA	-17.48	RAP	153.69

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.12	5 25 8	4398.15	-35.45	216.38	43.89	39.57	6 38 26	3798.1	-41.43	210.01
143.88	14 50 44	2744.49	-35.44	81.49	43.87	39.56	15 36 29	2144.5	-41.42	75.12
36.12	5 25 8	4398.15	-35.45	216.38	43.89	39.57	6 38 26	3798.1	-41.43	210.01
143.88	14 50 44	2744.49	-35.44	81.49	43.87	39.56	15 36 29	2144.5	-41.42	75.12
36.12	5 25 8	4398.15	-35.45	216.38	43.89	39.57	6 38 26	3798.1	-41.43	210.01
143.88	14 50 44	2744.49	-35.44	81.49	43.87	39.56	15 36 29	2144.5	-41.42	75.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	5.3710	TRA	-.6792	TC3	-5.6740	BAU	1.9338	SGT	8553.8	SGR	3529.2	SG3	1330.3	ST	6419.5	SR	2455.9	SS	3341.3
RDE	2.0600	RRA	.0124	RC3	-2.6366	FAU	.32708	RRT	.9772	RRF	.9976	RTF	.9692	CRT	.9971	CRS	-1.0000	CST	-.9972
FDE	8.3210	FRA	.0251	FC	-12.2486	BSP	31559	SGB	9253.3	R23	.2082	R13	.9760	LSA	7637.8	MSA	263.9	SSA	9.6
BDE	5.7525	BRA	.6793	BC3	6.2567	FSP	4733	SG1	9227.2	SG2	694.1	THA	22.09	EL1	6871.0	EL2	175.7	ALF	20.89

LAUNCH DATE DEC 19 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 664.501 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.983	GAL	3.72	AZL	84.39	HCA	195.32	SMA	185.46	ECC	.21596	INC	5.6081	V1	30.271
RP	213.93	LAP	-1.48	LOP	282.38	VP	22.916	GAP	-8.84	AZP	95.41	TAL	21.22	TAP	216.54	RCA	145.41	APO	225.51	V2	25.662
RC	294.131	GL	43.69	GP	-26.06	ZAL	60.80	ZAP	63.66	ETS	165.18	ZAE	89.55	ETE	178.62	ZAC	58.64	ETC	256.04	CLP	60.40

PLANETOCENTRIC CONIC

C3	21.682	VHL	4.656	DLA	56.95	RAL	158.85	RAD	6567.9	VEL	11.961	PTH	2.13	VHP	3.864	DPA	-15.62	RAP	154.40	ECC	1.3568

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.28	5 28 19	4371.39	-35.45	213.08	41.27	42.02	6 41 10	3771.4	-41.19	206.38
141.72	14 42 30	2740.11	-35.44	80.95	41.25	42.02	15 28 11	2140.1	-41.18	74.26
38.28	5 28 19	4371.39	-35.45	213.08	41.27	42.02	6 41 10	3771.4	-41.19	206.38
141.72	14 42 30	2740.11	-35.44	80.95	41.25	42.02	15 28 11	2140.1	-41.18	74.26
38.28	5 28 19	4371.39	-35.45	213.08	41.27	42.02	6 41 10	3771.4	-41.19	206.38
141.72	14 42 30	2740.11	-35.44	80.95	41.25	42.02	15 28 11	2140.1	-41.18	74.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	5.1840	TRA	-.7477	TC3	-6.1810	BAU	1.9404	SGT	8756.2	SGR	3270.2	SG3	1362.8	ST	6401.3	SR	2229.5	SS	3284.9
RDE	1.8109	RRA	-.0017	RC3	-2.5701	FAU	.33166	RRT	.9778	RRF	.9970	RTF	.9696	CRT	.9969	CRS	-1.0000	CST	-.9971
FDE	7.9912	FRA	-.0548	FC	-13.2431	BSP	31807	SGB	9346.9	R23	.2089	R13	.9752	LSA	7527.9	MSA	259.4	SSA	10.6
BDE	5.4912	BRA	.7477	BC3	6.6941	FSP	4801	SG1	9324.7	SG2	643.7	THA	20.16	EL1	6776.4	EL2	165.8	ALF	19.16

LAUNCH DATE DEC 19 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 668.746 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.988	GAL	3.64	AZL	84.71	HCA	196.50	SMA	185.55	ECC	.21592	INC	5.2949	V1	30.271
RP	213.62	LAP	-1.50	LOP	283.57	VP	22.963	GAP	-8.97	AZP	95.08	TAL	20.74	TAP	217.24	RCA	145.48	APO	225.61	V2	25.697
RC	295.251	GL	42.17	GP	-24.28	ZAL	60.55	ZAP	62.09	ETS	165.38	ZAE	88.09	ETE	178.03	ZAC	60.35	ETC	256.30	CLP	59.11

PLANETOCENTRIC CONIC

C3	20.483	VHL	4.526	DLA	55.31	RAL	158.47	RAD	6567.8	VEL	11.911	PTH	2.12	VHP	3.845	DPA	-13.95	RAP	155.06	ECC	1.3371

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.28	5 32 17	4346.47	-35.35	210.00	39.08	44.25	6 44 43	3746.5	-40.86	203.04
139.72	14 35 31	2737.70	-35.34	80.53	39.07	44.24	15 21 8	2137.7	-40.85	73.57
40.28	5 32 17	4346.47	-35.35	210.00	39.08	44.25	6 44 43	3746.5	-40.86	203.04
139.72	14 35 31	2737.70	-35.34	80.53	39.07	44.24	15 21 8	2137.7	-40.85	73.57
40.28	5 32 17	4346.47	-35.35	210.00	39.08	44.25	6 44 43	3746.5	-40.86	203.04
139.72	14 35 31	2737.70	-35.34	80.53	39.07	44.24	15 21 8	2137.7	-40.85	73.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	5.0261	TRA	-.7997	TC3	-6.6788	BAU	1.9519	SGT	8955.3	SGR	3034.2	SG3	1382.8	ST	6387.9	SR	2031.8	SS	3214.5
RDE	1.6040	RRA	-.0070	RC3	-2.4907	FAU	.33334	RRT	.9781	RRF	.9964	RTF	.9699	CRT	.9967	CRS	-1.0000	CST	-.9970
FDE	7.6362	FRA	-.1027	FC	-14.0892	BSP	32177	SGB	9455.4	R23	.2087	R13	.9745	LSA	7429.7	MSA	256.4	SSA	11.7
BDE	5.2758	BRA	.7998	BC3	7.1281	FSP	4837	SG1	9436.4	SG2	599.1	THA	18.41	EL1	6701.4	EL2	157.6	ALF	17.60

LAUNCH DATE DEC 19 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 672.999 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.994	GAL	3.56	AZL	84.98	HCA	197.69	SMA	185.64	ECC	.21590	INC	5.0219	V1	30.271
RP	213.31	LAP	-1.52	LOP	284.76	VP	23.009	GAP	-9.09	AZP	94.79	TAL	20.25	TAP	217.94	RCA	145.56	APO	225.72	V2	25.731
RC	296.356	GL	40.80	GP	-22.69	ZAL	60.44	ZAP	60.60	ETS	165.59	ZAE	86.64	ETE	177.53	ZAC	61.90	ETC	256.51	CLP	57.86

PLANETOCENTRIC CONIC

C3	19.464	VHL	4.412	DLA	53.80	RAL	158.29	RAD	6567.8	VEL	11.868	PTH	2.11	VHP	3.839	DPA	-12.47	RAP	155.66	ECC	1.3203

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.14	5 36 53	4322.96	-35.17	207.12	37.26	46.26	6 48 56	3723.0	-40.47	199.94
137.86	14 29 29	2736.93	-35.16	80.22	37.25	46.26	15 15 6	2136.9	-40.46	73.04
42.14	5 36 53	4322.96	-35.17	207.12	37.26	46.26	6 48 56	3723.0	-40.47	199.94
137.86	14 29 29	2736.93	-35.16	80.22	37.25	46.26	15 15 6	2136.9	-40.46	73.04
42.14	5 36 53	4322.96	-35.17	207.12	37.26	46.26	6 48 56	3723.0	-40.47	199.94
137.86	14 29 29	2736.93	-35.16	80.22	37.25	46.26	15 15 6	2136.9	-40.46	73.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.8913	TRA	-.8385	TC3	-7.1686	BAU	1.9673	SGT	9152.1	SGR	2818.9	SG3	1392.1	ST	6379.3	SR	1859.8	SS	3136.3
RDE	1.4312	RRA	-.0065	RC3	-2.4018	FAU	.33250	RRT	.9783	RRF	.9956	RTF	.9701	CRT	.9964	CRS	-1.0000	CST	-.9969
FDE	7.2736	FRA	-.1235	FC	-14.7894	BSP	32624	SGB	9576.4	R23	.2073	R13	.9739	LSA	7343.4	MSA	254.6	SSA	12.7
BDE	5.0964	BRA	.8386	BC3	7.5603	FSP	4849	SG1	9560.0	SG2	559.5	THA	16.83	EL1	6643.1	EL2	151.0	ALF	16.21

LAUNCH DATE DEC 19 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 677.261 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	32.999	GAL	3.47	AZL	85.22	HCA	198.88	SMA	185.74	ECC	.21589	INC	4.7816	V1	30.271
RP	213.01	LAP	-1.55	LOP	285.95	VP	23.056	GAP	-9.21	AZP	94.53	TAL	19.74	TAP	218.62	RCA	145.64	APO	225.84	V2	25.765
RC	297.448	GL	39.56	GP	-21.25	ZAL	60.44	ZAP	59.17	ETS	165.80	ZAE	85.20	ETE	177.11	ZAC	63.30	ETC	256.68	CLP	56.65

PLANETOCENTRIC CONIC

C3	18.584	VHL	4.311	DLA	52.39	RAL	158.28	RAD	6567.8	VEL	11.831	PTH	2.10	VHP	3.843	DPA	-11.14	RAP	156.23	ECC	1.3058

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.89	5 42 0	4300.61	-34.93	204.41	35.74	48.11	6 53 41	3700.6	-40.03	197.05
136.11	14 24 14	2737.48	-34.92	80.01	35.73	48.10	15 9 52	2137.5	-40.02	72.66
43.89	5 42 0	4300.61	-34.93	204.41	35.74	48.11	6 53 41	3700.6	-40.03	197.05
136.11	14 24 14	2737.48	-34.92	80.01	35.73	48.10	15 9 52	2137.5	-40.02	72.66
43.89	5 42 0	4300.61	-34.93	204.41	35.74	48.11	6 53 41	3700.6	-40.03	197.05
136.11	14 24 14	2737.48	-34.92	80.01	35.73	48.10	15 9 52	2137.5	-40.02	72.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.7737	TRA	-.8665	TC3	-7.6541	BAU	1.9864	SGT	9346.9	SGR	2623.8	SG3	1393.5	ST	6372.9	SR	1708.7	SS	3050.8
RDE	1.2849	RRA	-.0027	RC3	-2.3104	FAU	.33011	RRT	.9783	RRF	.9946	RTF	.9702	CRT	.9961	CRS	-.9999	CST	-.9967
FDE	6.9065	FRA	-.1259	FC	-15.3780	BSP	33093	SGB	9708.2	R23	.2049	R13	.9733	LSA	7264.8	MSA	253.0	SSA	13.8
BDE	4.9436	BRA	.8665	BC3	7.9952	FSP	4826	SG1	9694.0	SG2	524.7	THA	15.40	EL1	6596.4	EL2	145.1	ALF	14.96

LAUNCH DATE DEC 19 1964 FLIGHT TIME 316.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 681.530 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.005	GAL	3.38	AZL	85.43	HCA	200.07	SMA	185.84	ECC	.21589	INC	4.5682
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.101	GAP	-9.32	AZP	94.29	TAL	19.22	TAP	219.30	RCA	145.72	APO	225.96
RC	298.526	GL	38.44	GP	-19.95	ZAL	60.54	ZAP	57.81	ETS	166.02	ZAE	83.77	ETE	176.75	ZAC	64.57	ETC	256.82

V1	30.271	V2	25.798	CLP	55.47														

PLANETOCENTRIC CONIC

C3	17.814	VHL	4.221	DLA	51.08	RAL	158.40	RAD	6567.7	VEL	11.798	PTH	2.09	VHP	3.854	DPA	-9.96	RAP	156.78

ECC	1.2932																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.53	5 47 32	4279.19	-34.65	201.85	34.48	49.80	6 58 51	3679.2	-39.57	194.35
134.47	14 19 40	2739.11	-34.64	79.89	34.47	49.79	15 5 19	2139.1	-39.56	72.39
45.53	5 47 32	4279.19	-34.65	201.85	34.48	49.80	6 58 51	3679.2	-39.57	194.35
134.47	14 19 40	2739.11	-34.64	79.89	34.47	49.79	15 5 19	2139.1	-39.56	72.39
45.53	5 47 32	4279.19	-34.65	201.85	34.48	49.80	6 58 51	3679.2	-39.57	194.35
134.47	14 19 40	2739.11	-34.64	79.89	34.47	49.79	15 5 19	2139.1	-39.56	72.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.6684	TRA	-.8841	TC3	-8.1360	BAU	2.0083	SGT	9538.3	SGR	2445.5	SG3	1387.8	ST	6366.5	SR	1575.5	SS	2959.8
RDE	1.1599	RRA	.0038	RC3	-2.2168	FAU	.32625	RRT	.9780	RRF	.9934	RTF	.9702	CRT	.9958	CRS	-.9999	CST	-.9965
FDE	6.5401	FRA	-.1099	FC	-15.8550	BSP	33597	SGB	9846.8	R23	.2013	R13	.9728	LSA	7191.0	MSA	252.0	SSA	14.8
BDE	4.8103	BRA	.8841	BC3	8.4326	FSP	4785	SG1	9834.4	SG2	494.4	THA	14.11	EL1	6557.0	EL2	140.2	ALF	13.85

LAUNCH DATE DEC 19 1964 FLIGHT TIME 318.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 685.806 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.011	GAL	3.29	AZL	85.62	HCA	201.27	SMA	185.95	ECC	.21590	INC	4.3775
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.146	GAP	-9.43	AZP	94.08	TAL	18.69	TAP	219.96	RCA	145.80	APO	226.09
RC	299.592	GL	37.43	GP	-18.78	ZAL	60.73	ZAP	56.50	ETS	166.23	ZAE	82.37	ETE	176.45	ZAC	65.73	ETC	256.94

V1	30.271	V2	25.831	CLP	54.34														

PLANETOCENTRIC CONIC

C3	17.132	VHL	4.139	DLA	49.85	RAL	158.63	RAD	6567.7	VEL	11.769	PTH	2.08	VHP	3.872	DPA	-8.91	RAP	157.31

ECC	1.2819																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.10	5 53 27	4258.47	-34.35	199.42	33.44	51.35	7 4 26	3658.5	-39.08	191.79
132.90	14 15 38	2741.74	-34.33	79.85	33.43	51.34	15 1 20	2141.7	-39.07	72.22
47.10	5 53 27	4258.47	-34.35	199.42	33.44	51.35	7 4 26	3658.5	-39.08	191.79
132.90	14 15 38	2741.74	-34.33	79.85	33.43	51.34	15 1 20	2141.7	-39.07	72.22
47.10	5 53 27	4258.47	-34.35	199.42	33.44	51.35	7 4 26	3658.5	-39.08	191.79
132.90	14 15 38	2741.74	-34.33	79.85	33.43	51.34	15 1 20	2141.7	-39.07	72.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.5767	TRA	-.8901	TC3	-8.6099	BAU	2.0309	SGT	9725.6	SGR	2282.7	SG3	1376.2	ST	6364.9	SR	1459.5	SS	2869.2
RDE	1.0537	RRA	.0127	RC3	-2.1209	FAU	.32099	RRT	.9776	RRF	.9919	RTF	.9701	CRT	.9954	CRS	-.9999	CST	-.9963
FDE	6.1882	FRA	-.0735	FC	-16.2206	BSP	34163	SGB	9989.9	R23	.1965	R13	.9723	LSA	7128.2	MSA	251.9	SSA	15.9
BDE	4.6964	BRA	.8902	BC3	8.8672	FSP	4735	SG1	9978.9	SG2	468.7	THA	12.95	EL1	6528.7	EL2	136.1	ALF	12.86

LAUNCH DATE DEC 19 1964 FLIGHT TIME 320.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 690.090 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.017	GAL	3.19	AZL	85.79	HCA	202.47	SMA	186.05	ECC	.21593	INC	4.2057
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.191	GAP	-9.54	AZP	93.89	TAL	18.15	TAP	220.62	RCA	145.88	APO	226.23
RC	300.645	GL	36.50	GP	-17.71	ZAL	61.01	ZAP	55.24	ETS	166.43	ZAE	81.00	ETE	176.20	ZAC	66.80	ETC	257.03

V1	30.271	V2	25.863	CLP	53.24														

PLANETOCENTRIC CONIC

C3	16.521	VHL	4.065	DLA	48.68	RAL	158.97	RAD	6567.7	VEL	11.743	PTH	2.07	VHP	3.896	DPA	-7.96	RAP	157.83

ECC	1.2719																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.59	5 59 43	4238.32	-34.01	197.09	32.60	52.80	7 10 21	3638.3	-38.59	189.35
131.41	14 12 4	2745.20	-34.00	79.89	32.59	52.79	14 57 50	2145.2	-38.58	72.16
48.59	5 59 43	4238.32	-34.01	197.09	32.60	52.80	7 10 21	3638.3	-38.59	189.35
131.41	14 12 4	2745.20	-34.00	79.89	32.59	52.79	14 57 50	2145.2	-38.58	72.16
48.59	5 59 43	4238.32	-34.01	197.09	32.60	52.80	7 10 21	3638.3	-38.59	189.35
131.41	14 12 4	2745.20	-34.00	79.89	32.59	52.79	14 57 50	2145.2	-38.58	72.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.4927	TRA	-.8881	TC3	-9.0824	BAU	2.0554	SGT	9910.4	SGR	2134.0	SG3	1360.2	ST	6362.4	SR	1356.6	SS	2775.8
RDE	.9617	RRA	.0222	RC3	-2.0266	FAU	.31494	RRT	.9768	RRF	.9902	RTF	.9699	CRT	.9950	CRS	-.9998	CST	-.9961
FDE	5.8434	FRA	-.0270	FC	-16.5037	BSP	34741	SGB	10137.6	R23	.1905	R13	.9718	LSA	7068.4	MSA	251.9	SSA	16.9
BDE	4.5945	BRA	.8884	BC3	9.3058	FSP	4669	SG1	10127.7	SG2	447.0	THA	11.90	EL1	6504.1	EL2	132.5	ALF	11.98

LAUNCH DATE DEC 19 1964 FLIGHT TIME 322.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 694.381 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.024	GAL	3.10	AZL	85.95	HCA	203.68	SMA	186.16	ECC	.21597	INC	4.0500
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.235	GAP	-9.65	AZP	93.71	TAL	17.59	TAP	221.27	RCA	145.96	APO	226.37
RC	301.687	GL	35.65	GP	-16.73	ZAL	61.36	ZAP	54.03	ETS	166.63	ZAE	79.64	ETE	175.98	ZAC	67.78	ETC	257.10

V1	30.271	V2	25.895	CLP	52.17														

PLANETOCENTRIC CONIC

C3	15.969	VHL	3.996	DLA	47.58	RAL	159.40	RAD	6567.6	VEL	11.720	PTH	2.06	VHP	3.923	DPA	-7.12	RAP	158.34

ECC	1.2628																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.02	6 6 18	4218.56	-33.66	194.84	31.92	54.15	7 16 36	3618.6	-38.08	187.02
129.98	14 8 53	2749.45	-33.65	79.99	31.91	54.14	14 54 43	2149.5	-38.07	72.17
50.02	6 6 18	4218.56	-33.66	194.84	31.92	54.15	7 16 36	3618.6	-38.08	187.02
129.98	14 8 53	2749.45	-33.65	79.99	31.91	54.14	14 54 43	2149.5	-38.07	72.17
50.02	6 6 18	4218.56	-33.66	194.84	31.92	54.15	7 16 36	3618.6	-38.08	187.02
129.98	14 8 53	2749.45	-33.65	79.99	31.91	54.14	14 54 43	2149.5	-38.07	72.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.4132	TRA	-.8804	TC3	-9.5583	BAU	2.0820	SGT	10094.5	SGR	1998.7	SG3	1341.2	ST	6356.6	SR	1264.9	SS	2680.2
RDE	.8815	RRA	.0317	RC3	-1.9355	FAU	.30844	RRT	.9758	RRF	.9881	RTF	.9698	CRT	.9946	CRS	-.9998	CST	-.9958
FDE	5.5075	FRA	.0244	FC	-16.7217	BSP	35257	SGB	10290.4	R23	.1833	R13	.9713	LSA	7009.0	MSA	251.9	SSA	17.9
BDE	4.5004	BRA	.8810	BC3	9.7523	FSP	4581	SG1	10281.5	SG2	428.8	THA	10.95	EL1	6479.9	EL2	129.3	ALF	11.20

LAUNCH DATE DEC 19 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 698.678 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.030	GAL	3.00	AZL	86.09	HCA	204.89	SMA	186.27	ECC	.21602	INC	3.9084
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.279	GAP	-9.75	AZP	93.55	TAL	17.02	TAP	221.90	RCA	146.03	APO	226.51
RC	302.717	GL	34.87	GP	-15.84	ZAL	61.79	ZAP	52.86	ETS	166.82	ZAE	78.32	ETE	175.80	ZAC	68.68	ETC	257.16

V1 30.271 V2 25.926 CLP 51.13

PLANETOCENTRIC CONIC

C3	15.466	VHL	3.933	DLA	46.52	RAL	159.90	RAD	6567.6	VEL	11.698	PTH	2.06	VHP	3.955	DPA	-6.37	RAP	158.84

ECC 1.2545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.41	6 13 13	4199.03	-33.30	192.66	31.39	55.41	7 23 12	3599.0	-37.57	184.77
128.59	14 6 1	2754.51	-33.29	80.17	31.38	55.40	14 51 55	2154.5	-37.56	72.28
51.41	6 13 13	4199.03	-33.30	192.66	31.39	55.41	7 23 12	3599.0	-37.57	184.77
128.59	14 6 1	2754.51	-33.29	80.17	31.38	55.40	14 51 55	2154.5	-37.56	72.28
51.41	6 13 13	4199.03	-33.30	192.66	31.39	55.41	7 23 12	3599.0	-37.57	184.77
128.59	14 6 1	2754.51	-33.29	80.17	31.38	55.40	14 51 55	2154.5	-37.56	72.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.3408	TRA	-.8625	TC-10.0289	BAU	2.1085	SGT10273.9	SGR	1874.5	SG3	1319.0	ST	6352.2	SR	1183.9	SS	2585.6
RDE	.8118	RRA	.0421	RC3-1.8454	FAU	.30126	RRT .9745	RRF	.9857	RTF	.9696	CRT	.9941	CRS	-.9998	CST	-.9955
FDE	5.1863	FRA	.0883	FC-16.8635	BSP	35840	SGB10443.5	R23	.1750	R13	.9708	LSA	6955.1	MSA	252.4	SSA	19.0
BDE	4.4160	BRA	.8635	BC310.1973	FSP	4493	SG110435.3	SG2	414.4	THA	10.10	EL1	6460.3	EL2	126.6	ALF	10.50

LAUNCH DATE DEC 19 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 702.983 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.037	GAL	2.90	AZL	86.22	HCA	206.10	SMA	186.38	ECC	.21608	INC	3.7787
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.322	GAP	-9.86	AZP	93.39	TAL	16.43	TAP	222.53	RCA	146.11	APO	226.66
RC	303.736	GL	34.15	GP	-15.03	ZAL	62.29	ZAP	51.74	ETS	167.00	ZAE	77.01	ETE	175.64	ZAC	69.52	ETC	257.20

V1 30.271 V2 25.956 CLP 50.12

PLANETOCENTRIC CONIC

C3	15.005	VHL	3.874	DLA	45.51	RAL	160.48	RAD	6567.6	VEL	11.679	PTH	2.05	VHP	3.990	DPA	-5.69	RAP	159.35

ECC 1.2469

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.75	6 20 27	4179.61	-32.92	190.54	31.00	56.60	7 30 7	3579.6	-37.05	182.58
127.25	14 3 23	2760.34	-32.91	80.41	30.99	56.59	14 49 23	2160.3	-37.04	72.46
52.75	6 20 27	4179.61	-32.92	190.54	31.00	56.60	7 30 7	3579.6	-37.05	182.58
127.25	14 3 23	2760.34	-32.91	80.41	30.99	56.59	14 49 23	2160.3	-37.04	72.46
52.75	6 20 27	4179.61	-32.92	190.54	31.00	56.60	7 30 7	3579.6	-37.05	182.58
127.25	14 3 23	2760.34	-32.91	80.41	30.99	56.59	14 49 23	2160.3	-37.04	72.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.2723	TRA	-.8370	TC-10.4986	BAU	2.1354	SGT10450.3	SGR	1760.6	SG3	1294.5	ST	6346.1	SR	1111.9	SS	2491.8
RDE	.7509	RRA	.0528	RC3-1.7574	FAU	.29365	RRT .9727	RRF	.9828	RTF	.9693	CRT	.9935	CRS	-.9997	CST	-.9951
FDE	4.8790	FRA	.1597	FC-16.9426	BSP	36435	SGB10597.5	R23	.1660	R13	.9704	LSA	6903.1	MSA	253.5	SSA	19.9
BDE	4.3378	BRA	.8386	BC310.6447	FSP	4403	SG110589.9	SG2	403.4	THA	9.32	EL1	6441.5	EL2	124.3	ALF	9.88

LAUNCH DATE DEC 19 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 707.293 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.043	GAL	2.80	AZL	86.34	HCA	207.31	SMA	186.50	ECC	.21616	INC	3.6594
RP	211.08	LAP	-1.68	LOP	294.40	VP	23.365	GAP	-9.95	AZP	93.25	TAL	15.83	TAP	223.15	RCA	146.19	APO	226.81
RC	304.746	GL	33.48	GP	-14.28	ZAL	62.86	ZAP	50.65	ETS	167.18	ZAE	75.73	ETE	175.51	ZAC	70.30	ETC	257.23

V1 30.271 V2 25.986 CLP 49.14

PLANETOCENTRIC CONIC

C3	14.580	VHL	3.818	DLA	44.53	RAL	161.12	RAD	6567.6	VEL	11.660	PTH	2.05	VHP	4.028	DPA	-5.10	RAP	159.86

ECC 1.2399

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.07	6 28 0	4160.25	-32.53	188.45	30.73	57.73	7 37 20	3560.3	-36.52	180.45
125.93	14 0 58	2766.87	-32.52	80.71	30.72	57.72	14 47 5	2166.9	-36.52	72.71
54.07	6 28 0	4160.25	-32.53	188.45	30.73	57.73	7 37 20	3560.3	-36.52	180.45
125.93	14 0 58	2766.87	-32.52	80.71	30.72	57.72	14 47 5	2166.9	-36.52	72.71
54.07	6 28 0	4160.25	-32.53	188.45	30.73	57.73	7 37 20	3560.3	-36.52	180.45
125.93	14 0 58	2766.87	-32.52	80.71	30.72	57.72	14 47 5	2166.9	-36.52	72.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.2053	TRA	-.8061	TC-10.9723	BAU	2.1634	SGT10625.9	SGR	1656.3	SG3	1268.6	ST	6335.7	SR	1047.2	SS	2397.1
RDE	.6969	RRA	.0629	RC3-1.6730	FAU	.28590	RRT .9704	RRF	.9794	RTF	.9690	CRT	.9930	CRS	-.9997	CST	-.9947
FDE	4.5821	FRA	.2325	FC-16.9766	BSP	36988	SGB10754.2	R23	.1562	R13	.9699	LSA	6849.7	MSA	254.6	SSA	20.9
BDE	4.2627	BRA	.8085	BC311.0991	FSP	4299	SG110746.9	SG2	395.3	THA	8.61	EL1	6420.5	EL2	122.1	ALF	9.32

LAUNCH DATE DEC 19 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 711.610 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.050	GAL	2.69	AZL	86.45	HCA	208.53	SMA	186.62	ECC	.21626	INC	3.5493
RP	210.82	LAP	-1.69	LOP	295.62	VP	23.406	GAP	-10.05	AZP	93.12	TAL	15.22	TAP	223.75	RCA	146.26	APO	226.98
RC	305.746	GL	32.86	GP	-13.59	ZAL	63.48	ZAP	49.61	ETS	167.35	ZAE	74.48	ETE	175.40	ZAC	71.03	ETC	257.25

V1 30.271 V2 26.015 CLP 48.19

PLANETOCENTRIC CONIC

C3	14.186	VHL	3.766	DLA	43.58	RAL	161.83	RAD	6567.6	VEL	11.644	PTH	2.04	VHP	4.068	DPA	-4.56	RAP	160.37

ECC 1.2335

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.37	6 35 53	4140.74	-32.13	186.39	30.56	58.80	7 44 54	3540.7	-35.99	178.35
124.63	13 58 42	2774.25	-32.12	81.08	30.55	58.79	14 44 57	2174.2	-35.98	73.04
55.37	6 35 53	4140.74	-32.13	186.39	30.56	58.80	7 44 54	3540.7	-35.99	178.35
124.63	13 58 42	2774.25	-32.12	81.08	30.55	58.79	14 44 57	2174.2	-35.98	73.04
55.37	6 35 53	4140.74	-32.13	186.39	30.56	58.80	7 44 54	3540.7	-35.99	178.35
124.63	13 58 42	2774.25	-32.12	81.08	30.55	58.79	14 44 57	2174.2	-35.98	73.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.1402	TRA	-.7677	TC-11.4433	BAU	2.1911	SGT10796.8	SGR	1560.2	SG3	1241.1	ST	6322.0	SR	989.1	SS	2302.7
RDE	.6491	RRA	.0729	RC3-1.5906	FAU	.27788	RRT .9677	RRF	.9754	RTF	.9687	CRT	.9924	CRS	-.9996	CST	-.9942
FDE	4.2972	FRA	.3091	FC-16.9587	BSP	37546	SGB10909.0	R23	.1459	R13	.9695	LSA	6795.7	MSA	255.8	SSA	21.9
BDE	4.1907	BRA	.7711	BC311.5534	FSP	4195	SG110902.0	SG2	389.6	THA	7.97	EL1	6397.8	EL2	120.1	ALF	8.83

2258A

LAUNCH DATE DEC 19 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 715.934 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.057	GAL	2.58	AZL	86.55	HCA	209.75	SMA	186.74	ECC	.21637	INC	3.4472
RP	210.58	LAP	-1.71	LOP	296.84	VP	23.448	GAP	-10.14	AZP	92.99	TAL	14.60	TAP	224.35	RCA	146.33	APO	227.14
RC	306.737	GL	32.29	GP	-12.95	ZAL	64.17	ZAP	48.60	ETS	167.51	ZAE	73.25	ETE	175.31	ZAC	71.71	ETC	257.26

V1	30.271	V2	26.043	CLP	47.26														

PLANETOCENTRIC CONIC

C3	13.819	VHL	3.717	DLA	42.66	RAL	162.59	RAD	6567.5	VEL	11.628	PTH	2.04	VHP	4.111	DPA	-4.09	RAP	160.89

ECC	1.2274																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.65	6 44 8	4120.99	-31.71	184.34	30.49	59.82	7 52 49	3521.0	-35.45	176.27
123.35	13 56 32	2782.49	-31.70	81.53	30.49	59.81	14 42 55	2182.5	-35.44	73.45
56.65	6 44 8	4120.99	-31.71	184.34	30.49	59.82	7 52 49	3521.0	-35.45	176.27
123.35	13 56 32	2782.49	-31.70	81.53	30.49	59.81	14 42 55	2182.5	-35.44	73.45
56.65	6 44 8	4120.99	-31.71	184.34	30.49	59.82	7 52 49	3521.0	-35.45	176.27
123.35	13 56 32	2782.49	-31.70	81.53	30.49	59.81	14 42 55	2182.5	-35.44	73.45

DIFFERENTIAL CORRECTIONS

TDE	4.0771	TRA	-.7219	TC	-11.9144	BAU	2.2188				
RDE	.6067	RRA	.0827	RC3	-1.5112	FAU	.26978				
FDE	4.0251	FRA	.3881	FC	-16.9011	BSP	38107				
BDE	4.1220	BRA	.7266	BC	312.0099	FSP	4084				

MID-COURSE EXECUTION ACCURACY

SGT	10965.6	SGR	1472.0	SG3	1212.8		
RRT	.9644	RRF	.9708	RTF	.9684		
SGB	11064.0	R23	.1353	R13	.9690		
SG1	11057.2	SG2	386.2	THA	7.39		

ORBIT DETERMINATION ACCURACY

ST	6305.9	SR	937.1	SS	2209.2		
CRT	.9919	CRS	-.9996	CST	-.9936		
LSA	6742.2	MSA	257.1	SSA	22.8		
EL1	6374.1	EL2	118.1	ALF	8.39		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 720.263 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.064	GAL	2.47	AZL	86.65	HCA	210.97	SMA	186.86	ECC	.21650	INC	3.3523
RP	210.34	LAP	-1.72	LOP	298.06	VP	23.488	GAP	-10.24	AZP	92.88	TAL	13.96	TAP	224.94	RCA	146.40	APO	227.31
RC	307.719	GL	31.75	GP	-12.36	ZAL	64.91	ZAP	47.62	ETS	167.67	ZAE	72.05	ETE	175.23	ZAC	72.35	ETC	257.26

V1	30.271	V2	26.071	CLP	46.36														

PLANETOCENTRIC CONIC

C3	13.477	VHL	3.671	DLA	41.75	RAL	163.41	RAD	6567.5	VEL	11.613	PTH	2.03	VHP	4.156	DPA	-3.68	RAP	161.41

ECC	1.2218																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.94	6 52 46	4100.82	-31.28	182.29	30.52	60.81	8 1 7	3500.8	-34.91	174.18
122.06	13 54 25	2791.71	-31.27	82.05	30.51	60.79	14 40 56	2191.7	-34.90	73.95
57.94	6 52 46	4100.82	-31.28	182.29	30.52	60.81	8 1 7	3500.8	-34.91	174.18
122.06	13 54 25	2791.71	-31.27	82.05	30.51	60.79	14 40 56	2191.7	-34.90	73.95
57.94	6 52 46	4100.82	-31.28	182.29	30.52	60.81	8 1 7	3500.8	-34.91	174.18
122.06	13 54 25	2791.71	-31.27	82.05	30.51	60.79	14 40 56	2191.7	-34.90	73.95

DIFFERENTIAL CORRECTIONS

TDE	4.0147	TRA	-.6684	TC	-12.3819	BAU	2.2458				
RDE	.5689	RRA	.0925	RC3	-1.4333	FAU	.26146				
FDE	3.7656	FRA	.4712	FC	-16.7953	BSP	38695				
BDE	4.0548	BRA	.6748	BC	312.4646	FSP	3980				

MID-COURSE EXECUTION ACCURACY

SGT	11129.4	SGR	1390.4	SG3	1183.3		
RRT	.9603	RRF	.9655	RTF	.9680		
SGB	11215.9	R23	.1248	R13	.9685		
SG1	11209.3	SG2	385.2	THA	6.85		

ORBIT DETERMINATION ACCURACY

ST	6285.8	SR	890.4	SS	2116.9		
CRT	.9913	CRS	-.9995	CST	-.9930		
LSA	6687.1	MSA	259.0	SSA	23.8		
EL1	6347.4	EL2	116.3	ALF	8.00		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 724.594 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.071	GAL	2.36	AZL	86.74	HCA	212.20	SMA	186.98	ECC	.21664	INC	3.2637
RP	210.10	LAP	-1.74	LOP	299.29	VP	23.528	GAP	-10.33	AZP	92.76	TAL	13.31	TAP	225.51	RCA	146.47	APO	227.49
RC	308.691	GL	31.24	GP	-11.81	ZAL	65.71	ZAP	46.67	ETS	167.81	ZAE	70.87	ETE	175.17	ZAC	72.96	ETC	257.26

V1	30.271	V2	26.098	CLP	45.49														

PLANETOCENTRIC CONIC

C3	13.157	VHL	3.627	DLA	40.86	RAL	164.28	RAD	6567.5	VEL	11.599	PTH	2.03	VHP	4.202	DPA	-3.31	RAP	161.95

ECC	1.2165																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.22	7 1 48	4080.19	-30.84	180.22	30.63	61.75	8 9 49	3480.2	-34.35	172.10
120.78	13 52 18	2801.90	-30.83	82.65	30.63	61.74	14 39 0	2201.9	-34.34	74.53
59.22	7 1 48	4080.19	-30.84	180.22	30.63	61.75	8 9 49	3480.2	-34.35	172.10
120.78	13 52 18	2801.90	-30.83	82.65	30.63	61.74	14 39 0	2201.9	-34.34	74.53
59.22	7 1 48	4080.19	-30.84	180.22	30.63	61.75	8 9 49	3480.2	-34.35	172.10
120.78	13 52 18	2801.90	-30.83	82.65	30.63	61.74	14 39 0	2201.9	-34.34	74.53

DIFFERENTIAL CORRECTIONS

TDE	3.9718	TRA	-.5892	TC	-12.7964	BAU	2.2632				
RDE	.5383	RRA	.1052	RC3	-1.3482	FAU	.25150				
FDE	3.5514	FRA	.5906	FC	-16.5490	BSP	39721				
BDE	4.0081	BRA	.5986	BC	312.8673	FSP	3942				

MID-COURSE EXECUTION ACCURACY

SGT	11271.7	SGR	1314.5	SG3	1149.9		
RRT	.9546	RRF	.9593	RTF	.9674		
SGB	11348.1	R23	.1166	R13	.9679		
SG1	11341.4	SG2	389.2	THA	6.36		

ORBIT DETERMINATION ACCURACY

ST	6290.9	SR	853.4	SS	2045.3		
CRT	.9907	CRS	-.9995	CST	-.9921		
LSA	6664.6	MSA	265.2	SSA	24.2		
EL1	6347.5	EL2	115.0	ALF	7.66		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 728.936 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.078	GAL	2.24	AZL	86.82	HCA	213.43	SMA	187.11	ECC	.21681	INC	3.1807
RP	209.88	LAP	-1.75	LOP	300.52	VP	23.567	GAP	-10.42	AZP	92.66	TAL	12.65	TAP	226.08	RCA	146.54	APO	227.67
RC	309.654	GL	30.76	GP	-11.31	ZAL	66.57	ZAP	45.75	ETS	167.95	ZAE	69.71	ETE	175.11	ZAC	73.53	ETC	257.24

V1	30.271	V2	26.124	CLP	44.64														

PLANETOCENTRIC CONIC

C3	12.857	VHL	3.586	DLA	39.97	RAL	165.19	RAD	6567.5	VEL	11.586	PTH	2.03	VHP	4.250	DPA	-2.99	RAP	162.49

ECC	1.2116																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.52	7 11 17	4058.86	-30.38	178.12	30.82	62.67	8 18 56	3458.9	-33.78	169.99
119.48	13 50 7	2813.30	-30.37	83.34	30.82	62.66	14 37 0	2213.3	-33.77	75.21
60.52	7 11 17	4058.86	-30.38	178.12	30.82	62.67	8 18 56	3458.9	-33.78	169.99
119.48	13 50 7	2813.30	-30.37	83.34	30.82	62.66	14 37 0	2213.3	-33.77	75.21
60.52	7 11 17	4058.86	-30.38	178.12	30.82	62.67	8 18 56	3458.9	-33.78	169.99
119.48	13 50 7	2813.30	-30.37	83.34	30.82	62.66	14 37 0	2213.3	-33.77	75.21

DIFFERENTIAL CORRECTIONS

TDE	3.8993	TRA	-.5321	TC	-13.2912	BAU	2.2951				
RDE	.5064	RRA	.1123	RC3	-1.2810	FAU	.24415				
FDE	3.2975	FRA	.6548	FC	-16.4402	BSP	40071				
BDE	3.9320	BRA	.5438	BC	313.3528	FSP	3800				

MID-COURSE EXECUTION ACCURACY

SGT	11441.2	SGR	1246.4	SG3	1122.0		
RRT	.9493	RRF	.9523	RTF	.9671		
SGB	11508.9	R23	.1055	R13	.9675		
SG1	11502.3	SG2	389.6	THA	5.91		

ORBIT DETERMINATION ACCURACY

ST	6246.1	SR	812.7	SS	1945.1		
CRT	.9902	CRS	-.9994	CST	-.9912		
LSA	6586.8	MSA	265.3	SSA	25.3		
EL1	6297.7	EL2	112.8	ALF	7.34		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 733.282 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.086	GAL	2.13	AZL	86.90	HCA	214.66	SMA	187.23	ECC	.21699	INC	3.1028	V1	30.271
RP	209.66	LAP	-1.76	LOP	301.75	VP	23.605	GAP	-10.50	AZP	92.55	TAL	11.98	TAP	226.63	RCA	146.61	APO	227.86	V2	26.149
RC	310.607	GL	30.31	GP	-10.83	ZAL	67.47	ZAP	44.86	ETS	168.08	ZAE	68.57	ETE	175.07	ZAC	74.08	ETC	257.23	CLP	43.81

PLANETOCENTRIC CONIC

C3	12.576	VHL	3.546	DLA	39.10	RAL	166.15	RAD	6567.5	VEL	11.574	PTH	2.02	VHP	4.300	DPA	-2.72	RAP	163.04	ECC	1.2070

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.83	7 21 17	4036.62	-29.91	175.98	31.09	63.56	8 28 34	3436.6	-33.20	167.83
118.17	13 47 47	2826.07	-29.90	84.14	31.08	63.54	14 34 53	2226.1	-33.19	75.99
61.83	7 21 17	4036.62	-29.91	175.98	31.09	63.56	8 28 34	3436.6	-33.20	167.83
118.17	13 47 47	2826.07	-29.90	84.14	31.08	63.54	14 34 53	2226.1	-33.19	75.99
61.83	7 21 17	4036.62	-29.91	175.98	31.09	63.56	8 28 34	3436.6	-33.20	167.83
118.17	13 47 47	2826.07	-29.90	84.14	31.08	63.54	14 34 53	2226.1	-33.19	75.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.8291	TRA	-.4657	TC-13.7761	BAU	2.3251	SGT11605.2	SGR	1183.3	SG3	1093.0	ST	6200.3	SR	776.7	SS	1850.0
RDE	.4782	RRA	.1199	RC3-1.2136	FAU	.23646	RRT .9429	RRF	.9444	RTF	.9668	CRT	.9896	CRS	-.9993	CST	-.9902
FDE	3.0618	FRA	.7259	FC-16.2780	BSP	40487	SGB11665.4	R23	.0952	R13	.9671	LSA	6511.4	MSA	266.5	SSA	26.3
BDE	3.8588	BRA	.4809	BC313.8295	FSP	3672	SG111658.8	SG2	392.3	THA	5.50	EL1	6247.8	EL2	110.7	ALF	7.07

LAUNCH DATE DEC 19 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 737.632 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.093	GAL	2.01	AZL	86.97	HCA	215.89	SMA	187.36	ECC	.21719	INC	3.0295	V1	30.271
RP	209.44	LAP	-1.78	LOP	302.99	VP	23.643	GAP	-10.59	AZP	92.46	TAL	11.29	TAP	227.18	RCA	146.67	APO	228.06	V2	26.174
RC	311.551	GL	29.88	GP	-10.39	ZAL	68.44	ZAP	44.00	ETS	168.21	ZAE	67.45	ETE	175.03	ZAC	74.59	ETC	257.20	CLP	43.00

PLANETOCENTRIC CONIC

C3	12.312	VHL	3.509	DLA	38.22	RAL	167.16	RAD	6567.5	VEL	11.563	PTH	2.02	VHP	4.351	DPA	-2.48	RAP	163.60	ECC	1.2026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.18	7 31 49	4013.33	-29.43	173.77	31.43	64.42	8 38 43	3413.3	-32.60	165.62
116.82	13 45 16	2840.34	-29.41	85.05	31.42	64.41	14 32 36	2240.3	-32.59	76.90
63.18	7 31 49	4013.33	-29.43	173.77	31.43	64.42	8 38 43	3413.3	-32.60	165.62
116.82	13 45 16	2840.34	-29.41	85.05	31.42	64.41	14 32 36	2240.3	-32.59	76.90
63.18	7 31 49	4013.33	-29.43	173.77	31.43	64.42	8 38 43	3413.3	-32.60	165.62
116.82	13 45 16	2840.34	-29.41	85.05	31.42	64.41	14 32 36	2240.3	-32.59	76.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.7604	TRA	-.3900	TC-14.2534	BAU	2.3538	SGT11765.0	SGR	1125.3	SG3	1064.2	ST	6152.4	SR	744.6	SS	1758.0
RDE	.4532	RRA	.1274	RC3-1.1477	FAU	.22877	RRT .9355	RRF	.9353	RTF	.9665	CRT	.9892	CRS	-.9992	CST	-.9890
FDE	2.8401	FRA	.7994	FC-16.0856	BSP	40960	SGB11818.7	R23	.0853	R13	.9667	LSA	6436.2	MSA	268.1	SSA	27.2
BDE	3.7876	BRA	.4103	BC314.2996	FSP	3550	SG111812.1	SG2	396.0	THA	5.12	EL1	6196.3	EL2	108.5	ALF	6.83

LAUNCH DATE DEC 19 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 741.988 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.100	GAL	1.88	AZL	87.04	HCA	217.13	SMA	187.49	ECC	.21741	INC	2.9603	V1	30.271
RP	209.24	LAP	-1.79	LOP	304.23	VP	23.679	GAP	-10.67	AZP	92.36	TAL	10.59	TAP	227.72	RCA	146.73	APO	228.26	V2	26.198
RC	312.486	GL	29.46	GP	-9.98	ZAL	69.45	ZAP	43.16	ETS	168.33	ZAE	66.35	ETE	175.00	ZAC	75.09	ETC	257.18	CLP	42.21

PLANETOCENTRIC CONIC

C3	12.066	VHL	3.474	DLA	37.34	RAL	168.20	RAD	6567.5	VEL	11.552	PTH	2.02	VHP	4.403	DPA	-2.28	RAP	164.17	ECC	1.1986

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.56	7 42 59	3988.72	-28.92	171.48	31.83	65.27	8 49 28	3388.7	-31.99	163.32
115.44	13 42 27	2856.39	-28.91	86.09	31.83	65.25	14 30 4	2256.4	-31.98	77.94
64.56	7 42 59	3988.72	-28.92	171.48	31.83	65.27	8 49 28	3388.7	-31.99	163.32
115.44	13 42 27	2856.39	-28.91	86.09	31.83	65.25	14 30 4	2256.4	-31.98	77.94
64.56	7 42 59	3988.72	-28.92	171.48	31.83	65.27	8 49 28	3388.7	-31.99	163.32
115.44	13 42 27	2856.39	-28.91	86.09	31.83	65.25	14 30 4	2256.4	-31.98	77.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.6890	TRA	-.3081	TC-14.7268	BAU	2.3819	SGT11920.9	SGR	1071.2	SG3	1034.6	ST	6095.8	SR	715.2	SS	1666.5
RDE	.4304	RRA	.1345	RC3-1.0826	FAU	.22098	RRT .9269	RRF	.9250	RTF	.9661	CRT	.9888	CRS	-.9990	CST	-.9876
FDE	2.6275	FRA	.8711	FC-15.8561	BSP	41455	SGB11968.9	R23	.0760	R13	.9664	LSA	6354.0	MSA	269.8	SSA	28.2
BDE	3.7141	BRA	.3362	BC314.7665	FSP	3440	SG111962.2	SG2	400.7	THA	4.77	EL1	6136.7	EL2	106.1	ALF	6.62

LAUNCH DATE DEC 19 1964 FLIGHT TIME 346.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 746.347 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.108	GAL	1.76	AZL	87.11	HCA	218.37	SMA	187.63	ECC	.21766	INC	2.8948	V1	30.271
RP	209.04	LAP	-1.80	LOP	305.47	VP	23.715	GAP	-10.75	AZP	92.27	TAL	9.87	TAP	228.24	RCA	146.79	APO	228.46	V2	26.221
RC	313.411	GL	29.06	GP	-9.60	ZAL	70.52	ZAP	42.35	ETS	168.44	ZAE	65.28	ETE	174.97	ZAC	75.56	ETC	257.15	CLP	41.45

PLANETOCENTRIC CONIC

C3	11.835	VHL	3.440	DLA	36.46	RAL	169.29	RAD	6567.5	VEL	11.542	PTH	2.01	VHP	4.457	DPA	-2.12	RAP	164.76	ECC	1.1948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.00	7 54 53	3962.42	-28.39	169.08	32.30	66.09	9 0 55	3362.4	-31.37	160.93
114.00	13 39 15	2874.55	-28.38	87.29	32.30	66.08	14 27 9	2274.6	-31.35	79.14
66.00	7 54 53	3962.42	-28.39	169.08	32.30	66.09	9 0 55	3362.4	-31.37	160.93
114.00	13 39 15	2874.55	-28.38	87.29	32.30	66.08	14 27 9	2274.6	-31.35	79.14
66.00	7 54 53	3962.42	-28.39	169.08	32.30	66.09	9 0 55	3362.4	-31.37	160.93
114.00	13 39 15	2874.55	-28.38	87.29	32.30	66.08	14 27 9	2274.6	-31.35	79.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.6183	TRA	-.2174	TC-15.1899	BAU	2.4087	SGT12072.4	SGR	1021.8	SG3	1005.3	ST	6035.9	SR	689.0	SS	1578.1
RDE	.4101	RRA	.1416	RC3-1.0189	FAU	.21325	RRT .9169	RRF	.9135	RTF	.9657	CRT	.9885	CRS	-.9987	CST	-.9858
FDE	2.4273	FRA	.9461	FC-15.5997	BSP	41955	SGB12115.6	R23	.0676	R13	.9659	LSA	6270.7	MSA	272.5	SSA	29.0
BDE	3.6414	BRA	.2594	BC315.2240	FSP	3327	SG112108.7	SG2	406.5	THA	4.44	EL1	6074.2	EL2	103.6	ALF	6.44

LAUNCH DATE DEC 19 1964 FLIGHT TIME 348.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 750.711 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.115	GAL	1.63	AZL	87.17	HCA	219.61	SMA	187.76	ECC	.21792	INC	2.8326
RP	208.85	LAP	-1.81	LOP	306.71	VP	23.750	GAP	-10.83	AZP	92.18	TAL	9.14	TAP	228.75	RCA	146.84	APO	228.68
RC	314.329	GL	28.68	GP	-9.24	ZAL	71.63	ZAP	41.56	ETS	168.55	ZAE	64.22	ETE	174.95	ZAC	76.01	ETC	257.11

V1	30.271	V2	26.243	CLP	40.70														

PLANETOCENTRIC CONIC

C3	11.619	VHL	3.409	DLA	35.58	RAL	170.42	RAD	6567.4	VEL	11.533	PTH	2.01	VHP	4.512	DPA	-1.99	RAP	165.35
ECC	1.1912																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.50	8 7 34	3934.17	-27.84	166.55	32.84	66.90	9 13 8	3334.2	-30.72	158.40
112.50	13 35 33	2895.10	-27.83	88.66	32.83	66.89	14 23 48	2295.1	-30.71	80.52
67.50	8 7 34	3934.17	-27.84	166.55	32.84	66.90	9 13 8	3334.2	-30.72	158.40
112.50	13 35 33	2895.10	-27.83	88.66	32.83	66.89	14 23 48	2295.1	-30.71	80.52
67.50	8 7 34	3934.17	-27.84	166.55	32.84	66.90	9 13 8	3334.2	-30.72	158.40
112.50	13 35 33	2895.10	-27.83	88.66	32.83	66.89	14 23 48	2295.1	-30.71	80.52

DIFFERENTIAL CORRECTIONS

TDE	3.5453	TRA	-.1201	TC-15.6445	BAU	2.4347	
RDE	.3918	RRA	.1484	RC3 -.9559	FAU	.20544	
FDE	2.2369	FRA	1.0190	FC-15.3076	BSP	42466	
BDE	3.5668	BRA	.1910	BC315.6737	FSP	3219	

MID-COURSE EXECUTION ACCURACY

SGT12219.8	SGR	975.9	SG3	975.5			
RRT	.9055	RRF	.9005	RTF	.9653		
SGB12258.7	R23	.0600	R13	.9655			
SG112251.8	SG2	413.1	THA	4.14			

ORBIT DETERMINATION ACCURACY

ST	5968.2	SR	665.2	SS	1491.3		
CRT	.9883	CRS	-.9982	CST	-.9837		
LSA	6181.4	MSA	275.3	SSA	29.9		
EL1	6004.3	EL2	100.9	ALF	6.29		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 350.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 755.079 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.123	GAL	1.50	AZL	87.23	HCA	220.85	SMA	187.90	ECC	.21821	INC	2.7736
RP	208.67	LAP	-1.81	LOP	307.95	VP	23.785	GAP	-10.91	AZP	92.10	TAL	8.40	TAP	229.26	RCA	146.89	APO	228.90
RC	315.238	GL	28.30	GP	-8.90	ZAL	72.80	ZAP	40.79	ETS	168.65	ZAE	63.18	ETE	174.94	ZAC	76.45	ETC	257.07

V1	30.271	V2	26.264	CLP	39.98														

PLANETOCENTRIC CONIC

C3	11.419	VHL	3.379	DLA	34.68	RAL	171.58	RAD	6567.4	VEL	11.524	PTH	2.01	VHP	4.568	DPA	-1.89	RAP	165.95
ECC	1.1879																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.08	8 21 17	3903.22	-27.28	163.83	33.43	67.70	9 26 20	3303.2	-30.05	155.70
110.92	13 31 8	2918.80	-27.26	90.27	33.43	67.68	14 19 46	2318.8	-30.04	82.13
69.08	8 21 17	3903.22	-27.28	163.83	33.43	67.70	9 26 20	3303.2	-30.05	155.70
110.92	13 31 8	2918.80	-27.26	90.27	33.43	67.68	14 19 46	2318.8	-30.04	82.13
69.08	8 21 17	3903.22	-27.28	163.83	33.43	67.70	9 26 20	3303.2	-30.05	155.70
110.92	13 31 8	2918.80	-27.26	90.27	33.43	67.68	14 19 46	2318.8	-30.04	82.13

DIFFERENTIAL CORRECTIONS

TDE	3.4696	TRA	-.0163	TC-16.0946	BAU	2.4607	
RDE	.3752	RRA	.1548	RC3 -.8951	FAU	.19791	
FDE	2.0564	FRA	1.0892	FC-15.0052	BSP	42981	
BDE	3.4898	BRA	.1557	BC316.1195	FSP	3115	

MID-COURSE EXECUTION ACCURACY

SGT12366.2	SGR	934.2	SG3	946.6			
RRT	.8927	RRF	.8862	RTF	.9650		
SGB12401.4	R23	.0528	R13	.9651			
SG112394.3	SG2	420.1	THA	3.86			

ORBIT DETERMINATION ACCURACY

ST	5892.0	SR	643.7	SS	1406.8		
CRT	.9883	CRS	-.9975	CST	-.9812		
LSA	6085.2	MSA	278.4	SSA	30.7		
EL1	5926.2	EL2	97.8	ALF	6.16		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 352.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 759.450 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.131	GAL	1.37	AZL	87.28	HCA	222.10	SMA	188.03	ECC	.21852	INC	2.7172
RP	208.49	LAP	-1.82	LOP	309.20	VP	23.818	GAP	-10.99	AZP	92.02	TAL	7.65	TAP	229.75	RCA	146.94	APO	229.12
RC	316.140	GL	27.94	GP	-8.59	ZAL	74.02	ZAP	40.05	ETS	168.74	ZAE	62.16	ETE	174.93	ZAC	76.87	ETC	257.03

V1	30.271	V2	26.285	CLP	39.27														

PLANETOCENTRIC CONIC

C3	11.233	VHL	3.352	DLA	33.77	RAL	172.78	RAD	6567.4	VEL	11.516	PTH	2.01	VHP	4.625	DPA	-1.81	RAP	166.57
ECC	1.1849																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.77	8 36 9	3869.15	-26.68	160.90	34.08	68.48	9 40 38	3269.1	-29.36	152.78
109.23	13 25 51	2946.09	-26.67	92.13	34.08	68.47	14 14 57	2346.1	-29.35	84.01
70.77	8 36 9	3869.15	-26.68	160.90	34.08	68.48	9 40 38	3269.1	-29.36	152.78
109.23	13 25 51	2946.09	-26.67	92.13	34.08	68.47	14 14 57	2346.1	-29.35	84.01
110.00	14 10 34	2809.44	-29.80	82.75	35.34	72.41	14 57 23	2209.4	-31.91	74.18
110.00	12 50 36	3053.80	-23.64	99.06	32.63	64.56	13 41 30	2453.8	-26.87	91.38

DIFFERENTIAL CORRECTIONS

TDE	3.3886	TRA	.0924	TC-16.5414	BAU	2.4873	
RDE	.3599	RRA	.1607	RC3 -.8359	FAU	.19053	
FDE	1.8786	FRA	1.1549	FC-14.6844	BSP	43486	
BDE	3.4077	BRA	.1854	BC316.5625	FSP	3017	

MID-COURSE EXECUTION ACCURACY

SGT12511.4	SGR	895.4	SG3	917.8			
RRT	.8784	RRF	.8701	RTF	.9646		
SGB12543.4	R23	.0459	R13	.9647			
SG112536.2	SG2	427.1	THA	3.60			

ORBIT DETERMINATION ACCURACY

ST	5802.7	SR	623.4	SS	1319.8		
CRT	.9883	CRS	-.9963	CST	-.9779		
LSA	5976.8	MSA	281.5	SSA	31.6		
EL1	5835.3	EL2	94.4	ALF	6.06		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 763.825 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.139	GAL	1.23	AZL	87.34	HCA	223.35	SMA	188.17	ECC	.21886	INC	2.6636
RP	208.32	LAP	-1.83	LOP	310.45	VP	23.850	GAP	-11.07	AZP	91.94	TAL	6.89	TAP	230.23	RCA	146.99	APO	229.35
RC	317.035	GL	27.57	GP	-8.29	ZAL	75.29	ZAP	39.32	ETS	168.83	ZAE	61.16	ETE	174.92	ZAC	77.27	ETC	256.99

V1	30.271	V2	26.304	CLP	38.58														

PLANETOCENTRIC CONIC

C3	11.062	VHL	3.326	DLA	32.86	RAL	174.02	RAD	6567.4	VEL	11.509	PTH	2.00	VHP	4.683	DPA	-1.76	RAP	167.19
ECC	1.1821																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.60	8 52 33	3830.68	-26.07	157.66	34.80	69.26	9 56 23	3230.7	-28.65	149.55
107.40	13 19 18	2978.24	-26.06	94.35	34.79	69.24	14 8 56	2378.2	-28.64	86.24
72.60	8 52 33	3830.68	-26.07	157.66	34.80	69.26	9 56 23	3230.7	-28.65	149.55
107.40	13 19 18	2978.24	-26.06	94.35	34.79	69.24	14 8 56	2378.2	-28.64	86.24
110.00	14 47 26	2707.09	-31.67	75.37	36.77	76.41	15 32 33	2107.1	-33.21	66.48
110.00	12 23 35	3149.83	-20.71	104.97	32.16	62.18	13 16 5	2549.8	-24.26	97.63

DIFFERENTIAL CORRECTIONS

TDE	3.3078	TRA	.2099	TC-16.9718	BAU	2.5126	
RDE	.3463	RRA	.1664	RC3 -.7780	FAU	.18328	
FDE	1.7144	FRA	1.2205	FC-14.3432	BSP	43982	
BDE	3.3259	BRA	.2679	BC316.9896	FSP	2912	

MID-COURSE EXECUTION ACCURACY

SGT12653.5	SGR	860.4	SG3	889.6			
RRT	.8624	RRF	.8527	RTF	.9642		
SGB12682.7	R23	.0398	R13	.9643			
SG112675.3	SG2	434.7	THA	3.36			

ORBIT DETERMINATION ACCURACY

ST	5709.8	SR	605.6	SS	1238.4		
CRT	.9886	CRS	-.9946	CST	-.9741		
LSA	5866.8	MSA	285.2	SSA	32.3		
EL1	5741.1	EL2	90.6	ALF	5.99		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 768.203 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.147 GAL 1.10 AZL 87.39 HCA 224.60 SMA 188.31 ECC .21922 INC 2.6121 V1 30.271
RP 208.16 LAP -1.83 LOP 311.70 VP 23.882 GAP -11.14 AZP 91.86 TAL 6.11 TAP 230.70 RCA 147.03 APO 229.59 V2 26.323
RC 317.924 GL 27.22 GP -8.01 ZAL 76.60 ZAP 38.61 ETS 168.91 ZAE 60.17 ETE 174.91 ZAC 77.67 ETC 256.94 CLP 37.90

PLANETOCENTRIC CONIC

C3 10.906 VHL 3.302 DLA 31.92 RAL 175.29 RAD 6567.4 VEL 11.502 PTH 2.00 VHP 4.742 DPA -1.74 RAP 167.83 ECC 1.1795

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.61	9 10 53	3786.46	-25.42	154.02	35.56	70.02	10 14 0	3186.5	-27.91	145.93
105.39	13 11 4	3016.64	-25.42	97.02	35.56	70.01	14 1 21	2416.6	-27.90	88.93
74.61	9 10 53	3786.46	-25.42	154.02	35.56	70.02	10 14 0	3186.5	-27.91	145.93
105.39	13 11 4	3016.64	-25.42	97.02	35.56	70.01	14 1 21	2416.6	-27.90	88.93
110.00	15 14 13	2635.24	-32.70	70.02	37.84	79.42	15 58 8	2035.2	-33.81	60.96
110.00	12 6 55	3215.86	-18.56	108.89	32.18	60.77	13 0 31	2615.9	-22.31	101.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.2205 TRA .3322 TC-17.3929 BAU 2.5382 SGT12792.7 SGR 827.8 SG3 861.4 ST 5601.7 SR 588.7 SS 1154.9
RDE .3337 RRA .1716 RC3 -.7212 FAU .17613 RRT .8448 RRF .8333 RTF .9637 CRT .9891 CRS -.9919 CST -.9691
FDE 1.5521 FRA 1.2813 FC-13.9813 BSP 44464 SGB12819.4 R23 .0340 R13 .9638 LSA 5742.4 MSA 289.2 SSA 33.2
BDE 3.2378 BRA .3739 BC317.4078 FSP 2812 SG112811.8 SG2 442.3 THA 3.13 EL1 5631.9 EL2 86.3 ALF 5.94

LAUNCH DATE DEC 19 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 772.584 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.155 GAL .96 AZL 87.44 HCA 225.85 SMA 188.45 ECC .21961 INC 2.5630 V1 30.271
RP 208.01 LAP -1.84 LOP 312.95 VP 23.913 GAP -11.22 AZP 91.79 TAL 5.31 TAP 231.16 RCA 147.06 APO 229.84 V2 26.341
RC 318.808 GL 26.86 GP -7.75 ZAL 77.97 ZAP 37.93 ETS 168.99 ZAE 59.21 ETE 174.90 ZAC 78.05 ETC 256.90 CLP 37.24

PLANETOCENTRIC CONIC

C3 10.765 VHL 3.281 DLA 30.97 RAL 176.59 RAD 6567.4 VEL 11.496 PTH 2.00 VHP 4.802 DPA -1.74 RAP 168.47 ECC 1.1772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.90	9 32 1	3733.69	-24.76	149.77	36.39	70.77	10 34 15	3133.7	-27.15	141.69
103.10	13 0 18	3064.09	-24.75	100.35	36.39	70.76	13 51 22	2464.1	-27.14	92.27
76.90	9 32 1	3733.69	-24.76	149.77	36.39	70.77	10 34 15	3133.7	-27.15	141.69
103.10	13 0 18	3064.09	-24.75	100.35	36.39	70.76	13 51 22	2464.1	-27.14	92.27
110.00	15 37 6	2575.26	-33.35	65.46	38.76	82.04	16 20 1	1975.3	-34.09	56.30
110.00	11 54 24	3270.52	-16.71	112.05	32.43	59.74	12 48 54	2670.5	-20.61	105.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.1324 TRA .4624 TC-17.7942 BAU 2.5628 SGT12928.9 SGR 798.4 SG3 833.2 ST 5488.5 SR 574.1 SS 1078.1
RDE .3228 RRA .1766 RC3 -.6649 FAU .16900 RRT .8251 RRF .8124 RTF .9634 CRT .9897 CRS -.9879 CST -.9630
FDE 1.4038 FRA 1.3405 FC-13.5910 BSP 44959 SGB12953.5 R23 .0292 R13 .9635 LSA 5615.0 MSA 293.5 SSA 33.9
BDE 3.1490 BRA .4950 BC317.8066 FSP 2716 SG112945.6 SG2 450.5 THA 2.92 EL1 5517.8 EL2 81.6 ALF 5.91

LAUNCH DATE DEC 19 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 776.967 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.162 GAL .81 AZL 87.48 HCA 227.10 SMA 188.59 ECC .22003 INC 2.5157 V1 30.271
RP 207.86 LAP -1.84 LOP 314.21 VP 23.942 GAP -11.30 AZP 91.71 TAL 4.51 TAP 231.61 RCA 147.10 APO 230.09 V2 26.357
RC 319.685 GL 26.50 GP -7.50 ZAL 79.38 ZAP 37.26 ETS 169.06 ZAE 58.25 ETE 174.90 ZAC 78.42 ETC 256.85 CLP 36.60

PLANETOCENTRIC CONIC

C3 10.640 VHL 3.262 DLA 30.00 RAL 177.91 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 4.863 DPA -1.76 RAP 169.13 ECC 1.1751

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.65	9 57 31	3667.18	-24.06	144.53	37.27	71.52	10 58 38	3067.2	-26.36	136.48
100.35	12 45 24	3125.82	-24.06	104.70	37.26	71.51	13 37 30	2525.8	-26.36	96.65
79.65	9 57 31	3667.18	-24.06	144.53	37.27	71.52	10 58 38	3067.2	-26.36	136.48
100.35	12 45 24	3125.82	-24.06	104.70	37.26	71.51	13 37 30	2525.8	-26.36	96.65
110.00	15 57 47	2522.00	-33.78	61.36	39.63	84.43	16 39 49	1922.0	-34.18	52.14
110.00	11 44 18	3319.00	-15.03	114.80	32.85	58.93	12 39 37	2719.0	-19.04	107.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.0384 TRA .5973 TC-18.1893 BAU 2.5887 SGT13067.4 SGR 771.6 SG3 806.4 ST 5361.2 SR 560.2 SS 999.4
RDE .3126 RRA .1809 RC3 -.6115 FAU .16234 RRT .8043 RRF .7896 RTF .9631 CRT .9906 CRS -.9820 CST -.9552
FDE 1.2566 FRA 1.3930 FC-13.2098 BSP 45408 SGB13090.2 R23 .0237 R13 .9631 LSA 5474.0 MSA 297.9 SSA 34.8
BDE 3.0544 BRA .6241 BC318.1996 FSP 2617 SG113082.1 SG2 458.0 THA 2.72 EL1 5389.9 EL2 76.3 ALF 5.91

LAUNCH DATE DEC 19 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 781.353 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.171 GAL .67 AZL 87.53 HCA 228.36 SMA 188.73 ECC .22048 INC 2.4703 V1 30.271
RP 207.73 LAP -1.85 LOP 315.46 VP 23.971 GAP -11.37 AZP 91.64 TAL 3.69 TAP 232.05 RCA 147.12 APO 230.35 V2 26.373
RC 320.558 GL 26.14 GP -7.26 ZAL 80.84 ZAP 36.60 ETS 169.13 ZAE 57.31 ETE 174.90 ZAC 78.78 ETC 256.80 CLP 35.98

PLANETOCENTRIC CONIC

C3 10.529 VHL 3.245 DLA 29.02 RAL 179.27 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 4.925 DPA -1.80 RAP 169.79 ECC 1.1733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.39	10 32 13	3571.16	-23.34	137.17	38.20	72.26	11 31 44	2971.2	-25.55	129.14
96.61	12 21 31	3217.61	-23.33	111.24	38.20	72.25	13 15 9	2617.6	-25.54	103.21
100.00	13 48 58	2936.88	-27.53	91.73	39.44	77.87	14 37 55	2336.9	-28.93	83.20
100.00	11 47 27	3327.11	-19.28	117.69	36.57	66.70	12 42 54	2727.1	-22.26	110.17
110.00	16 17 4	2473.16	-34.04	57.57	40.47	86.66	16 58 17	1873.2	-34.13	48.33
110.00	11 35 51	3363.61	-13.45	117.29	33.41	58.27	12 31 54	2763.6	-17.55	110.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.9410 TRA .7401 TC-18.5579 BAU 2.6135 SGT13200.4 SGR 747.4 SG3 779.9 ST 5224.8 SR 547.8 SS 924.7
RDE .3036 RRA .1850 RC3 -.5589 FAU .15575 RRT .7816 RRF .7652 RTF .9627 CRT .9916 CRS -.9734 CST -.9451
FDE 1.1176 FRA 1.4446 FC-12.8060 BSP 45919 SGB13221.5 R23 .0191 R13 .9627 LSA 5325.5 MSA 303.3 SSA 35.6
BDE 2.9566 BRA .7628 BC318.5663 FSP 2532 SG113213.3 SG2 465.8 THA 2.54 EL1 5253.0 EL2 70.4 ALF 5.94

LAUNCH DATE DEC 19 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 785.740 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.179	GAL	.52	AZL	87.57	HCA	229.61	SMA	188.88	ECC	.22096	INC	2.4265
RP	207.60	LAP	-1.85	LOP	316.72	VP	23.999	GAP	-11.45	AZP	91.57	TAL	2.86	TAP	232.47	RCA	147.14	APO	230.61
RC	321.425	GL	25.78	GP	-7.04	ZAL	82.34	ZAP	35.97	ETS	169.19	ZAE	56.39	ETE	174.90	ZAC	79.13	ETC	256.75

V1	30.271	V2	26.388	CLP	35.36														

PLANETOCENTRIC CONIC

C3	10.435	VHL	3.230	DLA	28.01	RAL	180.65	RAD	6567.4	VEL	11.481	PTH	2.00	VHP	4.988	DPA	-1.86	RAP	170.47
ECC	1.1717																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 9 2	3273.54	-25.00	115.85	39.91	76.25	13 3 35	2673.5	-26.65	107.57
90.00	10 55 44	3511.59	-20.22	131.65	38.33	69.75	11 54 16	2911.6	-22.80	123.92
100.00	14 22 37	2842.86	-28.69	84.99	40.73	81.24	15 10 0	2242.9	-29.61	76.30
100.00	11 24 50	3417.49	-16.75	123.22	36.80	64.87	12 21 47	2817.5	-20.00	115.93
110.00	16 35 20	2427.48	-34.16	54.01	41.29	88.77	17 15 47	1827.5	-33.96	44.77
110.00	11 28 36	3405.64	-11.93	119.60	34.08	57.73	12 25 22	2805.6	-16.11	112.98

DIFFERENTIAL CORRECTIONS

TDE	2.8400	TRA	.8880	TC	-18.9016	BAU	2.6378
RDE	.2955	RRA	.1887	RC3	-.5063	FAU	.14907
FDE	.9838	FRA	1.4911	FC	-12.3675	BSP	46339
BDE	2.8553	BRA	.9078	BC	318.9083	FSP	2429

MID-COURSE EXECUTION ACCURACY

SGT	13329.6	SGR	724.9	SG3	752.5		
RRT	.7566	RRF	.7387	RTF	.9622		
SGB	13349.3	R23	.0149	R13	.9622		
SG1	13340.9	SG2	473.6	THA	2.36		

ORBIT DETERMINATION ACCURACY

ST	5078.8	SR	536.5	SS	852.1		
CRT	.9928	CRS	-.9608	CST	-.9319		
LSA	5168.3	MSA	309.1	SSA	36.3		
EL1	5106.7	EL2	64.1	ALF	5.99		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 790.129 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.187	GAL	.37	AZL	87.62	HCA	230.87	SMA	189.02	ECC	.22147	INC	2.3843
RP	207.48	LAP	-1.85	LOP	317.98	VP	24.025	GAP	-11.52	AZP	91.51	TAL	2.02	TAP	232.89	RCA	147.16	APO	230.89
RC	322.286	GL	25.40	GP	-6.83	ZAL	83.89	ZAP	35.35	ETS	169.25	ZAE	55.48	ETE	174.90	ZAC	79.48	ETC	256.70

V1	30.271	V2	26.402	CLP	34.77														

PLANETOCENTRIC CONIC

C3	10.357	VHL	3.218	DLA	26.98	RAL	182.06	RAD	6567.4	VEL	11.478	PTH	2.00	VHP	5.052	DPA	-1.94	RAP	171.15
ECC	1.1704																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 54 11	3142.02	-26.81	106.65	41.48	80.52	13 46 33	2542.0	-27.84	98.14
90.00	10 21 48	3640.06	-17.00	139.69	38.40	67.00	11 22 28	3040.1	-19.96	132.28
100.00	14 49 39	2769.74	-29.33	79.65	41.87	83.98	15 35 49	2169.7	-29.86	70.88
100.00	11 9 0	3487.58	-14.68	127.39	37.30	63.66	12 7 8	2887.6	-18.10	120.27
110.00	16 52 52	2384.20	-34.18	50.63	42.13	90.77	17 32 36	1784.2	-33.69	41.42
110.00	11 22 17	3445.88	-10.46	121.79	34.85	57.27	12 19 43	2845.9	-14.70	115.25

DIFFERENTIAL CORRECTIONS

TDE	2.7364	TRA	1.0448	TC	-19.2216	BAU	2.6621
RDE	.2887	RRA	.1922	RC3	-.4553	FAU	.14261
FDE	.8603	FRA	1.5363	FC	-11.9215	BSP	46818
BDE	2.7515	BRA	1.0623	BC	319.2270	FSP	2347

MID-COURSE EXECUTION ACCURACY

SGT	13459.2	SGR	705.3	SG3	726.2		
RRT	.7301	RRF	.7109	RTF	.9618		
SGB	13477.7	R23	.0114	R13	.9618		
SG1	13469.0	SG2	481.6	THA	2.19		

ORBIT DETERMINATION ACCURACY

ST	4925.9	SR	526.8	SS	786.4		
CRT	.9940	CRS	-.9432	CST	-.9153		
LSA	5005.9	MSA	315.9	SSA	37.1		
EL1	4953.6	EL2	57.3	ALF	6.07		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 794.519 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.195	GAL	.21	AZL	87.66	HCA	232.13	SMA	189.17	ECC	.22201	INC	2.3436
RP	207.36	LAP	-1.85	LOP	319.24	VP	24.051	GAP	-11.60	AZP	91.44	TAL	1.16	TAP	233.29	RCA	147.17	APO	231.17
RC	323.141	GL	25.03	GP	-6.63	ZAL	85.48	ZAP	34.75	ETS	169.31	ZAE	54.59	ETE	174.89	ZAC	79.82	ETC	256.65

V1	30.271	V2	26.416	CLP	34.18														

PLANETOCENTRIC CONIC

C3	10.295	VHL	3.209	DLA	25.94	RAL	183.49	RAD	6567.4	VEL	11.475	PTH	1.99	VHP	5.116	DPA	-2.03	RAP	171.85
ECC	1.1694																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 25 21	3055.48	-27.63	100.45	42.73	83.52	14 16 16	2455.5	-28.24	91.84
90.00	10 2 2	3724.21	-14.69	144.79	38.90	65.52	11 4 6	3124.2	-17.87	137.56
100.00	15 13 30	2706.79	-29.69	75.00	42.94	86.40	15 58 37	2106.8	-29.88	66.20
100.00	10 56 33	3548.13	-12.82	130.92	37.96	62.76	11 55 41	2948.1	-16.37	123.93
110.00	17 9 50	2342.81	-34.09	47.40	42.98	92.68	17 48 53	1742.8	-33.34	38.24
110.00	11 16 43	3484.87	-9.02	123.89	35.71	56.89	12 14 48	2884.9	-13.31	117.42

DIFFERENTIAL CORRECTIONS

TDE	2.6228	TRA	1.2032	TC	-19.5180	BAU	2.6870
RDE	.2817	RRA	.1946	RC3	-.4068	FAU	.13655
FDE	.7258	FRA	1.5677	FC	-11.4830	BSP	47349
BDE	2.6379	BRA	1.2188	BC	319.5223	FSP	2274

MID-COURSE EXECUTION ACCURACY

SGT	13583.9	SGR	686.0	SG3	700.2		
RRT	.7028	RRF	.6797	RTF	.9611		
SGB	13601.2	R23	.0047	R13	.9612		
SG1	13592.5	SG2	487.7	THA	2.04		

ORBIT DETERMINATION ACCURACY

ST	4752.9	SR	516.3	SS	712.9		
CRT	.9952	CRS	-.9152	CST	-.8901		
LSA	4822.7	MSA	323.3	SSA	37.8		
EL1	4780.6	EL2	50.4	ALF	6.17		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 798.909 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.203	GAL	.05	AZL	87.70	HCA	233.39	SMA	189.32	ECC	.22259	INC	2.3041
RP	207.26	LAP	-1.85	LOP	320.50	VP	24.076	GAP	-11.67	AZP	91.37	TAL	.29	TAP	233.68	RCA	147.18	APO	231.46
RC	323.990	GL	24.64	GP	-6.44	ZAL	87.11	ZAP	34.16	ETS	169.36	ZAE	53.70	ETE	174.89	ZAC	80.15	ETC	256.60

V1	30.271	V2	26.428	CLP	33.62														

PLANETOCENTRIC CONIC

C3	10.251	VHL	3.202	DLA	24.87	RAL	184.93	RAD	6567.4	VEL	11.473	PTH	1.99	VHP	5.182	DPA	-2.14	RAP	172.55
ECC	1.1687																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 51 40	2984.50	-28.06	95.30	43.89	86.07	14 41 25	2384.5	-28.31	86.65
90.00	9 47 15	3793.46	-12.69	148.90	39.59	64.47	10 50 29	3193.5	-16.03	141.81
100.00	15 35 23	2650.12	-29.86	70.80	43.98	88.60	16 19 33	2050.1	-29.74	61.99
100.00	10 46 13	3603.08	-11.09	134.08	38.76	62.06	11 46 16	3003.1	-14.74	127.20
110.00	17 26 20	2302.98	-33.92	44.30	43.85	94.50	18 4 43	1703.0	-32.93	35.21
110.00	11 11 45	3522.98	-7.59	125.92	36.66	56.57	12 10 28	2923.0	-11.94	119.52

DIFFERENTIAL CORRECTIONS

TDE	2.5109	TRA	1.3593	TC	-19.7697	BAU	2.7098
RDE	.2764	RRA	.1959	RC3	-.3541	FAU	.12949
FDE	.6083	FRA	1.5814	FC	-10.9361	BSP	47491
BDE	2.5261	BRA	1.3734	BC	319.7729	FSP	2102

MID-COURSE EXECUTION ACCURACY

SGT	13698.2	SGR	667.4	SG3	669.0		
RRT	.6705	RRF	.6448	RTF	.9608		
SGB	13714.5	R23	-.0003	R13	.9608		
SG1	13705.5	SG2	494.9	THA	1.87		

ORBIT DETERMINATION ACCURACY

ST	4580.6	SR	508.0	SS	649.5		
CRT	.9962	CRS	-.8796	CST	-.8613		
LSA	4642.5	MSA	328.0	SSA	38.5		
EL1	4608.5	EL2	44.1	ALF	6.31		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 803.300 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.211	GAL	-.11	AZL	87.73	HCA	234.65	SMA	189.47	ECC	.22321	INC	2.2660	V1	30.271
RP	207.16	LAP	-1.85	LOP	321.77	VP	24.100	GAP	-11.75	AZP	91.31	TAL	359.41	TAP	234.06	RCA	147.18	APO	231.76	V2	26.439
RC	324.833	GL	24.25	GP	-6.27	ZAL	88.78	ZAP	33.58	ETS	169.40	ZAE	52.84	ETE	174.89	ZAC	80.47	ETC	256.55	CLP	33.06

PLANETOCENTRIC CONIC

C3	10.225	VHL	3.198	DLA	23.79	RAL	186.40	RAD	6567.4	VEL	11.472	PTH	1.99	VHP	5.248	DPA	-2.27	RAP	173.27	ECC	1.1683

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 15 20	2922.12	-28.27	90.75	45.01	88.34	15 4 2	2322.1	-28.20	82.09
90.00	9 35 17	3854.82	-10.87	152.48	40.43	63.69	10 39 32	3254.8	-14.32	145.50
100.00	15 55 56	2597.80	-29.89	66.91	45.02	90.65	16 39 13	1997.8	-29.48	58.13
100.00	10 37 23	3654.37	-9.43	137.00	39.67	61.50	11 38 17	3054.4	-13.17	130.20
110.00	17 42 28	2264.47	-33.68	41.32	44.75	96.25	18 20 13	1664.5	-32.44	32.31
110.00	11 7 19	3560.47	-6.18	127.90	37.69	56.31	12 6 40	2960.5	-10.57	121.56

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	2.4080	TRA	1.5594	TC-19.9731	BAU 2.7306	SGT13823.9	SGR	659.7	SG3	647.0		ST	4427.4	SR	505.5	SS	630.4
RDE	.2743	RRA	.2013	RC3 -.3057	FAU .12316	RRT	.6384	RRF	.6207	RTF	.9595	CRT	.9968	CRS	-.8419	CST	-.8353
FDE	.5390	FRA	1.6677	FC-10.4281	BSP 48262	SGB13839.6	R23	.0094	R13	.9595		LSA	4487.2	MSA	344.2	SSA	39.1
BDE	2.4236	BRA	1.5724	BC319.9754	FSP 2116	SG113830.3	SG2	507.5	THA	1.75		EL1	4456.0	EL2	40.0	ALF	6.49

LAUNCH DATE DEC 19 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 807.691 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.220	GAL	-.27	AZL	87.77	HCA	235.92	SMA	189.62	ECC	.22386	INC	2.2289	V1	30.271
RP	207.08	LAP	-1.85	LOP	323.03	VP	24.122	GAP	-11.82	AZP	91.25	TAL	358.52	TAP	234.43	RCA	147.17	APO	232.06	V2	26.449
RC	325.671	GL	23.84	GP	-6.10	ZAL	90.48	ZAP	33.02	ETS	169.45	ZAE	51.98	ETE	174.89	ZAC	80.79	ETC	256.50	CLP	32.52

PLANETOCENTRIC CONIC

C3	10.217	VHL	3.196	DLA	22.69	RAL	187.88	RAD	6567.4	VEL	11.472	PTH	1.99	VHP	5.316	DPA	-2.41	RAP	173.99	ECC	1.1682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 37 17	2865.38	-28.31	86.60	46.12	90.42	15 25 2	2265.4	-27.96	77.96
90.00	9 25 10	3911.27	-9.14	155.73	41.38	63.08	10 30 21	3311.3	-12.68	148.84
100.00	16 15 29	2548.73	-29.79	63.26	46.08	92.57	16 57 58	1948.7	-29.12	54.52
100.00	10 29 39	3703.15	-7.84	139.74	40.68	61.06	11 31 22	3103.1	-11.64	133.01
110.00	17 58 17	2227.10	-33.36	38.45	45.69	97.92	18 35 24	1627.1	-31.91	29.52
110.00	11 3 20	3597.54	-4.78	129.86	38.80	56.11	12 3 17	2997.5	-9.20	123.55

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	2.2863	TRA	1.7371	TC-20.1761	BAU 2.7563	SGT13948.3	SGR	646.6	SG3	623.7		ST	4238.9	SR	499.1	SS	580.1
RDE	.2705	RRA	.2023	RC3 -.2636	FAU .11798	RRT	.6085	RRF	.5862	RTF	.9596	CRT	.9967	CRS	-.7799	CST	-.7913
FDE	.4316	FRA	1.6814	FC3-9.9967	BSP 48692	SGB13963.2	R23	.0019	R13	.9596		LSA	4292.8	MSA	352.9	SSA	39.6
BDE	2.3022	BRA	1.7488	BC320.1778	FSP 2019	SG113953.8	SG2	512.9	THA	1.62		EL1	4268.0	EL2	40.3	ALF	6.69

LAUNCH DATE DEC 19 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 812.081 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.228	GAL	-.44	AZL	87.81	HCA	237.18	SMA	189.77	ECC	.22455	INC	2.1930	V1	30.271
RP	207.00	LAP	-1.84	LOP	324.30	VP	24.144	GAP	-11.90	AZP	91.19	TAL	357.61	TAP	234.79	RCA	147.15	APO	232.38	V2	26.459
RC	326.503	GL	23.42	GP	-5.93	ZAL	92.22	ZAP	32.47	ETS	169.48	ZAE	51.14	ETE	174.89	ZAC	81.11	ETC	256.45	CLP	31.99

PLANETOCENTRIC CONIC

C3	10.229	VHL	3.198	DLA	21.57	RAL	189.38	RAD	6567.4	VEL	11.473	PTH	1.99	VHP	5.384	DPA	-2.57	RAP	174.72	ECC	1.1684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 57 59	2812.71	-28.23	82.75	47.24	92.35	15 44 52	2212.7	-27.60	74.14
90.00	9 16 24	3964.41	-7.49	158.76	42.43	62.61	10 22 28	3364.4	-11.11	151.95
100.00	16 34 16	2502.24	-29.60	59.82	47.15	94.37	17 15 58	1902.2	-28.68	51.14
100.00	10 22 48	3750.11	-6.28	142.36	41.78	60.72	11 25 18	3150.1	-10.14	135.69
110.00	18 13 50	2190.77	-32.99	35.68	46.67	99.52	18 50 20	1590.8	-31.32	26.85
110.00	10 59 43	3634.34	-3.38	131.79	39.98	55.96	12 0 18	3034.3	-7.82	125.52

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	2.1644	TRA	1.9286	TC-20.3319	BAU 2.7807	SGT14070.7	SGR	636.0	SG3	600.8		ST	4053.1	SR	494.0	SS	542.9
RDE	.2678	RRA	.2039	RC3 -.2216	FAU .11264	RRT	.5769	RRF	.5521	RTF	.9590	CRT	.9954	CRS	-.6988	CST	-.7360
FDE	.3327	FRA	1.7075	FC3-9.5330	BSP 49160	SGB14085.0	R23	-.0023	R13	.9590		LSA	4102.5	MSA	366.9	SSA	40.1
BDE	2.1809	BRA	1.9393	BC320.3331	FSP 1943	SG114075.5	SG2	519.3	THA	1.50		EL1	4082.9	EL2	47.1	ALF	6.92

LAUNCH DATE DEC 19 1964 FLIGHT TIME 378.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 816.471 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.236	GAL	-.61	AZL	87.84	HCA	238.45	SMA	189.92	ECC	.22528	INC	2.1579	V1	30.271
RP	206.93	LAP	-1.84	LOP	325.56	VP	24.164	GAP	-11.98	AZP	91.13	TAL	356.69	TAP	235.14	RCA	147.13	APO	232.70	V2	26.467
RC	327.330	GL	23.00	GP	-5.78	ZAL	93.98	ZAP	31.94	ETS	169.52	ZAE	50.31	ETE	174.89	ZAC	81.42	ETC	256.40	CLP	31.47

PLANETOCENTRIC CONIC

C3	10.262	VHL	3.203	DLA	20.43	RAL	190.89	RAD	6567.4	VEL	11.474	PTH	1.99	VHP	5.453	DPA	-2.74	RAP	175.46	ECC	1.1689

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 46	2763.18	-28.04	79.14	48.38	94.15	16 3 49	2163.2	-27.17	70.58
90.00	9 8 39	4015.20	-5.89	161.64	43.58	62.25	10 15 34	3415.2	-9.56	154.88
100.00	16 52 26	2457.87	-29.33	56.55	48.25	96.07	17 33 24	1857.9	-28.18	47.94
100.00	10 16 39	3795.74	-4.76	144.88	42.95	60.45	11 19 55	3195.7	-8.66	138.27
110.00	18 29 7	2155.39	-32.56	33.01	47.68	101.05	19 5 3	1555.4	-30.69	24.29
110.00	10 56 27	3670.98	-1.98	133.70	41.23	55.87	11 57 38	3071.0	-6.45	127.46

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	2.0385	TRA	2.1239	TC-20.4394	BAU 2.8042	SGT14184.7	SGR	626.7	SG3	576.0		ST	3863.6	SR	490.4	SS	516.1
RDE	.2662	RRA	.2049	RC3 -.1787	FAU .10691	RRT	.5423	RRF	.5168	RTF	.9583	CRT	.9923	CRS	-.6054	CST	-.6777
FDE	.2449	FRA	1.7270	FC3-9.0194	BSP 49601	SGB14198.6	R23	-.0043	R13	.9583		LSA	3909.9	MSA	381.1	SSA	40.5
BDE	2.0558	BRA	2.1337	BC320.4402	FSP 1869	SG114188.8	SG2	526.4	THA	1.37		EL1	3894.2	EL2	60.3	ALF	7.18

LAUNCH DATE DEC 19 1964 FLIGHT TIME 380.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 820.860 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.245	GAL	-.78	AZL	87.88	HCA	239.71	SMA	190.07	ECC	.22606	INC	2.1238
RP	206.86	LAP	-1.83	LOP	326.83	VP	24.184	GAP	-12.06	AZP	91.07	TAL	355.75	TAP	235.47	RCA	147.10	APO	233.04
RC	328.152	GL	22.56	GP	-5.64	ZAL	95.78	ZAP	31.42	ETS	169.55	ZAE	49.49	ETE	174.89	ZAC	81.72	ETC	256.35

V1 30.271 V2 26.474 CLP 30.96

PLANETOCENTRIC CONIC

C3 10.315 VHL 3.212 DLA 19.28 RAL 192.40 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 5.523 DPA -2.92 RAP 176.21 ECC 1.1698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 36 48	2716.19	-27.76	75.73	49.55	95.84	16 22 4	2116.2	-26.66	67.24
90.00	9 1 43	4064.27	-4.33	164.40	44.80	61.99	10 9 27	3464.3	-8.04	157.69
100.00	17 10 6	2415.31	-28.98	53.43	49.38	97.67	17 50 21	1815.3	-27.61	44.90
100.00	10 11 6	3840.38	-3.25	147.35	44.21	60.27	11 15 6	3240.4	-7.19	140.77
110.00	18 44 12	2120.91	-32.08	30.44	48.74	102.50	19 19 33	1520.9	-30.02	21.82
110.00	10 53 29	3707.55	-.58	135.61	42.54	55.82	11 55 17	3107.5	-5.06	129.39

DIFFERENTIAL CORRECTIONS

TDE	1.9116	TRA	2.3285	TC-20.5088	BAU	2.8282	
RDE	.2655	RRA	.2057	RC3 -.1394	FAU	.10169	
FDE	.1645	FRA	1.7448	FC3-8.5352	BSP	50067	
BDE	1.9300	BRA	2.3376	BC320.5093	FSP	1795	

MID-COURSE EXECUTION ACCURACY

SGT14301.7	SGR	619.3	SG3	553.3			
RRT	.5087	RRF	.4820	RTF	.9579		
SGB14315.1	R23	-.0069	R13	.9579			
SG114305.2	SG2	533.1	THA	1.26			

ORBIT DETERMINATION ACCURACY

ST	3678.2	SR	487.9	SS	498.6		
CRT	.9867	CRS	-.5000	CST	-.6172		
LSA	3722.4	MSA	397.5	SSA	40.7		
EL1	3709.6	EL2	78.8	ALF	7.46		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 382.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 825.246 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.253	GAL	-.96	AZL	87.91	HCA	240.98	SMA	190.22	ECC	.22687	INC	2.0906
RP	206.81	LAP	-1.83	LOP	328.10	VP	24.203	GAP	-12.14	AZP	91.01	TAL	354.81	TAP	235.79	RCA	147.07	APO	233.38
RC	328.970	GL	22.10	GP	-5.50	ZAL	97.60	ZAP	30.91	ETS	169.58	ZAE	48.68	ETE	174.88	ZAC	82.02	ETC	256.30

V1 30.271 V2 26.480 CLP 30.47

PLANETOCENTRIC CONIC

C3 10.390 VHL 3.223 DLA 18.12 RAL 193.93 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 5.594 DPA -3.12 RAP 176.97 ECC 1.1710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 55 13	2671.34	-27.41	72.50	50.74	97.42	16 39 44	2071.3	-26.09	64.08
90.00	8 55 27	4112.05	-2.80	167.07	46.11	61.81	10 3 59	3512.0	-6.55	160.40
100.00	17 27 19	2374.35	-28.57	50.46	50.55	99.19	18 6 53	1774.3	-27.00	42.01
100.00	10 6 2	3884.27	-1.77	149.76	45.54	60.16	11 10 47	3284.3	-5.73	143.21
110.00	18 59 4	2087.29	-31.55	27.95	49.85	103.88	19 33 51	1487.3	-29.32	19.46
110.00	10 50 47	3744.10	.81	137.51	43.92	55.83	11 53 11	3144.1	-3.67	131.31

DIFFERENTIAL CORRECTIONS

TDE	1.7821	TRA	2.5413	TC-20.5241	BAU	2.8510	
RDE	.2655	RRA	.2061	RC3 -.1004	FAU	.09626	
FDE	.0859	FRA	1.7588	FC3-8.0209	BSP	50508	
BDE	1.8017	BRA	2.5496	BC320.5243	FSP	1720	

MID-COURSE EXECUTION ACCURACY

SGT14411.5	SGR	612.7	SG3	529.7			
RRT	.4737	RRF	.4458	RTF	.9568		
SGB14424.5	R23	-.0092	R13	.9568			
SG114414.4	SG2	539.5	THA	1.16			

ORBIT DETERMINATION ACCURACY

ST	3496.3	SR	485.9	SS	488.4		
CRT	.9774	CRS	-.3798	CST	-.5526		
LSA	3538.8	MSA	417.4	SSA	40.8		
EL1	3528.5	EL2	101.7	ALF	7.74		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 384.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 829.631 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.262	GAL	-1.14	AZL	87.94	HCA	242.25	SMA	190.38	ECC	.22774	INC	2.0581
RP	206.77	LAP	-1.82	LOP	329.37	VP	24.220	GAP	-12.22	AZP	90.96	TAL	353.85	TAP	236.10	RCA	147.02	APO	233.73
RC	329.784	GL	21.64	GP	-5.36	ZAL	99.43	ZAP	30.42	ETS	169.60	ZAE	47.88	ETE	174.88	ZAC	82.32	ETC	256.26

V1 30.271 V2 26.486 CLP 29.98

PLANETOCENTRIC CONIC

C3 10.488 VHL 3.239 DLA 16.94 RAL 195.46 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 5.666 DPA -3.32 RAP 177.74 ECC 1.1726

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 13 7	2628.37	-26.99	69.42	51.97	98.91	16 56 55	2028.4	-25.48	61.08
90.00	8 49 45	4158.82	-1.29	169.68	47.49	61.71	9 59 4	3558.8	-5.06	163.04
100.00	17 44 8	2334.84	-28.11	47.61	51.76	100.62	18 23 3	1734.8	-26.35	39.25
100.00	10 1 25	3927.59	-.30	152.13	46.94	60.11	11 6 53	3327.6	-4.27	145.60
110.00	19 13 44	2054.53	-30.99	25.56	51.00	105.20	19 47 58	1454.5	-28.60	17.18
110.00	10 48 19	3780.66	2.21	139.42	45.37	55.88	11 51 19	3180.7	-2.28	133.22

DIFFERENTIAL CORRECTIONS

TDE	1.6494	TRA	2.7596	TC-20.5029	BAU	2.8750	
RDE	.2663	RRA	.2061	RC3 -.0641	FAU	.09113	
FDE	.0142	FRA	1.7688	FC3-7.5222	BSP	50961	
BDE	1.6707	BRA	2.7673	BC320.5030	FSP	1651	

MID-COURSE EXECUTION ACCURACY

SGT14523.2	SGR	607.5	SG3	507.0			
RRT	.4389	RRF	.4098	RTF	.9559		
SGB14535.9	R23	-.0114	R13	.9559			
SG114525.6	SG2	545.8	THA	1.05			

ORBIT DETERMINATION ACCURACY

ST	3319.3	SR	484.9	SS	485.9		
CRT	.9634	CRS	-.2581	CST	-.4960		
LSA	3360.7	MSA	439.3	SSA	40.7		
EL1	3352.0	EL2	128.7	ALF	8.02		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 834.012 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.270	GAL	-1.32	AZL	87.97	HCA	243.52	SMA	190.53	ECC	.22865	INC	2.0264
RP	206.73	LAP	-1.81	LOP	330.64	VP	24.236	GAP	-12.30	AZP	90.90	TAL	352.88	TAP	236.40	RCA	146.97	APO	234.10
RC	330.595	GL	21.17	GP	-5.24	ZAL	101.29	ZAP	29.93	ETS	169.63	ZAE	47.10	ETE	174.87	ZAC	82.62	ETC	256.21

V1 30.271 V2 26.490 CLP 29.51

PLANETOCENTRIC CONIC

C3 10.611 VHL 3.257 DLA 15.76 RAL 196.99 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 5.739 DPA -3.54 RAP 178.51 ECC 1.1746

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 33	2587.08	-26.52	66.49	53.24	100.31	17 13 40	1987.1	-24.83	58.23
90.00	8 44 32	4204.82	.19	172.25	48.94	61.68	9 54 37	3604.8	-3.59	165.62
100.00	18 0 36	2296.68	-27.60	44.89	53.00	101.96	18 38 53	1696.7	-25.67	36.62
100.00	9 57 10	3970.45	1.15	154.49	48.40	60.13	11 3 20	3370.5	-2.83	147.96
110.00	19 28 12	2022.62	-30.40	23.27	52.19	106.44	20 1 54	1422.6	-27.85	15.00
110.00	10 46 4	3817.28	3.61	141.34	46.87	55.98	11 49 41	3217.3	-.88	135.13

DIFFERENTIAL CORRECTIONS

TDE	1.5147	TRA	2.9859	TC-20.4318	BAU	2.8984	
RDE	.2680	RRA	.2056	RC3 -.0294	FAU	.08601	
FDE	-.0516	FRA	1.7729	FC3-7.0172	BSP	51383	
BDE	1.5382	BRA	2.9930	BC320.4318	FSP	1577	

MID-COURSE EXECUTION ACCURACY

SGT14630.9	SGR	603.2	SG3	484.2			
RRT	.4036	RRF	.3735	RTF	.9549		
SGB14643.3	R23	-.0136	R13	.9549			
SG114632.9	SG2	551.8	THA	.95			

ORBIT DETERMINATION ACCURACY

ST	3152.4	SR	484.7	SS	488.8		
CRT	.9429	CRS	-.1400	CST	-.4519		
LSA	3193.0	MSA	463.1	SSA	40.5		
EL1	3185.4	EL2	159.8	ALF	8.27		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 838.391 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.279	GAL	-1.51	AZL	88.00	HCA	244.79	SMA	190.69	ECC	.22961	INC	1.9954
RP	206.70	LAP	-1.81	LOP	331.91	VP	24.252	GAP	-12.38	AZP	90.85	TAL	351.90	TAP	236.68	RCA	146.90	APO	234.47
RC	331.403	GL	20.68	GP	-5.12	ZAL	103.16	ZAP	29.46	ETS	169.65	ZAE	46.32	ETE	174.86	ZAC	82.91	ETC	256.17

PLANETOCENTRIC CONIC

C3	10.759	VHL	3.280	DLA	14.57	RAL	198.52	RAD	6567.4	VEL	11.496	PTH	2.00	VHP	5.813	DPA	-3.76	RAP	179.29

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 35	2547.34	-26.01	63.69	54.55	101.62	17 30 3	1947.3	-24.14	55.52
90.00	8 39 43	4250.18	1.66	174.78	50.45	61.73	9 50 33	3650.2	-2.13	168.15
100.00	18 16 45	2259.80	-27.05	42.29	54.29	103.23	18 54 25	1659.8	-24.96	34.11
100.00	9 53 15	4012.96	2.59	156.82	49.93	60.21	11 0 8	3413.0	-1.39	150.30
110.00	19 42 29	1991.57	-29.78	21.06	53.44	107.61	20 15 40	1391.6	-27.09	12.91
110.00	10 44 1	3853.95	5.00	143.26	48.43	56.14	11 48 15	3253.9	.52	137.04

DIFFERENTIAL CORRECTIONS

TDE	1.3785	TRA	3.2200	TC-20.3129	BAU	2.9216	
RDE	.2705	RRA	.2049	RC3 .0030	FAU	.08106	
FDE	-.1122	FRA	1.7760	FC3-6.5226	BSP	51827	
BDE	1.4048	BRA	3.2266	BC320.3129	FSP	1510	

MID-COURSE EXECUTION ACCURACY

SGT14735.7	SGR	600.1	SG3	462.2			
RRT	.3688	RRF	.3378	RTF	.9536		
SGB14747.9	R23	-.0155	R13	.9536			
SG114737.3	SG2	557.7	THA	.86			

ORBIT DETERMINATION ACCURACY

ST	2999.7	SR	485.4	SS	497.1		
CRT	.9143	CRS	-.0293	CST	-.4231		
LSA	3039.6	MSA	489.7	SSA	40.2		
EL1	3032.5	EL2	194.4	ALF	8.45		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 842.766 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.287	GAL	-1.70	AZL	88.03	HCA	246.05	SMA	190.84	ECC	.23062	INC	1.9650
RP	206.68	LAP	-1.80	LOP	333.17	VP	24.266	GAP	-12.47	AZP	90.80	TAL	350.90	TAP	236.96	RCA	146.83	APO	234.85
RC	332.208	GL	20.19	GP	-5.00	ZAL	105.03	ZAP	29.00	ETS	169.66	ZAE	45.56	ETE	174.85	ZAC	83.20	ETC	256.13

PLANETOCENTRIC CONIC

C3	10.933	VHL	3.306	DLA	13.38	RAL	200.05	RAD	6567.4	VEL	11.503	PTH	2.00	VHP	5.888	DPA	-4.00	RAP	180.08

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 15	2509.04	-25.45	61.03	55.90	102.85	17 46 4	1909.0	-23.43	52.94
90.00	8 35 16	4295.04	3.10	177.28	52.03	61.84	9 46 51	3695.0	-.69	170.65
100.00	18 32 36	2224.15	-26.47	39.80	55.62	104.42	19 9 40	1624.1	-24.23	31.71
100.00	9 49 37	4055.17	4.02	159.14	51.52	60.35	10 57 12	3455.2	.04	152.61
110.00	19 56 34	1961.40	-29.14	18.94	54.73	108.71	20 29 15	1361.4	-26.31	10.91
110.00	10 42 8	3890.68	6.39	145.20	50.05	56.35	11 46 59	3290.7	1.93	138.96

DIFFERENTIAL CORRECTIONS

TDE	1.2406	TRA	3.4617	TC-20.1525	BAU	2.9455	
RDE	.2738	RRA	.2038	RC3 .0330	FAU	.07627	
FDE	-.1679	FRA	1.7748	FC3-6.0394	BSP	52264	
BDE	1.2705	BRA	3.4677	BC320.1525	FSP	1440	

MID-COURSE EXECUTION ACCURACY

SGT14840.5	SGR	597.7	SG3	440.8			
RRT	.3345	RRF	.3024	RTF	.9521		
SGB14852.6	R23	-.0175	R13	.9521			
SG114841.9	SG2	563.3	THA	.77			

ORBIT DETERMINATION ACCURACY

ST	2864.2	SR	486.8	SS	508.3		
CRT	.8759	CRS	.0717	CST	-.4112		
LSA	2903.3	MSA	517.9	SSA	39.6		
EL1	2895.9	EL2	232.3	ALF	8.52		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 847.137 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.296	GAL	-1.90	AZL	88.06	HCA	247.32	SMA	191.00	ECC	.23168	INC	1.9352
RP	206.67	LAP	-1.79	LOP	334.44	VP	24.279	GAP	-12.56	AZP	90.75	TAL	349.90	TAP	237.22	RCA	146.75	APO	235.25
RC	333.009	GL	19.68	GP	-4.89	ZAL	106.91	ZAP	28.54	ETS	169.68	ZAE	44.80	ETE	174.84	ZAC	83.49	ETC	256.09

PLANETOCENTRIC CONIC

C3	11.134	VHL	3.337	DLA	12.19	RAL	201.58	RAD	6567.4	VEL	11.512	PTH	2.01	VHP	5.964	DPA	-4.25	RAP	180.88

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 34	2472.14	-24.87	58.48	57.29	103.99	18 1 46	1872.1	-22.70	50.48
90.00	8 31 9	4339.46	4.53	179.77	53.67	62.02	9 43 28	3739.5	.75	173.13
100.00	18 48 9	2189.70	-25.86	37.42	57.00	105.53	19 24 38	1589.7	-23.48	29.43
100.00	9 46 15	4097.13	5.43	161.46	53.17	60.56	10 54 32	3497.1	1.47	154.92
110.00	20 10 28	1932.12	-28.49	16.92	56.06	109.75	20 42 40	1332.1	-25.53	8.99
110.00	10 40 26	3927.47	7.78	147.15	51.73	56.61	11 45 53	3327.5	3.33	140.88

DIFFERENTIAL CORRECTIONS

TDE	1.1023	TRA	3.7123	TC-19.9420	BAU	2.9685	
RDE	.2779	RRA	.2023	RC3 .0613	FAU	.07145	
FDE	-.2176	FRA	1.7707	FC3-5.5552	BSP	52713	
BDE	1.1368	BRA	3.7178	BC319.9421	FSP	1376	

MID-COURSE EXECUTION ACCURACY

SGT14940.9	SGR	596.3	SG3	419.4			
RRT	.3003	RRF	.2679	RTF	.9503		
SGB14952.7	R23	-.0188	R13	.9503			
SG114941.9	SG2	568.8	THA	.69			

ORBIT DETERMINATION ACCURACY

ST	2751.2	SR	488.9	SS	521.1		
CRT	.8261	CRS	.1596	CST	-.4180		
LSA	2789.3	MSA	546.3	SSA	39.0		
EL1	2781.0	EL2	272.6	ALF	8.43		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 851.502 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.305	GAL	-2.09	AZL	88.09	HCA	248.59	SMA	191.16	ECC	.23280	INC	1.9059
RP	206.67	LAP	-1.77	LOP	335.71	VP	24.291	GAP	-12.65	AZP	90.70	TAL	348.88	TAP	237.47	RCA	146.66	APO	235.66
RC	333.807	GL	19.17	GP	-4.79	ZAL	108.80	ZAP	28.10	ETS	169.69	ZAE	44.06	ETE	174.83	ZAC	83.78	ETC	256.05

PLANETOCENTRIC CONIC

C3	11.365	VHL	3.371	DLA	11.00	RAL	203.10	RAD	6567.4	VEL	11.522	PTH	2.01	VHP	6.041	DPA	-4.50	RAP	181.69

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 34	2436.58	-24.26	56.05	58.72	105.06	18 17 10	1836.6	-21.96	48.14
90.00	8 27 18	4383.50	5.93	182.25	55.36	62.26	9 40 22	3783.5	2.17	175.59
100.00	19 3 25	2156.44	-25.24	35.14	58.42	106.57	19 39 22	1556.4	-22.73	27.25
100.00	9 43 8	4138.86	6.82	163.78	54.88	60.83	10 52 7	3538.9	2.88	157.21
110.00	20 24 10	1903.77	-27.82	14.98	57.44	110.72	20 55 54	1303.8	-24.75	7.16
110.00	10 38 52	3964.30	9.15	149.11	53.46	56.92	11 44 57	3364.3	4.73	142.81

DIFFERENTIAL CORRECTIONS

TDE	.9618	TRA	3.9687	TC-19.6958	BAU	2.9926	
RDE	.2827	RRA	.2003	RC3 .0869	FAU	.06686	
FDE	-.2635	FRA	1.7608	FC3-5.0930	BSP	53133	
BDE	1.0025	BRA	3.9738	BC319.6960	FSP	1313	

MID-COURSE EXECUTION ACCURACY

SGT15041.3	SGR	595.5	SG3	398.6			
RRT	.2669	RRF	.2333	RTF	.9484		
SGB15053.1	R23	-.0210	R13	.9484			
SG115042.1	SG2	573.8	THA	.61			

ORBIT DETERMINATION ACCURACY

ST	2660.9	SR	491.6	SS	534.2		
CRT	.7638	CRS	.2389	CST	-.4385		
LSA	2697.5	MSA	574.2	SSA	38.2		
EL1	2687.6	EL2	314.1	ALF	8.14		

LAUNCH DATE DEC 19 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 855.863 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.313	GAL	-2.30	AZL	88.12	HCA	249.86	SMA	191.31	ECC	.23397	INC	1.8772
RP	206.68	LAP	-1.76	LOP	336.98	VP	24.302	GAP	-12.74	AZP	90.65	TAL	347.84	TAP	237.71	RCA	146.55	APO	236.08
RC	334.601	GL	18.65	GP	-4.69	ZAL	110.68	ZAP	27.67	ETS	169.70	ZAE	43.32	ETE	174.82	ZAC	84.06	ETC	256.02

V1	30.271	V2	26.496	CLP	27.31														

PLANETOCENTRIC CONIC

C3	11.626	VHL	3.410	DLA	9.82	RAL	204.62	RAD	6567.4	VEL	11.533	PTH	2.01	VHP	6.119	DPA	-4.76	RAP	182.50
ECC	1.1913																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 14	2402.33	-23.64	53.74	60.19	106.06	18 32 17	1802.3	-21.21	45.91
90.00	8 23 43	4427.20	7.30	184.72	57.12	62.57	9 37 30	3827.2	3.57	178.03
100.00	19 18 25	2124.37	-24.60	32.98	59.88	107.54	19 53 50	1524.4	-21.97	25.17
100.00	9 40 13	4180.39	8.19	166.10	56.64	61.15	10 49 53	3580.4	4.28	159.50
110.00	20 37 40	1876.37	-27.15	13.14	58.87	111.62	21 8 57	1276.4	-23.96	5.42
110.00	10 37 27	4001.16	10.51	151.10	55.24	57.28	11 44 8	3401.2	6.13	144.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8207	TRA	4.2332	TC-19.4075	BAU	3.0166	SGT15138.7	SGR	595.2	SG3	378.0	ST	2598.0	SR	494.9	SS	547.1
RDE	.2883	RRA	.1979	RC3 .1106	FAU	.06226	RRT	.2338	RRF	.1994	RTF	.9460	CRT	.6894	CRS	.3084	CST	-.4713
FDE	-.3050	FRA	1.7473	FC3-4.6363	BSP	53554	SGB15150.4	R23	-.0228	R13	.9460	LSA	2633.0	MSA	599.9	SSA	37.3
BDE	.8698	BRA	4.2379	BC319.4078	FSP	1250	SG115139.3	SG2	578.7	THA	.53	EL1	2620.8	EL2	355.4	ALF	7.62

LAUNCH DATE DEC 19 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 860.218 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.322	GAL	-2.50	AZL	88.15	HCA	251.13	SMA	191.47	ECC	.23521	INC	1.8489
RP	206.69	LAP	-1.75	LOP	338.25	VP	24.312	GAP	-12.83	AZP	90.60	TAL	346.80	TAP	237.93	RCA	146.44	APO	236.51
RC	335.390	GL	18.13	GP	-4.59	ZAL	112.55	ZAP	27.25	ETS	169.70	ZAE	42.60	ETE	174.80	ZAC	84.34	ETC	255.98

V1	30.271	V2	26.494	CLP	26.89														

PLANETOCENTRIC CONIC

C3	11.919	VHL	3.452	DLA	8.65	RAL	206.12	RAD	6567.5	VEL	11.546	PTH	2.02	VHP	6.198	DPA	-5.04	RAP	183.32
ECC	1.1962																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 37	2369.38	-23.00	51.53	61.71	106.99	18 47 6	1769.4	-20.46	43.78
90.00	8 20 21	4470.58	8.66	187.19	58.93	62.93	9 34 52	3870.6	4.96	180.46
100.00	19 33 9	2093.48	-23.95	30.91	61.38	108.44	20 8 3	1493.5	-21.21	23.19
100.00	9 37 30	4221.71	9.54	168.42	58.46	61.54	10 47 52	3621.7	5.66	161.78
110.00	20 50 59	1849.94	-26.47	11.38	60.34	112.46	21 21 49	1249.9	-23.19	3.75
110.00	10 36 10	4038.01	11.86	153.10	57.07	57.70	11 43 28	3438.0	7.51	146.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6799	TRA	4.5064	TC-19.0850	BAU	3.0413	SGT15236.7	SGR	595.6	SG3	358.2	ST	2565.1	SR	498.8	SS	558.3
RDE	.2947	RRA	.1952	RC3 .1315	FAU	.05791	RRT	.2021	RRF	.1665	RTF	.9435	CRT	.6048	CRS	.3678	CST	-.5136
FDE	-.3409	FRA	1.7303	FC3-4.2061	BSP	53969	SGB15248.3	R23	-.0249	R13	.9435	LSA	2598.7	MSA	621.2	SSA	36.4
BDE	.7410	BRA	4.5107	BC319.0854	FSP	1187	SG115237.1	SG2	583.3	THA	.45	EL1	2583.2	EL2	394.5	ALF	6.87

LAUNCH DATE DEC 19 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 864.565 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.330	GAL	-2.71	AZL	88.18	HCA	252.40	SMA	191.63	ECC	.23650	INC	1.8210
RP	206.72	LAP	-1.74	LOP	339.52	VP	24.320	GAP	-12.93	AZP	90.55	TAL	345.75	TAP	238.15	RCA	146.31	APO	236.96
RC	336.176	GL	17.60	GP	-4.50	ZAL	114.42	ZAP	26.84	ETS	169.71	ZAE	41.88	ETE	174.79	ZAC	84.62	ETC	255.95

V1	30.271	V2	26.491	CLP	26.49														

PLANETOCENTRIC CONIC

C3	12.246	VHL	3.499	DLA	7.48	RAL	207.62	RAD	6567.5	VEL	11.560	PTH	2.02	VHP	6.278	DPA	-5.31	RAP	184.15
ECC	1.2015																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 22 42	2337.72	-22.35	49.44	63.26	107.85	19 1 39	1737.7	-19.70	41.76
90.00	8 17 13	4513.66	9.98	189.66	60.79	63.36	9 32 26	3913.7	6.33	182.89
100.00	19 47 38	2063.78	-23.29	28.95	62.91	109.28	20 22 1	1463.8	-20.45	21.30
100.00	9 34 58	4262.84	10.86	170.76	60.33	61.98	10 46 0	3662.8	7.03	164.07
110.00	21 4 5	1824.53	-25.80	9.71	61.84	113.25	21 34 29	1224.5	-22.43	2.18
110.00	10 35 0	4074.85	13.19	155.12	58.96	58.18	11 42 55	3474.8	8.89	148.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5382	TRA	4.7857	TC-18.7289	BAU	3.0663	SGT15331.5	SGR	596.4	SG3	338.6	ST	2559.7	SR	503.2	SS	567.9
RDE	.3018	RRA	.1920	RC3 .1505	FAU	.05357	RRT	.1706	RRF	.1341	RTF	.9404	CRT	.5121	CRS	.4207	CST	-.5597
FDE	-.3731	FRA	1.7087	FC3-3.7870	BSP	54367	SGB15343.1	R23	-.0270	R13	.9404	LSA	2592.3	MSA	637.8	SSA	35.4
BDE	.6170	BRA	4.7896	BC318.7295	FSP	1127	SG115331.8	SG2	587.7	THA	.38	EL1	2573.0	EL2	429.9	ALF	5.91

LAUNCH DATE DEC 19 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 868.906 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.339	GAL	-2.93	AZL	88.21	HCA	253.67	SMA	191.79	ECC	.23786	INC	1.7935
RP	206.75	LAP	-1.72	LOP	340.79	VP	24.328	GAP	-13.03	AZP	90.50	TAL	344.68	TAP	238.35	RCA	146.17	APO	237.41
RC	336.957	GL	17.07	GP	-4.41	ZAL	116.27	ZAP	26.44	ETS	169.71	ZAE	41.18	ETE	174.77	ZAC	84.90	ETC	255.93

V1	30.271	V2	26.488	CLP	26.10														

PLANETOCENTRIC CONIC

C3	12.608	VHL	3.551	DLA	6.33	RAL	209.10	RAD	6567.5	VEL	11.576	PTH	2.02	VHP	6.360	DPA	-5.60	RAP	184.98
ECC	1.2075																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 29	2307.33	-21.71	47.44	64.85	108.64	19 15 57	1707.3	-18.96	39.85
90.00	8 14 15	4556.44	11.28	192.14	62.71	63.85	9 30 12	3956.4	7.67	185.32
100.00	20 1 50	2035.27	-22.64	27.08	64.49	110.06	20 35 46	1435.3	-19.70	19.52
100.00	9 32 35	4303.74	12.16	173.10	62.25	62.48	10 44 19	3703.7	8.38	166.35
110.00	21 16 58	1800.14	-25.13	8.13	63.39	113.97	21 46 58	1200.1	-21.68	.68
110.00	10 33 57	4111.63	14.50	157.17	60.89	58.70	11 42 28	3511.6	10.25	150.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3966	TRA	5.0738	TC-18.3419	BAU	3.0917	SGT15425.0	SGR	597.7	SG3	319.5	ST	2582.5	SR	508.0	SS	575.1
RDE	.3096	RRA	.1884	RC3 .1671	FAU	.04936	RRT	.1402	RRF	.1027	RTF	.9369	CRT	.4155	CRS	.4666	CST	-.6070
FDE	-.4006	FRA	1.6832	FC3-3.3891	BSP	54757	SGB15436.6	R23	-.0292	R13	.9369	LSA	2614.7	MSA	648.5	SSA	34.3
BDE	.5032	BRA	5.0773	BC318.3427	FSP	1066	SG115425.2	SG2	591.8	THA	.31	EL1	2591.4	EL2	460.5	ALF	4.83

LAUNCH DATE DEC 19 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 873.239 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.348 GAL -3.14 AZL 88.23 HCA 254.93 SMA 191.95 ECC .23929 INC 1.7665 V1 30.271
RP 206.79 LAP -1.71 LOP 342.06 VP 24.335 GAP -13.13 AZP 90.46 TAL 343.60 TAP 238.54 RCA 146.02 APO 237.89 V2 26.483
RC 337.733 GL 16.54 GP -4.33 ZAL 118.10 ZAP 26.05 ETS 169.71 ZAE 40.48 ETE 174.75 ZAC 85.17 ETC 255.90 CLP 25.72

PLANETOCENTRIC CONIC

C3 13.007 VHL 3.606 DLA 5.20 RAL 210.57 RAD 6567.5 VEL 11.593 PTH 2.03 VHP 6.443 DPA -5.89 RAP 185.82 ECC 1.2141

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 52 0	2278.22	-21.06	45.55	66.47	109.38	19 29 58	1678.2	-18.23	38.03
90.00	8 11 29	4598.92	12.54	194.62	64.67	64.40	9 28 7	3998.9	8.99	187.74
100.00	20 15 47	2007.96	-21.99	25.31	66.11	110.77	20 49 15	1408.0	-18.97	17.82
100.00	9 30 22	4344.42	13.43	175.46	64.22	63.04	10 42 47	3744.4	9.71	168.64
110.00	21 29 39	1776.80	-24.48	6.63	64.97	114.64	21 59 16	1176.8	-20.95	359.26
110.00	10 33 0	4148.33	15.79	159.23	62.87	59.28	11 42 8	3548.3	11.60	152.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2561 TRA 5.3707 TC-17.9254 BAU 3.1171 SGT15515.8 SGR 599.3 SG3 300.9 ST 2631.0 SR 513.1 SS 580.0
RDE .3182 RRA .1843 RC3 .1817 FAU .04521 RRT .1108 RRF .0721 RTF .9327 CRT .3191 CRS .5075 CST -.6513
FDE -.4245 FRA 1.6538 FC3-3.0093 BSP 55156 SGB15527.4 R23 -.0316 R13 .9327 LSA 2663.2 MSA 654.1 SSA 33.3
BDE .4084 BRA 5.3738 BC317.9263 FSP 1009 SG115515.9 SG2 595.6 THA .25 EL1 2636.3 EL2 485.3 ALF 3.69

LAUNCH DATE DEC 19 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 877.564 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.357 GAL -3.37 AZL 88.26 HCA 256.20 SMA 192.12 ECC .24078 INC 1.7397 V1 30.271
RP 206.84 LAP -1.69 LOP 343.33 VP 24.340 GAP -13.23 AZP 90.42 TAL 342.51 TAP 238.71 RCA 145.86 APO 238.37 V2 26.477
RC 338.506 GL 16.00 GP -4.24 ZAL 119.92 ZAP 25.67 ETS 169.71 ZAE 39.79 ETE 174.72 ZAC 85.45 ETC 255.88 CLP 25.34

PLANETOCENTRIC CONIC

C3 13.444 VHL 3.667 DLA 4.08 RAL 212.03 RAD 6567.5 VEL 11.612 PTH 2.03 VHP 6.527 DPA -6.19 RAP 186.67 ECC 1.2213

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 14	2250.38	-20.42	43.76	68.13	110.05	19 43 44	1650.4	-17.51	36.30
90.00	8 8 52	4641.09	13.77	197.11	66.68	65.01	9 26 13	4041.1	10.28	190.16
100.00	20 29 29	1981.85	-21.35	23.64	67.75	111.43	21 2 31	1381.9	-18.25	16.21
100.00	9 28 17	4384.85	14.66	177.82	66.23	63.66	10 41 22	3784.9	11.01	170.94
110.00	21 42 7	1754.54	-23.84	5.22	66.59	115.26	22 11 21	1154.5	-20.24	357.92
110.00	10 32 9	4184.93	17.05	161.32	64.90	59.91	11 41 54	3584.9	12.93	154.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1161 TRA 5.6751 TC-17.4892 BAU 3.1437 SGT15606.6 SGR 601.2 SG3 282.7 ST 2700.9 SR 518.6 SS 581.7
RDE .3274 RRA .1799 RC3 .1942 FAU .04118 RRT .0823 RRF .0425 RTF .9279 CRT .2261 CRS .5433 CST -.6919
FDE -.4438 FRA 1.6203 FC3-2.6519 BSP 55517 SGB15618.2 R23 -.0341 R13 .9279 LSA 2733.5 MSA 654.9 SSA 32.2
BDE .3474 BRA 5.6780 BC317.4903 FSP 950 SG115606.7 SG2 599.2 THA .18 EL1 2703.5 EL2 504.7 ALF 2.58

LAUNCH DATE DEC 19 1964 FLIGHT TIME 408.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 881.879 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.365 GAL -3.59 AZL 88.29 HCA 257.47 SMA 192.28 ECC .24234 INC 1.7132 V1 30.271
RP 206.90 LAP -1.67 LOP 344.60 VP 24.345 GAP -13.34 AZP 90.37 TAL 341.41 TAP 238.88 RCA 145.68 APO 238.87 V2 26.470
RC 339.274 GL 15.47 GP -4.17 ZAL 121.71 ZAP 25.30 ETS 169.71 ZAE 39.11 ETE 174.70 ZAC 85.72 ETC 255.86 CLP 24.98

PLANETOCENTRIC CONIC

C3 13.923 VHL 3.731 DLA 2.98 RAL 213.47 RAD 6567.5 VEL 11.632 PTH 2.04 VHP 6.612 DPA -6.50 RAP 187.52 ECC 1.2291

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 11	2223.81	-19.79	42.07	69.82	110.67	19 57 15	1623.8	-16.80	34.67
90.00	8 6 24	4682.95	14.96	199.61	68.73	65.67	9 24 26	4082.9	11.55	192.59
100.00	20 42 55	1956.95	-20.73	22.05	69.44	112.04	21 15 32	1357.0	-17.55	14.69
100.00	9 26 21	4425.04	15.86	180.20	68.29	64.33	10 40 6	3825.0	12.28	173.25
110.00	21 54 21	1733.37	-23.22	3.89	68.24	115.82	22 23 15	1133.4	-19.55	356.66
110.00	10 31 24	4221.38	18.28	163.43	66.97	60.60	11 41 45	3621.4	14.23	156.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0245 TRA 5.9864 TC-17.0360 BAU 3.1712 SGT15695.8 SGR 603.4 SG3 265.0 ST 2787.9 SR 524.3 SS 581.0
RDE .3374 RRA .1750 RC3 .2046 FAU .03725 RRT .0545 RRF .0135 RTF .9223 CRT .1380 CRS .5760 CST -.7273
FDE -.4599 FRA 1.5826 FC3-2.3163 BSP 55866 SGB15707.4 R23 -.0369 R13 .9223 LSA 2821.1 MSA 652.2 SSA 31.2
BDE .3382 BRA 5.9889 BC317.0372 FSP 893 SG115695.8 SG2 602.5 THA .12 EL1 2788.9 EL2 519.1 ALF 1.54

LAUNCH DATE DEC 19 1964 FLIGHT TIME 410.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 886.184 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.374 GAL -3.83 AZL 88.31 HCA 258.73 SMA 192.44 ECC .24398 INC 1.6870 V1 30.271
RP 206.97 LAP -1.65 LOP 345.86 VP 24.348 GAP -13.45 AZP 90.33 TAL 340.30 TAP 239.03 RCA 145.49 APO 239.39 V2 26.462
RC 340.039 GL 14.95 GP -4.09 ZAL 123.48 ZAP 24.94 ETS 169.71 ZAE 38.44 ETE 174.67 ZAC 86.00 ETC 255.84 CLP 24.62

PLANETOCENTRIC CONIC

C3 14.444 VHL 3.801 DLA 1.90 RAL 214.89 RAD 6567.6 VEL 11.655 PTH 2.05 VHP 6.699 DPA -6.81 RAP 188.39 ECC 1.2377

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 52	2198.50	-19.17	40.47	71.55	111.24	20 10 31	1598.5	-16.12	33.12
90.00	8 4 4	4724.48	16.10	202.12	70.83	66.39	9 22 48	4124.5	12.78	195.02
100.00	20 56 6	1933.26	-20.11	20.56	71.15	112.59	21 28 19	1333.3	-16.88	13.26
100.00	9 24 31	4464.94	17.03	182.60	70.40	65.05	10 38 56	3864.9	13.52	175.56
110.00	22 6 23	1713.29	-22.62	2.64	69.92	116.34	22 34 56	1113.3	-18.89	355.48
110.00	10 30 44	4257.69	19.48	165.56	69.09	61.34	11 41 42	3657.7	15.51	158.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1624 TRA 6.3077 TC-16.5631 BAU 3.1987 SGT15782.5 SGR 605.8 SG3 247.8 ST 2889.6 SR 530.2 SS 577.4
RDE .3480 RRA .1697 RC3 .2132 FAU .03340 RRT .0279 RRF -.0145 RTF .9157 CRT .0580 CRS .6053 CST -.7569
FDE -.4722 FRA 1.5410 FC3-2.0019 BSP 56215 SGB15794.1 R23 -.0400 R13 .9157 LSA 2923.1 MSA 647.2 SSA 30.2
BDE .3840 BRA 6.3100 BC316.5645 FSP 836 SG115782.5 SG2 605.5 THA .06 EL1 2889.8 EL2 529.3 ALF .63

LAUNCH DATE DEC 19 1964 FLIGHT TIME 412.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 890.478 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.383 GAL -4.06 AZL 88.34 HCA 260.00 SMA 192.60 ECC .24569 INC 1.6611 V1 30.271
RP 207.04 LAP -1.64 LOP 347.13 VP 24.351 GAP -13.57 AZP 90.29 TAL 339.18 TAP 239.18 RCA 145.28 APO 239.92 V2 26.453
RC 340.800 GL 14.43 GP -4.02 ZAL 125.22 ZAP 24.59 ETS 169.70 ZAE 37.78 ETE 174.64 ZAC 86.27 ETC 255.83 CLP 24.27

PLANETOCENTRIC CONIC

C3 15.011 VHL 3.874 DLA .85 RAL 216.30 RAD 6567.6 VEL 11.679 PTH 2.05 VHP 6.787 DPA -7.12 RAP 189.25 ECC 1.2470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 17	2174.44	-18.57	38.96	73.30	111.76	20 23 31	1574.4	-15.46	31.67
90.00	8 1 52	4765.67	17.21	204.64	72.97	67.16	9 21 18	4165.7	13.97	197.46
100.00	21 9 1	1910.78	-19.52	19.15	72.89	113.10	21 40 52	1310.8	-16.22	11.91
100.00	9 22 49	4504.56	18.15	185.01	72.54	65.83	10 37 53	3904.6	14.73	177.88
110.00	22 18 10	1694.33	-22.04	1.47	71.63	116.82	22 46 25	1094.3	-18.26	354.37
110.00	10 30 9	4293.78	20.65	167.71	71.25	62.13	11 41 43	3693.8	16.76	160.75

DIFFERENTIAL CORRECTIONS
TDE -.3001 TRA 6.6355 TC-16.0830 BAU 3.2278
RDE .3592 RRA .1639 RC3 .2200 FAU .02964
FDE -.4814 FRA 1.4954 FC3-1.7096 BSP 56532
BDE .4680 BRA 6.6375 BC316.0845 FSP 781

MID-COURSE EXECUTION ACCURACY
SGT15868.7 SGR 608.3 SG3 231.1
RRT .0019 RRF -.0417 RTF .9078
SGB15880.4 R23 -.0435 R13 .9078
SG115868.7 SG2 608.3 THA .00

ORBIT DETERMINATION ACCURACY
ST 3000.8 SR 536.2 SS 571.1
CRT -.0146 CRS .6321 CST -.7815
LSA 3034.3 MSA 640.7 SSA 29.2
EL1 3000.8 EL2 536.1 ALF 179.85

LAUNCH DATE DEC 19 1964 FLIGHT TIME 414.00 ARRIVAL DATE FEB 6 1966

HELIOCENTRIC CONIC DISTANCE 894.761 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.391 GAL -4.30 AZL 88.36 HCA 261.26 SMA 192.77 ECC .24748 INC 1.6354 V1 30.271
RP 207.13 LAP -1.62 LOP 348.39 VP 24.352 GAP -13.69 AZP 90.25 TAL 338.04 TAP 239.31 RCA 145.06 APO 240.47 V2 26.444
RC 341.558 GL 13.91 GP -3.95 ZAL 126.94 ZAP 24.24 ETS 169.69 ZAE 37.12 ETE 174.61 ZAC 86.54 ETC 255.82 CLP 23.94

PLANETOCENTRIC CONIC

C3 15.625 VHL 3.953 DLA -.18 RAL 217.69 RAD 6567.6 VEL 11.705 PTH 2.06 VHP 6.877 DPA -7.45 RAP 190.13 ECC 1.2571

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 0 26	2151.63	-17.99	37.53	75.08	112.24	20 36 17	1551.6	-14.82	30.29
90.00	7 59 48	4806.51	18.27	207.16	75.15	67.98	9 19 54	4206.5	15.12	199.90
100.00	21 21 41	1889.51	-18.94	17.83	74.65	113.56	21 53 11	1289.5	-15.60	10.64
100.00	9 21 13	4543.87	19.22	187.43	74.73	66.66	10 36 57	3943.9	15.90	180.21
110.00	22 29 45	1676.47	-21.49	.38	73.37	117.25	22 57 41	1076.5	-17.66	353.33
110.00	10 29 39	4329.66	21.77	169.89	73.45	62.97	11 41 49	3729.7	17.97	162.82

DIFFERENTIAL CORRECTIONS
TDE -.4361 TRA 6.9732 TC-15.5896 BAU 3.2568
RDE .3711 RRA .1577 RC3 .2253 FAU .02593
FDE -.4871 FRA 1.4456 FC3-1.4368 BSP 56858
BDE .5726 BRA 6.9750 BC315.5912 FSP 727

MID-COURSE EXECUTION ACCURACY
SGT15951.8 SGR 611.0 SG3 214.8
RRT -.0230 RRF -.0678 RTF .8984
SGB15963.5 R23 .0471 R13 -.8984
SG115951.8 SG2 610.8 THA 179.95

ORBIT DETERMINATION ACCURACY
ST 3119.5 SR 542.3 SS 562.0
CRT -.0792 CRS .6566 CST -.8015
LSA 3152.7 MSA 633.4 SSA 28.3
EL1 3119.8 EL2 540.5 ALF 179.19

LAUNCH DATE DEC 19 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 8 1966

HELIOCENTRIC CONIC DISTANCE 899.031 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.400 GAL -4.55 AZL 88.39 HCA 262.53 SMA 192.93 ECC .24935 INC 1.6099 V1 30.271
RP 207.22 LAP -1.60 LOP 349.66 VP 24.352 GAP -13.81 AZP 90.21 TAL 336.90 TAP 239.42 RCA 144.82 APO 241.04 V2 26.433
RC 342.314 GL 13.40 GP -3.89 ZAL 128.62 ZAP 23.91 ETS 169.69 ZAE 36.48 ETE 174.58 ZAC 86.81 ETC 255.82 CLP 23.61

PLANETOCENTRIC CONIC

C3 16.288 VHL 4.036 DLA -1.18 RAL 219.05 RAD 6567.7 VEL 11.733 PTH 2.07 VHP 6.967 DPA -7.77 RAP 191.01 ECC 1.2681

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 13 18	2130.05	-17.43	36.20	76.88	112.67	20 48 48	1530.0	-14.21	29.00
90.00	7 57 50	4846.99	19.29	209.70	77.36	68.86	9 18 37	4247.0	16.24	202.35
100.00	21 34 6	1869.42	-18.39	16.60	76.45	113.99	22 5 15	1269.4	-15.00	9.45
100.00	9 19 43	4582.85	20.26	189.86	76.95	67.54	10 36 6	3982.8	17.04	182.55
110.00	22 41 5	1659.73	-20.96	359.36	75.13	117.64	23 8 45	1059.7	-17.10	352.37
110.00	10 29 13	4365.31	22.86	172.09	75.69	63.86	11 41 59	3765.3	19.16	164.90

DIFFERENTIAL CORRECTIONS
TDE -.5705 TRA 7.3178 TC-15.0956 BAU 3.2876
RDE .3835 RRA .1511 RC3 .2290 FAU .02234
FDE -.4904 FRA 1.3914 FC3-1.1873 BSP 57136
BDE .6874 BRA 7.3193 BC315.0974 FSP 673

MID-COURSE EXECUTION ACCURACY
SGT16034.3 SGR 613.7 SG3 199.0
RRT -.0471 RRF -.0935 RTF .8872
SGB16046.0 R23 .0517 R13 -.8872
SG116034.3 SG2 613.1 THA 179.90

ORBIT DETERMINATION ACCURACY
ST 3241.4 SR 548.3 SS 550.7
CRT -.1364 CRS .6800 CST -.8168
LSA 3273.9 MSA 626.1 SSA 27.4
EL1 3242.3 EL2 543.0 ALF 178.64

LAUNCH DATE DEC 19 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 10 1966

HELIOCENTRIC CONIC DISTANCE 903.288 EARTH TO MARS

RL 147.18 LAL -.00 LOL 87.13 VL 33.409 GAL -4.80 AZL 88.42 HCA 263.79 SMA 193.09 ECC .25131 INC 1.5845 V1 30.271
RP 207.32 LAP -1.58 LOP 350.92 VP 24.352 GAP -13.94 AZP 90.17 TAL 335.74 TAP 239.53 RCA 144.57 APO 241.62 V2 26.421
RC 343.066 GL 12.90 GP -3.82 ZAL 130.28 ZAP 23.58 ETS 169.68 ZAE 35.84 ETE 174.54 ZAC 87.07 ETC 255.81 CLP 23.28

PLANETOCENTRIC CONIC

C3 17.005 VHL 4.124 DLA -2.15 RAL 220.40 RAD 6567.7 VEL 11.764 PTH 2.08 VHP 7.060 DPA -8.10 RAP 191.90 ECC 1.2799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 25 55	2109.68	-16.89	34.95	78.71	113.07	21 1 5	1509.7	-13.63	27.79
90.00	7 55 59	4887.09	20.25	212.25	79.61	69.77	9 17 26	4287.1	17.31	204.80
100.00	21 46 16	1850.52	-17.87	15.44	78.26	114.37	22 17 6	1250.5	-14.43	8.34
100.00	9 18 20	4621.49	21.24	192.31	79.21	68.46	10 35 21	4021.5	18.13	184.90
110.00	22 52 12	1644.08	-20.46	358.42	76.91	118.00	23 19 37	1044.1	-16.56	351.47
110.00	10 28 52	4400.69	23.90	174.30	77.96	64.80	11 42 13	3800.7	20.31	167.00

DIFFERENTIAL CORRECTIONS
TDE -.7032 TRA 7.6722 TC-14.5984 BAU 3.3192
RDE .3966 RRA .1441 RC3 .2314 FAU .01878
FDE -.4901 FRA 1.3335 FC3 -.9564 BSP 57393
BDE .8073 BRA 7.6735 BC314.6003 FSP 619

MID-COURSE EXECUTION ACCURACY
SGT16115.5 SGR 616.6 SG3 183.8
RRT -.0703 RRF -.1177 RTF .8735
SGB16127.3 R23 .0563 R13 -.8735
SG116115.5 SG2 615.1 THA 179.85

ORBIT DETERMINATION ACCURACY
ST 3365.5 SR 554.4 SS 536.6
CRT -.1866 CRS .7013 CST -.8289
LSA 3396.8 MSA 618.7 SSA 26.6
EL1 3367.1 EL2 544.4 ALF 178.19

LAUNCH DATE DEC 19 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 12 1966

HELIOCENTRIC CONIC DISTANCE 907.530 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.418	GAL	-5.06	AZL	88.44	HCA	265.05	SMA	193.26	ECC	.25335	INC	1.5593
RP	207.43	LAP	-1.55	LOP	352.18	VP	24.350	GAP	-14.07	AZP	90.13	TAL	334.58	TAP	239.63	RCA	144.30	APO	242.22
RC	343.815	GL	12.41	GP	-3.76	ZAL	131.90	ZAP	23.26	ETS	169.67	ZAE	35.21	ETE	174.50	ZAC	87.34	ETC	255.81

V1	30.271	V2	26.408	CLP	22.97														

PLANETOCENTRIC CONIC

C3	17.777	VHL	4.216	DLA	-3.10	RAL	221.73	RAD	6567.7	VEL	11.797	PTH	2.09	VHP	7.154	DPA	-8.44	RAP	192.80

ECC	1.2926																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 38 17	2090.51	-16.38	33.78	80.55	113.43	21 13 7	1490.5	-13.07	26.66
90.00	7 54 14	4926.81	21.16	214.80	81.89	70.74	9 16 21	4326.8	18.34	207.26
100.00	21 58 10	1832.78	-17.36	14.36	80.09	114.72	22 28 43	1232.8	-13.89	7.30
100.00	9 17 1	4659.77	22.18	194.77	81.50	69.43	10 34 41	4059.8	19.18	187.26
110.00	23 3 6	1629.53	-20.00	357.55	78.71	118.32	23 30 16	1029.5	-16.06	350.64
110.00	10 28 35	4435.79	24.90	176.54	80.28	65.79	11 42 31	3835.8	21.42	169.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8334	TRA	8.0347	TC	-14.1039	BAU	3.3523	SGT	16195.5	SGR	619.5	SG3	169.1	ST	3488.7	SR	560.3
RDE	.4102	RRA	.1366	RC3	.2325	FAU	.01533	RRT	-.0927	RRF	-.1409	RTF	.8569	CRT	-.2305	CRS	.7216
FDE	-.4871	FRA	1.2715	FC3	-.7464	BSP	57646	SGB	16207.3	R23	.0616	R13	-.8570	LSA	3518.6	MSA	611.6
BDE	.9289	BRA	8.0359	BC	314.1058	FSP	568	SG1	16195.6	SG2	616.8	THA	179.80	EL1	3491.1	EL2	544.8

SS	520.1	CST	-.8378	SSA	25.9
ALF	177.83				

LAUNCH DATE DEC 19 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 14 1966

HELIOCENTRIC CONIC DISTANCE 911.757 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.427	GAL	-5.32	AZL	88.47	HCA	266.31	SMA	193.43	ECC	.25549	INC	1.5342
RP	207.54	LAP	-1.53	LOP	353.44	VP	24.347	GAP	-14.21	AZP	90.10	TAL	333.40	TAP	239.71	RCA	144.01	APO	242.84
RC	344.561	GL	11.92	GP	-3.70	ZAL	133.49	ZAP	22.95	ETS	169.66	ZAE	34.59	ETE	174.46	ZAC	87.61	ETC	255.82

V1	30.271	V2	26.395	CLP	22.67														

PLANETOCENTRIC CONIC

C3	18.606	VHL	4.314	DLA	-4.02	RAL	223.04	RAD	6567.8	VEL	11.832	PTH	2.10	VHP	7.250	DPA	-8.78	RAP	193.70

ECC	1.3062																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 50 23	2072.52	-15.89	32.68	82.42	113.75	21 24 55	1472.5	-12.54	25.60
90.00	7 52 35	4966.13	22.02	217.36	84.21	71.74	9 15 21	4366.1	19.32	209.73
100.00	22 9 50	1816.19	-16.89	13.36	81.94	115.04	22 40 7	1216.2	-13.38	6.33
100.00	9 15 48	4697.69	23.07	197.24	83.82	70.44	10 34 6	4097.7	20.19	189.62
110.00	23 13 46	1616.07	-19.56	356.75	80.52	118.61	23 40 42	1016.1	-15.59	349.88
110.00	10 28 22	4470.58	25.85	178.80	82.62	66.82	11 42 52	3870.6	22.49	171.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.9622	TRA	8.4050	TC	-13.6107	BAU	3.3862	SGT	16271.6	SGR	622.4	SG3	154.8	ST	3609.8	SR	566.1
RDE	.4244	RRA	.1286	RC3	.2325	FAU	.01191	RRT	-.1144	RRF	-.1633	RTF	.8363	CRT	-.2692	CRS	.7416
FDE	-.4820	FRA	1.2046	FC3	-.5543	BSP	57863	SGB	16283.5	R23	.0679	R13	-.8363	LSA	3638.1	MSA	605.2
BDE	1.0517	BRA	8.4060	BC	313.6127	FSP	516	SG1	16271.7	SG2	618.3	THA	179.75	EL1	3613.1	EL2	544.7

SS	501.8	CST	-.8435	SSA	25.1
ALF	177.53				

LAUNCH DATE DEC 19 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 16 1966

HELIOCENTRIC CONIC DISTANCE 915.968 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.435	GAL	-5.59	AZL	88.49	HCA	267.57	SMA	193.59	ECC	.25771	INC	1.5092
RP	207.67	LAP	-1.51	LOP	354.70	VP	24.343	GAP	-14.35	AZP	90.06	TAL	332.22	TAP	239.78	RCA	143.70	APO	243.48
RC	345.302	GL	11.45	GP	-3.65	ZAL	135.04	ZAP	22.65	ETS	169.65	ZAE	33.98	ETE	174.42	ZAC	87.87	ETC	255.83

V1	30.271	V2	26.380	CLP	22.37														

PLANETOCENTRIC CONIC

C3	19.498	VHL	4.416	DLA	-4.91	RAL	224.33	RAD	6567.8	VEL	11.869	PTH	2.11	VHP	7.347	DPA	-9.12	RAP	194.61

ECC	1.3209																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 2 14	2055.67	-15.42	31.66	84.30	114.05	21 36 29	1455.7	-12.05	24.61
90.00	7 51 1	5005.04	22.83	219.93	86.54	72.78	9 14 26	4405.0	20.26	212.20
100.00	22 21 16	1800.73	-16.44	12.43	83.81	115.32	22 51 16	1200.7	-12.90	5.43
100.00	9 14 40	4735.22	23.90	199.71	86.17	71.49	10 33 35	4135.2	21.15	192.00
110.00	23 24 12	1603.65	-19.15	356.02	82.36	118.87	23 50 56	1003.6	-15.16	349.18
110.00	10 28 12	4505.06	26.76	181.07	85.00	67.89	11 43 18	3905.1	23.52	173.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.0885	TRA	8.7856	TC	-13.1230	BAU	3.4212	SGT	16347.0	SGR	625.3	SG3	141.3	ST	3728.1	SR	571.7
RDE	.4391	RRA	.1203	RC3	.2315	FAU	.00857	RRT	-.1352	RRF	-.1839	RTF	.8105	CRT	-.3029	CRS	.7608
FDE	-.4744	FRA	1.1343	FC3	-.3803	BSP	58064	SGB	16358.9	R23	.0748	R13	-.8105	LSA	3754.7	MSA	599.3
BDE	1.1738	BRA	8.7865	BC	313.1250	FSP	465	SG1	16347.2	SG2	619.5	THA	179.70	EL1	3732.2	EL2	544.3

SS	481.5	CST	-.8466	SSA	24.4
ALF	177.28				

LAUNCH DATE DEC 19 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 18 1966

HELIOCENTRIC CONIC DISTANCE 920.162 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.444	GAL	-5.86	AZL	88.52	HCA	268.82	SMA	193.76	ECC	.26003	INC	1.4843
RP	207.80	LAP	-1.48	LOP	355.95	VP	24.339	GAP	-14.50	AZP	90.03	TAL	331.02	TAP	239.84	RCA	143.38	APO	244.14
RC	346.039	GL	10.99	GP	-3.59	ZAL	136.56	ZAP	22.36	ETS	169.64	ZAE	33.38	ETE	174.37	ZAC	88.13	ETC	255.84

V1	30.271	V2	26.364	CLP	22.08														

PLANETOCENTRIC CONIC

C3	20.453	VHL	4.523	DLA	-5.77	RAL	225.60	RAD	6567.8	VEL	11.909	PTH	2.12	VHP	7.446	DPA	-9.47	RAP	195.52

ECC	1.3366																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 13 50	2039.95	-14.98	30.72	86.20	114.31	21 47 50	1440.0	-11.58	23.70
90.00	7 49 32	5043.54	23.58	222.50	88.91	73.86	9 13 36	4443.5	21.15	214.68
100.00	22 32 26	1786.36	-16.02	11.57	85.70	115.58	23 2 13	1186.4	-12.45	4.60
100.00	9 13 37	4772.37	24.68	202.20	88.54	72.58	10 33 9	4172.4	22.06	194.38
110.00	23 34 26	1592.28	-18.78	355.35	84.20	119.10	24 0 58	992.3	-14.76	348.54
110.00	10 28 7	4539.21	27.61	183.36	87.41	69.00	11 43 46	3939.2	24.50	175.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.2107	TRA	9.1762	TC	-12.6412	BAU	3.4572	SGT	16420.0	SGR	628.1	SG3	128.3	ST	3841.6	SR	577.1
RDE	.4543	RRA	.1115	RC3	.2296	FAU	.00528	RRT	-.1550	RRF	-.2025	RTF	.7780	CRT	-.3318	CRS	.7797
FDE	-.4641	FRA	1.0594	FC3	-.2236	BSP	58276	SGB	16432.0	R23	.0827	R13	-.7781	LSA	3866.3	MSA	593.9
BDE	1.2931	BRA	9.1769	BC	312.6433	FSP	416	SG1	16420.3	SG2	620.5	THA	179.66	EL1	3846.5	EL2	543.8

SS	459.2	CST	-.8470	SSA	23.8
ALF	177.09				

LAUNCH DATE DEC 19 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 20 1966

HELIOCENTRIC CONIC DISTANCE 924.337 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.453	GAL	-6.14	AZL	88.54	HCA	270.08	SMA	193.93	ECC	.26245	INC	1.4594
RP	207.94	LAP	-1.46	LOP	357.21	VP	24.333	GAP	-14.65	AZP	90.00	TAL	329.82	TAP	239.89	RCA	143.03	APO	244.82
RC	346.771	GL	10.53	GP	-3.54	ZAL	138.05	ZAP	22.07	ETS	169.62	ZAE	32.78	ETE	174.32	ZAC	88.40	ETC	255.86

V1	30.271	V2	26.348	CLP	21.80														

PLANETOCENTRIC CONIC

C3	21.477	VHL	4.634	DLA	-6.60	RAL	226.85	RAD	6567.9	VEL	11.952	PTH	2.13	VHP	7.547	DPA	-9.82	RAP	196.44

ECC	1.3535																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 25 11	2025.32	-14.57	29.84	88.11	114.55	21 58 56	1425.3	-11.14	22.85
90.00	7 48 9	5081.61	24.28	225.07	91.29	74.97	9 12 50	4481.6	21.98	217.16
100.00	22 43 23	1773.07	-15.63	10.78	87.59	115.81	23 12 56	1173.1	-12.03	3.84
100.00	9 12 38	4809.11	25.41	204.68	90.94	73.69	10 32 47	4209.1	22.93	196.76
110.00	23 44 26	1581.93	-18.44	354.74	86.06	119.31	24 10 48	981.9	-14.39	347.96
110.00	10 28 5	4573.01	28.41	185.66	89.84	70.14	11 44 18	3973.0	25.44	177.74

DIFFERENTIAL CORRECTIONS

TDE	-1.3325	TRA	9.5743	TC	-12.1722	BAU	3.4956
RDE	.4700	RRA	.1022	RC3	.2270	FAU	.00204
FDE	-.4521	FRA	.9809	FC3	-.0821	BSP	58408
BDE	1.4129	BRA	9.5749	BC3	12.1743	FSP	367

MID-COURSE EXECUTION ACCURACY

SGT	16492.2	SGR	630.9	SG3	116.2		
RRT	-.1744	RRF	-.2186	RTF	.7361		
SGB	16504.2	R23	.0915	R13	-.7362		
SG1	16492.5	SG2	621.2	THA	179.62		

ORBIT DETERMINATION ACCURACY

ST	3950.7	SR	582.3	SS	435.8
CRT	-.3577	CRS	.7987	CST	-.8450
LSA	3973.6	MSA	589.0	SSA	23.2
EL1	3956.3	EL2	543.0	ALF	176.92

LAUNCH DATE DEC 19 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 22 1966

HELIOCENTRIC CONIC DISTANCE 928.493 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.462	GAL	-6.42	AZL	88.57	HCA	271.33	SMA	194.09	ECC	.26498	INC	1.4346
RP	208.09	LAP	-1.43	LOP	358.46	VP	24.326	GAP	-14.81	AZP	89.97	TAL	328.60	TAP	239.93	RCA	142.66	APO	245.52
RC	347.497	GL	10.09	GP	-3.49	ZAL	139.51	ZAP	21.80	ETS	169.61	ZAE	32.19	ETE	174.27	ZAC	88.66	ETC	255.88

V1	30.271	V2	26.331	CLP	21.53														

PLANETOCENTRIC CONIC

C3	22.573	VHL	4.751	DLA	-7.41	RAL	228.08	RAD	6567.9	VEL	11.998	PTH	2.14	VHP	7.650	DPA	-10.17	RAP	197.37

ECC	1.3715																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 36 18	2011.76	-14.19	29.03	90.02	114.77	22 9 50	1411.8	-10.73	22.06
90.00	7 46 50	5119.26	24.92	227.65	93.69	76.10	9 12 9	4519.3	22.77	219.64
100.00	22 54 5	1760.81	-15.26	10.05	89.50	116.02	23 23 26	1160.8	-11.64	3.13
100.00	9 11 44	4845.43	26.08	207.18	93.36	74.84	10 32 29	4245.4	23.74	199.15
110.00	23 54 13	1572.56	-18.12	354.20	87.93	119.49	24 20 25	972.6	-14.06	347.44
110.00	10 28 6	4606.44	29.17	187.97	92.30	71.33	11 44 52	4006.4	26.34	179.93

DIFFERENTIAL CORRECTIONS

TDE	-1.4510	TRA	9.9821	TC	-11.7110	BAU	3.5348
RDE	.4861	RRA	.0926	RC3	.2237	FAU	-.00116
FDE	-.4382	FRA	.8975	FC3	.0444	BSP	58536
BDE	1.5302	BRA	9.9826	BC3	11.7131	FSP	319

MID-COURSE EXECUTION ACCURACY

SGT	16560.7	SGR	633.6	SG3	104.8		
RRT	-.1929	RRF	-.2314	RTF	.6820		
SGB	16572.8	R23	.1016	R13	-.6821		
SG1	16561.2	SG2	621.7	THA	179.58		

ORBIT DETERMINATION ACCURACY

ST	4054.1	SR	587.2	SS	410.9
CRT	-.3801	CRS	.8183	CST	-.8399
LSA	4075.2	MSA	584.6	SSA	22.6
EL1	4060.4	EL2	542.3	ALF	176.79

LAUNCH DATE DEC 19 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 24 1966

HELIOCENTRIC CONIC DISTANCE 932.627 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.471	GAL	-6.71	AZL	88.59	HCA	272.58	SMA	194.26	ECC	.26761	INC	1.4098
RP	208.25	LAP	-1.41	LOP	359.71	VP	24.319	GAP	-14.98	AZP	89.94	TAL	327.38	TAP	239.96	RCA	142.28	APO	246.25
RC	348.218	GL	9.66	GP	-3.44	ZAL	140.93	ZAP	21.53	ETS	169.60	ZAE	31.61	ETE	174.21	ZAC	88.92	ETC	255.90

V1	30.271	V2	26.312	CLP	21.27														

PLANETOCENTRIC CONIC

C3	23.744	VHL	4.873	DLA	-8.19	RAL	229.29	RAD	6568.0	VEL	12.047	PTH	2.15	VHP	7.755	DPA	-10.53	RAP	198.31

ECC	1.3908																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 11	1999.21	-13.83	28.29	91.95	114.96	22 20 30	1399.2	-10.35	21.33
90.00	7 45 36	5156.46	25.50	230.21	96.10	77.26	9 11 32	4556.5	23.50	222.12
100.00	23 4 34	1749.57	-14.93	9.39	91.41	116.20	23 33 43	1149.6	-11.29	2.49
100.00	9 10 54	4881.34	26.69	209.67	95.79	76.02	10 32 15	4281.3	24.50	201.55
110.00	0 7 43	1564.16	-17.84	353.71	89.80	119.65	0 33 47	964.2	-13.76	346.97
110.00	10 28 10	4639.51	29.86	190.29	94.77	72.54	11 45 30	4039.5	27.19	182.13

DIFFERENTIAL CORRECTIONS

TDE	-1.5668	TRA	10.3990	TC	-11.2646	BAU	3.5764
RDE	.5026	RRA	.0825	RC3	.2198	FAU	-.00428
FDE	-.4224	FRA	.8099	FC3	.1562	BSP	58636
BDE	1.6455	BRA	10.3993	BC3	11.2667	FSP	271

MID-COURSE EXECUTION ACCURACY

SGT	16628.7	SGR	636.2	SG3	94.5		
RRT	-.2108	RRF	-.2396	RTF	.6121		
SGB	16640.9	R23	.1129	R13	-.6122		
SG1	16629.3	SG2	621.9	THA	179.54		

ORBIT DETERMINATION ACCURACY

ST	4151.8	SR	591.8	SS	384.9
CRT	-.3997	CRS	.8384	CST	-.8315
LSA	4171.1	MSA	580.7	SSA	22.0
EL1	4158.6	EL2	541.6	ALF	176.68

LAUNCH DATE DEC 19 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 26 1966

HELIOCENTRIC CONIC DISTANCE 936.740 EARTH TO MARS

RL	147.18	LAL	-.00	LOL	87.13	VL	33.480	GAL	-7.01	AZL	88.61	HCA	273.83	SMA	194.43	ECC	.27035	INC	1.3850
RP	208.42	LAP	-1.38	LOP	.96	VP	24.310	GAP	-15.15	AZP	89.91	TAL	326.14	TAP	239.97	RCA	141.87	APO	246.99
RC	348.934	GL	9.24	GP	-3.40	ZAL	142.31	ZAP	21.27	ETS	169.59	ZAE	31.04	ETE	174.16	ZAC	89.18	ETC	255.93

V1	30.271	V2	26.293	CLP	21.01														

PLANETOCENTRIC CONIC

C3	24.995	VHL	4.999	DLA	-8.94	RAL	230.48	RAD	6568.0	VEL	12.098	PTH	2.17	VHP	7.862	DPA	-10.88	RAP	199.25

ECC	1.4114																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 50	1987.66	-13.49	27.60	93.89	115.13	22 30 57	1387.7	-10.00	20.67
90.00	7 44 26	5193.23	26.03	232.78	98.53	78.44	9 10 59	4593.2	24.18	224.60
100.00	23 14 49	1739.30	-14.62	8.78	93.33	116.37	23 43 48	1139.3	-10.96	1.90
100.00	9 10 8	4916.82	27.25	212.15	98.23	77.21	10 32 5	4316.8	25.22	203.94
110.00	0 17 4	1556.68	-17.59	353.28	91.68	119.79	0 43 1	956.7	-13.49	346.56
110.00	10 28 18	4672.20	30.51	192.62	97.27	73.78	11 46 10	4072.2	27.98	184.33

DIFFERENTIAL CORRECTIONS

TDE	-1.6789	TRA	10.8268	TC	-10.8271	BAU	3.6187
RDE	.5196	RRA	.0720	RC3	.2155	FAU	-.00740
FDE	-.4047	FRA	.7185	FC3	.2563	BSP	58717
BDE	1.7574	BRA	10.8270	BC3	10.8292	FSP	225

MID-COURSE EXECUTION ACCURACY

SGT	16693.2	SGR	638.7	SG3	85.3		
RRT	-.2279	RRF	-.2400	RTF	.5208		
SGB	16705.4	R23	.1244	R13	-.5208		
SG1	16693.9	SG2	621.9	THA	179.50		

ORBIT DETERMINATION ACCURACY

ST	4243.3	SR	596.0	SS	358.0
CRT	-.4165	CRS	.8592	CST	-.8193
LSA	4260.9	MSA	577.2	SSA	21.5
EL1	4250.7	EL2	540.9	ALF	176.60

LAUNCH DATE DEC 20 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 350.202 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	35.176	GAL	2.63	AZL	88.93	HCA	107.61	SMA	234.38	ECC	.37453	INC	1.0722	V1	30.273
RP	243.25	LAP	1.02	LOP	195.76	VP	22.912	GAP	21.89	AZP	90.32	TAL	9.67	TAP	117.27	RCA	146.60	APO	322.16	V2	22.560
RC	141.251	GL	7.26	GP	2.56	ZAL	70.51	ZAP	172.39	ETS	159.00	ZAE	152.09	ETE	3.36	ZAC	92.08	ETC	255.91	CLP	172.84

PLANETOCENTRIC CONIC

C3	27.066	VHL	5.202	DLA	15.11	RAL	162.94	RAD	6568.1	VEL	12.184	PTH	2.19	VHP	10.097	DPA	.03	RAP	189.44	ECC	1.4454

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 16 51	2777.69	-28.10	80.20	35.21	93.62	15 3 9	2177.7	-27.30	71.62
90.00	6 18 42	4442.59	7.79	185.60	27.70	62.69	7 32 44	3842.6	4.07	178.89
100.00	15 46 24	2488.89	-29.53	58.83	35.09	94.88	16 27 53	1888.9	-28.54	50.17
100.00	7 31 50	4206.62	9.05	167.57	27.03	61.39	8 41 56	3606.6	5.16	160.94
110.00	17 12 57	2218.09	-33.27	37.76	34.59	98.32	17 49 55	1618.1	-31.77	28.86
110.00	8 21 46	4050.18	12.30	153.77	25.09	57.85	9 29 16	3450.2	7.97	147.35

DIFFERENTIAL CORRECTIONS

TDE	.2489	TRA	-.9221	TC3	1.2537	BAU	.4537	SGT	1698.0	SGR	664.7	SG3	190.0	ST	419.8	SR	621.0	SS	171.1
RDE	-.5598	RRA	-.2175	RC3	.0136	FAU	.06578	RRT	.0979	RRF	-.1142	RTF	-.7778	CRT	-.5580	CRS	.9420	CST	-.4694
FDE	.1659	FRA	.0820	FC3	-2.1039	BSP	5395	SGB	1823.5	R23	-.0246	R13	-.7784	LSA	695.9	MSA	322.5	SSA	54.2
BDE	.6127	BRA	.9474	BC3	1.2538	FSP	516	SG1	1699.5	SG2	661.0	THA	2.59	EL1	678.4	EL2	318.9	ALF	117.13

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 20 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 352.635 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	35.059	GAL	2.76	AZL	88.95	HCA	108.53	SMA	231.02	ECC	.36574	INC	1.0516	V1	30.273
RP	243.00	LAP	1.00	LOP	196.68	VP	22.757	GAP	21.26	AZP	90.33	TAL	10.32	TAP	118.84	RCA	146.53	APO	315.52	V2	22.585
RC	143.499	GL	7.22	GP	2.64	ZAL	69.28	ZAP	171.78	ETS	159.99	ZAE	152.21	ETE	3.66	ZAC	92.21	ETC	255.90	CLP	172.21

PLANETOCENTRIC CONIC

C3	26.150	VHL	5.114	DLA	15.54	RAL	161.74	RAD	6568.1	VEL	12.146	PTH	2.18	VHP	9.843	DPA	-.02	RAP	189.74	ECC	1.4304

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 8 7	2784.65	-28.13	80.70	33.56	93.37	14 54 32	2184.6	-27.37	72.12
90.00	6 17 56	4418.56	7.03	184.23	26.05	62.50	7 31 34	3818.6	3.30	177.55
100.00	15 38 0	2494.80	-29.56	59.27	33.45	94.65	16 19 35	1894.8	-28.60	50.60
100.00	7 30 44	4183.63	8.30	166.28	25.36	61.18	8 40 28	3583.6	4.39	159.67
110.00	17 5 14	2221.87	-33.31	38.05	32.95	98.16	17 42 16	1621.9	-31.83	29.14
110.00	8 20 0	4029.33	11.54	152.63	23.41	57.60	9 27 9	3429.3	7.19	146.24

DIFFERENTIAL CORRECTIONS

TDE	.2301	TRA	-.8911	TC3	1.3299	BAU	.4650	SGT	1729.2	SGR	663.5	SG3	200.5	ST	405.9	SR	621.0	SS	187.3
RDE	-.5504	RRA	-.2099	RC3	.0195	FAU	.06825	RRT	.1055	RRF	-.1224	RTF	-.7845	CRT	-.5403	CRS	.9488	CST	-.5097
FDE	.1859	FRA	.0490	FC3	-2.2595	BSP	5530	SGB	1852.2	R23	-.0256	R13	-.7851	LSA	693.5	MSA	318.4	SSA	56.8
BDE	.5966	BRA	.9154	BC3	1.3300	FSP	549	SG1	1730.9	SG2	659.2	THA	2.71	EL1	671.3	EL2	316.0	ALF	115.48

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 20 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 355.173 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	34.947	GAL	2.88	AZL	88.97	HCA	109.45	SMA	227.92	ECC	.35742	INC	1.0308	V1	30.273
RP	242.74	LAP	.97	LOP	197.60	VP	22.610	GAP	20.62	AZP	90.34	TAL	10.97	TAP	120.42	RCA	146.46	APO	309.39	V2	22.611
RC	145.763	GL	7.17	GP	2.71	ZAL	68.06	ZAP	171.16	ETS	160.84	ZAE	152.38	ETE	3.98	ZAC	92.35	ETC	255.89	CLP	171.58

PLANETOCENTRIC CONIC

C3	25.317	VHL	5.032	DLA	15.96	RAL	160.55	RAD	6568.0	VEL	12.112	PTH	2.17	VHP	9.597	DPA	-.07	RAP	190.03	ECC	1.4167

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 59 26	2791.80	-28.16	81.23	31.94	93.11	14 45 58	2191.8	-27.43	72.64
90.00	6 17 4	4395.39	6.30	182.92	24.42	62.34	7 30 19	3795.4	2.55	176.25
100.00	15 29 38	2500.91	-29.59	59.72	31.83	94.42	16 11 19	1900.9	-28.67	51.04
100.00	7 29 33	4161.52	7.57	165.04	23.74	61.00	8 38 54	3561.5	3.64	158.45
110.00	16 57 33	2225.85	-33.35	38.36	31.35	97.98	17 34 39	1625.9	-31.89	29.43
110.00	8 18 8	4009.34	10.81	151.54	21.78	57.37	9 24 57	3409.3	6.44	145.18

DIFFERENTIAL CORRECTIONS

TDE	.2111	TRA	-.8596	TC3	1.4065	BAU	.4761	SGT	1760.0	SGR	662.2	SG3	211.6	ST	391.0	SR	620.9	SS	205.6
RDE	-.5416	RRA	-.2024	RC3	.0260	FAU	.07085	RRT	.1140	RRF	-.1318	RTF	-.7910	CRT	-.5201	CRS	.9515	CST	-.5402
FDE	.2081	FRA	.0135	FC3	-2.4227	BSP	5656	SGB	1880.4	R23	-.0272	R13	-.7916	LSA	692.0	MSA	313.5	SSA	59.5
BDE	.5813	BRA	.8831	BC3	1.4067	FSP	584	SG1	1761.9	SG2	657.2	THA	2.85	EL1	664.0	EL2	312.3	ALF	113.67

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 20 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 357.807 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	34.841	GAL	3.01	AZL	88.99	HCA	110.37	SMA	225.05	ECC	.34956	INC	1.0097	V1	30.273
RP	242.47	LAP	.95	LOP	198.52	VP	22.472	GAP	19.99	AZP	90.35	TAL	11.64	TAP	122.00	RCA	146.38	APO	303.72	V2	22.638
RC	148.041	GL	7.11	GP	2.79	ZAL	66.84	ZAP	170.52	ETS	161.58	ZAE	152.58	ETE	4.31	ZAC	92.49	ETC	255.89	CLP	170.94

PLANETOCENTRIC CONIC

C3	24.559	VHL	4.956	DLA	16.36	RAL	159.35	RAD	6568.0	VEL	12.080	PTH	2.16	VHP	9.357	DPA	-.12	RAP	190.32	ECC	1.4042

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 50 49	2799.09	-28.19	81.76	30.34	92.84	14 37 28	2199.1	-27.49	73.16
90.00	6 16 6	4373.14	5.60	181.67	22.83	62.20	7 28 59	3773.1	1.83	175.01
100.00	15 21 21	2507.15	-29.63	60.18	30.24	94.18	16 3 8	1907.1	-28.73	51.49
100.00	7 28 15	4140.32	6.87	163.86	22.14	60.84	8 37 16	3540.3	2.93	157.29
110.00	16 49 55	2230.00	-33.39	38.67	29.77	97.79	17 27 5	1630.0	-31.95	29.74
110.00	8 16 10	3990.23	10.11	150.51	20.17	57.17	9 22 40	3390.2	5.71	144.18

DIFFERENTIAL CORRECTIONS

TDE	.1931	TRA	-.8278	TC3	1.4825	BAU	.4869	SGT	1789.9	SGR	660.7	SG3	223.3	ST	376.0	SR	620.6	SS	224.6
RDE	-.5333	RRA	-.1950	RC3	.0332	FAU	.07357	RRT	.1226	RRF	-.1417	RTF	-.7970	CRT	-.4995	CRS	.9506	CST	-.5640
FDE	.2307	FRA	-.0254	FC3	-2.5934	BSP	5766	SGB	1907.9	R23	-.0291	R13	-.7977	LSA	691.6	MSA	308.0	SSA	62.4
BDE	.5672	BRA	.8505	BC3	1.4828	FSP	621	SG1	1792.0	SG2	654.9	THA	2.99	EL1	657.2	EL2	307.6	ALF	111.86

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 20 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 360.527 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 34.739 GAL 3.13 AZL 89.01 HCA 111.29 SMA 222.39 ECC .34212 INC .9883 V1 30.273
RP 242.20 LAP .92 LOP 199.44 VP 22.342 GAP 19.37 AZP 90.36 TAL 12.30 TAP 123.59 RCA 146.31 APO 298.47 V2 22.664
RC 150.330 GL 7.03 GP 2.88 ZAL 65.62 ZAP 169.87 ETS 162.22 ZAE 152.83 ETE 4.66 ZAC 92.63 ETC 255.88 CLP 170.28

PLANETOCENTRIC CONIC

C3 23.871 VHL 4.886 DLA 16.74 RAL 158.14 RAD 6568.0 VEL 12.052 PTH 2.15 VHP 9.124 DPA -.15 RAP 190.60 ECC 1.3929

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 42 18	2806.43	-28.21	82.29	28.77	92.58	14 29 4	2206.4	-27.55	73.69
90.00	6 15 2	4351.86	4.92	180.47	21.28	62.08	7 27 34	3751.9	1.15	173.82
100.00	15 13 9	2513.45	-29.66	60.65	28.67	93.94	15 55 2	1913.4	-28.79	51.95
100.00	7 26 52	4120.07	6.19	162.73	20.58	60.70	8 35 32	3520.1	2.24	156.18
110.00	16 42 23	2234.23	-33.43	39.00	28.23	97.61	17 19 38	1634.2	-32.01	30.05
110.00	8 14 7	3972.05	9.44	149.53	18.60	56.99	9 20 19	3372.1	5.02	143.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1752 TRA -.7962 TC3 1.5581 BAU .4974 SGT 1819.6 SGR 659.0 SG3 235.6 ST 360.3 SR 620.2 SS 244.2
RDE -.5256 RRA -.1876 RC3 .0412 FAU .07644 RRT .1323 RRF -.1524 RTF -.8029 CRT -.4761 CRS .9474 CST -.5795
FDE .2541 FRA -.0671 FC3-2.7723 BSP 5898 SGB 1935.3 R23 -.0308 R13 -.8036 LSA 691.8 MSA 302.1 SSA 65.4
BDE .5540 BRA .8180 BC3 1.5586 FSP 661 SG1 1822.0 SG2 652.4 THA 3.15 EL1 650.6 EL2 302.1 ALF 109.93

LAUNCH DATE DEC 20 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 363.327 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 34.643 GAL 3.24 AZL 89.03 HCA 112.21 SMA 219.92 ECC .33508 INC .9665 V1 30.273
RP 241.93 LAP .89 LOP 200.37 VP 22.219 GAP 18.75 AZP 90.37 TAL 12.96 TAP 125.18 RCA 146.23 APO 293.60 V2 22.692
RC 152.629 GL 6.95 GP 2.97 ZAL 64.42 ZAP 169.21 ETS 162.79 ZAE 153.11 ETE 5.03 ZAC 92.77 ETC 255.87 CLP 169.62

PLANETOCENTRIC CONIC

C3 23.247 VHL 4.821 DLA 17.11 RAL 156.94 RAD 6567.9 VEL 12.026 PTH 2.15 VHP 8.897 DPA -.18 RAP 190.87 ECC 1.3826

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 33 55	2813.75	-28.23	82.83	27.23	92.31	14 20 48	2213.7	-27.61	74.22
90.00	6 13 51	4331.58	4.27	179.33	19.76	61.98	7 26 3	3731.6	.49	172.69
100.00	15 5 5	2519.75	-29.68	61.11	27.14	93.69	15 47 4	1919.7	-28.86	52.41
100.00	7 25 22	4100.82	5.55	161.67	19.06	60.58	8 33 43	3500.8	1.59	155.12
110.00	16 34 58	2238.51	-33.46	39.32	26.71	97.42	17 12 16	1638.5	-32.08	30.37
110.00	8 11 58	3954.82	8.80	148.61	17.07	56.83	9 17 53	3354.8	4.37	142.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1580 TRA -.7642 TC3 1.6336 BAU .5079 SGT 1849.2 SGR 657.2 SG3 248.6 ST 344.6 SR 619.6 SS 264.4
RDE -.5183 RRA -.1802 RC3 .0499 FAU .07948 RRT .1423 RRF -.1638 RTF -.8087 CRT -.4517 CRS .9426 CST -.5899
FDE .2782 FRA -.1119 FC3-2.9600 BSP 6011 SGB 1962.6 R23 -.0328 R13 -.8095 LSA 693.1 MSA 295.8 SSA 68.4
BDE .5419 BRA .7851 BC3 1.6344 FSP 703 SG1 1851.9 SG2 649.6 THA 3.30 EL1 644.4 EL2 295.6 ALF 108.02

LAUNCH DATE DEC 20 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 366.200 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 34.550 GAL 3.36 AZL 89.06 HCA 113.14 SMA 217.61 ECC .32843 INC .9445 V1 30.273
RP 241.65 LAP .87 LOP 201.29 VP 22.103 GAP 18.13 AZP 90.37 TAL 13.63 TAP 126.77 RCA 146.14 APO 289.08 V2 22.720
RC 154.936 GL 6.86 GP 3.06 ZAL 63.22 ZAP 168.54 ETS 163.29 ZAE 153.43 ETE 5.43 ZAC 92.92 ETC 255.86 CLP 168.95

PLANETOCENTRIC CONIC

C3 22.680 VHL 4.762 DLA 17.46 RAL 155.75 RAD 6567.9 VEL 12.002 PTH 2.14 VHP 8.676 DPA -.20 RAP 191.14 ECC 1.3733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 25 41	2820.98	-28.25	83.36	25.72	92.05	14 12 42	2221.0	-27.67	74.74
90.00	6 12 33	4312.35	3.66	178.25	18.28	61.90	7 24 26	3712.3	-.13	171.62
100.00	14 57 9	2525.97	-29.71	61.58	25.64	93.45	15 39 15	1926.0	-28.92	52.86
100.00	7 23 46	4082.58	4.94	160.66	17.57	60.48	8 31 48	3482.6	.97	154.12
110.00	16 27 40	2242.77	-33.50	39.65	25.23	97.23	17 5 3	1642.8	-32.14	30.69
110.00	8 9 44	3938.56	8.19	147.74	15.57	56.70	9 15 22	3338.6	3.75	141.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1413 TRA -.7324 TC3 1.7067 BAU .5178 SGT 1877.5 SGR 655.3 SG3 262.1 ST 328.7 SR 618.9 SS 285.2
RDE -.5115 RRA -.1728 RC3 .0593 FAU .08266 RRT .1533 RRF -.1760 RTF -.8139 CRT -.4247 CRS .9367 CST -.5949
FDE .3030 FRA -.1605 FC3-3.1552 BSP 6137 SGB 1988.5 R23 -.0349 R13 -.8148 LSA 695.3 MSA 289.5 SSA 71.5
BDE .5307 BRA .7526 BC3 1.7077 FSP 748 SG1 1880.5 SG2 646.5 THA 3.47 EL1 638.7 EL2 288.4 ALF 106.07

LAUNCH DATE DEC 20 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 369.140 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 34.462 GAL 3.47 AZL 89.08 HCA 114.07 SMA 215.47 ECC .32213 INC .9220 V1 30.273
RP 241.36 LAP .84 LOP 202.22 VP 21.995 GAP 17.52 AZP 90.38 TAL 14.29 TAP 128.37 RCA 146.06 APO 284.87 V2 22.748
RC 157.250 GL 6.75 GP 3.15 ZAL 62.04 ZAP 167.85 ETS 163.73 ZAE 153.79 ETE 5.85 ZAC 93.06 ETC 255.86 CLP 168.26

PLANETOCENTRIC CONIC

C3 22.168 VHL 4.708 DLA 17.79 RAL 154.56 RAD 6567.9 VEL 11.981 PTH 2.14 VHP 8.460 DPA -.22 RAP 191.40 ECC 1.3648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 17 36	2828.09	-28.27	83.88	24.25	91.78	14 4 44	2228.1	-27.72	75.25
90.00	6 11 9	4294.14	3.07	177.24	16.83	61.84	7 22 43	3694.1	-.72	170.60
100.00	14 49 23	2532.11	-29.74	62.03	24.18	93.21	15 31 35	1932.1	-28.97	53.31
100.00	7 22 3	4065.36	4.36	159.71	16.12	60.40	8 29 48	3465.4	.39	153.17
110.00	16 20 31	2246.99	-33.54	39.98	23.78	97.04	16 57 58	1647.0	-32.20	31.00
110.00	8 7 24	3923.25	7.62	146.92	14.11	56.58	9 12 48	3323.2	3.17	140.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1387 TRA -.6871 TC3 1.8029 BAU .5347 SGT 1918.8 SGR 653.5 SG3 276.2 ST 317.0 SR 618.1 SS 308.0
RDE -.5053 RRA -.1655 RC3 .0693 FAU .08592 RRT .1538 RRF -.1899 RTF -.8249 CRT -.4437 CRS .9313 CST -.6319
FDE .3308 FRA -.2108 FC3-3.3553 BSP 5914 SGB 2027.0 R23 -.0475 R13 -.8260 LSA 703.3 MSA 277.7 SSA 74.9
BDE .5240 BRA .7068 BC3 1.8042 FSP 798 SG1 1921.8 SG2 644.7 THA 3.38 EL1 637.8 EL2 275.3 ALF 105.85

LAUNCH DATE DEC 20 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 372.141 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	34.378	GAL	3.58	AZL	89.10	HCA	115.00	SMA	213.46	ECC	.31619	INC	.8992
RP	241.08	LAP	.82	LOP	203.16	VP	21.893	GAP	16.92	AZP	90.38	TAL	14.95	TAP	129.96	RCA	145.97	APO	280.96
RC	159.568	GL	6.64	GP	3.25	ZAL	60.89	ZAP	167.15	ETS	164.13	ZAE	154.18	ETE	6.30	ZAC	93.21	ETC	255.85

V1	30.273	V2	22.777	CLP	167.56														

PLANETOCENTRIC CONIC

C3	21.704	VHL	4.659	DLA	18.10	RAL	153.39	RAD	6567.9	VEL	11.962	PTH	2.13	VHP	8.251	DPA	-.22	RAP	191.65
ECC	1.3572																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 9 46	2834.91	-28.28	84.37	22.81	91.54	13 57 1	2234.9	-27.77	75.75
90.00	6 9 37	4277.10	2.53	176.28	15.42	61.79	7 20 54	3677.1	-1.27	169.65
100.00	14 41 51	2537.98	-29.76	62.47	22.75	92.98	15 24 9	1938.0	-29.03	53.74
100.00	7 20 13	4049.27	3.82	158.82	14.70	60.33	8 27 43	3449.3	-.16	152.29
110.00	16 13 34	2251.04	-33.57	40.29	22.36	96.85	16 51 5	1651.0	-32.26	31.30
110.00	8 5 0	3908.98	7.08	146.16	12.69	56.47	9 10 9	3309.0	2.62	139.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1162	TRA	-.6623	TC3	1.8604	BAU	.5403	SGT	1938.9	SGR	651.4	SG3	291.4	ST	298.7	SR	617.0	SS	328.8
RDE	-.4992	RRA	-.1580	RC3	.0806	FAU	.08949	RRT	.1723	RRF	-.2038	RTF	-.8266	CRT	-.3898	CRS	.9235	CST	-.6109
FDE	.3563	FRA	-.2681	FC3	-3.5697	BSP	6201	SGB	2045.4	R23	-.0446	R13	-.8278	LSA	704.7	MSA	274.6	SSA	77.8
BDE	.5125	BRA	.6809	BC3	1.8621	FSP	845	SG1	1942.6	SG2	640.5	THA	3.72	EL1	630.4	EL2	269.2	ALF	103.12

LAUNCH DATE DEC 20 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 375.199 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	34.299	GAL	3.68	AZL	89.12	HCA	115.94	SMA	211.60	ECC	.31057	INC	.8760
RP	240.79	LAP	.79	LOP	204.09	VP	21.798	GAP	16.32	AZP	90.38	TAL	15.61	TAP	131.55	RCA	145.88	APO	277.31
RC	161.890	GL	6.51	GP	3.36	ZAL	59.75	ZAP	166.43	ETS	164.48	ZAE	154.61	ETE	6.78	ZAC	93.36	ETC	255.84

V1	30.273	V2	22.806	CLP	166.85														

PLANETOCENTRIC CONIC

C3	21.286	VHL	4.614	DLA	18.38	RAL	152.23	RAD	6567.9	VEL	11.944	PTH	2.13	VHP	8.047	DPA	-.22	RAP	191.90
ECC	1.3503																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 2 10	2841.45	-28.29	84.85	21.41	91.30	13 49 31	2241.4	-27.81	76.22
90.00	6 7 58	4261.18	2.01	175.39	14.05	61.75	7 18 59	3661.2	-1.78	168.77
100.00	14 34 32	2543.61	-29.78	62.88	21.35	92.77	15 16 55	1943.6	-29.07	54.15
100.00	7 18 17	4034.25	3.31	157.99	13.33	60.27	8 25 31	3434.3	-.67	151.47
110.00	16 6 48	2254.92	-33.60	40.59	20.98	96.68	16 44 23	1654.9	-32.31	31.59
110.00	8 2 30	3895.70	6.58	145.46	11.31	56.38	9 7 26	3295.7	2.12	139.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0974	TRA	-.6343	TC3	1.9214	BAU	.5474	SGT	1961.3	SGR	649.4	SG3	307.4	ST	281.9	SR	615.7	SS	350.4
RDE	-.4935	RRA	-.1505	RC3	.0926	FAU	.09325	RRT	.1891	RRF	-.2190	RTF	-.8297	CRT	-.3415	CRS	.9158	CST	-.5920
FDE	.3831	FRA	-.3289	FC3	-3.7925	BSP	6395	SGB	2066.0	R23	-.0444	R13	-.8309	LSA	708.3	MSA	270.6	SSA	80.6
BDE	.5030	BRA	.6519	BC3	1.9236	FSP	896	SG1	1965.6	SG2	636.3	THA	4.00	EL1	624.8	EL2	261.1	ALF	100.79

LAUNCH DATE DEC 20 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 378.309 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	34.222	GAL	3.78	AZL	89.15	HCA	116.87	SMA	209.85	ECC	.30526	INC	.8524
RP	240.49	LAP	.76	LOP	205.03	VP	21.709	GAP	15.72	AZP	90.39	TAL	16.27	TAP	133.14	RCA	145.79	APO	273.91
RC	164.213	GL	6.38	GP	3.47	ZAL	58.63	ZAP	165.70	ETS	164.79	ZAE	155.07	ETE	7.30	ZAC	93.51	ETC	255.84

V1	30.273	V2	22.836	CLP	166.12														

PLANETOCENTRIC CONIC

C3	20.908	VHL	4.573	DLA	18.65	RAL	151.08	RAD	6567.8	VEL	11.928	PTH	2.12	VHP	7.849	DPA	-.20	RAP	192.13
ECC	1.3441																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 54 48	2847.64	-28.30	85.30	20.05	91.07	13 42 16	2247.6	-27.85	76.67
90.00	6 6 11	4246.38	1.54	174.57	12.72	61.72	7 16 57	3646.4	-2.26	167.94
100.00	14 27 26	2548.93	-29.79	63.28	19.99	92.56	15 9 55	1948.9	-29.12	54.54
100.00	7 16 14	4020.33	2.84	157.22	11.99	60.23	8 23 15	3420.3	-1.14	150.70
110.00	16 0 14	2258.59	-33.63	40.87	19.63	96.52	16 37 53	1658.6	-32.36	31.87
110.00	7 59 56	3883.43	6.12	144.81	9.96	56.30	9 4 39	3283.4	1.65	138.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0815	TRA	-.6052	TC3	1.9827	BAU	.5550	SGT	1984.6	SGR	647.5	SG3	324.1	ST	266.5	SR	614.3	SS	- 372.4
RDE	-.4882	RRA	-.1429	RC3	.1055	FAU	.09715	RRT	.2052	RRF	-.2354	RTF	-.8331	CRT	-.2973	CRS	.9083	CST	-.5739
FDE	.4109	FRA	-.3930	FC3	-4.0227	BSP	6545	SGB	2087.5	R23	-.0460	R13	-.8345	LSA	713.5	MSA	266.7	SSA	83.1
BDE	.4949	BRA	.6218	BC3	1.9855	FSP	951	SG1	1989.5	SG2	632.1	THA	4.26	EL1	620.5	EL2	252.0	ALF	98.81

LAUNCH DATE DEC 20 1964 FLIGHT TIME 162.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 381.467 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	34.150	GAL	3.88	AZL	89.17	HCA	117.81	SMA	208.21	ECC	.30025	INC	.8283
RP	240.19	LAP	.73	LOP	205.96	VP	21.626	GAP	15.13	AZP	90.39	TAL	16.91	TAP	134.72	RCA	145.70	APO	270.73
RC	166.536	GL	6.24	GP	3.58	ZAL	57.54	ZAP	164.96	ETS	165.08	ZAE	155.56	ETE	7.86	ZAC	93.67	ETC	255.83

V1	30.273	V2	22.866	CLP	165.38														

PLANETOCENTRIC CONIC

C3	20.568	VHL	4.535	DLA	18.89	RAL	149.96	RAD	6567.8	VEL	11.914	PTH	2.12	VHP	7.656	DPA	-.18	RAP	192.36
ECC	1.3385																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 47 43	2853.42	-28.31	85.73	18.72	90.86	13 35 17	2253.4	-27.89	77.09
90.00	6 4 17	4232.75	1.10	173.81	11.42	61.70	7 14 49	3632.7	-2.70	167.18
100.00	14 20 36	2553.89	-29.81	63.65	18.67	92.37	15 3 10	1953.9	-29.16	54.90
100.00	7 14 5	4007.51	2.41	156.52	10.69	60.20	8 20 52	3407.5	-1.57	150.00
110.00	15 53 54	2262.01	-33.66	41.13	18.32	96.36	16 31 36	1662.0	-32.41	32.12
110.00	7 57 16	3872.15	5.69	144.22	8.65	56.24	9 1 49	3272.1	1.22	137.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0677	TRA	-.5751	TC3	2.0427	BAU	.5626	SGT	2007.5	SGR	645.6	SG3	341.6	ST	252.0	SR	612.8	SS	394.1
RDE	-.4831	RRA	-.1352	RC3	.1193	FAU	.10126	RRT	.2214	RRF	-.2528	RTF	-.8368	CRT	-.2562	CRS	.9004	CST	-.5569
FDE	.4388	FRA	-.4618	FC3	-4.2621	BSP	6657	SGB	2108.7	R23	-.0487	R13	-.8382	LSA	719.6	MSA	263.1	SSA	85.3
BDE	.4879	BRA	.5908	BC3	2.0462	FSP	1008	SG1	2013.1	SG2	627.9	THA	4.51	EL1	616.8	EL2	242.0	ALF	97.11

LAUNCH DATE DEC 20 1964 FLIGHT TIME 164.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 384.671 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	34.080	GAL	3.98	AZL	89.20	HCA	118.75	SMA	206.68	ECC	.29551	INC	.8036	V1	30.273
RP	239.88	LAP	.70	LOP	206.90	VP	21.549	GAP	14.55	AZP	90.39	TAL	17.55	TAP	136.31	RCA	145.60	APO	267.75	V2	22.897
RC	168.857	GL	6.08	GP	3.70	ZAL	56.47	ZAP	164.19	ETS	165.33	ZAE	156.09	ETE	8.47	ZAC	93.83	ETC	255.83	CLP	164.62

PLANETOCENTRIC CONIC

C3	20.262	VHL	4.501	DLA	19.11	RAL	148.85	RAD	6567.8	VEL	11.901	PTH	2.11	VHP	7.467	DPA	-.15	RAP	192.58	ECC	1.3335

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 40 56	2858.73	-28.31	86.12	17.42	90.66	13 28 34	2258.7	-27.92	77.47
90.00	6 2 14	4220.27	.69	173.11	10.16	61.69	7 12 35	3620.3	-3.10	166.48
100.00	14 14 3	2558.44	-29.82	63.98	17.38	92.19	14 56 41	1958.4	-29.20	55.23
100.00	7 11 48	3995.79	2.01	155.88	9.43	60.17	8 18 24	3395.8	-1.97	149.36
110.00	15 47 48	2265.13	-33.68	41.37	17.05	96.22	16 25 33	1665.1	-32.45	32.35
110.00	7 54 33	3861.87	5.30	143.68	7.38	56.18	8 58 54	3261.9	.82	137.45

DIFFERENTIAL CORRECTIONS

TDE	.0548	TRA	-.5446	TC3	2.1010	BAU	.5703
RDE	-.4784	RRA	-.1273	RC3	.1341	FAU	.10558
FDE	.4680	FRA	-.5353	FC3	-4.5109	BSP	6766
BDE	.4815	BRA	.5593	BC3	2.1052	FSP	1070

MID-COURSE EXECUTION ACCURACY

SGT	2029.9	SGR	644.0	SG3	360.1		
RRT	.2384	RRF	-.2717	RTF	-.8405		
SGB	2129.7	R23	-.0519	R13	-.8421		
SG1	2036.4	SG2	623.5	THA	4.77		

ORBIT DETERMINATION ACCURACY

ST	237.8	SR	611.1	SS	416.4		
CRT	-.2131	CRS	.8926	CST	-.5362		
LSA	726.7	MSA	260.3	SSA	87.2		
EL1	613.5	EL2	231.4	ALF	95.53		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 166.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 387.917 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	34.014	GAL	4.07	AZL	89.22	HCA	119.69	SMA	205.24	ECC	.29103	INC	.7785	V1	30.273
RP	239.58	LAP	.68	LOP	207.85	VP	21.478	GAP	13.98	AZP	90.39	TAL	18.19	TAP	137.88	RCA	145.51	APO	264.97	V2	22.928
RC	171.174	GL	5.92	GP	3.83	ZAL	55.43	ZAP	163.42	ETS	165.56	ZAE	156.65	ETE	9.14	ZAC	93.99	ETC	255.82	CLP	163.85

PLANETOCENTRIC CONIC

C3	19.987	VHL	4.471	DLA	19.31	RAL	147.76	RAD	6567.8	VEL	11.890	PTH	2.11	VHP	7.284	DPA	-.11	RAP	192.78	ECC	1.3289

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 34 26	2863.53	-28.31	86.47	16.17	90.49	13 22 10	2263.5	-27.95	77.82
90.00	6 0 4	4208.96	.33	172.48	8.94	61.68	7 10 13	3609.0	-3.46	165.85
100.00	14 7 47	2562.54	-29.83	64.29	16.13	92.03	14 50 29	1962.5	-29.23	55.53
100.00	7 9 25	3985.19	1.65	155.29	8.20	60.15	8 15 50	3385.2	-2.33	148.77
110.00	15 41 57	2267.92	-33.70	41.59	15.81	96.10	16 19 45	1667.9	-32.49	32.56
110.00	7 51 44	3852.57	4.95	143.19	6.15	56.13	8 55 57	3252.6	.47	136.97

DIFFERENTIAL CORRECTIONS

TDE	.0435	TRA	-.5149	TC3	2.1558	BAU	.5774
RDE	-.4738	RRA	-.1193	RC3	.1499	FAU	.11012
FDE	.4970	FRA	-.6132	FC3	-4.7697	BSP	6855
BDE	.4758	BRA	.5286	BC3	2.1610	FSP	1134

MID-COURSE EXECUTION ACCURACY

SGT	2051.2	SGR	642.6	SG3	379.4		
RRT	.2562	RRF	-.2917	RTF	-.8439		
SGB	2149.6	R23	-.0556	R13	-.8457		
SG1	2058.5	SG2	619.0	THA	5.05		

ORBIT DETERMINATION ACCURACY

ST	224.6	SR	609.2	SS	438.0		
CRT	-.1714	CRS	.8847	CST	-.5152		
LSA	734.0	MSA	258.5	SSA	88.6		
EL1	610.6	EL2	220.8	ALF	94.16		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 168.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 391.202 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.951	GAL	4.16	AZL	89.25	HCA	120.64	SMA	203.89	ECC	.28681	INC	.7529	V1	30.273
RP	239.26	LAP	.65	LOP	208.79	VP	21.412	GAP	13.41	AZP	90.38	TAL	18.81	TAP	139.45	RCA	145.42	APO	262.37	V2	22.959
RC	173.485	GL	5.75	GP	3.96	ZAL	54.42	ZAP	162.62	ETS	165.76	ZAE	157.24	ETE	9.87	ZAC	94.15	ETC	255.81	CLP	163.06

PLANETOCENTRIC CONIC

C3	19.741	VHL	4.443	DLA	19.49	RAL	146.70	RAD	6567.8	VEL	11.879	PTH	2.11	VHP	7.106	DPA	-.05	RAP	192.98	ECC	1.3249

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 28 16	2867.77	-28.32	86.78	14.95	90.33	13 16 4	2267.8	-27.97	78.13
90.00	5 57 46	4198.82	.00	171.91	7.76	61.68	7 7 45	3598.8	-3.78	165.28
100.00	14 1 49	2566.14	-29.84	64.56	14.92	91.89	14 44 35	1966.1	-29.26	55.80
100.00	7 6 55	3975.68	1.33	154.77	7.02	60.13	8 13 11	3375.7	-2.65	148.25
110.00	15 36 21	2270.34	-33.72	41.78	14.60	95.99	16 14 12	1670.3	-32.52	32.75
110.00	7 48 52	3844.25	4.63	142.75	4.96	56.09	8 52 56	3244.2	.15	136.54

DIFFERENTIAL CORRECTIONS

TDE	.0329	TRA	-.4852	TC3	2.2076	BAU	.5843
RDE	-.4695	RRA	-.1111	RC3	.1667	FAU	.11489
FDE	.5269	FRA	-.6966	FC3	-5.0388	BSP	6941
BDE	.4706	BRA	.4977	BC3	2.2139	FSP	1202

MID-COURSE EXECUTION ACCURACY

SGT	2071.3	SGR	641.6	SG3	399.9		
RRT	.2753	RRF	-.3131	RTF	-.8473		
SGB	2168.4	R23	-.0597	R13	-.8493		
SG1	2079.6	SG2	614.3	THA	5.34		

ORBIT DETERMINATION ACCURACY

ST	211.9	SR	607.2	SS	460.0		
CRT	-.1268	CRS	.8769	CST	-.4900		
LSA	742.1	MSA	257.7	SSA	89.6		
EL1	607.8	EL2	210.0	ALF	92.88		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 170.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 394.524 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.891	GAL	4.25	AZL	89.27	HCA	121.59	SMA	202.63	ECC	.28282	INC	.7267	V1	30.273
RP	238.95	LAP	.62	LOP	209.74	VP	21.351	GAP	12.85	AZP	90.38	TAL	19.43	TAP	141.01	RCA	145.32	APO	259.93	V2	22.991
RC	175.790	GL	5.57	GP	4.09	ZAL	53.44	ZAP	161.80	ETS	165.94	ZAE	157.86	ETE	10.67	ZAC	94.32	ETC	255.81	CLP	162.26

PLANETOCENTRIC CONIC

C3	19.520	VHL	4.418	DLA	19.64	RAL	145.66	RAD	6567.8	VEL	11.870	PTH	2.11	VHP	6.932	DPA	.02	RAP	193.17	ECC	1.3213

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 22 26	2871.44	-28.32	87.05	13.77	90.20	13 10 17	2271.4	-27.99	78.40
90.00	5 55 20	4189.82	-.29	171.41	6.61	61.68	7 5 10	3589.8	-4.07	164.78
100.00	13 56 9	2569.24	-29.85	64.79	13.74	91.77	14 38 58	1969.2	-29.28	56.03
100.00	7 4 18	3967.25	1.05	154.31	5.86	60.12	8 10 26	3367.3	-2.94	147.79
110.00	15 31 1	2272.40	-33.73	41.93	13.43	95.89	16 8 54	1672.4	-32.55	32.90
110.00	7 45 55	3836.87	4.35	142.36	3.80	56.06	8 49 52	3236.9	-.13	136.15

DIFFERENTIAL CORRECTIONS

TDE	.0314	TRA	-.4478	TC3	2.2719	BAU	.5948
RDE	-.4653	RRA	-.1027	RC3	.1847	FAU	.11995
FDE	.5558	FRA	-.7868	FC3	-5.3200	BSP	6823
BDE	.4664	BRA	.4594	BC3	2.2794	FSP	1272

MID-COURSE EXECUTION ACCURACY

SGT	2100.5	SGR	640.9	SG3	421.4		
RRT	.2899	RRF	-.3356	RTF	-.8530		
SGB	2196.1	R23	-.0683	R13	-.8553		
SG1	2109.4	SG2	610.8	THA	5.52		

ORBIT DETERMINATION ACCURACY

ST	198.8	SR	604.9	SS	481.0		
CRT	-.1365	CRS	.8683	CST	-.5072		
LSA	750.7	MSA	254.9	SSA	90.9		
EL1	605.6	EL2	196.7	ALF	92.87		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 397.880 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.834	GAL	4.33	AZL	89.30	HCA	122.54	SMA	201.44	ECC	.27906	INC	.6999	V1	30.273
RP	238.63	LAP	.59	LOP	210.69	VP	21.295	GAP	12.29	AZP	90.38	TAL	20.03	TAP	142.57	RCA	145.23	APO	257.65	V2	23.024
RC	178.086	GL	5.38	GP	4.24	ZAL	52.49	ZAP	160.97	ETS	166.11	ZAE	158.50	ETE	11.55	ZAC	94.48	ETC	255.80	CLP	161.43

PLANETOCENTRIC CONIC

C3	19.322	VHL	4.396	DLA	19.77	RAL	144.66	RAD	6567.8	VEL	11.862	PTH	2.10	VHP	6.763	DPA	.09	RAP	193.34	ECC	1.3180

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 16 57	2874.43	-28.32	87.26	12.63	90.09	13 4 51	2274.4	-28.00	78.61
90.00	5 52 46	4182.02	-.54	170.98	5.50	61.69	7 2 28	3582.0	-4.32	164.34
100.00	13 50 49	2571.74	-29.85	64.97	12.60	91.67	14 33 41	1971.7	-29.30	56.21
100.00	7 1 35	3959.94	.80	153.91	4.75	60.12	8 7 35	3359.9	-3.18	147.39
110.00	15 25 59	2273.99	-33.74	42.06	12.30	95.82	16 3 53	1674.0	-32.57	33.02
110.00	7 42 54	3830.45	4.11	142.03	2.69	56.03	8 46 45	3230.5	-.38	135.82

DIFFERENTIAL CORRECTIONS

TDE	.0154	TRA	-.4273	TC3	2.3003	BAU	.5966														
RDE	-.4613	RRA	-.0940	RC3	.2038	FAU	.12517														
FDE	.5869	FRA	-.8796	FC3	-5.6082	BSP	7075														
BDE	.4616	BRA	.4375	BC3	2.3094	FSP	1349														

MID-COURSE EXECUTION ACCURACY

SGT	2107.3	SGR	640.8	SG3	443.8				
RRT	.3164	RRF	-.3599	RTF	-.8532				
SGB	2202.5	R23	-.0692	R13	-.8557				
SG1	2117.9	SG2	604.8	THA	5.99				

ORBIT DETERMINATION ACCURACY

ST	188.7	SR	602.6	SS	502.9		
CRT	-.0422	CRS	.8610	CST	-.4388		
LSA	759.2	MSA	259.1	SSA	90.2		
EL1	602.6	EL2	188.5	ALF	90.84		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 401.269 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.780	GAL	4.41	AZL	89.33	HCA	123.49	SMA	200.32	ECC	.27550	INC	.6725	V1	30.273
RP	238.31	LAP	.56	LOP	211.64	VP	21.244	GAP	11.74	AZP	90.37	TAL	20.62	TAP	144.11	RCA	145.13	APO	255.51	V2	23.056
RC	180.373	GL	5.18	GP	4.39	ZAL	51.57	ZAP	160.12	ETS	166.26	ZAE	159.18	ETE	12.52	ZAC	94.66	ETC	255.80	CLP	160.59

PLANETOCENTRIC CONIC

C3	19.147	VHL	4.376	DLA	19.88	RAL	143.67	RAD	6567.8	VEL	11.854	PTH	2.10	VHP	6.598	DPA	.19	RAP	193.51	ECC	1.3151

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 11 48	2876.80	-28.32	87.44	11.52	90.00	12 59 45	2276.8	-28.02	78.79
90.00	5 50 4	4175.32	-.76	170.60	4.42	61.69	6 59 39	3575.3	-4.54	163.96
100.00	13 45 48	2573.70	-29.85	65.12	11.50	91.59	14 28 41	1973.7	-29.31	56.35
100.00	6 58 45	3953.66	.58	153.56	3.67	60.11	8 4 39	3353.7	-3.40	147.04
110.00	15 21 12	2275.19	-33.75	42.15	11.20	95.77	15 59 8	1675.2	-32.59	33.11
110.00	7 39 50	3824.93	3.90	141.74	1.60	56.01	8 43 35	3224.9	-.59	135.53

DIFFERENTIAL CORRECTIONS

TDE	.0169	TRA	-.3907	TC3	2.3584	BAU	.6064														
RDE	-.4574	RRA	-.0850	RC3	.2242	FAU	.13078														
FDE	.6153	FRA	-.9817	FC3	-5.9134	BSP	6923														
BDE	.4577	BRA	.3998	BC3	2.3690	FSP	1424														

MID-COURSE EXECUTION ACCURACY

SGT	2134.5	SGR	641.2	SG3	467.7				
RRT	.3332	RRF	-.3850	RTF	-.8585				
SGB	2228.8	R23	-.0787	R13	-.8613				
SG1	2146.1	SG2	601.3	THA	6.21				

ORBIT DETERMINATION ACCURACY

ST	175.9	SR	600.0	SS	522.9		
CRT	-.0672	CRS	.8520	CST	-.4655		
LSA	767.8	MSA	258.2	SSA	90.7		
EL1	600.1	EL2	175.5	ALF	91.23		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 404.687 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.728	GAL	4.49	AZL	89.36	HCA	124.45	SMA	199.27	ECC	.27215	INC	.6442	V1	30.273
RP	237.98	LAP	.53	LOP	212.60	VP	21.198	GAP	11.20	AZP	90.36	TAL	21.20	TAP	145.65	RCA	145.04	APO	253.50	V2	23.089
RC	182.651	GL	4.98	GP	4.55	ZAL	50.68	ZAP	159.25	ETS	166.39	ZAE	159.88	ETE	13.61	ZAC	94.83	ETC	255.79	CLP	159.73

PLANETOCENTRIC CONIC

C3	18.989	VHL	4.358	DLA	19.97	RAL	142.72	RAD	6567.8	VEL	11.848	PTH	2.10	VHP	6.438	DPA	.29	RAP	193.66	ECC	1.3125

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 7 2	2878.43	-28.32	87.56	10.45	89.94	12 55 0	2278.4	-28.03	78.90
90.00	5 47 14	4169.79	-.94	170.30	3.38	61.70	6 56 44	3569.8	-4.71	163.65
100.00	13 41 8	2575.00	-29.86	65.21	10.43	91.54	14 24 3	1975.0	-29.32	56.45
100.00	6 55 50	3948.46	.41	153.28	2.63	60.11	8 1 38	3348.5	-3.57	146.75
110.00	15 16 44	2275.88	-33.76	42.20	10.14	95.73	15 54 40	1675.9	-32.59	33.16
110.00	7 36 43	3820.34	3.72	141.50	.56	56.00	8 40 23	3220.3	-.76	135.29

DIFFERENTIAL CORRECTIONS

TDE	.0009	TRA	-.3734	TC3	2.3743	BAU	.6060														
RDE	-.4536	RRA	-.0757	RC3	.2457	FAU	.13650														
FDE	.6476	FRA	-1.0860	FC3	-6.2232	BSP	7212														
BDE	.4536	BRA	.3810	BC3	2.3869	FSP	1513														

MID-COURSE EXECUTION ACCURACY

SGT	2134.2	SGR	642.5	SG3	492.2				
RRT	.3630	RRF	-.4122	RTF	-.8578				
SGB	2228.8	R23	-.0800	R13	-.8609				
SG1	2147.9	SG2	594.9	THA	6.76				

ORBIT DETERMINATION ACCURACY

ST	168.6	SR	597.3	SS	544.8		
CRT	.0466	CRS	.8451	CST	-.3774		
LSA	777.3	MSA	264.5	SSA	89.1		
EL1	597.4	EL2	168.4	ALF	89.18		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 408.135 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.679	GAL	4.56	AZL	89.38	HCA	125.41	SMA	198.28	ECC	.26899	INC	.6154	V1	30.273
RP	237.65	LAP	.50	LOP	213.56	VP	21.156	GAP	10.67	AZP	90.36	TAL	21.76	TAP	147.17	RCA	144.94	APO	251.61	V2	23.123
RC	184.919	GL	4.77	GP	4.72	ZAL	49.82	ZAP	158.35	ETS	166.51	ZAE	160.61	ETE	14.82	ZAC	95.01	ETC	255.79	CLP	158.85

PLANETOCENTRIC CONIC

C3	18.849	VHL	4.342	DLA	20.03	RAL	141.79	RAD	6567.8	VEL	11.842	PTH	2.10	VHP	6.282	DPA	.41	RAP	193.80	ECC	1.3102

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 2 36	2879.40	-28.32	87.63	9.42	89.90	12 50 36	2279.4	-28.03	78.97
90.00	5 44 17	4165.34	-1.08	170.05	2.37	61.70	6 53 42	3565.3	-4.86	163.40
100.00	13 36 47	2575.71	-29.86	65.27	9.39	91.51	14 19 43	1975.7	-29.33	56.50
100.00	6 52 47	3944.27	.27	153.05	1.62	60.11	7 58 31	3344.3	-3.71	146.52
110.00	15 12 32	2276.14	-33.76	42.22	9.10	95.72	15 50 28	1676.1	-32.60	33.18
110.00	7 33 31	3816.60	3.58	141.30	359.55	55.98	8 37 8	3216.6	-.91	135.09

DIFFERENTIAL CORRECTIONS

TDE	.0010	TRA	-.3421	TC3	2.4167	BAU	.6128														
RDE	-.4499	RRA	-.0659	RC3	.2688	FAU	.14265														
FDE	.6763	FRA	-1.2000	FC3	-6.5517	BSP	7130														
BDE	.4499	BRA	.3484	BC3	2.4316	FSP	1597														

MID-COURSE EXECUTION ACCURACY

SGT	2152.8	SGR	644.6	SG3	518.4				
RRT	.3845	RRF	-.4400	RTF	-.8614				
SGB	2247.2	R23	-.0886	R13	-.8649				
SG1	2168.2	SG2	590.9	THA	7.10				

ORBIT DETERMINATION ACCURACY

ST	157.3	SR	594.4	SS	564.5		
CRT	.0388	CRS	.8365	CST	-.3875		
LSA	786.1	MSA	266.3	SSA	88.6		
EL1	594.4	EL2	157.2	ALF	89.37		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 411.608 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.632 GAL 4.63 AZL 89.41 HCA 126.37 SMA 197.35 ECC .26601 INC .5856 V1 30.273
RP 237.31 LAP .47 LOP 214.52 VP 21.118 GAP 10.14 AZP 90.35 TAL 22.31 TAP 148.68 RCA 144.85 APO 249.85 V2 23.157
RC 187.176 GL 4.54 GP 4.89 ZAL 48.99 ZAP 157.43 ETS 166.62 ZAE 161.35 ETE 16.18 ZAC 95.20 ETC 255.78 CLP 157.94

PLANETOCENTRIC CONIC

C3 18.724 VHL 4.327 DLA 20.07 RAL 140.90 RAD 6567.8 VEL 11.837 PTH 2.10 VHP 6.131 DPA .55 RAP 193.92 ECC 1.3082

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 58 34	2879.61	-28.32	87.64	8.42	89.90	12 46 33	2279.6	-28.03	78.99
90.00	5 41 12	4162.01	-1.19	169.86	1.40	61.71	6 50 34	3562.0	-4.96	163.21
100.00	13 32 47	2575.75	-29.86	65.27	8.40	91.51	14 15 43	1975.8	-29.33	56.50
100.00	6 49 39	3941.10	.16	152.88	.65	60.11	7 55 20	3341.1	-3.82	146.35
110.00	15 8 38	2275.88	-33.76	42.20	8.11	95.74	15 46 34	1675.9	-32.59	33.16
110.00	7 30 17	3813.73	3.47	141.15	358.58	55.97	8 33 51	3213.7	-1.02	134.94

DIFFERENTIAL CORRECTIONS
TDE -.0097 TRA -.3236 TC3 2.4302 BAU .6128
RDE -.4463 RRA -.0559 RC3 .2932 FAU .14895
FDE .7088 FRA-1.3170 FC3-6.8868 BSP 7323
BDE .4464 BRA .3284 BC3 2.4478 FSP 1694

MID-COURSE EXECUTION ACCURACY
SGT 2152.1 SGR 647.9 SG3 545.4
RRT .4138 RRF -.4695 RTF -.8612
SGB 2247.5 R23 -.0930 R13 -.8651
SG1 2170.1 SG2 585.0 THA 7.66

ORBIT DETERMINATION ACCURACY
ST 151.3 SR 591.5 SS 585.8
CRT .1262 CRS .8298 CST -.3164
LSA 796.4 MSA 272.1 SSA 86.9
EL1 591.8 EL2 150.0 ALF 88.03

LAUNCH DATE DEC 20 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 415.108 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.587 GAL 4.70 AZL 89.44 HCA 127.33 SMA 196.47 ECC .26320 INC .5552 V1 30.273
RP 236.98 LAP .44 LOP 215.48 VP 21.085 GAP 9.63 AZP 90.34 TAL 22.85 TAP 150.18 RCA 144.76 APO 248.18 V2 23.191
RC 189.421 GL 4.31 GP 5.08 ZAL 48.20 ZAP 156.49 ETS 166.72 ZAE 162.12 ETE 17.72 ZAC 95.39 ETC 255.78 CLP 157.02

PLANETOCENTRIC CONIC

C3 18.613 VHL 4.314 DLA 20.09 RAL 140.04 RAD 6567.8 VEL 11.832 PTH 2.10 VHP 5.983 DPA .70 RAP 194.03 ECC 1.3063

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 54 52	2879.09	-28.32	87.61	7.45	89.92	12 42 51	2279.1	-28.03	78.95
90.00	5 37 59	4159.73	-1.26	169.74	.45	61.71	6 47 19	3559.7	-5.03	163.09
100.00	13 29 8	2575.15	-29.86	65.22	7.43	91.54	14 12 3	1975.2	-29.32	56.46
100.00	6 46 25	3938.91	.08	152.76	359.70	60.11	7 52 3	3338.9	-3.89	146.23
110.00	15 5 1	2275.13	-33.75	42.15	7.14	95.77	15 42 57	1675.1	-32.58	33.10
110.00	7 27 0	3811.69	3.40	141.04	357.64	55.97	8 30 32	3211.7	-1.09	134.84

DIFFERENTIAL CORRECTIONS
TDE -.0135 TRA -.3004 TC3 2.4510 BAU .6151
RDE -.4428 RRA -.0453 RC3 .3190 FAU .15559
FDE .7396 FRA-1.4424 FC3-7.2366 BSP 7363
BDE .4430 BRA .3038 BC3 2.4717 FSP 1793

MID-COURSE EXECUTION ACCURACY
SGT 2157.2 SGR 652.4 SG3 573.9
RRT .4405 RRF -.4998 RTF -.8624
SGB 2253.7 R23 -.1005 R13 -.8669
SG1 2177.8 SG2 580.2 THA 8.17

ORBIT DETERMINATION ACCURACY
ST 143.5 SR 588.4 SS 606.0
CRT .1598 CRS .8225 CST -.2885
LSA 806.4 MSA 276.4 SSA 85.5
EL1 588.9 EL2 141.5 ALF 87.63

LAUNCH DATE DEC 20 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 418.632 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.545 GAL 4.77 AZL 89.48 HCA 128.30 SMA 195.65 ECC .26055 INC .5239 V1 30.273
RP 236.64 LAP .41 LOP 216.45 VP 21.056 GAP 9.12 AZP 90.32 TAL 23.37 TAP 151.67 RCA 144.67 APO 246.62 V2 23.226
RC 191.655 GL 4.07 GP 5.27 ZAL 47.44 ZAP 155.53 ETS 166.81 ZAE 162.91 ETE 19.46 ZAC 95.58 ETC 255.77 CLP 156.07

PLANETOCENTRIC CONIC

C3 18.515 VHL 4.303 DLA 20.09 RAL 139.20 RAD 6567.7 VEL 11.828 PTH 2.09 VHP 5.840 DPA .87 RAP 194.13 ECC 1.3047

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 51 33	2877.82	-28.32	87.51	6.52	89.96	12 39 30	2277.8	-28.02	78.86
90.00	5 34 39	4158.51	-1.30	169.67	359.54	61.71	6 43 57	3558.5	-5.07	163.02
100.00	13 25 48	2573.89	-29.85	65.13	6.50	91.58	14 8 42	1973.9	-29.32	56.37
100.00	6 43 4	3937.68	.04	152.69	358.80	60.11	7 48 42	3337.7	-3.93	146.16
110.00	15 1 42	2273.87	-33.74	42.05	6.20	95.83	15 39 36	1673.9	-32.57	33.01
110.00	7 23 40	3810.46	3.35	140.98	356.73	55.96	8 27 10	3210.5	-1.14	134.77

DIFFERENTIAL CORRECTIONS
TDE -.0150 TRA -.2778 TC3 2.4693 BAU .6172
RDE -.4392 RRA -.0342 RC3 .3467 FAU .16259
FDE .7684 FRA-1.3755 FC3-7.6024 BSP 7377
BDE .4394 BRA .2799 BC3 2.4935 FSP 1894

MID-COURSE EXECUTION ACCURACY
SGT 2161.3 SGR 658.3 SG3 603.8
RRT .4672 RRF -.5308 RTF -.8635
SGB 2259.3 R23 -.1090 R13 -.8687
SG1 2184.7 SG2 575.8 THA 8.71

ORBIT DETERMINATION ACCURACY
ST 135.7 SR 585.0 SS 625.0
CRT .1757 CRS .8146 CST -.2752
LSA 815.7 MSA 280.8 SSA 84.2
EL1 585.5 EL2 133.5 ALF 87.54

LAUNCH DATE DEC 20 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 422.179 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.505 GAL 4.83 AZL 89.51 HCA 129.27 SMA 194.87 ECC .25805 INC .4916 V1 30.273
RP 236.29 LAP .38 LOP 217.42 VP 21.030 GAP 8.61 AZP 90.31 TAL 23.88 TAP 153.14 RCA 144.58 APO 245.16 V2 23.261
RC 193.877 GL 3.83 GP 5.48 ZAL 46.71 ZAP 154.54 ETS 166.89 ZAE 163.70 ETE 21.45 ZAC 95.78 ETC 255.77 CLP 155.10

PLANETOCENTRIC CONIC

C3 18.427 VHL 4.293 DLA 20.07 RAL 138.39 RAD 6567.7 VEL 11.824 PTH 2.09 VHP 5.700 DPA 1.06 RAP 194.21 ECC 1.3033

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 48 35	2875.80	-28.32	87.36	5.62	90.04	12 36 31	2275.8	-28.01	78.71
90.00	5 31 11	4158.31	-1.31	169.66	358.66	61.71	6 40 29	3558.3	-5.08	163.01
100.00	13 22 48	2571.95	-29.85	64.99	5.60	91.66	14 5 40	1971.9	-29.30	56.23
100.00	6 39 38	3937.39	.03	152.67	357.92	60.11	7 45 16	3337.4	-3.94	146.14
110.00	14 58 39	2272.09	-33.73	41.91	5.29	95.91	15 36 31	1672.1	-32.55	32.88
110.00	7 20 17	3810.02	3.33	140.96	355.86	55.96	8 23 47	3210.0	-1.16	134.75

DIFFERENTIAL CORRECTIONS
TDE -.0151 TRA -.2561 TC3 2.4833 BAU .6188
RDE -.4356 RRA -.0225 RC3 .3761 FAU .16992
FDE .7967 FRA-1.7157 FC3-7.9829 BSP 7377
BDE .4358 BRA .2571 BC3 2.5116 FSP 2002

MID-COURSE EXECUTION ACCURACY
SGT 2162.9 SGR 665.8 SG3 635.2
RRT .4943 RRF -.5625 RTF -.8645
SGB 2263.1 R23 -.1185 R13 -.8703
SG1 2189.7 SG2 571.7 THA 9.29

ORBIT DETERMINATION ACCURACY
ST 128.1 SR 581.5 SS 643.6
CRT .1795 CRS .8068 CST -.2704
LSA 825.0 MSA 285.1 SSA 82.9
EL1 582.0 EL2 125.9 ALF 87.62

LAUNCH DATE DEC 20 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 425.749 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.466	GAL	4.89	AZL	89.54	HCA	130.24	SMA	194.14	ECC	.25569	INC	.4583	V1	30.273
RP	235.94	LAP	.35	LOP	218.39	VP	21.008	GAP	8.12	AZP	90.30	TAL	24.37	TAP	154.60	RCA	144.50	APO	243.78	V2	23.297
RC	196.086	GL	3.57	GP	5.69	ZAL	46.01	ZAP	153.53	ETS	166.96	ZAE	164.51	ETE	23.73	ZAC	95.98	ETC	255.76	CLP	154.10

PLANETOCENTRIC CONIC

C3	18.350	VHL	4.284	DLA	20.03	RAL	137.62	RAD	6567.7	VEL	11.821	PTH	2.09	VHP	5.565	DPA	1.27	RAP	194.28	ECC	1.3020

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 45 58	2873.02	-28.32	86.16	4.75	90.14	12 33 51	2273.0	-28.00	78.51
90.00	5 27 36	4159.11	-1.28	169.70	357.81	61.71	6 36 55	3559.1	-5.05	163.05
100.00	13 20 9	2569.34	-29.85	64.79	4.72	91.76	14 2 58	1969.3	-29.28	56.03
100.00	6 36 7	3938.02	.05	152.71	357.07	60.11	7 41 45	3338.0	-3.92	146.18
110.00	14 55 53	2269.78	-33.71	41.73	4.41	96.01	15 33 43	1669.8	-32.52	32.70
110.00	7 16 51	3810.35	3.34	140.97	355.02	55.96	8 20 21	3210.3	-1.15	134.77

DIFFERENTIAL CORRECTIONS

TDE	-.0095	TRA	-.2310	TC3	2.5022	BAU	.6219
RDE	-.4318	RRA	-.0100	RC3	.4077	FAU	.17771
FDE	.8207	FRA	-1.8674	FC3	-8.3843	BSP	7250
BDE	.4319	BRA	.2312	BC3	2.5352	FSP	2107

MID-COURSE EXECUTION ACCURACY

SGT	2168.8	SGR	675.1	SG3	668.5		
RRT	.5196	RRF	-.5944	RTF	-.8663		
SGB	2271.4	R23	-.1298	R13	-.8730		
SG1	2199.1	SG2	568.8	THA	9.85		

ORBIT DETERMINATION ACCURACY

ST	118.5	SR	577.6	SS	660.6
CRT	.1234	CRS	.7974	CST	-.3126
LSA	832.9	MSA	289.0	SSA	81.8
EL1	577.8	EL2	117.5	ALF	88.49

LAUNCH DATE DEC 20 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 429.338 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.430	GAL	4.95	AZL	89.58	HCA	131.21	SMA	193.45	ECC	.25347	INC	.4238	V1	30.273
RP	235.59	LAP	.32	LOP	219.37	VP	20.990	GAP	7.63	AZP	90.28	TAL	24.84	TAP	156.05	RCA	144.41	APO	242.48	V2	23.333
RC	198.280	GL	3.30	GP	5.92	ZAL	45.35	ZAP	152.49	ETS	167.03	ZAE	165.32	ETE	26.35	ZAC	96.19	ETC	255.76	CLP	153.08

PLANETOCENTRIC CONIC

C3	18.280	VHL	4.275	DLA	19.97	RAL	136.87	RAD	6567.7	VEL	11.818	PTH	2.09	VHP	5.433	DPA	1.49	RAP	194.33	ECC	1.3008

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 43 44	2869.44	-28.32	86.90	3.91	90.27	12 31 33	2269.4	-27.98	78.25
90.00	5 23 54	4160.90	-1.22	169.80	357.00	61.71	6 33 15	3560.9	-5.00	163.15
100.00	13 17 50	2566.01	-29.84	64.55	3.88	91.89	14 0 36	1966.0	-29.26	55.79
100.00	6 32 30	3939.57	.11	152.79	356.25	60.11	7 38 9	3339.6	-3.87	146.26
110.00	14 53 26	2266.90	-33.69	41.51	3.56	96.14	15 31 13	1666.9	-32.48	32.49
110.00	7 13 23	3811.44	3.39	141.03	354.21	55.96	8 16 54	3211.4	-1.10	134.82

DIFFERENTIAL CORRECTIONS

TDE	-.0164	TRA	-.2206	TC3	2.4883	BAU	.6175
RDE	-.4284	RRA	.0027	RC3	.4404	FAU	.18547
FDE	.8534	FRA	-2.0177	FC3	-8.7839	BSP	7423
BDE	.4287	BRA	.2207	BC3	2.5269	FSP	2235

MID-COURSE EXECUTION ACCURACY

SGT	2150.9	SGR	686.6	SG3	701.9		
RRT	.5503	RRF	-.6268	RTF	-.8642		
SGB	2257.9	R23	-.1389	R13	-.8720		
SG1	2186.3	SG2	564.1	THA	10.68		

ORBIT DETERMINATION ACCURACY

ST	116.0	SR	574.2	SS	680.9
CRT	.1983	CRS	.7926	CST	-.2494
LSA	844.8	MSA	294.3	SSA	79.9
EL1	574.7	EL2	113.6	ALF	87.61

LAUNCH DATE DEC 20 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 432.947 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.395	GAL	5.00	AZL	89.61	HCA	132.19	SMA	192.80	ECC	.25138	INC	.3881	V1	30.273
RP	235.24	LAP	.29	LOP	220.34	VP	20.975	GAP	7.15	AZP	90.26	TAL	25.29	TAP	157.48	RCA	144.33	APO	241.26	V2	23.369
RC	200.460	GL	3.03	GP	6.16	ZAL	44.71	ZAP	151.42	ETS	167.09	ZAE	166.11	ETE	29.40	ZAC	96.41	ETC	255.75	CLP	152.03

PLANETOCENTRIC CONIC

C3	18.217	VHL	4.268	DLA	19.88	RAL	136.16	RAD	6567.7	VEL	11.815	PTH	2.09	VHP	5.306	DPA	1.74	RAP	194.36	ECC	1.2998

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 41 50	2865.10	-28.31	86.58	3.10	90.43	12 29 35	2265.1	-27.95	77.93
90.00	5 20 6	4163.65	-1.13	169.95	356.20	61.70	6 29 29	3563.6	-4.91	163.31
100.00	13 15 50	2561.99	-29.83	64.25	3.06	92.05	13 58 32	1962.0	-29.23	55.49
100.00	6 28 47	3941.99	.19	152.92	355.47	60.11	7 34 29	3342.0	-3.79	146.40
110.00	14 51 14	2263.49	-33.67	41.25	2.74	96.29	15 28 58	1663.5	-32.43	32.23
110.00	7 9 52	3813.26	3.46	141.13	353.43	55.97	8 13 25	3213.3	-1.03	134.92

DIFFERENTIAL CORRECTIONS

TDE	-.0142	TRA	-.2047	TC3	2.4845	BAU	.6161
RDE	-.4247	RRA	.0164	RC3	.4758	FAU	.19377
FDE	.8790	FRA	-2.1811	FC3	-9.2085	BSP	7407
BDE	.4250	BRA	.2054	BC3	2.5296	FSP	2358

MID-COURSE EXECUTION ACCURACY

SGT	2141.0	SGR	700.4	SG3	737.6		
RRT	.5771	RRF	-.6587	RTF	-.8636		
SGB	2252.6	R23	-.1510	R13	-.8727		
SG1	2181.5	SG2	561.3	THA	11.46		

ORBIT DETERMINATION ACCURACY

ST	110.0	SR	570.3	SS	698.3
CRT	.1757	CRS	.7852	CST	-.2651
LSA	854.2	MSA	298.6	SSA	78.5
EL1	570.6	EL2	108.2	ALF	87.99

LAUNCH DATE DEC 20 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 436.576 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.362	GAL	5.05	AZL	89.65	HCA	133.17	SMA	192.19	ECC	.24940	INC	.3515	V1	30.273
RP	234.89	LAP	.26	LOP	221.32	VP	20.964	GAP	6.67	AZP	90.24	TAL	25.73	TAP	158.90	RCA	144.26	APO	240.12	V2	23.405
RC	202.623	GL	2.74	GP	6.41	ZAL	44.11	ZAP	150.32	ETS	167.15	ZAE	166.90	ETE	32.95	ZAC	96.63	ETC	255.75	CLP	150.96

PLANETOCENTRIC CONIC

C3	18.162	VHL	4.262	DLA	19.77	RAL	135.47	RAD	6567.7	VEL	11.813	PTH	2.09	VHP	5.182	DPA	2.00	RAP	194.38	ECC	1.2989

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 40 17	2859.98	-28.31	86.21	2.32	90.62	12 27 57	2260.0	-27.93	77.56
90.00	5 16 10	4167.34	-1.02	170.16	355.44	61.70	6 25 37	3567.3	-4.79	163.51
100.00	13 14 9	2557.28	-29.82	63.90	2.28	92.23	13 56 46	1957.3	-29.19	55.15
100.00	6 24 59	3945.27	.30	153.10	354.71	60.11	7 30 44	3345.3	-3.68	146.58
110.00	14 49 20	2259.51	-33.64	40.94	1.93	96.47	15 26 59	1659.5	-32.38	31.93
110.00	7 6 18	3815.80	3.55	141.26	352.68	55.98	8 9 53	3215.8	-.94	135.05

DIFFERENTIAL CORRECTIONS

TDE	-.0109	TRA	-.1905	TC3	2.4758	BAU	.6139
RDE	-.4209	RRA	.0309	RC3	.5134	FAU	.20241
FDE	.9032	FRA	-2.3520	FC3	-9.6484	BSP	7383
BDE	.4211	BRA	.1930	BC3	2.5285	FSP	2489

MID-COURSE EXECUTION ACCURACY

SGT	2127.7	SGR	716.7	SG3	774.7		
RRT	.6030	RRF	-.6900	RTF	-.8626		
SGB	2245.2	R23	-.1641	R13	-.8732		
SG1	2174.4	SG2	559.5	THA	12.31		

ORBIT DETERMINATION ACCURACY

ST	104.3	SR	566.3	SS	715.2
CRT	.1362	CRS	.7781	CST	-.2933
LSA	863.4	MSA	302.5	SSA	77.2
EL1	566.4	EL2	103.3	ALF	88.51

LAUNCH DATE DEC 20 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 440.223 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.331 GAL 5.10 AZL 89.69 HCA 134.16 SMA 191.61 ECC .24754 INC .3133 V1 30.273
RP 234.53 LAP .22 LOP 222.31 VP 20.956 GAP 6.21 AZP 90.22 TAL 26.15 TAP 160.30 RCA 144.18 APO 239.04 V2 23.442
RC 204.770 GL 2.45 GP 6.67 ZAL 43.54 ZAP 149.19 ETS 167.20 ZAE 167.64 ETE 37.09 ZAC 96.87 ETC 255.74 CLP 149.85

PLANETOCENTRIC CONIC

C3 18.112 VHL 4.256 DLA 19.65 RAL 134.81 RAD 6567.7 VEL 11.811 PTH 2.09 VHP 5.062 DPA 2.29 RAP 194.38 ECC 1.2981

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 39 4	2854.08	-28.31	85.78	1.56	90.83	12 26 38	2254.1	-27.89	77.14
90.00	5 12 7	4171.94	-.87	170.42	354.70	61.70	6 21 39	3571.9	-4.64	163.77
100.00	13 12 48	2551.86	-29.80	63.49	1.51	92.44	13 55 20	1951.9	-29.14	54.75
100.00	6 21 5	3949.40	.44	153.33	353.98	60.11	7 26 54	3349.4	-3.54	146.80
110.00	14 47 41	2254.97	-33.60	40.59	1.15	96.68	15 25 16	1655.0	-32.31	31.59
110.00	7 2 41	3819.05	3.68	141.43	351.96	55.99	8 6 20	3219.1	-.81	135.22

DIFFERENTIAL CORRECTIONS
TDE -.0054 TRA -.1770 TC3 2.4650 BAU .6117
RDE -.4170 RRA .0464 RC3 .5537 FAU .21149
FDE .9243 FRA-2.5330 FC-10.1091 BSP 7306
BDE .4171 BRA .1829 BC3 2.5264 FSP 2619

MID-COURSE EXECUTION ACCURACY
SGT 2113.3 SGR 736.0 SG3 813.7
RRT .6276 RRF -.7205 RTF -.8615
SGB 2237.8 R23 -.1784 R13 -.8739
SG1 2166.9 SG2 558.9 THA 13.22

ORBIT DETERMINATION ACCURACY
ST 98.9 SR 562.0 SS 731.2
CRT .0625 CRS .7705 CST -.3456
LSA 872.2 MSA 306.3 SSA 76.0
EL1 562.0 EL2 98.7 ALF 89.35

LAUNCH DATE DEC 20 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 443.887 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.302 GAL 5.15 AZL 89.73 HCA 135.14 SMA 191.07 ECC .24579 INC .2737 V1 30.273
RP 234.17 LAP .19 LOP 223.29 VP 20.950 GAP 5.75 AZP 90.19 TAL 26.55 TAP 161.69 RCA 144.11 APO 238.03 V2 23.479
RC 206.900 GL 2.14 GP 6.95 ZAL 43.00 ZAP 148.03 ETS 167.25 ZAE 168.34 ETE 41.91 ZAC 97.11 ETC 255.74 CLP 148.72

PLANETOCENTRIC CONIC

C3 18.066 VHL 4.250 DLA 19.50 RAL 134.18 RAD 6567.7 VEL 11.809 PTH 2.09 VHP 4.946 DPA 2.61 RAP 194.37 ECC 1.2973

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 38 12	2847.38	-28.30	85.29	.82	91.08	12 25 40	2247.4	-27.85	76.65
90.00	5 7 58	4177.46	-.69	170.72	353.99	61.69	6 17 35	3577.5	-4.47	164.08
100.00	13 11 45	2545.71	-29.78	63.04	.77	92.68	13 54 11	1945.7	-29.09	54.30
100.00	6 17 6	3954.37	.61	153.60	353.27	60.11	7 23 0	3354.4	-3.37	147.08
110.00	14 46 20	2249.83	-33.56	40.20	.40	96.91	15 23 50	1649.8	-32.24	31.21
110.00	6 59 1	3823.01	3.83	141.64	351.26	56.01	8 2 44	3223.0	-.66	135.43

DIFFERENTIAL CORRECTIONS
TDE -.0023 TRA -.1695 TC3 2.4393 BAU .6065
RDE -.4131 RRA .0626 RC3 .5960 FAU .22068
FDE .9467 FRA-2.7174 FC-10.5751 BSP 7311
BDE .4132 BRA .1807 BC3 2.5111 FSP 2764

MID-COURSE EXECUTION ACCURACY
SGT 2087.8 SGR 758.2 SG3 853.3
RRT .6511 RRF -.7496 RTF -.8586
SGB 2221.2 R23 -.1938 R13 -.8733
SG1 2149.7 SG2 558.9 THA 14.29

ORBIT DETERMINATION ACCURACY
ST 95.7 SR 557.8 SS 747.6
CRT .0141 CRS .7646 CST -.3819
LSA 881.8 MSA 309.6 SSA 74.7
EL1 557.8 EL2 95.7 ALF 89.86

LAUNCH DATE DEC 20 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 447.569 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.274 GAL 5.19 AZL 89.77 HCA 136.13 SMA 190.56 ECC .24413 INC .2324 V1 30.273
RP 233.80 LAP .16 LOP 224.28 VP 20.948 GAP 5.30 AZP 90.17 TAL 26.93 TAP 163.06 RCA 144.04 APO 237.08 V2 23.517
RC 209.011 GL 1.82 GP 7.25 ZAL 42.49 ZAP 146.84 ETS 167.29 ZAE 168.96 ETE 47.50 ZAC 97.36 ETC 255.73 CLP 147.55

PLANETOCENTRIC CONIC

C3 18.024 VHL 4.246 DLA 19.33 RAL 133.58 RAD 6567.7 VEL 11.807 PTH 2.09 VHP 4.833 DPA 2.95 RAP 194.33 ECC 1.2966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 37 40	2839.90	-28.29	84.74	.11	91.35	12 25 0	2239.9	-27.80	76.11
90.00	5 3 42	4183.87	-.48	171.08	353.31	61.69	6 13 26	3583.9	-4.26	164.44
100.00	13 11 2	2538.84	-29.76	62.53	.05	92.95	13 53 21	1938.8	-29.03	53.80
100.00	6 13 1	3960.16	.81	153.92	352.59	60.12	7 19 1	3360.2	-3.18	147.40
110.00	14 45 14	2244.10	-33.51	39.75	359.66	97.17	15 22 38	1644.1	-32.16	30.78
110.00	6 55 18	3827.67	4.00	141.88	350.59	56.02	7 59 6	3227.7	-.48	135.67

DIFFERENTIAL CORRECTIONS
TDE .0041 TRA -.1611 TC3 2.4140 BAU .6019
RDE -.4090 RRA .0801 RC3 .6416 FAU .23039
FDE .9638 FRA-2.9150 FC-11.0662 BSP 7241
BDE .4090 BRA .1799 BC3 2.4978 FSP 2909

MID-COURSE EXECUTION ACCURACY
SGT 2062.7 SGR 784.0 SG3 895.2
RRT .6724 RRF -.7774 RTF -.8559
SGB 2206.6 R23 -.2101 R13 -.8734
SG1 2134.2 SG2 560.8 THA 15.43

ORBIT DETERMINATION ACCURACY
ST 92.7 SR 553.3 SS 762.7
CRT -.0860 CRS .7576 CST -.4507
LSA 890.6 MSA 312.9 SSA 73.5
EL1 553.3 EL2 92.3 ALF 90.85

LAUNCH DATE DEC 20 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 451.267 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.247 GAL 5.23 AZL 89.81 HCA 137.13 SMA 190.08 ECC .24257 INC .1900 V1 30.273
RP 233.44 LAP .13 LOP 225.28 VP 20.948 GAP 4.86 AZP 90.14 TAL 27.29 TAP 164.42 RCA 143.97 APO 236.18 V2 23.555
RC 211.104 GL 1.49 GP 7.56 ZAL 42.01 ZAP 145.62 ETS 167.34 ZAE 169.47 ETE 53.91 ZAC 97.61 ETC 255.73 CLP 146.36

PLANETOCENTRIC CONIC

C3 17.986 VHL 4.241 DLA 19.14 RAL 133.01 RAD 6567.7 VEL 11.805 PTH 2.09 VHP 4.725 DPA 3.31 RAP 194.28 ECC 1.2960

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 37 28	2831.61	-28.27	84.13	359.42	91.66	12 24 39	2231.6	-27.74	75.51
90.00	4 59 18	4191.17	-.25	171.49	352.64	61.68	6 9 10	3591.2	-4.03	164.85
100.00	13 10 37	2531.23	-29.73	61.97	359.35	93.25	13 52 48	1931.2	-28.96	53.25
100.00	6 8 51	3966.78	1.03	154.28	351.93	60.12	7 14 57	3366.8	-2.95	147.76
110.00	14 44 25	2237.76	-33.46	39.27	358.94	97.45	15 21 43	1637.8	-32.07	30.31
110.00	6 51 32	3833.02	4.21	142.16	349.95	56.05	7 55 25	3233.0	-.28	135.95

DIFFERENTIAL CORRECTIONS
TDE .0115 TRA -.1558 TC3 2.3820 BAU .5963
RDE -.4046 RRA .0986 RC3 .6902 FAU .24040
FDE .9779 FRA-3.1189 FC-11.5715 BSP 7169
BDE .4048 BRA .1843 BC3 2.4800 FSP 3062

MID-COURSE EXECUTION ACCURACY
SGT 2032.8 SGR 813.3 SG3 938.4
RRT .6913 RRF -.8034 RTF -.8523
SGB 2189.4 R23 -.2276 R13 -.8732
SG1 2115.3 SG2 564.7 THA 16.68

ORBIT DETERMINATION ACCURACY
ST 91.6 SR 548.6 SS 777.0
CRT -.2046 CRS .7509 CST -.5288
LSA 898.9 MSA 315.7 SSA 72.4
EL1 548.9 EL2 89.6 ALF 92.01

LAUNCH DATE DEC 20 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 454.980 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.222 GAL 5.26 AZL 89.85 HCA 138.12 SMA 189.63 ECC .24110 INC .1449 V1 30.273
RP 233.07 LAP .10 LOP 226.27 VP 20.952 GAP 4.43 AZP 90.11 TAL 27.63 TAP 165.76 RCA 143.91 APO 235.34 V2 23.593
RC 213.179 GL 1.14 GP 7.89 ZAL 41.55 ZAP 144.36 ETS 167.38 ZAE 169.85 ETE 61.13 ZAC 97.88 ETC 255.72 CLP 145.13

PLANETOCENTRIC CONIC

C3 17.951 VHL 4.237 DLA 18.92 RAL 132.46 RAD 6567.7 VEL 11.804 PTH 2.09 VHP 4.620 DPA 3.71 RAP 194.21 ECC 1.2954

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 37 35	2822.51	-28.25	83.47	358.74	91.99	12 24 37	2222.5	-27.68	74.85
90.00	4 54 48	4199.35	.02	171.94	352.00	61.68	6 4 47	3599.4	-3.77	165.31
100.00	13 10 30	2522.87	-29.70	61.35	358.66	93.57	13 52 33	1922.9	-28.89	52.64
100.00	6 4 34	3974.22	1.28	154.69	351.30	60.13	7 10 48	3374.2	-2.70	148.17
110.00	14 43 51	2230.80	-33.40	38.73	358.23	97.76	15 21 2	1630.8	-31.96	29.80
110.00	6 47 42	3839.06	4.44	142.48	349.33	56.07	7 51 41	3239.1	-.05	136.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0196 TRA -.1529 TC3 2.3431 BAU .5898 SGT 1997.6 SGR 846.5 SG3 983.1 ST 92.5 SR 543.7 SS 790.8
RDE -.4001 RRA .1184 RC3 .7419 FAU .25072 RRT .7078 RRF -.8276 RTF -.8476 CRT -.3288 CRS .7443 CST -.6050
FDE .9887 FRA-3.3323 FC-12.0918 BSP 7090 SGB 2169.5 R23 -.2458 R13 -.8729 LSA 907.3 MSA 318.3 SSA 71.3
BDE .4005 BRA .1934 BC3 2.4577 FSP 3219 SG1 2093.1 SG2 570.7 THA 18.09 EL1 544.6 EL2 87.2 ALF 93.28

LAUNCH DATE DEC 20 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 458.709 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.199 GAL 5.30 AZL 89.90 HCA 139.12 SMA 189.20 ECC .23972 INC .0989 V1 30.273
RP 232.70 LAP .07 LOP 227.27 VP 20.957 GAP 4.00 AZP 90.08 TAL 27.96 TAP 167.08 RCA 143.85 APO 234.55 V2 23.631
RC 215.236 GL .78 GP 8.23 ZAL 41.13 ZAP 143.07 ETS 167.43 ZAE 170.05 ETE 69.03 ZAC 98.17 ETC 255.71 CLP 143.87

PLANETOCENTRIC CONIC

C3 17.917 VHL 4.233 DLA 18.69 RAL 131.93 RAD 6567.7 VEL 11.803 PTH 2.09 VHP 4.519 DPA 4.13 RAP 194.11 ECC 1.2949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 38 1	2812.58	-28.23	82.74	358.09	92.35	12 24 54	2212.6	-27.60	74.13
90.00	4 50 10	4208.42	.31	172.45	351.39	61.68	6 0 19	3608.4	-3.48	165.82
100.00	13 10 41	2513.74	-29.66	60.67	358.00	93.92	13 52 35	1913.7	-28.80	51.97
100.00	6 0 11	3982.48	1.56	155.15	350.69	60.14	7 6 34	3382.5	-2.42	148.62
110.00	14 43 34	2223.18	-33.32	38.15	357.55	98.10	15 20 37	1623.2	-31.85	29.23
110.00	6 43 48	3845.81	4.69	142.83	348.74	56.10	7 47 54	3245.8	.21	136.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0285 TRA -.1534 TC3 2.2976 BAU .5825 SGT 1957.8 SGR 883.9 SG3 1029.1 ST 96.0 SR 538.7 SS 803.8
RDE -.3953 RRA .1394 RC3 .7971 FAU .26136 RRT .7213 RRF -.8498 RTF -.8418 CRT -.4518 CRS .7381 CST -.6748
FDE .9958 FRA-3.5519 FC-12.6283 BSP 7001 SGB 2148.1 R23 -.2647 R13 -.8725 LSA 915.3 MSA 320.5 SSA 70.2
BDE .3963 BRA .2073 BC3 2.4319 FSP 3382 SG1 2068.4 SG2 579.4 THA 19.64 EL1 540.5 EL2 85.3 ALF 94.72

LAUNCH DATE DEC 20 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 462.452 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.176 GAL 5.33 AZL 89.95 HCA 140.12 SMA 188.80 ECC .23841 INC .0479 V1 30.273
RP 232.32 LAP .03 LOP 228.27 VP 20.966 GAP 3.58 AZP 90.04 TAL 28.27 TAP 168.39 RCA 143.79 APO 233.81 V2 23.670
RC 217.275 GL .40 GP 8.60 ZAL 40.74 ZAP 141.75 ETS 167.47 ZAE 170.05 ETE 77.36 ZAC 98.46 ETC 255.71 CLP 142.58

PLANETOCENTRIC CONIC

C3 17.886 VHL 4.229 DLA 18.42 RAL 131.43 RAD 6567.7 VEL 11.801 PTH 2.09 VHP 4.422 DPA 4.58 RAP 194.01 ECC 1.2944

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 38 47	2801.80	-28.19	81.96	357.45	92.75	12 25 29	2201.8	-27.52	73.36
90.00	4 45 25	4218.37	.63	173.01	350.79	61.69	5 55 44	3618.4	-3.16	166.37
100.00	13 11 11	2503.83	-29.61	59.94	357.35	94.31	13 52 55	1903.8	-28.70	51.25
100.00	5 55 42	3991.58	1.87	155.65	350.10	60.16	7 2 14	3391.6	-2.11	149.12
110.00	14 43 32	2214.90	-33.24	37.52	356.87	98.46	15 20 27	1614.9	-31.72	28.62
110.00	6 39 51	3853.28	4.98	143.22	348.17	56.14	7 44 4	3253.3	.50	137.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0388 TRA -.1559 TC3 2.2454 BAU .5746 SGT 1913.0 SGR 925.7 SG3 1076.6 ST 102.3 SR 533.4 SS 815.5
RDE -.3900 RRA .1620 RC3 .8560 FAU .27230 RRT .7318 RRF -.8699 RTF -.8348 CRT -.5708 CRS .7312 CST -.7327
FDE .9958 FRA-3.7820 FC-13.1803 BSP 6899 SGB 2125.2 R23 -.2835 R13 -.8723 LSA 922.5 MSA 322.8 SSA 69.2
BDE .3919 BRA .2249 BC3 2.4031 FSP 3549 SG1 2041.3 SG2 591.3 THA 21.38 EL1 536.6 EL2 83.5 ALF 96.40

LAUNCH DATE DEC 20 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 466.210 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.155 GAL 5.36 AZL 90.00 HCA 141.13 SMA 188.43 ECC .23718 INC .0000 V1 30.273
RP 231.95 LAP .00 LOP 229.28 VP 20.976 GAP 3.17 AZP 90.00 TAL 28.55 TAP 169.68 RCA 143.74 APO 233.12 V2 23.709
RC 219.295 GL .00 GP 8.99 ZAL 40.38 ZAP 140.38 ETS 167.52 ZAE 169.83 ETE 85.76 ZAC 98.77 ETC 255.70 CLP 141.25

PLANETOCENTRIC CONIC

C3 17.856 VHL 4.226 DLA 18.14 RAL 130.95 RAD 6567.7 VEL 11.800 PTH 2.09 VHP 4.328 DPA 5.07 RAP 193.88 ECC 1.2939

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 39 52	2790.16	-28.15	81.11	356.82	93.17	12 26 22	2190.2	-27.42	72.52
90.00	4 40 32	4229.23	.98	173.61	350.22	61.70	5 51 1	3629.2	-2.81	166.98
100.00	13 11 59	2493.10	-29.55	59.15	356.71	94.72	13 53 32	1893.1	-28.58	50.47
100.00	5 51 6	4001.52	2.21	156.19	349.54	60.18	6 57 48	3401.5	-1.78	149.67
110.00	14 43 46	2205.92	-33.15	36.83	356.21	98.86	15 20 32	1605.9	-31.57	27.96
110.00	6 35 48	3861.47	5.29	143.66	347.62	56.18	7 40 9	3261.5	.81	137.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0491 TRA -.1626 TC3 2.1853 BAU .5659 SGT 1862.5 SGR 972.2 SG3 1124.9 ST 111.1 SR 528.0 SS 827.0
RDE -.3846 RRA .1859 RC3 .9187 FAU .28342 RRT .7387 RRF -.8879 RTF -.8259 CRT -.6639 CRS .7256 CST -.7733
FDE .9935 FRA-4.0160 FC-13.7418 BSP 6800 SGB 2101.0 R23 -.3022 R13 -.8722 LSA 930.1 MSA 324.5 SSA 68.2
BDE .3877 BRA .2470 BC3 2.3705 FSP 3723 SG1 2011.5 SG2 606.7 THA 23.33 EL1 533.3 EL2 82.3 ALF 98.15

LAUNCH DATE DEC 20 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 469.982 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.135 GAL 5.39 AZL 90.05 HCA 142.14 SMA 188.07 ECC .23601 INC .0533 V1 30.273
RP 231.57 LAP -.03 LOP 230.29 VP 20.989 GAP 2.77 AZP 89.96 TAL 28.82 TAP 170.96 RCA 143.69 APO 232.46 V2 23.748
RC 221.297 GL -.41 GP 9.39 ZAL 40.04 ZAP 138.99 ETS 167.57 ZAE 169.38 ETE 93.87 ZAC 99.09 ETC 255.70 CLP 139.89

PLANETOCENTRIC CONIC

C3 17.827 VHL 4.222 DLA 17.82 RAL 130.50 RAD 6567.7 VEL 11.799 PTH 2.09 VHP 4.238 DPA 5.58 RAP 193.73 ECC 1.2934

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 41 15	2777.64	-28.10	80.19	356.20	93.62	12 27 33	2177.6	-27.30	71.62
90.00	4 35 31	4241.00	1.36	174.27	349.66	61.71	5 46 12	3641.0	-2.43	167.64
100.00	13 13 4	2481.54	-29.48	58.29	356.08	95.16	13 54 26	1881.5	-28.46	49.64
100.00	5 46 23	4012.32	2.57	156.78	348.99	60.21	6 53 15	3412.3	-1.41	150.26
110.00	14 44 16	2196.22	-33.05	36.10	355.56	99.28	15 20 52	1596.2	-31.41	27.25
110.00	6 31 40	3870.41	5.63	144.13	347.09	56.23	7 36 11	3270.4	1.15	137.90

DIFFERENTIAL CORRECTIONS
TDE .0603 TRA -.1717 TC3 2.1193 BAU .5570
RDE -.3787 RRA .2116 RC3 .9857 FAU .29483
FDE .9851 FRA-4.2594 FC-14.3179 BSP 6689
BDE .3835 BRA .2725 BC3 2.3373 FSP 3901

MID-COURSE EXECUTION ACCURACY
SGT 1808.1 SGR 1023.7 SG3 1174.6
RRT .7422 RRF -.9041 RTF -.8153
SGB 2077.8 R23 -.3194 R13 -.8728
SG1 1981.2 SG2 626.1 THA 25.52

ORBIT DETERMINATION ACCURACY
ST 122.4 SR 522.4 SS 838.0
CRT -.7410 CRS .7201 CST -.7988
LSA 937.7 MSA 326.1 SSA 67.1
EL1 530.4 EL2 80.9 ALF 100.08

LAUNCH DATE DEC 20 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 473.766 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.117 GAL 5.41 AZL 90.11 HCA 143.15 SMA 187.74 ECC .23492 INC .1074 V1 30.273
RP 231.20 LAP -.06 LOP 231.30 VP 21.004 GAP 2.37 AZP 89.91 TAL 29.07 TAP 172.22 RCA 143.64 APO 231.85 V2 23.788
RC 223.281 GL -.85 GP 9.83 ZAL 39.74 ZAP 137.55 ETS 167.63 ZAE 168.71 ETE 101.40 ZAC 99.43 ETC 255.69 CLP 138.49

PLANETOCENTRIC CONIC

C3 17.799 VHL 4.219 DLA 17.48 RAL 130.06 RAD 6567.7 VEL 11.798 PTH 2.09 VHP 4.153 DPA 6.14 RAP 193.56 ECC 1.2929

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 42 58	2764.19	-28.04	79.22	355.60	94.11	12 29 2	2164.2	-27.18	70.66
90.00	4 30 20	4253.74	1.77	174.98	349.13	61.73	5 41 14	3653.7	-2.02	168.35
100.00	13 14 28	2469.12	-29.40	57.38	355.47	95.64	13 55 37	1869.1	-28.31	48.74
100.00	5 41 31	4024.02	2.97	157.43	348.47	60.24	6 48 35	3424.0	-1.01	150.90
110.00	14 45 2	2185.77	-32.93	35.30	354.91	99.74	15 21 28	1585.8	-31.24	26.49
110.00	6 27 27	3880.13	5.99	144.64	346.59	56.28	7 32 7	3280.1	1.52	138.41

DIFFERENTIAL CORRECTIONS
TDE .0724 TRA -.1843 TC3 2.0447 BAU .5477
RDE -.3722 RRA .2391 RC3 1.0572 FAU .30643
FDE .9678 FRA-4.5091 FC-14.9049 BSP 6581
BDE .3792 BRA .3019 BC3 2.3019 FSP 4082

MID-COURSE EXECUTION ACCURACY
SGT 1747.9 SGR 1080.3 SG3 1225.3
RRT .7414 RRF -.9183 RTF -.8021
SGB 2054.8 R23 -.3347 R13 -.8740
SG1 1949.3 SG2 650.1 THA 28.00

ORBIT DETERMINATION ACCURACY
ST 136.2 SR 516.4 SS 847.5
CRT -.8013 CRS .7142 CST -.8125
LSA 944.3 MSA 327.7 SSA 66.1
EL1 528.1 EL2 79.7 ALF 102.21

LAUNCH DATE DEC 20 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 477.565 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.099 GAL 5.43 AZL 90.17 HCA 144.17 SMA 187.44 ECC .23388 INC .1658 V1 30.273
RP 230.82 LAP -.10 LOP 232.32 VP 21.022 GAP 1.98 AZP 89.86 TAL 29.30 TAP 173.47 RCA 143.60 APO 231.27 V2 23.827
RC 225.247 GL -1.31 GP 10.29 ZAL 39.46 ZAP 136.08 ETS 167.69 ZAE 167.84 ETE 108.15 ZAC 99.78 ETC 255.68 CLP 137.06

PLANETOCENTRIC CONIC

C3 17.771 VHL 4.216 DLA 17.11 RAL 129.65 RAD 6567.7 VEL 11.796 PTH 2.09 VHP 4.071 DPA 6.72 RAP 193.38 ECC 1.2925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 45 0	2749.80	-27.97	78.17	355.00	94.63	12 30 50	2149.8	-27.03	69.63
90.00	4 25 0	4267.39	2.21	175.74	348.61	61.76	5 36 8	3667.4	-1.58	169.11
100.00	13 16 10	2455.79	-29.31	56.40	354.86	96.15	13 57 6	1855.8	-28.15	47.79
100.00	5 36 31	4036.64	3.39	158.12	347.96	60.28	6 43 48	3436.6	-.59	151.60
110.00	14 46 4	2174.53	-32.80	34.45	354.27	100.23	15 22 19	1574.5	-31.04	25.67
110.00	6 23 7	3890.66	6.39	145.19	346.10	56.35	7 27 58	3290.7	1.92	138.96

DIFFERENTIAL CORRECTIONS
TDE .0853 TRA -.2004 TC3 1.9636 BAU .5387
RDE -.3650 RRA .2685 RC3 1.1339 FAU .31828
FDE .9415 FRA-4.7653 FC-15.5049 BSP 6466
BDE .3749 BRA .3350 BC3 2.2675 FSP 4263

MID-COURSE EXECUTION ACCURACY
SGT 1683.9 SGR 1142.7 SG3 1277.0
RRT .7361 RRF -.9307 RTF -.7860
SGB 2035.1 R23 -.3467 R13 -.8765
SG1 1918.5 SG2 679.0 THA 30.81

ORBIT DETERMINATION ACCURACY
ST 152.4 SR 510.0 SS 856.1
CRT -.8480 CRS .7081 CST -.8161
LSA 950.4 MSA 329.6 SSA 65.0
EL1 526.5 EL2 78.2 ALF 104.55

LAUNCH DATE DEC 20 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 481.376 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.082 GAL 5.45 AZL 90.23 HCA 145.18 SMA 187.15 ECC .23290 INC .2284 V1 30.273
RP 230.43 LAP -.13 LOP 233.34 VP 21.041 GAP 1.60 AZP 89.81 TAL 29.51 TAP 174.70 RCA 143.56 APO 230.73 V2 23.867
RC 227.193 GL -1.79 GP 10.77 ZAL 39.21 ZAP 134.57 ETS 167.76 ZAE 166.79 ETE 114.08 ZAC 100.15 ETC 255.68 CLP 135.59

PLANETOCENTRIC CONIC

C3 17.745 VHL 4.212 DLA 16.71 RAL 129.26 RAD 6567.7 VEL 11.795 PTH 2.09 VHP 3.993 DPA 7.35 RAP 193.18 ECC 1.2920

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 47 22	2734.41	-27.88	77.05	354.41	95.18	12 32 56	2134.4	-26.87	68.53
90.00	4 19 30	4282.09	2.69	176.56	348.12	61.80	5 30 52	3682.1	-1.11	169.93
100.00	13 18 11	2441.51	-29.20	55.35	354.25	96.69	13 58 53	1841.5	-27.97	46.76
100.00	5 31 22	4050.22	3.85	158.87	347.47	60.33	6 38 52	3450.2	-.13	152.34
110.00	14 47 22	2162.46	-32.65	33.54	353.64	100.75	15 23 25	1562.5	-30.82	24.80
110.00	6 18 40	3902.04	6.82	145.80	345.64	56.42	7 23 42	3302.0	2.36	139.55

DIFFERENTIAL CORRECTIONS
TDE .0981 TRA -.2205 TC3 1.8724 BAU .5295
RDE -.3574 RRA .2997 RC3 1.2147 FAU .32998
FDE .9101 FRA-5.0236 FC-16.0989 BSP 6377
BDE .3706 BRA .3721 BC3 2.2319 FSP 4454

MID-COURSE EXECUTION ACCURACY
SGT 1613.8 SGR 1210.3 SG3 1328.4
RRT .7251 RRF -.9415 RTF -.7656
SGB 2017.2 R23 -.3543 R13 -.8805
SG1 1887.1 SG2 712.7 THA 34.04

ORBIT DETERMINATION ACCURACY
ST 169.9 SR 503.5 SS 864.4
CRT -.8813 CRS .7034 CST -.8150
LSA 957.0 MSA 331.1 SSA 63.8
EL1 525.8 EL2 76.9 ALF 106.94

LAUNCH DATE DEC 20 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 485.199 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.067 GAL 5.47 AZL 90.29 HCA 146.21 SMA 186.88 ECC .23198 INC .2933 V1 30.273
RP 230.05 LAP -.16 LOP 234.36 VP 21.062 GAP 1.23 AZP 89.76 TAL 29.71 TAP 175.91 RCA 143.52 APO 230.23 V2 23.907
RC 229.120 GL -2.30 GP 11.28 ZAL 38.99 ZAP 133.02 ETS 167.84 ZAE 165.57 ETE 119.20 ZAC 100.55 ETC 255.67 CLP 134.08

PLANETOCENTRIC CONIC

C3 17.719 VHL 4.209 DLA 16.28 RAL 128.88 RAD 6567.7 VEL 11.794 PTH 2.09 VHP 3.919 DPA 8.01 RAP 192.96 ECC 1.2916

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 50 3	2717.98	-27.77	75.86	353.83	95.77	12 35 20	2118.0	-26.68	67.36
90.00	4 13 49	4297.85	3.19	177.44	347.64	61.85	5 25 27	3697.8	-.60	170.81
100.00	13 20 30	2426.25	-29.08	54.23	353.66	97.26	14 0 57	1826.2	-27.77	45.67
100.00	5 26 2	4064.81	4.34	159.68	347.00	60.40	6 33 47	3464.8	.37	153.14
110.00	14 48 57	2149.51	-32.48	32.57	353.01	101.30	15 24 47	1549.5	-30.58	23.87
110.00	6 14 5	3914.31	7.28	146.45	345.19	56.51	7 19 19	3314.3	2.83	140.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1122 TRA -.2434 TC3 1.7753 BAU .5215 SGT 1541.5 SGR 1284.5 SG3 1381.1 ST 189.9 SR 496.2 SS 871.6
RDE -.3485 RRA .3335 RC3 1.3019 FAU .34195 RRT .7082 RRF -.9508 RTF -.7408 CRT -.9091 CRS .6976 CST -.8055
FDE .8640 FRA-5.2911 FC-16.7070 BSP 6277 SGB 2006.6 R23 -.3552 R13 -.8871 LSA 962.7 MSA 333.6 SSA 62.5
BDE .3661 BRA .4129 BC3 2.2015 FSP 4635 SG1 1860.6 SG2 751.3 THA 37.74 EL1 526.1 EL2 74.6 ALF 109.59

LAUNCH DATE DEC 20 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 489.035 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.052 GAL 5.48 AZL 90.36 HCA 147.23 SMA 186.62 ECC .23110 INC .3624 V1 30.273
RP 229.67 LAP -.20 LOP 235.38 VP 21.085 GAP .87 AZP 89.69 TAL 29.88 TAP 177.11 RCA 143.49 APO 229.75 V2 23.948
RC 231.027 GL -2.84 GP 11.83 ZAL 38.81 ZAP 131.43 ETS 167.92 ZAE 164.22 ETE 123.59 ZAC 100.97 ETC 255.67 CLP 132.54

PLANETOCENTRIC CONIC

C3 17.695 VHL 4.207 DLA 15.81 RAL 128.52 RAD 6567.7 VEL 11.793 PTH 2.09 VHP 3.849 DPA 8.72 RAP 192.73 ECC 1.2912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 53 4	2700.45	-27.64	74.59	353.24	96.39	12 38 4	2100.5	-26.47	66.12
90.00	4 7 56	4314.73	3.73	178.39	347.18	61.91	5 19 50	3714.7	-.05	171.75
100.00	13 23 9	2409.93	-28.93	53.04	353.06	97.87	14 3 19	1809.9	-27.54	44.52
100.00	5 20 32	4080.48	4.87	160.54	346.55	60.47	6 28 32	3480.5	.90	154.00
110.00	14 50 49	2135.63	-32.29	31.53	352.38	101.89	15 26 25	1535.6	-30.32	22.87
110.00	6 9 21	3927.55	7.78	147.15	344.76	56.61	7 14 48	3327.5	3.33	140.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1257 TRA -.2711 TC3 1.6679 BAU .5142 SGT 1464.8 SGR 1364.6 SG3 1433.0 ST 210.6 SR 488.8 SS 878.7
RDE -.3389 RRA .3695 RC3 1.3940 FAU .35370 RRT .6834 RRF -.9588 RTF -.7088 CRT -.9290 CRS .6932 CST -.7950
FDE .8103 FRA-5.5584 FC-17.3052 BSP 6223 SGB 2001.9 R23 -.3481 R13 -.8964 LSA 968.9 MSA 336.0 SSA 61.1
BDE .3615 BRA .4583 BC3 2.1738 FSP 4827 SG1 1837.7 SG2 794.1 THA 42.04 EL1 527.3 EL2 72.3 ALF 112.25

LAUNCH DATE DEC 20 1964 FLIGHT TIME 224.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 492.883 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.039 GAL 5.49 AZL 90.44 HCA 148.26 SMA 186.39 ECC .23028 INC .4357 V1 30.273
RP 229.28 LAP -.23 LOP 236.41 VP 21.110 GAP .51 AZP 89.63 TAL 30.04 TAP 178.30 RCA 143.47 APO 229.31 V2 23.988
RC 232.913 GL -3.42 GP 12.41 ZAL 38.65 ZAP 129.81 ETS 168.02 ZAE 162.75 ETE 127.36 ZAC 101.41 ETC 255.66 CLP 130.96

PLANETOCENTRIC CONIC

C3 17.671 VHL 4.204 DLA 15.30 RAL 128.18 RAD 6567.7 VEL 11.792 PTH 2.08 VHP 3.783 DPA 9.47 RAP 192.48 ECC 1.2908

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 56 25	2681.76	-27.49	73.25	352.66	97.05	12 41 7	2081.8	-26.23	64.81
90.00	4 1 49	4332.80	4.31	179.40	346.74	61.99	5 14 2	3732.8	.53	172.76
100.00	13 26 7	2392.50	-28.76	51.77	352.46	98.52	14 5 59	1792.5	-27.28	43.28
100.00	5 14 49	4097.30	5.43	161.47	346.12	60.56	6 23 6	3497.3	1.47	154.92
110.00	14 52 58	2120.75	-32.07	30.42	351.75	102.51	15 28 19	1520.8	-30.02	21.81
110.00	6 4 27	3941.81	8.31	147.91	344.35	56.72	7 10 9	3341.8	3.88	141.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1393 TRA -.3030 TC3 1.5516 BAU .5086 SGT 1386.0 SGR 1451.4 SG3 1484.7 ST 232.6 SR 480.9 SS 885.2
RDE -.3281 RRA .4080 RC3 1.4923 FAU .36535 RRT .6487 RRF -.9656 RTF -.6681 CRT -.9447 CRS .6892 CST -.7814
FDE .7439 FRA-5.8272 FC-17.8986 BSP 6194 SGB 2006.9 R23 -.3305 R13 -.9089 LSA 975.0 MSA 339.0 SSA 59.6
BDE .3564 BRA .5082 BC3 2.1528 FSP 5011 SG1 1822.6 SG2 840.0 THA 47.03 EL1 529.7 EL2 69.3 ALF 115.01

LAUNCH DATE DEC 20 1964 FLIGHT TIME 226.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 496.742 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.026 GAL 5.50 AZL 90.51 HCA 149.29 SMA 186.17 ECC .22950 INC .5137 V1 30.273
RP 228.89 LAP -.26 LOP 237.45 VP 21.137 GAP .16 AZP 89.56 TAL 30.18 TAP 179.47 RCA 143.44 APO 228.90 V2 24.029
RC 234.778 GL -4.03 GP 13.02 ZAL 38.53 ZAP 128.15 ETS 168.13 ZAE 161.16 ETE 130.58 ZAC 101.88 ETC 255.66 CLP 129.35

PLANETOCENTRIC CONIC

C3 17.650 VHL 4.201 DLA 14.75 RAL 127.85 RAD 6567.7 VEL 11.791 PTH 2.08 VHP 3.722 DPA 10.26 RAP 192.23 ECC 1.2905

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 0 8	2661.84	-27.32	71.82	352.07	97.75	12 44 30	2061.8	-25.96	63.41
90.00	3 55 28	4352.16	4.93	180.49	346.31	62.08	5 8 0	3752.2	1.16	173.84
100.00	13 29 25	2373.89	-28.57	50.42	351.86	99.21	14 8 59	1773.9	-27.00	41.97
100.00	5 8 52	4115.34	6.04	162.47	345.70	60.67	6 17 27	3515.3	2.08	155.92
110.00	14 55 25	2104.82	-31.83	29.24	351.12	103.17	15 30 30	1504.8	-29.70	20.69
110.00	5 59 21	3957.18	8.88	148.73	343.96	56.86	7 5 19	3357.2	4.46	142.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1532 TRA -.3388 TC3 1.4271 BAU .5053 SGT 1307.6 SGR 1544.9 SG3 1535.4 ST 255.9 SR 472.4 SS 891.5
RDE -.3157 RRA .4492 RC3 1.5968 FAU .37675 RRT .6020 RRF -.9713 RTF -.6164 CRT -.9575 CRS .6859 CST -.7638
FDE .6632 FRA-6.0954 FC-18.4796 BSP 6209 SGB 2024.0 R23 -.3000 R13 -.9247 LSA 981.1 MSA 342.9 SSA 57.8
BDE .3509 BRA .5626 BC3 2.1415 FSP 5197 SG1 1819.5 SG2 886.5 THA 52.78 EL1 533.3 EL2 65.4 ALF 117.87

LAUNCH DATE DEC 20 1964 FLIGHT TIME 228.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 500.613 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.014	GAL	5.50	AZL	90.60	HCA	150.33	SMA	185.97	ECC	.22876	INC	.5968	V1	30.273
RP	228.51	LAP	-.30	LOP	238.48	VP	21.165	GAP	-.19	AZP	89.48	TAL	30.30	TAP	180.63	RCA	143.43	APO	228.51	V2	24.070
RC	236.623	GL	-4.68	GP	13.67	ZAL	38.43	ZAP	126.45	ETS	168.25	ZAE	159.49	ETE	133.35	ZAC	102.38	ETC	255.65	CLP	127.70

PLANETOCENTRIC CONIC

C3	17.631	VHL	4.199	DLA	14.16	RAL	127.53	RAD	6567.7	VEL	11.790	PTH	2.08	VHP	3.665	DPA	11.11	RAP	191.96	ECC	1.2902

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 4 13	2640.59	-27.12	70.29	351.49	98.49	12 48 14	2040.6	-25.66	61.93
90.00	3 48 51	4372.90	5.59	181.65	345.90	62.20	5 1 43	3772.9	1.83	175.00
100.00	13 33 5	2354.00	-28.34	48.99	351.26	99.93	14 12 19	1754.0	-26.68	40.58
100.00	5 2 40	4134.72	6.68	163.55	345.31	60.80	6 11 35	3534.7	2.74	156.98
110.00	14 58 11	2087.74	-31.56	27.99	350.48	103.87	15 32 58	1487.7	-29.33	19.49
110.00	5 54 3	3973.75	9.50	149.62	343.59	57.01	7 0 17	3373.8	5.09	143.31

DIFFERENTIAL CORRECTIONS

TDE	.1662	TRA	-.3790	TC3	1.2933	BAU	.5050
RDE	-.3018	RRA	.4934	RC3	1.7079	FAU	.38785
FDE	.5686	FRA	-6.3634	FC	-19.0447	BSP	6279
BDE	.3446	BRA	.6222	BC3	2.1423	FSP	5376

MID-COURSE EXECUTION ACCURACY

SGT	1231.0	SGR	1645.9	SG3	1585.1		
RRT	.5399	RRF	-.9762	RTF	-.5499		
SGB	2055.3	R23	-.2558	R13	-.9425		
SG1	1832.6	SG2	930.6	THA	59.31		

ORBIT DETERMINATION ACCURACY

ST	279.5	SR	463.5	SS	898.4		
CRT	-.9675	CRS	.6842	CST	-.7443		
LSA	988.0	MSA	347.7	SSA	55.9		
EL1	537.8	EL2	60.9	ALF	120.69		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 230.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 504.495 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.003	GAL	5.51	AZL	90.69	HCA	151.37	SMA	185.78	ECC	.22806	INC	.6859	V1	30.273
RP	228.12	LAP	-.33	LOP	239.52	VP	21.194	GAP	-.52	AZP	89.40	TAL	30.40	TAP	181.77	RCA	143.41	APO	228.15	V2	24.111
RC	238.446	GL	-5.38	GP	14.36	ZAL	38.38	ZAP	124.72	ETS	168.39	ZAE	157.72	ETE	135.74	ZAC	102.91	ETC	255.65	CLP	126.01

PLANETOCENTRIC CONIC

C3	17.615	VHL	4.197	DLA	13.51	RAL	127.22	RAD	6567.7	VEL	11.790	PTH	2.08	VHP	3.613	DPA	12.00	RAP	191.68	ECC	1.2899

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 8 41	2617.92	-26.88	68.68	350.90	99.27	12 52 19	2017.9	-25.32	60.35
90.00	3 41 55	4395.15	6.30	182.91	345.52	62.34	4 55 10	3795.2	2.54	176.24
100.00	13 37 6	2332.75	-28.08	47.46	350.66	100.69	14 15 59	1732.8	-26.32	39.10
100.00	4 56 11	4155.55	7.37	164.71	344.93	60.95	6 5 26	3555.6	3.44	158.13
110.00	15 1 16	2069.43	-31.26	26.65	349.84	104.60	15 35 45	1469.4	-28.93	18.21
110.00	5 48 31	3991.64	10.16	150.58	343.24	57.19	6 55 3	3391.6	5.77	144.25

DIFFERENTIAL CORRECTIONS

TDE	.1790	TRA	-.4236	TC3	1.1503	BAU	.5082
RDE	-.2859	RRA	.5408	RC3	1.8257	FAU	.39843
FDE	.4581	FRA	-6.6274	FC	-19.5819	BSP	6404
BDE	.3373	BRA	.6870	BC3	2.1578	FSP	5546

MID-COURSE EXECUTION ACCURACY

SGT	1160.1	SGR	1754.2	SG3	1632.8		
RRT	.4583	RRF	-.9803	RTF	-.4645		
SGB	2103.1	R23	-.1997	R13	-.9599		
SG1	1866.6	SG2	969.0	THA	66.44		

ORBIT DETERMINATION ACCURACY

ST	303.9	SR	454.3	SS	906.1		
CRT	-.9755	CRS	.6845	CST	-.7216		
LSA	995.9	MSA	353.7	SSA	53.7		
EL1	543.7	EL2	55.9	ALF	123.53		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 508.391 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	32.993	GAL	5.51	AZL	90.78	HCA	152.41	SMA	185.61	ECC	.22741	INC	.7808	V1	30.273
RP	227.73	LAP	-.36	LOP	240.56	VP	21.226	GAP	-.85	AZP	89.31	TAL	30.49	TAP	182.90	RCA	143.40	APO	227.81	V2	24.152
RC	240.248	GL	-6.13	GP	15.09	ZAL	38.36	ZAP	122.95	ETS	168.55	ZAE	155.87	ETE	137.81	ZAC	103.48	ETC	255.64	CLP	124.29

PLANETOCENTRIC CONIC

C3	17.604	VHL	4.196	DLA	12.81	RAL	126.92	RAD	6567.7	VEL	11.789	PTH	2.08	VHP	3.565	DPA	12.94	RAP	191.39	ECC	1.2897

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 13 33	2593.74	-26.60	66.96	350.30	100.08	12 56 46	1993.7	-24.94	58.69
90.00	3 34 39	4419.05	7.05	184.26	345.15	62.50	4 48 18	3819.0	3.31	177.58
100.00	13 41 31	2310.05	-27.78	45.84	350.04	101.50	14 20 1	1710.0	-25.92	37.54
100.00	4 49 23	4177.97	8.11	165.96	344.57	61.13	5 59 1	3578.0	4.20	159.36
110.00	15 4 41	2049.82	-30.91	25.22	349.19	105.38	15 38 50	1449.8	-28.49	16.86
110.00	5 42 42	4010.97	10.87	151.63	342.91	57.39	6 49 33	3411.0	6.50	145.27

DIFFERENTIAL CORRECTIONS

TDE	.1987	TRA	-.4644	TC3	1.0175	BAU	.5196
RDE	-.2639	RRA	.5956	RC3	1.9591	FAU	.41029
FDE	.2898	FRA	-6.9270	FC	-20.1776	BSP	6466
BDE	.3304	BRA	.7552	BC3	2.2076	FSP	5627

MID-COURSE EXECUTION ACCURACY

SGT	1107.1	SGR	1878.4	SG3	1686.3		
RRT	.3671	RRF	-.9838	RTF	-.3721		
SGB	2180.4	R23	-.1392	R13	-.9740		
SG1	1938.7	SG2	997.7	THA	73.23		

ORBIT DETERMINATION ACCURACY

ST	335.2	SR	441.5	SS	918.1		
CRT	-.9822	CRS	.6808	CST	-.6628		
LSA	1004.9	MSA	371.2	SSA	50.1		
EL1	552.0	EL2	50.4	ALF	127.07		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 512.294 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	32.984	GAL	5.51	AZL	90.88	HCA	153.46	SMA	185.45	ECC	.22678	INC	.8834	V1	30.273
RP	227.34	LAP	-.39	LOP	241.61	VP	21.258	GAP	-1.17	AZP	89.21	TAL	30.55	TAP	184.01	RCA	143.39	APO	227.50	V2	24.193
RC	242.030	GL	-6.93	GP	15.87	ZAL	38.38	ZAP	121.16	ETS	168.73	ZAE	153.95	ETE	139.61	ZAC	104.09	ETC	255.64	CLP	122.54

PLANETOCENTRIC CONIC

C3	17.597	VHL	4.195	DLA	12.05	RAL	126.63	RAD	6567.7	VEL	11.789	PTH	2.08	VHP	3.522	DPA	13.94	RAP	191.11	ECC	1.2896

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 18 51	2567.85	-26.28	65.13	349.69	100.94	13 1 39	1967.9	-24.50	56.91
90.00	3 27 1	4444.77	7.85	185.72	344.80	62.71	4 41 6	3844.8	4.14	179.02
100.00	13 46 20	2285.69	-27.44	44.11	349.42	102.35	14 24 26	1685.7	-25.46	35.87
100.00	4 42 13	4202.16	8.90	167.32	344.24	61.35	5 52 15	3602.2	5.01	160.70
110.00	15 8 28	2028.71	-30.52	23.70	348.53	106.20	15 42 16	1428.7	-28.00	15.42
110.00	5 36 35	4031.90	11.64	152.77	342.60	57.63	6 43 47	3431.9	7.28	146.38

DIFFERENTIAL CORRECTIONS

TDE	.2061	TRA	-.5218	TC3	.8488	BAU	.5304
RDE	-.2439	RRA	.6491	RC3	2.0886	FAU	.41894
FDE	.1546	FRA	-7.1645	FC	-20.6103	BSP	6807
BDE	.3193	BRA	.8328	BC3	2.2545	FSP	5806

MID-COURSE EXECUTION ACCURACY

SGT	1057.1	SGR	2000.8	SG3	1726.2		
RRT	.2333	RRF	-.9867	RTF	-.2350		
SGB	2262.9	R23	-.0774	R13	-.9836		
SG1	2021.2	SG2	1017.6	THA	80.56		

ORBIT DETERMINATION ACCURACY

ST	357.1	SR	433.3	SS	929.3		
CRT	-.9833	CRS	.6909	CST	-.6462		
LSA	1017.1	MSA	377.0	SSA	47.8		
EL1	559.2	EL2	50.4	ALF	129.41		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 516.209 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.975 GAL 5.50 AZL 90.99 HCA 154.51 SMA 185.30 ECC .22619 INC .9943 V1 30.273
RP 226.95 LAP -.43 LOP 242.66 VP 21.292 GAP -1.49 AZP 89.10 TAL 30.60 TAP 185.11 RCA 143.39 APO 227.21 V2 24.235
RC 243.792 GL -7.80 GP 16.71 ZAL 38.45 ZAP 119.33 ETS 168.94 ZAE 151.97 ETE 141.18 ZAC 104.74 ETC 255.63 CLP 120.76

PLANETOCENTRIC CONIC

C3 17.599 VHL 4.195 DLA 11.22 RAL 126.34 RAD 6567.7 VEL 11.789 PTH 2.08 VHP 3.485 DPA 14.99 RAP 190.83 ECC 1.2896

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 24 36	2540.13	-25.91	63.19	349.08	101.85	13 6 56	1940.1	-24.01	55.03
90.00	3 18 58	4472.51	8.72	187.30	344.48	62.95	4 33 30	3872.5	5.02	180.57
100.00	13 51 36	2259.58	-27.05	42.27	348.79	103.24	14 29 15	1659.6	-24.96	34.10
100.00	4 34 39	4228.29	9.75	168.80	343.93	61.60	5 45 8	3628.3	5.88	162.14
110.00	15 12 37	2006.02	-30.08	22.08	347.86	107.07	15 46 4	1406.0	-27.45	13.88
110.00	5 30 7	4054.62	12.46	154.01	342.32	57.91	6 37 41	3454.6	8.14	147.59

DIFFERENTIAL CORRECTIONS
TDE .2121 TRA -.5832 TC3 .6723 BAU .5469
RDE -.2211 RRA .7066 RC3 2.2253 FAU .42673
FDE .0030 FRA-7.3917 FC-20.9922 BSP 7227
BDE .3064 BRA .9162 BC3 2.3247 FSP 5975

MID-COURSE EXECUTION ACCURACY
SGT 1030.4 SGR 2132.0 SG3 1762.5
RRT .0759 RRF -.9890 RTF -.0749
SGB 2367.9 R23 -.0228 R13 -.9887
SG1 2133.8 SG2 1026.5 THA 87.27

ORBIT DETERMINATION ACCURACY
ST 378.9 SR 426.0 SS 943.2
CRT -.9817 CRS .7061 CST -.6272
LSA 1032.1 MSA 383.7 SSA 45.2
EL1 567.5 EL2 54.2 ALF 131.59

LAUNCH DATE DEC 20 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 520.134 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.968 GAL 5.50 AZL 91.11 HCA 155.56 SMA 185.16 ECC .22563 INC 1.1141 V1 30.273
RP 226.56 LAP -.46 LOP 243.72 VP 21.327 GAP -1.80 AZP 88.99 TAL 30.63 TAP 186.19 RCA 143.39 APO 226.94 V2 24.277
RC 245.534 GL -8.75 GP 17.59 ZAL 38.56 ZAP 117.48 ETS 169.16 ZAE 149.92 ETE 142.57 ZAC 105.44 ETC 255.62 CLP 118.95

PLANETOCENTRIC CONIC

C3 17.609 VHL 4.196 DLA 10.32 RAL 126.05 RAD 6567.7 VEL 11.789 PTH 2.08 VHP 3.453 DPA 16.10 RAP 190.55 ECC 1.2898

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 30 51	2510.42	-25.47	61.12	348.45	102.80	13 12 42	1910.4	-23.46	53.03
90.00	3 10 25	4502.52	9.64	189.02	344.18	63.25	4 25 27	3902.5	5.97	182.26
100.00	13 57 19	2231.55	-26.60	40.31	348.15	104.18	14 34 31	1631.6	-24.38	32.21
100.00	4 26 38	4256.63	10.66	170.40	343.64	61.91	5 37 35	3656.6	6.83	163.72
110.00	15 17 12	1981.60	-29.58	20.36	347.18	107.98	15 50 13	1381.6	-26.83	12.24
110.00	5 23 15	4079.33	13.35	155.37	342.06	58.24	6 31 14	3479.3	9.06	148.91

DIFFERENTIAL CORRECTIONS
TDE .2176 TRA -.6484 TC3 .4908 BAU .5702
RDE -.1932 RRA .7695 RC3 2.3716 FAU .43389
FDE -.1820 FRA-7.6150 FC-21.3312 BSP 7697
BDE .2910 BRA 1.0062 BC3 2.4218 FSP 6104

MID-COURSE EXECUTION ACCURACY
SGT 1033.3 SGR 2274.1 SG3 1796.3
RRT -.0934 RRF -.9910 RTF .0960
SGB 2497.9 R23 .0204 R13 -.9908
SG1 2276.7 SG2 1027.6 THA 93.05

ORBIT DETERMINATION ACCURACY
ST 401.6 SR 419.3 SS 962.1
CRT -.9747 CRS .7264 CST -.5986
LSA 1051.5 MSA 394.3 SSA 42.2
EL1 576.9 EL2 65.3 ALF 133.74

LAUNCH DATE DEC 20 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 524.070 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.960 GAL 5.49 AZL 91.24 HCA 156.62 SMA 185.04 ECC .22509 INC 1.2449 V1 30.273
RP 226.17 LAP -.49 LOP 244.77 VP 21.363 GAP -2.10 AZP 88.86 TAL 30.65 TAP 187.26 RCA 143.39 APO 226.69 V2 24.318
RC 247.256 GL -9.77 GP 18.54 ZAL 38.73 ZAP 115.60 ETS 169.42 ZAE 147.80 ETE 143.80 ZAC 106.20 ETC 255.61 CLP 117.11

PLANETOCENTRIC CONIC

C3 17.633 VHL 4.199 DLA 9.33 RAL 125.76 RAD 6567.7 VEL 11.790 PTH 2.08 VHP 3.426 DPA 17.28 RAP 190.29 ECC 1.2902

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 37 38	2478.49	-24.97	58.92	347.81	103.80	13 18 57	1878.5	-22.83	50.90
90.00	3 1 19	4535.07	10.63	190.90	343.91	63.60	4 16 54	3935.1	7.00	184.10
100.00	14 3 33	2201.39	-26.08	38.22	347.50	105.16	14 40 15	1601.4	-23.74	30.20
100.00	4 18 5	4287.40	11.65	172.16	343.39	62.27	5 29 33	3687.4	7.84	165.44
110.00	15 22 13	1955.25	-29.01	18.52	346.48	108.93	15 54 48	1355.3	-26.15	10.50
110.00	5 15 55	4106.30	14.31	156.87	341.83	58.62	6 24 22	3506.3	10.06	150.36

DIFFERENTIAL CORRECTIONS
TDE .2207 TRA -.7183 TC3 .3013 BAU .5991
RDE -.1613 RRA .8370 RC3 2.5235 FAU .43954
FDE -.3842 FRA-7.8195 FC-21.5800 BSP 8265
BDE .2733 BRA 1.1029 BC3 2.5415 FSP 6224

MID-COURSE EXECUTION ACCURACY
SGT 1068.2 SGR 2424.8 SG3 1823.9
RRT -.2623 RRF -.9926 RTF .2659
SGB 2649.7 R23 .0526 R13 -.9912
SG1 2444.4 SG2 1022.6 THA 98.00

ORBIT DETERMINATION ACCURACY
ST 423.7 SR 416.0 SS 986.0
CRT -.9603 CRS .7546 CST -.5702
LSA 1076.4 MSA 405.6 SSA 39.1
EL1 587.8 EL2 83.7 ALF 135.55

LAUNCH DATE DEC 20 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 528.016 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.954 GAL 5.48 AZL 91.39 HCA 157.68 SMA 184.93 ECC .22459 INC 1.3875 V1 30.273
RP 225.78 LAP -.53 LOP 245.83 VP 21.401 GAP -2.39 AZP 88.72 TAL 30.65 TAP 188.32 RCA 143.40 APO 226.46 V2 24.360
RC 248.959 GL -10.89 GP 19.56 ZAL 38.95 ZAP 113.70 ETS 169.71 ZAE 145.63 ETE 144.89 ZAC 107.02 ETC 255.59 CLP 115.25

PLANETOCENTRIC CONIC

C3 17.673 VHL 4.204 DLA 8.25 RAL 125.47 RAD 6567.7 VEL 11.792 PTH 2.08 VHP 3.406 DPA 18.53 RAP 190.04 ECC 1.2909

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 45 1	2444.09	-24.39	56.56	347.16	104.84	13 25 45	1844.1	-22.12	48.63
90.00	2 51 36	4570.52	11.70	192.96	343.68	64.03	4 7 46	3970.5	8.11	186.12
100.00	14 10 21	2168.85	-25.48	35.99	346.83	106.19	14 46 30	1568.9	-23.01	28.06
100.00	4 8 57	4320.99	12.70	174.10	343.17	62.71	5 20 58	3721.0	8.95	167.32
110.00	15 27 42	1926.77	-28.36	16.55	345.78	109.93	15 59 49	1326.8	-25.38	8.64
110.00	5 8 5	4135.83	15.35	158.53	341.65	59.08	6 17 0	3535.8	11.14	151.95

DIFFERENTIAL CORRECTIONS
TDE .2202 TRA -.7936 TC3 .1033 BAU .6343
RDE -.1238 RRA .9104 RC3 2.6825 FAU .44377
FDE -.6110 FRA-8.0081 FC-21.7388 BSP 8909
BDE .2526 BRA 1.2077 BC3 2.6845 FSP 6316

MID-COURSE EXECUTION ACCURACY
SGT 1136.7 SGR 2585.9 SG3 1845.8
RRT -.4167 RRF -.9939 RTF .4207
SGB 2824.7 R23 .0753 R13 -.9911
SG1 2636.7 SG2 1013.4 THA 102.21

ORBIT DETERMINATION ACCURACY
ST 444.5 SR 417.7 SS 1016.9
CRT -.9358 CRS .7905 CST -.5426
LSA 1109.4 MSA 417.3 SSA 35.8
EL1 600.2 EL2 109.0 ALF 136.90

LAUNCH DATE DEC 20 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 531.973 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	32.948	GAL	5.47	AZL	91.54	HCA	158.74	SMA	184.83	ECC	.22411	INC	1.5442	V1	30.273
RP	225.38	LAP	-.56	LOP	246.90	VP	21.439	GAP	-2.68	AZP	88.56	TAL	30.63	TAP	189.37	RCA	143.41	APO	226.25	V2	24.402
RC	250.643	GL	-12.12	GP	20.65	ZAL	39.24	ZAP	111.78	ETS	170.03	ZAE	143.41	ETE	145.86	ZAC	107.91	ETC	255.57	CLP	113.36

PLANETOCENTRIC CONIC

C3	17.734	VHL	4.211	DLA	7.07	RAL	125.16	RAD	6567.7	VEL	11.795	PTH	2.09	VHP	3.393	DPA	19.84	RAP	189.82	ECC	1.2919

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 53 2	2406.95	-23.72	54.05	346.50	105.93	13 33 9	1806.9	-21.31	46.21
90.00	2 41 9	4609.27	12.84	195.23	343.50	64.55	3 57 58	4009.3	9.31	188.33
100.00	14 17 46	2133.68	-24.79	33.60	346.16	107.26	14 53 19	1533.7	-22.19	25.77
100.00	3 59 6	4357.76	13.84	176.24	342.99	63.24	5 11 44	3757.8	10.14	169.40
110.00	15 33 44	1895.93	-27.63	14.45	345.06	110.98	16 5 20	1295.9	-24.52	6.66
110.00	4 59 37	4168.28	16.48	160.37	341.50	59.62	6 9 6	3568.3	12.32	153.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2165	TRA	-.8739	TC3	-.0993	BAU	.6759	SGT	1236.6	SGR	2759.1	SG3	1861.4	ST	464.7	SR	427.3	SS	1056.7
RDE	-.0792	RRA	.9900	RC3	2.8492	FAU	.44659	RRT	-.5447	RRF	-.9951	RTF	.5486	CRT	-.8978	CRS	.8321	CST	-.5152
FDE	-.8654	FRA	-8.1750	FC	-21.8016	BSP	9627	SGB	3023.5	R23	.0902	R13	-.9910	LSA	1152.8	MSA	430.1	SSA	32.5
BDE	.2305	BRA	1.3205	BC3	2.8509	FSP	6373	SG1	2852.2	SG2	1003.1	THA	105.71	EL1	615.1	EL2	142.2	ALF	137.67

LAUNCH DATE DEC 20 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 535.940 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	32.943	GAL	5.45	AZL	91.72	HCA	159.81	SMA	184.74	ECC	.22365	INC	1.7169	V1	30.273
RP	224.99	LAP	-.59	LOP	247.97	VP	21.479	GAP	-2.96	AZP	88.39	TAL	30.59	TAP	190.40	RCA	143.42	APO	226.06	V2	24.444
RC	252.307	GL	-13.46	GP	21.82	ZAL	39.61	ZAP	109.86	ETS	170.39	ZAE	141.14	ETE	146.73	ZAC	108.87	ETC	255.54	CLP	111.46

PLANETOCENTRIC CONIC

C3	17.823	VHL	4.222	DLA	5.76	RAL	124.84	RAD	6567.7	VEL	11.799	PTH	2.09	VHP	3.386	DPA	21.24	RAP	189.63	ECC	1.2933

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 1 47	2366.71	-22.95	51.35	345.84	107.06	13 41 14	1766.7	-20.39	43.61
90.00	2 29 51	4651.83	14.07	197.75	343.36	65.17	3 47 23	4051.8	10.61	190.78
100.00	14 25 51	2095.55	-23.99	31.05	345.47	108.39	15 0 47	1495.6	-21.26	23.32
100.00	3 48 28	4398.22	15.07	178.61	342.87	63.87	5 1 46	3798.2	11.43	171.71
110.00	15 40 21	1862.43	-26.79	12.21	344.33	112.07	16 11 23	1262.4	-23.56	4.54
110.00	4 50 28	4204.11	17.70	162.43	341.42	60.27	6 0 32	3604.1	13.61	155.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2082	TRA	-.9595	TC3	-.3073	BAU	.7242	SGT	1363.9	SGR	2946.8	SG3	1871.1	ST	483.8	SR	449.2	SS	1109.4
RDE	-.0253	RRA	1.0785	RC3	3.0238	FAU	.44791	RRT	-.6463	RRF	-.9960	RTF	.6498	CRT	-.8446	CRS	.8763	CST	-.4903
FDE	-1.1552	FRA	-8.3288	FC	-21.7566	BSP	10391	SGB	3247.2	R23	.0992	R13	-.9911	LSA	1212.2	MSA	443.2	SSA	29.0
BDE	.2097	BRA	1.4435	BC3	3.0394	FSP	6379	SG1	3091.9	SG2	991.9	THA	108.64	EL1	634.2	EL2	183.5	ALF	137.51

LAUNCH DATE DEC 20 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 539.916 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	32.938	GAL	5.44	AZL	91.91	HCA	160.88	SMA	184.66	ECC	.22322	INC	1.9096	V1	30.273
RP	224.60	LAP	-.63	LOP	249.04	VP	21.519	GAP	-3.24	AZP	88.20	TAL	30.54	TAP	191.42	RCA	143.44	APO	225.88	V2	24.486
RC	253.951	GL	-14.95	GP	23.09	ZAL	40.07	ZAP	107.92	ETS	170.79	ZAE	138.81	ETE	147.51	ZAC	109.93	ETC	255.51	CLP	109.54

PLANETOCENTRIC CONIC

C3	17.948	VHL	4.237	DLA	4.32	RAL	124.50	RAD	6567.7	VEL	11.804	PTH	2.09	VHP	3.388	DPA	22.72	RAP	189.49	ECC	1.2954

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 11 21	2322.97	-22.04	48.47	345.16	108.24	13 50 4	1723.0	-19.35	40.83
90.00	2 17 33	4698.82	15.40	200.56	343.29	65.94	3 35 52	4098.8	12.02	193.52
100.00	14 34 43	2054.07	-23.08	28.31	344.78	109.55	15 8 57	1454.1	-20.20	20.69
100.00	3 36 52	4442.95	16.39	181.28	342.82	64.65	4 50 55	3843.0	12.84	174.28
110.00	15 47 37	1825.95	-25.84	9.80	343.60	113.20	16 18 3	1226.0	-22.47	2.26
110.00	4 40 29	4243.84	19.03	164.74	341.40	61.05	5 51 12	3643.8	15.02	157.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1961	TRA	-1.0493	TC3	-.5140	BAU	.7781	SGT	1511.7	SGR	3146.4	SG3	1870.9	ST	502.8	SR	487.5	SS	1172.0
RDE	.0377	RRA	1.1746	RC3	3.2018	FAU	.44695	RRT	-.7222	RRF	-.9967	RTF	.7252	CRT	-.7818	CRS	.9162	CST	-.4721
FDE	-1.4626	FRA	-8.4478	FC	-21.5590	BSP	11257	SGB	3490.8	R23	.1040	R13	-.9913	LSA	1286.6	MSA	456.1	SSA	25.7
BDE	.1996	BRA	1.5750	BC3	3.2428	FSP	6358	SG1	3349.7	SG2	982.2	THA	111.03	EL1	661.0	EL2	231.2	ALF	136.13

LAUNCH DATE DEC 20 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 543.904 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	32.934	GAL	5.42	AZL	92.12	HCA	161.95	SMA	184.59	ECC	.22282	INC	2.1244	V1	30.273
RP	224.21	LAP	-.66	LOP	250.12	VP	21.561	GAP	-3.51	AZP	87.98	TAL	30.48	TAP	192.43	RCA	143.46	APO	225.72	V2	24.527
RC	255.576	GL	-16.59	GP	24.45	ZAL	40.63	ZAP	105.98	ETS	171.24	ZAE	136.44	ETE	148.21	ZAC	111.08	ETC	255.46	CLP	107.60

PLANETOCENTRIC CONIC

C3	18.121	VHL	4.257	DLA	2.71	RAL	124.13	RAD	6567.7	VEL	11.811	PTH	2.09	VHP	3.399	DPA	24.30	RAP	189.40	ECC	1.2982

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 21 52	2275.26	-20.99	45.36	344.50	109.45	13 59 47	1675.3	-18.15	37.84
90.00	2 4 6	4751.01	16.82	203.74	343.31	66.88	3 23 17	4151.0	13.55	196.59
100.00	14 44 29	2008.81	-22.01	25.37	344.09	110.75	15 17 57	1408.8	-18.99	17.87
100.00	3 24 10	4492.69	17.81	184.28	342.85	65.59	4 39 3	3892.7	14.37	177.18
110.00	15 55 37	1786.12	-24.74	7.23	342.86	114.37	16 25 24	1186.1	-21.24	359.83
110.00	4 29 31	4288.14	20.47	167.38	341.47	62.00	5 40 59	3688.1	16.56	160.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1789	TRA	-1.1432	TC3	-.7182	BAU	.8409	SGT	1674.7	SGR	3375.0	SG3	1869.0	ST	521.4	SR	551.2	SS	1260.3
RDE	.1190	RRA	1.2868	RC3	3.3958	FAU	.44549	RRT	-.7785	RRF	-.9974	RTF	.7807	CRT	-.7078	CRS	.9496	CST	-.4544
FDE	-1.8356	FRA	-8.5751	FC	-21.2835	BSP	12061	SGB	3767.7	R23	.1052	R13	-.9918	LSA	1393.6	MSA	470.7	SSA	22.3
BDE	.2149	BRA	1.7213	BC3	3.4709	FSP	6211	SG1	3639.4	SG2	974.8	THA	112.85	EL1	701.3	EL2	289.5	ALF	132.76

LAUNCH DATE DEC 20 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 547.897 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.930 GAL 5.39 AZL 92.37 HCA 163.03 SMA 184.53 ECC .22242 INC 2.3663 V1 30.273
RP 223.82 LAP -.69 LOP 251.20 VP 21.603 GAP -3.77 AZP 87.74 TAL 30.40 TAP 193.43 RCA 143.49 APO 225.57 V2 24.569
RC 257.180 GL -18.42 GP 25.94 ZAL 41.32 ZAP 104.05 ETS 171.74 ZAE 134.02 ETE 148.85 ZAC 112.34 ETC 255.40 CLP 105.67

PLANETOCENTRIC CONIC

C3 18.354 VHL 4.284 DLA .93 RAL 123.73 RAD 6567.7 VEL 11.821 PTH 2.09 VHP 3.421 DPA 25.97 RAP 189.39 ECC 1.3021

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 33 31	2222.85	-19.77	42.01	343.84	110.70	14 10 34	1622.9	-16.78	34.61
90.00	1 49 14	4809.39	18.34	207.34	343.43	68.04	3 9 23	4209.4	15.21	200.07
100.00	14 55 17	1959.08	-20.78	22.19	343.42	111.99	15 27 56	1359.1	-17.61	14.82
100.00	3 10 8	4548.39	19.35	187.71	342.99	66.76	4 25 57	3948.4	16.04	180.48
110.00	16 4 31	1742.37	-23.48	4.45	342.13	115.58	16 33 34	1142.4	-19.85	357.20
110.00	4 17 24	4337.86	22.02	170.39	341.65	63.17	5 29 41	3737.9	18.25	163.30

DIFFERENTIAL CORRECTIONS
TDE .1430 TRA-1.2560 TC3 -.9476 BAU .9008
RDE .1953 RRA 1.3911 RC3 3.5469 FAU .43579
FDE-2.1065 FRA-8.5421 FC-20.5559 BSP 13279
BDE .2420 BRA 1.8742 BC3 3.6713 FSP 6272

MID-COURSE EXECUTION ACCURACY
SGT 1875.7 SGR 3573.0 SG3 1830.2
RRT -.8272 RRF -.9979 RTF .8295
SGB 4035.4 R23 .1065 R13 -.9922
SG1 3919.4 SG2 960.9 THA 115.08

ORBIT DETERMINATION ACCURACY
ST 539.6 SR 623.0 SS 1320.6
CRT -.6949 CRS .9690 CST -.4984
LSA 1484.9 MSA 466.8 SSA 19.9
EL1 760.4 EL2 317.9 ALF 129.14

LAUNCH DATE DEC 20 1964 FLIGHT TIME 254.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 551.899 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.927 GAL 5.37 AZL 92.64 HCA 164.11 SMA 184.48 ECC .22205 INC 2.6410 V1 30.273
RP 223.44 LAP -.72 LOP 252.28 VP 21.646 GAP -4.03 AZP 87.46 TAL 30.30 TAP 194.41 RCA 143.51 APO 225.44 V2 24.611
RC 258.763 GL -20.47 GP 27.55 ZAL 42.15 ZAP 102.14 ETS 172.29 ZAE 131.56 ETE 149.43 ZAC 113.73 ETC 255.31 CLP 103.72

PLANETOCENTRIC CONIC

C3 18.671 VHL 4.321 DLA -1.07 RAL 123.27 RAD 6567.8 VEL 11.834 PTH 2.10 VHP 3.454 DPA 27.76 RAP 189.47 ECC 1.3073

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 46 29	2165.10	-18.34	38.37	343.21	111.96	14 22 34	1565.1	-15.20	31.10
90.00	1 32 39	4875.16	19.97	211.49	343.69	69.49	2 53 54	4275.2	17.00	204.07
100.00	15 7 19	1904.31	-19.35	18.75	342.77	113.24	15 39 4	1304.3	-16.03	11.52
100.00	2 54 29	4611.19	20.98	191.65	343.27	68.21	4 11 20	4011.2	17.84	184.27
110.00	16 14 26	1694.24	-22.04	1.46	341.43	116.82	16 42 40	1094.2	-18.26	354.37
110.00	4 3 52	4394.02	23.71	173.88	341.99	64.62	5 17 6	3794.0	20.09	166.61

DIFFERENTIAL CORRECTIONS
TDE .1000 TRA-1.3736 TC3-1.1651 BAU .9677
RDE .2913 RRA 1.5109 RC3 3.6976 FAU .42417
FDE-2.4179 FRA-8.4875 FC-19.6686 BSP 14531
BDE .3080 BRA 2.0420 BC3 3.8768 FSP 6240

MID-COURSE EXECUTION ACCURACY
SGT 2085.7 SGR 3791.5 SG3 1783.1
RRT -.8620 RRF -.9982 RTF .8641
SGB 4327.3 R23 .1057 R13 -.9927
SG1 4221.9 SG2 949.5 THA 116.84

ORBIT DETERMINATION ACCURACY
ST 563.2 SR 721.0 SS 1398.1
CRT -.6900 CRS .9823 CST -.5442
LSA 1604.6 MSA 465.4 SSA 17.5
EL1 846.4 EL2 347.2 ALF 125.06

LAUNCH DATE DEC 20 1964 FLIGHT TIME 256.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 555.916 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.925 GAL 5.34 AZL 92.96 HCA 165.20 SMA 184.44 ECC .22170 INC 2.9560 V1 30.273
RP 223.05 LAP -.75 LOP 253.37 VP 21.690 GAP -4.28 AZP 87.14 TAL 30.19 TAP 195.38 RCA 143.55 APO 225.32 V2 24.653
RC 260.326 GL -22.76 GP 29.31 ZAL 43.15 ZAP 100.25 ETS 172.91 ZAE 129.05 ETE 149.96 ZAC 115.27 ETC 255.20 CLP 101.77

PLANETOCENTRIC CONIC

C3 19.102 VHL 4.371 DLA -3.30 RAL 122.75 RAD 6567.8 VEL 11.853 PTH 2.10 VHP 3.503 DPA 29.67 RAP 189.66 ECC 1.3144

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 1 1	2101.12	-16.66	34.42	342.64	113.23	14 36 2	1501.1	-13.38	27.29
90.00	1 13 58	4949.91	21.67	216.30	344.14	71.32	2 36 28	4349.9	18.92	208.71
100.00	15 20 49	1843.70	-17.67	15.03	342.17	114.51	15 51 32	1243.7	-14.22	7.94
100.00	2 36 51	4682.57	22.72	196.25	343.74	70.03	3 54 54	4082.6	19.79	188.67
110.00	16 25 31	1641.13	-20.37	358.24	340.77	118.06	16 52 52	1041.1	-16.46	351.30
110.00	3 48 38	4457.90	25.51	177.97	342.52	66.44	5 2 56	3857.9	22.10	170.47

DIFFERENTIAL CORRECTIONS
TDE .0533 TRA-1.4913 TC3-1.3540 BAU 1.0495
RDE .4297 RRA 1.6675 RC3 3.8799 FAU .41440
FDE-2.8521 FRA-8.4944 FC-18.7808 BSP 15450
BDE .4330 BRA 2.2371 BC3 4.1094 FSP 5921

MID-COURSE EXECUTION ACCURACY
SGT 2289.2 SGR 4076.0 SG3 1745.0
RRT -.8855 RRF -.9986 RTF .8870
SGB 4674.9 R23 .1020 R13 -.9934
SG1 4577.9 SG2 947.0 THA 117.73

ORBIT DETERMINATION ACCURACY
ST 592.7 SR 871.3 SS 1525.8
CRT -.6781 CRS .9912 CST -.5763
LSA 1792.8 MSA 473.4 SSA 14.8
EL1 980.0 EL2 387.3 ALF 119.89

LAUNCH DATE DEC 20 1964 FLIGHT TIME 258.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 559.939 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.922 GAL 5.32 AZL 93.32 HCA 166.29 SMA 184.40 ECC .22137 INC 3.3212 V1 30.273
RP 222.66 LAP -.79 LOP 254.46 VP 21.734 GAP -4.52 AZP 86.77 TAL 30.06 TAP 196.35 RCA 143.58 APO 225.22 V2 24.695
RC 261.869 GL -25.34 GP 31.24 ZAL 44.36 ZAP 98.39 ETS 173.60 ZAE 126.50 ETE 150.45 ZAC 116.97 ETC 255.06 CLP 99.83

PLANETOCENTRIC CONIC

C3 19.689 VHL 4.437 DLA -5.81 RAL 122.15 RAD 6567.8 VEL 11.877 PTH 2.11 VHP 3.569 DPA 31.72 RAP 189.99 ECC 1.3240

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 17 34	2029.54	-14.69	30.09	342.16	114.48	14 51 23	1429.5	-11.27	23.09
90.00	0 52 37	5035.81	23.44	221.98	344.83	73.64	2 16 33	4435.8	20.97	214.18
100.00	15 36 9	1776.01	-15.72	10.95	341.66	115.76	16 5 45	1176.0	-12.12	4.01
100.00	2 16 43	4764.57	24.52	201.67	344.46	72.34	3 36 8	4164.6	21.87	193.87
110.00	16 38 5	1582.08	-18.44	354.75	340.18	119.31	17 4 28	982.1	-14.40	347.97
110.00	3 31 16	4531.26	27.42	182.82	343.32	68.73	4 46 47	3931.3	24.28	175.06

DIFFERENTIAL CORRECTIONS
TDE -.0104 TRA-1.6231 TC3-1.5351 BAU 1.1315
RDE .5828 RRA 1.8315 RC3 4.0153 FAU .39792
FDE-3.2218 FRA-8.3764 FC-17.4967 BSP 16671
BDE .5829 BRA 2.4472 BC3 4.2987 FSP 5680

MID-COURSE EXECUTION ACCURACY
SGT 2508.8 SGR 4349.1 SG3 1676.7
RRT -.9048 RRF -.9989 RTF .9061
SGB 5020.8 R23 .0986 R13 -.9940
SG1 4931.6 SG2 942.0 THA 118.71

ORBIT DETERMINATION ACCURACY
ST 633.4 SR 1042.2 SS 1636.4
CRT -.7046 CRS .9955 CST -.6354
LSA 1985.1 MSA 474.0 SSA 12.6
EL1 1149.5 EL2 407.6 ALF 116.82

LAUNCH DATE DEC 20 1964 FLIGHT TIME 260.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 563.970 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.921 GAL 5.29 AZL 93.75 HCA 167.38 SMA 184.37 ECC .22105 INC 3.7494 V1 30.273
RP 222.28 LAP -.82 LOP 255.55 VP 21.779 GAP -4.76 AZP 86.34 TAL 29.92 TAP 197.30 RCA 143.62 APO 225.13 V2 24.737
RC 263.392 GL -28.27 GP 33.37 ZAL 45.82 ZAP 96.59 ETS 174.37 ZAE 123.90 ETE 150.90 ZAC 118.87 ETC 254.87 CLP 97.89

PLANETOCENTRIC CONIC

C3 20.494 VHL 4.527 DLA -8.65 RAL 121.44 RAD 6567.8 VEL 11.911 PTH 2.12 VHP 3.658 DPA 33.91 RAP 190.49 ECC 1.3373

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 42	1948.65	-12.36	25.30	341.83	115.68	15 9 11	1348.6	-8.80	18.43
90.00	0 27 49	5135.80	25.19	228.78	345.83	76.61	1 53 25	4535.8	23.10	220.74
100.00	15 53 51	1699.79	-13.41	6.47	341.30	116.97	16 22 10	1099.8	-9.69	359.66
100.00	1 53 22	4859.89	26.33	208.17	345.51	75.31	3 14 22	4259.9	24.05	200.11
110.00	16 52 30	1516.11	-16.20	350.95	339.71	120.52	17 17 46	916.1	-12.03	344.33
110.00	3 11 11	4616.33	29.38	188.66	344.49	71.68	4 28 8	4016.3	26.60	180.58

DIFFERENTIAL CORRECTIONS
TDE -.0912 TRA-1.7678 TC3-1.6945 BAU 1.2209
RDE .7713 RRA 2.0207 RC3 4.1211 FAU .37776
FDE-3.5870 FRA-8.1932 FC-15.9577 BSP 17931
BDE .7766 BRA 2.6848 BC3 4.4558 FSP 5373

MID-COURSE EXECUTION ACCURACY
SGT 2736.7 SGR 4644.0 SG3 1591.7
RRT -.9200 RRF -.9991 RTF .9209
SGB 5390.4 R23 .0947 R13 -.9946
SG1 5308.0 SG2 938.6 THA 119.48

ORBIT DETERMINATION ACCURACY
ST 690.2 SR 1252.1 SS 1751.0
CRT -.7460 CRS .9978 CST -.7009
LSA 2210.4 MSA 473.4 SSA 10.6
EL1 1366.3 EL2 421.2 ALF 114.88

LAUNCH DATE DEC 20 1964 FLIGHT TIME 262.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 568.009 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.920 GAL 5.25 AZL 94.26 HCA 168.47 SMA 184.35 ECC .22075 INC 4.2598 V1 30.273
RP 221.89 LAP -.85 LOP 256.65 VP 21.825 GAP -5.00 AZP 85.83 TAL 29.76 TAP 198.24 RCA 143.66 APO 225.05 V2 24.779
RC 264.895 GL -31.58 GP 35.71 ZAL 47.57 ZAP 94.85 ETS 175.23 ZAE 121.26 ETE 151.32 ZAC 120.97 ETC 254.62 CLP 95.98

PLANETOCENTRIC CONIC

C3 21.614 VHL 4.649 DLA -11.86 RAL 120.59 RAD 6567.9 VEL 11.958 PTH 2.13 VHP 3.776 DPA 36.27 RAP 191.22 ECC 1.3557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 59 23	1855.86	-9.56	19.92	341.74	116.78	15 30 18	1255.9	-5.89	13.16
90.00	23 54 24	5254.15	26.79	237.08	347.22	80.47	25 21 59	4654.2	25.20	228.77
100.00	16 14 41	1612.88	-10.67	1.47	341.16	118.09	16 41 34	1012.9	-6.84	354.78
100.00	1 25 43	4972.37	28.03	216.10	346.97	79.15	2 48 35	4372.4	26.24	207.75
110.00	17 9 19	1441.82	-13.59	346.78	339.45	121.67	17 33 20	841.8	-9.30	340.30
110.00	2 47 35	4716.19	31.30	195.80	346.13	75.51	4 6 11	4116.2	28.99	187.36

DIFFERENTIAL CORRECTIONS
TDE -.1874 TRA-1.9242 TC3-1.8136 BAU 1.3127
RDE .9959 RRA 2.2339 RC3 4.1649 FAU .35204
FDE-3.8980 FRA-7.9056 FC-14.1005 BSP 19434
BDE 1.0134 BRA 2.9484 BC3 4.5426 FSP 5046

MID-COURSE EXECUTION ACCURACY
SGT 2961.2 SGR 4941.4 SG3 1481.7
RRT -.9315 RRF -.9992 RTF .9323
SGB 5760.7 R23 .0909 R13 -.9951
SG1 5684.1 SG2 936.2 THA 120.07

ORBIT DETERMINATION ACCURACY
ST 764.4 SR 1494.1 SS 1849.7
CRT -.7905 CRS .9989 CST -.7614
LSA 2452.4 MSA 473.0 SSA 8.9
EL1 1621.9 EL2 431.3 ALF 113.81

LAUNCH DATE DEC 20 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 572.056 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.919 GAL 5.22 AZL 94.88 HCA 169.57 SMA 184.34 ECC .22047 INC 4.8768 V1 30.273
RP 221.51 LAP -.88 LOP 257.76 VP 21.871 GAP -5.22 AZP 85.20 TAL 29.60 TAP 199.16 RCA 143.70 APO 224.98 V2 24.820
RC 266.379 GL -35.35 GP 38.29 ZAL 49.67 ZAP 93.20 ETS 176.17 ZAE 118.59 ETE 151.72 ZAC 123.32 ETC 254.29 CLP 94.08

PLANETOCENTRIC CONIC

C3 23.202 VHL 4.817 DLA -15.49 RAL 119.55 RAD 6567.9 VEL 12.024 PTH 2.15 VHP 3.932 DPA 38.81 RAP 192.22 ECC 1.3818

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 27 13	1746.75	-6.16	13.71	342.06	117.69	15 56 19	1146.8	-2.40	7.04
90.00	23 18 14	5397.64	27.99	247.40	349.08	85.51	24 48 12	4797.6	27.07	238.85
100.00	16 40 3	1511.72	-7.38	355.77	341.39	119.05	17 5 15	911.7	-3.45	349.18
100.00	0 52 1	5107.91	29.37	225.95	348.94	84.16	2 17 9	4507.9	28.25	217.32
110.00	17 29 23	1357.19	-10.51	342.15	339.49	122.71	17 52 0	757.2	-6.13	335.80
110.00	2 19 10	4835.20	32.99	204.67	348.37	80.50	3 39 46	4235.2	31.33	195.84

DIFFERENTIAL CORRECTIONS
TDE -.3120 TRA-2.1051 TC3-1.8972 BAU 1.4180
RDE 1.2851 RRA 2.4960 RC3 4.1593 FAU .32332
FDE-4.1876 FRA-7.5570 FC-12.0640 BSP 20737
BDE 1.3224 BRA 3.2651 BC3 4.5715 FSP 4584

MID-COURSE EXECUTION ACCURACY
SGT 3198.4 SGR 5280.5 SG3 1357.6
RRT -.9412 RRF -.9994 RTF .9417
SGB 6173.6 R23 .0865 R13 -.9956
SG1 6102.4 SG2 935.1 THA 120.48

ORBIT DETERMINATION ACCURACY
ST 865.1 SR 1790.4 SS 1944.6
CRT -.8357 CRS .9995 CST -.8177
LSA 2740.9 MSA 472.0 SSA 7.4
EL1 1939.4 EL2 438.6 ALF 113.25

LAUNCH DATE DEC 20 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 576.110 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.919 GAL 5.19 AZL 95.64 HCA 170.67 SMA 184.33 ECC .22020 INC 5.6403 V1 30.273
RP 221.13 LAP -.91 LOP 258.86 VP 21.917 GAP -5.45 AZP 84.43 TAL 29.42 TAP 200.08 RCA 143.74 APO 224.93 V2 24.862
RC 267.844 GL -39.64 GP 41.15 ZAL 52.18 ZAP 91.67 ETS 177.21 ZAE 115.88 ETE 152.11 ZAC 125.94 ETC 253.86 CLP 92.22

PLANETOCENTRIC CONIC

C3 25.508 VHL 5.051 DLA -19.60 RAL 118.24 RAD 6568.0 VEL 12.120 PTH 2.17 VHP 4.142 DPA 41.54 RAP 193.59 ECC 1.4198

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 33	1612.20	-1.85	6.16	343.06	118.26	16 30 25	1012.2	1.94	359.54
90.00	22 31 29	5578.71	28.24	260.62	351.34	92.12	24 4 27	4978.7	28.24	251.96
100.00	17 12 33	1389.48	-3.29	349.00	342.26	119.73	17 35 43	789.5	.69	342.47
100.00	0 9 5	5276.65	29.88	238.45	351.38	90.71	1 37 2	4676.7	29.66	229.65
110.00	17 54 15	1258.83	-6.85	336.89	340.06	123.57	18 15 14	658.8	-2.39	330.64
110.00	1 43 53	4980.07	34.07	215.83	351.29	87.01	3 6 53	4380.1	33.28	206.68

DIFFERENTIAL CORRECTIONS
TDE -.4602 TRA-2.3083 TC3-1.9181 BAU 1.5311
RDE 1.6443 RRA 2.8100 RC3 4.0595 FAU .28939
FDE-4.3803 FRA-7.0922 FC3-9.8219 BSP 22166
BDE 1.7075 BRA 3.6366 BC3 4.4898 FSP 4065

MID-COURSE EXECUTION ACCURACY
SGT 3428.4 SGR 5634.3 SG3 1209.8
RRT -.9487 RRF -.9995 RTF .9490
SGB 6595.3 R23 .0822 R13 -.9961
SG1 6528.7 SG2 935.5 THA 120.69

ORBIT DETERMINATION ACCURACY
ST 985.6 SR 2127.3 SS 2003.5
CRT -.8717 CRS .9997 CST -.8605
LSA 3047.5 MSA 472.9 SSA 6.1
EL1 2301.6 EL2 446.4 ALF 112.90

LAUNCH DATE DEC 20 1964 FLIGHT TIME 268.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 580.170 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.919 GAL 5.15 AZL 96.61 HCA 171.77 SMA 184.34 ECC .21996 INC 6.6092 V1 30.273
RP 220.75 LAP -.94 LOP 259.97 VP 21.964 GAP -5.66 AZP 83.46 TAL 29.22 TAP 200.99 RCA 143.79 APO 224.88 V2 24.903
RC 269.292 GL -44.52 GP 44.29 ZAL 55.15 ZAP 90.30 ETS 178.34 ZAE 113.16 ETE 152.48 ZAC 128.85 ETC 253.28 CLP 90.41

PLANETOCENTRIC CONIC

C3 28.969 VHL 5.382 DLA -24.24 RAL 116.56 RAD 6568.2 VEL 12.261 PTH 2.21 VHP 4.428 DPA 44.43 RAP 195.41 ECC 1.4768

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 53	1424.66	4.19	355.69	345.42	118.03	17 21 38	824.7	7.91	348.99
90.00	21 23 46	5829.49	26.28	278.68	353.46	100.94	23 0 55	5229.5	27.53	270.23
100.00	17 58 48	1228.00	2.18	340.13	344.31	119.82	18 19 16	628.0	6.14	333.57
100.00	23 5 32	5501.39	28.54	254.99	353.92	99.29	24 37 13	4901.4	29.53	246.32
110.00	18 27 2	1139.49	-2.32	330.62	341.51	124.11	18 46 1	539.5	2.17	324.41
110.00	0 57 44	5162.66	33.80	230.06	354.71	95.41	2 23 46	4562.7	34.18	220.83

DIFFERENTIAL CORRECTIONS
TDE -.6386 TRA-2.5471 TC3-1.8698 BAU 1.6578
RDE 2.0975 RRA 3.1999 RC3 3.8507 FAU .25092
FDE-4.4357 FRA-6.5016 FC3-7.4987 BSP 23583
BDE 2.1926 BRA 4.0899 BC3 4.2806 FSP 3470

MID-COURSE EXECUTION ACCURACY
SGT 3654.5 SGR 6010.2 SG3 1040.6
RRT -.9547 RRF -.9996 RTF .9548
SGB 7034.1 R23 .0779 R13 -.9965
SG1 6971.3 SG2 937.6 THA 120.75

ORBIT DETERMINATION ACCURACY
ST 1123.2 SR 2501.4 SS 2007.7
CRT -.8988 CRS .9999 CST -.8917
LSA 3364.9 MSA 476.0 SSA 5.0
EL1 2703.9 EL2 455.5 ALF 112.66

LAUNCH DATE DEC 20 1964 FLIGHT TIME 270.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 584.233 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.919 GAL 5.11 AZL 97.88 HCA 172.87 SMA 184.34 ECC .21972 INC 7.8794 V1 30.273
RP 220.37 LAP -.97 LOP 261.09 VP 22.012 GAP -5.88 AZP 82.18 TAL 29.02 TAP 201.89 RCA 143.84 APO 224.85 V2 24.945
RC 270.721 GL -50.03 GP 47.74 ZAL 58.62 ZAP 89.12 ETS 179.53 ZAE 110.44 ETE 152.84 ZAC 132.05 ETC 252.51 CLP 88.69

PLANETOCENTRIC CONIC

C3 34.398 VHL 5.865 DLA -29.42 RAL 114.35 RAD 6568.4 VEL 12.481 PTH 2.26 VHP 4.828 DPA 47.47 RAP 197.81 ECC 1.5661

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.65	17 53 19	1248.08	16.77	349.14	352.03	114.54	18 14 7	648.1	19.94	341.82
98.35	20 10 40	804.41	16.78	316.58	352.04	114.53	20 24 4	204.4	19.95	309.25
100.00	19 38 55	906.12	12.76	322.09	350.02	117.26	19 54 1	306.1	16.31	315.10
100.00	21 7 45	621.60	20.88	304.88	353.90	111.89	21 18 7	21.6	23.67	297.20
110.00	19 16 32	976.61	3.90	322.11	344.73	123.99	19 32 49	376.6	8.34	315.83
110.00	23 46 37	5411.91	30.61	248.75	357.60	106.01	25 16 49	4811.9	32.50	240.04

DIFFERENTIAL CORRECTIONS
TDE -.8447 TRA-2.8336 TC3-1.7407 BAU 1.8022
RDE 2.6692 RRA 3.6970 RC3 3.5111 FAU .20794
FDE-4.2855 FRA-5.7586 FC3-5.2336 BSP 25028
BDE 2.7996 BRA 4.6581 BC3 3.9189 FSP 2814

MID-COURSE EXECUTION ACCURACY
SGT 3866.6 SGR 6399.7 SG3 850.6
RRT -.9594 RRF -.9996 RTF .9592
SGB 7477.1 R23 .0740 R13 -.9969
SG1 7417.6 SG2 941.3 THA 120.65

ORBIT DETERMINATION ACCURACY
ST 1262.4 SR 2891.7 SS 1926.0
CRT -.9164 CRS .9999 CST -.9116
LSA 3664.9 MSA 483.4 SSA 4.1
EL1 3120.3 EL2 468.3 ALF 112.33

LAUNCH DATE DEC 20 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 642.656 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.958 GAL 4.24 AZL 81.24 HCA 189.04 SMA 185.00 ECC .21696 INC 8.7575 V1 30.273
RP 215.38 LAP -1.37 LOP 277.09 VP 22.694 GAP -8.26 AZP 98.65 TAL 24.19 TAP 213.23 RCA 144.86 APO 225.14 V2 25.498
RC 288.924 GL 55.93 GP -40.20 ZAL 64.91 ZAP 72.67 ETS 163.71 ZAE 95.79 ETE 183.32 ZAC 45.23 ETC 252.93 CLP 67.04

PLANETOCENTRIC CONIC

C3 36.495 VHL 6.041 DLA 68.96 RAL 168.75 RAD 6568.4 VEL 12.564 PTH 2.28 VHP 4.486 DPA -28.89 RAP 148.96 ECC 1.6006

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
11.00	9 17 7	4308.84	-52.65	243.29	129.56	16.07	10 28 56	3708.8	-60.27	239.25
11.00	0 48 47	4860.60	-15.95	251.09	12.24	10.06	2 9 48	4260.6	-23.82	249.99
21.00	7 23 40	4413.70	-42.49	232.97	91.24	25.33	8 37 14	3813.7	-49.61	228.12
21.00	3 22 32	4719.64	-23.22	241.22	40.32	20.08	4 41 12	4119.6	-30.70	238.45
24.07	5 29 43	4558.44	-32.34	234.35	64.66	25.15	6 45 42	3958.4	-39.50	230.37
155.93	15 52 11	2811.97	-32.33	85.58	64.64	25.15	16 39 3	2212.0	-39.50	81.60

DIFFERENTIAL CORRECTIONS
TDE 6.9885 TRA -.1754 TC3-3.4318 BAU 2.0958
RDE 3.9634 RRA .2454 RC3-2.5836 FAU .25202
FDE 8.2177 FRA .5647 FC3-5.9784 BSP 31003
BDE 8.0342 BRA .3017 BC3 4.2956 FSP 3339

MID-COURSE EXECUTION ACCURACY
SGT 7832.0 SGR 4928.9 SG3 927.1
RRT .9729 RRF .9985 RTF .9628
SGB 9253.9 R23 .2036 R13 .9782
SG1 9202.9 SG2 969.4 THA 31.87

ORBIT DETERMINATION ACCURACY
ST 6630.8 SR 3765.2 SS 3026.8
CRT .9973 CRS-1.0000 CST -.9969
LSA 8198.8 MSA 293.9 SSA 5.5
EL1 7621.5 EL2 238.6 ALF 29.56

LAUNCH DATE DEC 20 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 646.858 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.963 GAL 4.17 AZL 82.09 HCA 190.20 SMA 185.08 ECC .21687 INC 7.9054 V1 30.273
RP 215.05 LAP -1.40 LOP 278.26 VP 22.742 GAP -8.41 AZP 97.78 TAL 23.78 TAP 213.98 RCA 144.94 APO 225.22 V2 25.535
RC 290.105 GL 53.01 GP -36.92 ZAL 63.56 ZAP 70.59 ETS 163.71 ZAE 94.51 ETE 181.92 ZAC 48.29 ETC 253.85 CLP 65.43

PLANETOCENTRIC CONIC

C3 32.043 VHL 5.661 DLA 66.22 RAL 165.27 RAD 6568.3 VEL 12.386 PTH 2.24 VHP 4.283 DPA -25.79 RAP 150.25 ECC 1.5273

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
27.26	5 22 54	4515.70	-33.60	229.84	58.26	28.95	6 38 10	3915.7	-40.50	225.17
152.74	15 31 16	2789.07	-33.59	84.52	58.24	28.95	16 17 45	2189.1	-40.49	79.86
27.26	5 22 54	4515.70	-33.60	229.84	58.26	28.95	6 38 10	3915.7	-40.50	225.17
152.74	15 31 16	2789.07	-33.59	84.52	58.24	28.95	16 17 45	2189.1	-40.49	79.86
27.26	5 22 54	4515.70	-33.60	229.84	58.26	28.95	6 38 10	3915.7	-40.50	225.17
152.74	15 31 16	2789.07	-33.59	84.52	58.24	28.95	16 17 45	2189.1	-40.49	79.86

DIFFERENTIAL CORRECTIONS
TDE 6.5368 TRA -.3526 TC3-3.9612 BAU 2.0406
RDE 3.3696 RRA .1423 RC3-2.6459 FAU .27526
FDE 8.4677 FRA .3993 FC3-7.4369 BSP 31106
BDE 7.3542 BRA .3803 BC3 4.7636 FSP 3740

MID-COURSE EXECUTION ACCURACY
SGT 8041.9 SGR 4553.4 SG3 1041.7
RRT .9745 RRF .9984 RTF .9652
SGB 9241.5 R23 .2052 R13 .9777
SG1 9198.2 SG2 893.5 THA 29.19

ORBIT DETERMINATION ACCURACY
ST 6623.1 SR 3413.5 SS 3175.1
CRT .9974 CRS-1.0000 CST -.9971
LSA 8094.5 MSA 280.6 SSA 6.4
EL1 7447.9 EL2 217.6 ALF 27.23

LAUNCH DATE DEC 20 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 651.070 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.967 GAL 4.10 AZL 82.78 HCA 191.37 SMA 185.16 ECC .21679 INC 7.2241 V1 30.273
RP 214.72 LAP -1.42 LOP 279.43 VP 22.791 GAP -8.54 AZP 97.08 TAL 23.35 TAP 214.72 RCA 145.02 APO 225.30 V2 25.572
RC 291.272 GL 50.45 GP -33.99 ZAL 62.47 ZAP 68.62 ETS 163.80 ZAE 93.15 ETE 180.75 ZAC 51.06 ETC 254.57 CLP 63.91

PLANETOCENTRIC CONIC

C3 28.761 VHL 5.363 DLA 63.74 RAL 162.91 RAD 6568.2 VEL 12.253 PTH 2.20 VHP 4.143 DPA -23.03 RAP 151.37 ECC 1.4733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.17	5 20 13	4478.13	-34.40	225.59	53.18	32.43	6 34 51	3878.1	-41.03	220.33
149.83	15 15 9	2772.43	-34.39	83.55	53.16	32.42	16 1 21	2172.4	-41.02	78.30
30.17	5 20 13	4478.13	-34.40	225.59	53.18	32.43	6 34 51	3878.1	-41.03	220.33
149.83	15 15 9	2772.43	-34.39	83.55	53.16	32.42	16 1 21	2172.4	-41.02	78.30
30.17	5 20 13	4478.13	-34.40	225.59	53.18	32.43	6 34 51	3878.1	-41.03	220.33
149.83	15 15 9	2772.43	-34.39	83.55	53.16	32.42	16 1 21	2172.4	-41.02	78.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 6.1662 TRA -.4953 TC3-4.4873 BAU 2.0065 SGT 8245.9 SGR 4205.5 SG3 1133.0 ST 6599.2 SR 3082.5 SS 3246.0
RDE 2.8837 RRA .0742 RC3-2.6637 FAU .29300 RRT .9756 RRF .9983 RTF .9667 CRT .9974 CRS-1.0000 CST -.9972
FDE 8.4826 FRA .2440 FC3-8.8197 BSP 31219 SGB 9256.4 R23 .2076 R13 .9770 LSA 7969.5 MSA 271.6 SSA 7.3
BDE 6.8072 BRA .5008 BC3 5.2183 FSP 4044 SG1 9219.5 SG2 825.6 THA 26.68 EL1 7280.8 EL2 201.2 ALF 25.00

LAUNCH DATE DEC 20 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 655.290 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.972 GAL 4.02 AZL 83.33 HCA 192.54 SMA 185.25 ECC .21672 INC 6.6667 V1 30.273
RP 214.40 LAP -1.44 LOP 280.61 VP 22.838 GAP -8.68 AZP 96.51 TAL 22.91 TAP 215.45 RCA 145.10 APO 225.39 V2 25.608
RC 292.426 GL 48.18 GP -31.37 ZAL 61.63 ZAP 66.75 ETS 163.96 ZAE 91.74 ETE 179.77 ZAC 53.54 ETC 255.12 CLP 62.47

PLANETOCENTRIC CONIC

C3 26.249 VHL 5.123 DLA 61.49 RAL 161.29 RAD 6568.1 VEL 12.150 PTH 2.18 VHP 4.046 DPA -20.56 RAP 152.34 ECC 1.4320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
32.83	5 20 7	4444.59	-34.88	221.62	49.05	35.58	6 34 12	3844.6	-41.23	215.86
147.17	15 2 18	2760.49	-34.87	82.70	49.04	35.57	15 48 19	2160.5	-41.23	76.94
32.83	5 20 7	4444.59	-34.88	221.62	49.05	35.58	6 34 12	3844.6	-41.23	215.86
147.17	15 2 18	2760.49	-34.87	82.70	49.04	35.57	15 48 19	2160.5	-41.23	76.94
32.83	5 20 7	4444.59	-34.88	221.62	49.05	35.58	6 34 12	3844.6	-41.23	215.86
147.17	15 2 18	2760.49	-34.87	82.70	49.04	35.57	15 48 19	2160.5	-41.23	76.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 5.8786 TRA -.5964 TC3-4.9870 BAU 1.9782 SGT 8443.0 SGR 3882.2 SG3 1201.7 ST 6589.3 SR 2796.1 SS 3280.1
RDE 2.4991 RRA .0421 RC3-2.6279 FAU .30373 RRT .9761 RRF .9980 RTF .9674 CRT .9972 CRS-1.0000 CST -.9971
FDE 8.3864 FRA .1537 FC-10.0173 BSP 31840 SGB 9292.8 R23 .2105 R13 .9760 LSA 7869.1 MSA 271.2 SSA 8.1
BDE 6.3878 BRA .5979 BC3 5.6370 FSP 4357 SG1 9261.0 SG2 768.4 THA 24.35 EL1 7155.4 EL2 191.5 ALF 22.95

LAUNCH DATE DEC 20 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 22.1965

HELIOCENTRIC CONIC DISTANCE 659.524 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.978 GAL 3.94 AZL 83.80 HCA 193.72 SMA 185.34 ECC .21666 INC 6.2019 V1 30.273
RP 214.08 LAP -1.47 LOP 281.79 VP 22.886 GAP -8.81 AZP 96.03 TAL 22.45 TAP 216.16 RCA 145.18 APO 225.49 V2 25.644
RC 293.566 GL 46.18 GP -29.04 ZAL 60.98 ZAP 64.99 ETS 164.16 ZAE 90.30 ETE 178.95 ZAC 55.76 ETC 255.56 CLP 61.08

PLANETOCENTRIC CONIC

C3 24.269 VHL 4.926 DLA 59.45 RAL 160.17 RAD 6568.0 VEL 12.068 PTH 2.16 VHP 3.980 DPA -18.37 RAP 153.20 ECC 1.3994

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.27	5 21 47	4414.13	-35.12	217.94	45.66	38.42	6 35 21	3814.1	-41.22	211.75
144.73	14 51 44	2752.27	-35.11	81.98	45.64	38.42	15 37 36	2152.3	-41.20	75.80
35.27	5 21 47	4414.13	-35.12	217.94	45.66	38.42	6 35 21	3814.1	-41.22	211.75
144.73	14 51 44	2752.27	-35.11	81.98	45.64	38.42	15 37 36	2152.3	-41.20	75.80
35.27	5 21 47	4414.13	-35.12	217.94	45.66	38.42	6 35 21	3814.1	-41.22	211.75
144.73	14 51 44	2752.27	-35.11	81.98	45.64	38.42	15 37 36	2152.3	-41.20	75.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 5.6192 TRA -.6974 TC3-5.5100 BAU 1.9760 SGT 8644.6 SGR 3591.9 SG3 1254.6 ST 6554.9 SR 2524.7 SS 3254.9
RDE 2.1698 RRA .0092 RC3-2.5942 FAU .31345 RRT .9769 RRF .9976 RTF .9682 CRT .9971 CRS-1.0000 CST -.9971
FDE 8.1338 FRA .0256 FC-11.1816 BSP 31852 SGB 9361.1 R23 .2119 R13 .9753 LSA 7737.3 MSA 263.7 SSA 9.2
BDE 6.0236 BRA .6974 BC3 6.0901 FSP 4473 SG1 9334.2 SG2 710.1 THA 22.23 EL1 7022.0 EL2 178.4 ALF 21.02

LAUNCH DATE DEC 20 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 663.765 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.983 GAL 3.86 AZL 84.19 HCA 194.90 SMA 185.43 ECC .21661 INC 5.8082 V1 30.273
RP 213.77 LAP -1.49 LOP 282.97 VP 22.933 GAP -8.93 AZP 95.61 TAL 21.98 TAP 216.87 RCA 145.26 APO 225.60 V2 25.679
RC 294.693 GL 44.39 GP -26.96 ZAL 60.51 ZAP 63.32 ETS 164.38 ZAE 88.85 ETE 178.26 ZAC 57.76 ETC 255.91 CLP 59.75

PLANETOCENTRIC CONIC

C3 22.666 VHL 4.761 DLA 57.58 RAL 159.43 RAD 6567.9 VEL 12.002 PTH 2.14 VHP 3.937 DPA -16.41 RAP 153.98 ECC 1.3730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.51	5 24 38	4386.21	-35.19	214.52	42.84	40.99	6 37 44	3786.2	-41.04	207.98
142.49	14 42 55	2746.80	-35.18	81.40	42.82	40.99	15 28 42	2146.8	-41.03	74.87
37.51	5 24 38	4386.21	-35.19	214.52	42.84	40.99	6 37 44	3786.2	-41.04	207.98
142.49	14 42 55	2746.80	-35.18	81.40	42.82	40.99	15 28 42	2146.8	-41.03	74.87
37.51	5 24 38	4386.21	-35.19	214.52	42.84	40.99	6 37 44	3786.2	-41.04	207.98
142.49	14 42 55	2746.80	-35.18	81.40	42.82	40.99	15 28 42	2146.8	-41.03	74.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 5.4059 TRA -.7755 TC3-6.0200 BAU 1.9796 SGT 8843.8 SGR 3327.0 SG3 1291.9 ST 6529.0 SR 2288.7 SS 3207.9
RDE 1.9007 RRA -.0085 RC3-2.5371 FAU .31920 RRT .9775 RRF .9971 RTF .9687 CRT .9970 CRS-1.0000 CST -.9971
FDE 7.8298 FRA -.0656 FC-12.1923 BSP 32075 SGB 9448.9 R23 .2127 R13 .9745 LSA 7621.7 MSA 258.4 SSA 10.2
BDE 5.7303 BRA .7755 BC3 6.5328 FSP 4554 SG1 9426.0 SG2 657.9 THA 20.29 EL1 6916.5 EL2 167.8 ALF 19.28

LAUNCH DATE DEC 20 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 668.015 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.989 GAL 3.78 AZL 84.53 HCA 196.08 SMA 185.52 ECC .21657 INC 5.4704 V1 30.273
RP 213.46 LAP -1.51 LOP 284.16 VP 22.980 GAP -9.06 AZP 95.26 TAL 21.49 TAP 217.57 RCA 145.35 APO 225.70 V2 25.714
RC 295.805 GL 42.79 GP -25.09 ZAL 60.20 ZAP 61.73 ETS 164.62 ZAE 87.40 ETE 177.68 ZAC 59.56 ETC 256.19 CLP 58.47

PLANETOCENTRIC CONIC

C3 21.338 VHL 4.619 DLA 55.87 RAL 158.96 RAD 6567.9 VEL 11.946 PTH 2.13 VHP 3.913 DPA -14.68 RAP 154.68 ECC 1.3512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.59	5 28 24	4360.26	-35.14	211.33	40.49	43.32	6 41 4	3760.3	-40.75	204.51
140.41	14 35 27	2743.55	-35.13	80.94	40.47	43.31	15 21 10	2143.6	-40.74	74.12
39.59	5 28 24	4360.26	-35.14	211.33	40.49	43.32	6 41 4	3760.3	-40.75	204.51
140.41	14 35 27	2743.55	-35.13	80.94	40.47	43.31	15 21 10	2143.6	-40.74	74.12
39.59	5 28 24	4360.26	-35.14	211.33	40.49	43.32	6 41 4	3760.3	-40.75	204.51
140.41	14 35 27	2743.55	-35.13	80.94	40.47	43.31	15 21 10	2143.6	-40.74	74.12

DIFFERENTIAL CORRECTIONS
TDE 5.2286 TRA -.8337 TC3-6.5172 BAU 1.9876
RDE 1.6791 RRA -.0152 RC3-2.4635 FAU .32169
FDE 7.4985 FRA -.1204 FC-13.0516 BSP 32464
BDE 5.4916 BRA .8338 BC3 6.9673 FSP 4610

MID-COURSE EXECUTION ACCURACY
SGT 9039.3 SGR 3085.2 SG3 1315.9
RRT .9779 RRF .9964 RTF .9690
SGB 9551.3 R23 .2127 R13 .9738
SG1 9531.7 SG2 611.6 THA 18.54

ORBIT DETERMINATION ACCURACY
ST 6511.4 SR 2083.8 SS 3146.7
CRT .9968 CRS-1.0000 CST -.9970
LSA 7521.7 MSA 255.0 SSA 11.3
EL1 6834.8 EL2 159.3 ALF 17.70

LAUNCH DATE DEC 20 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 672.273 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 32.994 GAL 3.69 AZL 84.82 HCA 197.27 SMA 185.62 ECC .21654 INC 5.1769 V1 30.273
RP 213.16 LAP -1.53 LOP 285.35 VP 23.027 GAP -9.18 AZP 94.94 TAL 20.99 TAP 218.26 RCA 145.43 APO 225.82 V2 25.748
RC 296.904 GL 41.36 GP -23.42 ZAL 60.03 ZAP 60.23 ETS 164.86 ZAE 85.95 ETE 177.20 ZAC 61.18 ETC 256.42 CLP 57.24

PLANETOCENTRIC CONIC

C3 20.218 VHL 4.496 DLA 54.30 RAL 158.71 RAD 6567.8 VEL 11.900 PTH 2.11 VHP 3.902 DPA -13.13 RAP 155.34 ECC 1.3327

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.52	5 32 51	4335.86	-34.99	208.36	38.53	45.43	6 45 7	3735.9	-40.39	201.30
138.48	14 29 1	2742.10	-34.98	80.59	38.51	45.42	15 14 43	2142.1	-40.37	73.53
41.52	5 32 51	4335.86	-34.99	208.36	38.53	45.43	6 45 7	3735.9	-40.39	201.30
138.48	14 29 1	2742.10	-34.98	80.59	38.51	45.42	15 14 43	2142.1	-40.37	73.53
41.52	5 32 51	4335.86	-34.99	208.36	38.53	45.43	6 45 7	3735.9	-40.39	201.30
138.48	14 29 1	2742.10	-34.98	80.59	38.51	45.42	15 14 43	2142.1	-40.37	73.53

DIFFERENTIAL CORRECTIONS
TDE 5.0758 TRA -.8794 TC3-7.0100 BAU 2.0011
RDE 1.4939 RRA -.0158 RC3-2.3811 FAU .32179
FDE 7.1510 FRA -.1500 FC-13.7792 BSP 32880
BDE 5.2911 BRA .8795 BC3 7.4034 FSP 4632

MID-COURSE EXECUTION ACCURACY
SGT 9233.7 SGR 2865.3 SG3 1329.2
RRT .9781 RRF .9957 RTF .9692
SGB 9668.0 R23 .2117 R13 .9732
SG1 9651.2 SG2 570.9 THA 16.94

ORBIT DETERMINATION ACCURACY
ST 6496.2 SR 1904.7 SS 3074.5
CRT .9965 CRS-1.0000 CST -.9969
LSA 7430.8 MSA 253.0 SSA 12.4
EL1 6768.0 EL2 152.4 ALF 16.30

LAUNCH DATE DEC 20 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 676.539 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.000 GAL 3.60 AZL 85.08 HCA 198.46 SMA 185.72 ECC .21652 INC 4.9194 V1 30.273
RP 212.87 LAP -1.56 LOP 286.55 VP 23.073 GAP -9.29 AZP 94.67 TAL 20.48 TAP 218.94 RCA 145.51 APO 225.94 V2 25.782
RC 297.989 GL 40.06 GP -21.92 ZAL 59.97 ZAP 58.79 ETS 165.11 ZAE 84.53 ETE 176.79 ZAC 62.64 ETC 256.61 CLP 56.04

PLANETOCENTRIC CONIC

C3 19.256 VHL 4.388 DLA 52.84 RAL 158.64 RAD 6567.8 VEL 11.859 PTH 2.10 VHP 3.901 DPA -11.75 RAP 155.96 ECC 1.3169

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.33	5 37 52	4312.72	-34.79	205.56	36.89	47.35	6 49 45	3712.7	-39.97	198.30
136.67	14 23 27	2742.10	-34.77	80.35	36.87	47.34	15 9 9	2142.1	-39.96	73.09
43.33	5 37 52	4312.72	-34.79	205.56	36.89	47.35	6 49 45	3712.7	-39.97	198.30
136.67	14 23 27	2742.10	-34.77	80.35	36.87	47.34	15 9 9	2142.1	-39.96	73.09
43.33	5 37 52	4312.72	-34.79	205.56	36.89	47.35	6 49 45	3712.7	-39.97	198.30
136.67	14 23 27	2742.10	-34.77	80.35	36.87	47.34	15 9 9	2142.1	-39.96	73.09

DIFFERENTIAL CORRECTIONS
TDE 4.9421 TRA -.9127 TC3-7.4981 BAU 2.0186
RDE 1.3376 RRA -.0123 RC3-2.2941 FAU .32008
FDE 6.7953 FRA -.1576 FC-14.3903 BSP 33323
BDE 5.1199 BRA .9128 BC3 7.8412 FSP 4624

MID-COURSE EXECUTION ACCURACY
SGT 9425.3 SGR 2665.4 SG3 1333.9
RRT .9781 RRF .9947 RTF .9692
SGB 9794.9 R23 .2096 R13 .9725
SG1 9780.3 SG2 535.1 THA 15.51

ORBIT DETERMINATION ACCURACY
ST 6482.9 SR 1747.6 SS 2993.6
CRT .9962 CRS -.9999 CST -.9967
LSA 7347.2 MSA 251.6 SSA 13.4
EL1 6712.7 EL2 146.6 ALF 15.04

LAUNCH DATE DEC 20 1964 FLIGHT TIME 316.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 680.813 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.006 GAL 3.51 AZL 85.31 HCA 199.66 SMA 185.83 ECC .21651 INC 4.6916 V1 30.273
RP 212.57 LAP -1.58 LOP 287.75 VP 23.118 GAP -9.41 AZP 94.42 TAL 19.95 TAP 219.61 RCA 145.60 APO 226.06 V2 25.815
RC 299.061 GL 38.89 GP -20.56 ZAL 60.02 ZAP 57.41 ETS 165.35 ZAE 83.11 ETE 176.44 ZAC 63.98 ETC 256.75 CLP 54.89

PLANETOCENTRIC CONIC

C3 18.419 VHL 4.292 DLA 51.48 RAL 158.72 RAD 6567.7 VEL 11.824 PTH 2.09 VHP 3.910 DPA -10.53 RAP 156.55 ECC 1.3031

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.03	5 43 20	4290.60	-34.53	202.92	35.53	49.11	6 54 50	3690.6	-39.52	195.50
134.97	14 18 36	2743.29	-34.52	80.20	35.51	49.10	15 4 19	2143.3	-39.51	72.78
45.03	5 43 20	4290.60	-34.53	202.92	35.53	49.11	6 54 50	3690.6	-39.52	195.50
134.97	14 18 36	2743.29	-34.52	80.20	35.51	49.10	15 4 19	2143.3	-39.51	72.78
45.03	5 43 20	4290.60	-34.53	202.92	35.53	49.11	6 54 50	3690.6	-39.52	195.50
134.97	14 18 36	2743.29	-34.52	80.20	35.51	49.10	15 4 19	2143.3	-39.51	72.78

DIFFERENTIAL CORRECTIONS
TDE 4.8262 TRA -.9340 TC3-7.9769 BAU 2.0377
RDE 1.2052 RRA -.0058 RC3-2.2026 FAU .31663
FDE 6.4420 FRA -.1463 FC-14.8828 BSP 33837
BDE 4.9744 BRA .9340 BC3 8.2754 FSP 4595

MID-COURSE EXECUTION ACCURACY
SGT 9612.6 SGR 2482.6 SG3 1330.8
RRT .9779 RRF .9936 RTF .9692
SGB 9928.0 R23 .2063 R13 .9720
SG1 9915.2 SG2 503.4 THA 14.21

ORBIT DETERMINATION ACCURACY
ST 6474.3 SR 1609.9 SS 2908.2
CRT .9959 CRS -.9999 CST -.9966
LSA 7273.5 MSA 250.4 SSA 14.5
EL1 6670.0 EL2 141.5 ALF 13.92

LAUNCH DATE DEC 20 1964 FLIGHT TIME 318.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 685.094 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.013 GAL 3.42 AZL 85.51 HCA 200.86 SMA 185.93 ECC .21651 INC 4.4885 V1 30.273
RP 212.29 LAP -1.60 LOP 288.95 VP 23.164 GAP -9.52 AZP 94.20 TAL 19.41 TAP 220.27 RCA 145.68 APO 226.19 V2 25.847
RC 300.120 GL 37.83 GP -19.33 ZAL 60.18 ZAP 56.10 ETS 165.59 ZAE 81.73 ETE 176.15 ZAC 65.19 ETC 256.88 CLP 53.77

PLANETOCENTRIC CONIC

C3 17.680 VHL 4.205 DLA 50.21 RAL 158.92 RAD 6567.7 VEL 11.792 PTH 2.09 VHP 3.925 DPA -9.43 RAP 157.11 ECC 1.2910

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.64	5 49 11	4269.28	-34.24	200.41	34.40	50.73	7 0 20	3669.3	-39.05	192.86
133.36	14 14 20	2745.51	-34.23	80.13	34.39	50.72	15 0 6	2145.5	-39.04	72.58
46.64	5 49 11	4269.28	-34.24	200.41	34.40	50.73	7 0 20	3669.3	-39.05	192.86
133.36	14 14 20	2745.51	-34.23	80.13	34.39	50.72	15 0 6	2145.5	-39.04	72.58
46.64	5 49 11	4269.28	-34.24	200.41	34.40	50.73	7 0 20	3669.3	-39.05	192.86
133.36	14 14 20	2745.51	-34.23	80.13	34.39	50.72	15 0 6	2145.5	-39.04	72.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 4.7217 TRA -.9456 TC3-8.4541 BAU 2.0596 SGT 9797.7 SGR 2316.2 SG3 1322.1 ST 6465.9 SR 1488.6 SS 2818.9
RDE 1.0918 RRA .0024 RC3-2.1110 FAU .31209 RRT .9775 RRF .9922 RTF .9691 CRT .9955 CRS -.9999 CST -.9964
FDE 6.0932 FRA -.1200 FC-15.2821 BSP 34362 SGB10067.7 R23 .2018 R13 .9714 LSA 7204.7 MSA 249.6 SSA 15.6
BDE 4.8463 BRA .9456 BC3 8.7136 FSP 4547 SG110056.5 SG2 476.1 THA 13.04 EL1 6633.6 EL2 137.1 ALF 12.91

LAUNCH DATE DEC 20 1964 FLIGHT TIME 320.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 689.382 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.019 GAL 3.32 AZL 85.69 HCA 202.06 SMA 186.04 ECC .21652 INC 4.3060 V1 30.273
RP 212.01 LAP -1.62 LOP 290.16 VP 23.208 GAP -9.62 AZP 93.99 TAL 18.86 TAP 220.92 RCA 145.76 APO 226.33 V2 25.879
RC 301.167 GL 36.86 GP -18.22 ZAL 60.42 ZAP 54.84 ETS 165.82 ZAE 80.36 ETE 175.91 ZAC 66.30 ETC 256.97 CLP 52.68

PLANETOCENTRIC CONIC

C3 17.021 VHL 4.126 DLA 49.01 RAL 159.23 RAD 6567.7 VEL 11.765 PTH 2.08 VHP 3.946 DPA -8.45 RAP 157.66 ECC 1.2801

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.17	5 55 25	4248.53	-33.92	198.02	33.48	52.23	7 6 13	3648.5	-38.56	190.35
131.83	14 10 33	2748.68	-33.91	80.15	33.46	52.22	14 56 22	2148.7	-38.55	72.48
48.17	5 55 25	4248.53	-33.92	198.02	33.48	52.23	7 6 13	3648.5	-38.56	190.35
131.83	14 10 33	2748.68	-33.91	80.15	33.46	52.22	14 56 22	2148.7	-38.55	72.48
48.17	5 55 25	4248.53	-33.92	198.02	33.48	52.23	7 6 13	3648.5	-38.56	190.35
131.83	14 10 33	2748.68	-33.91	80.15	33.46	52.22	14 56 22	2148.7	-38.55	72.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 4.6284 TRA -.9468 TC3-8.9284 BAU 2.0830 SGT 9980.4 SGR 2164.7 SG3 1308.9 ST 6459.7 SR 1382.2 SS 2729.0
RDE .9946 RRA .0124 RC3-2.0197 FAU .30659 RRT .9768 RRF .9905 RTF .9690 CRT .9951 CRS -.9999 CST -.9961
FDE 5.7563 FRA -.0767 FC-15.5942 BSP 34919 SGB10212.4 R23 .1963 R13 .9709 LSA 7143.0 MSA 249.7 SSA 16.6
BDE 4.7341 BRA .9469 BC3 9.1539 FSP 4490 SG110202.4 SG2 453.6 THA 11.99 EL1 6604.5 EL2 133.6 ALF 12.03

LAUNCH DATE DEC 20 1964 FLIGHT TIME 322.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 693.678 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.025 GAL 3.23 AZL 85.86 HCA 203.27 SMA 186.16 ECC .21655 INC 4.1412 V1 30.273
RP 211.73 LAP -1.63 LOP 291.36 VP 23.252 GAP -9.73 AZP 93.81 TAL 18.29 TAP 221.56 RCA 145.84 APO 226.47 V2 25.911
RC 302.203 GL 35.98 GP -17.21 ZAL 60.74 ZAP 53.63 ETS 166.05 ZAE 79.02 ETE 175.70 ZAC 67.33 ETC 257.05 CLP 51.63

PLANETOCENTRIC CONIC

C3 16.428 VHL 4.053 DLA 47.87 RAL 159.63 RAD 6567.7 VEL 11.739 PTH 2.07 VHP 3.972 DPA -7.58 RAP 158.21 ECC 1.2704

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.64	6 1 58	4228.25	-33.58	195.71	32.73	53.63	7 12 27	3628.2	-38.06	187.95
130.36	14 7 11	2752.67	-33.57	80.23	32.72	53.62	14 53 3	2152.7	-38.05	72.47
49.64	6 1 58	4228.25	-33.58	195.71	32.73	53.63	7 12 27	3628.2	-38.06	187.95
130.36	14 7 11	2752.67	-33.57	80.23	32.72	53.62	14 53 3	2152.7	-38.05	72.47
49.64	6 1 58	4228.25	-33.58	195.71	32.73	53.63	7 12 27	3628.2	-38.06	187.95
130.36	14 7 11	2752.67	-33.57	80.23	32.72	53.62	14 53 3	2152.7	-38.05	72.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 4.5428 TRA -.9403 TC3-9.4006 BAU 2.1076 SGT10160.6 SGR 2026.0 SG3 1291.7 ST 6453.4 SR 1288.0 SS 2637.9
RDE .9105 RRA .0229 RC3-1.9293 FAU .30032 RRT .9758 RRF .9885 RTF .9688 CRT .9946 CRS -.9998 CST -.9958
FDE 5.4300 FRA -.0243 FC-15.8268 BSP 35471 SGB10360.6 R23 .1895 R13 .9703 LSA 7085.3 MSA 250.1 SSA 17.6
BDE 4.6332 BRA .9406 BC3 9.5966 FSP 4417 SG110351.5 SG2 434.8 THA 11.03 EL1 6579.4 EL2 130.5 ALF 11.23

LAUNCH DATE DEC 20 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 697.980 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.032 GAL 3.13 AZL 86.01 HCA 204.48 SMA 186.27 ECC .21659 INC 3.9914 V1 30.273
RP 211.47 LAP -1.65 LOP 292.57 VP 23.296 GAP -9.83 AZP 93.63 TAL 17.71 TAP 222.19 RCA 145.92 APO 226.61 V2 25.941
RC 303.228 GL 35.17 GP -16.28 ZAL 61.14 ZAP 52.47 ETS 166.26 ZAE 77.70 ETE 175.53 ZAC 68.27 ETC 257.11 CLP 50.61

PLANETOCENTRIC CONIC

C3 15.889 VHL 3.986 DLA 46.79 RAL 160.11 RAD 6567.6 VEL 11.716 PTH 2.06 VHP 4.003 DPA -6.80 RAP 158.74 ECC 1.2615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.06	6 8 52	4208.26	-33.23	193.48	32.14	54.94	7 19 0	3608.3	-37.55	185.64
128.94	14 4 8	2757.47	-33.21	80.39	32.13	54.93	14 50 6	2157.5	-37.54	72.55
51.06	6 8 52	4208.26	-33.23	193.48	32.14	54.94	7 19 0	3608.3	-37.55	185.64
128.94	14 4 8	2757.47	-33.21	80.39	32.13	54.93	14 50 6	2157.5	-37.54	72.55
51.06	6 8 52	4208.26	-33.23	193.48	32.14	54.94	7 19 0	3608.3	-37.55	185.64
128.94	14 4 8	2757.47	-33.21	80.39	32.13	54.93	14 50 6	2157.5	-37.54	72.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 4.4646 TRA -.9241 TC3-9.8672 BAU 2.1321 SGT10335.6 SGR 1898.9 SG3 1271.3 ST 6448.1 SR 1204.8 SS 2547.3
RDE .8375 RRA .0339 RC3-1.8399 FAU .29337 RRT .9745 RRF .9861 RTF .9685 CRT .9942 CRS -.9998 CST -.9955
FDE 5.1174 FRA .0377 FC-15.9850 BSP 36078 SGB10508.6 R23 .1815 R13 .9699 LSA 7032.5 MSA 250.7 SSA 18.6
BDE 4.5425 BRA .9247 BC31D.0373 FSP 4343 SG110500.2 SG2 419.3 THA 10.17 EL1 6558.5 EL2 127.8 ALF 10.53

LAUNCH DATE DEC 20 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 702.289 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.039	GAL	3.02	AZL	86.15	HCA	205.69	SMA	186.39	ECC	.21665	INC	3.8545
RP	211.20	LAP	-1.67	LOP	293.79	VP	23.339	GAP	-9.93	AZP	93.47	TAL	17.12	TAP	222.81	RCA	146.01	APO	226.76
RC	304.242	GL	34.42	GP	-15.43	ZAL	61.61	ZAP	51.35	ETS	166.47	ZAE	76.41	ETE	175.38	ZAC	69.14	ETC	257.15

V1	30.273	V2	25.971	CLP	49.62														

PLANETOCENTRIC CONIC

C3	15.396	VHL	3.924	DLA	45.75	RAL	160.67	RAD	6567.6	VEL	11.695	PTH	2.06	VHP	4.036	DPA	-6.11	RAP	159.28
ECC	1.2534																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.43	6 16 4	4188.47	-32.85	191.31	31.69	56.17	7 25 52	3588.5	-37.04	183.40
127.57	14 1 23	2763.01	-32.84	80.61	31.68	56.16	14 47 26	2163.0	-37.03	72.70
52.43	6 16 4	4188.47	-32.85	191.31	31.69	56.17	7 25 52	3588.5	-37.04	183.40
127.57	14 1 23	2763.01	-32.84	80.61	31.68	56.16	14 47 26	2163.0	-37.03	72.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.3892	TRA	-.9017	TC-10.3392	BAU	2.1585	SGT10510.5	SGR	1783.0	SG3	1249.2	ST	6438.9	SR	1129.9	SS	2453.9
RDE	.7730	RRA	.0445	RC3-1.7548	FAU	.28631	RRT	.9729	RRF	.9833	RTF	.9682	CRT	.9936	CRS	-.9997	CST	-.9951
FDE	4.8114	FRA	.1032	FC-16.0999	BSP	36632	SGB10660.7	R23	.1727	R13	.9693	LSA	6978.1	MSA	251.2	SSA	19.6		
BDE	4.4568	BRA	.9028	BC310.4871	FSP	4250	SG110652.9	SG2	407.1	THA	9.39	EL1	6536.1	EL2	125.3	ALF	9.89		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 706.604 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.045	GAL	2.92	AZL	86.27	HCA	206.90	SMA	186.50	ECC	.21671	INC	3.7288
RP	210.95	LAP	-1.69	LOP	295.01	VP	23.381	GAP	-10.03	AZP	93.33	TAL	16.52	TAP	223.42	RCA	146.09	APO	226.92
RC	305.247	GL	33.73	GP	-14.66	ZAL	62.15	ZAP	50.27	ETS	166.66	ZAE	75.15	ETE	175.26	ZAC	69.95	ETC	257.18

V1	30.273	V2	26.001	CLP	48.65														

PLANETOCENTRIC CONIC

C3	14.942	VHL	3.865	DLA	44.75	RAL	161.29	RAD	6567.6	VEL	11.676	PTH	2.05	VHP	4.073	DPA	-5.49	RAP	159.81
ECC	1.2459																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.78	6 23 37	4168.62	-32.47	189.17	31.37	57.33	7 33 6	3568.6	-36.51	181.21
126.22	13 58 49	2769.43	-32.46	80.90	31.36	57.32	14 44 59	2169.4	-36.50	72.94
53.78	6 23 37	4168.62	-32.47	189.17	31.37	57.33	7 33 6	3568.6	-36.51	181.21
126.22	13 58 49	2769.43	-32.46	80.90	31.36	57.32	14 44 59	2169.4	-36.50	72.94
53.78	6 23 37	4168.62	-32.47	189.17	31.37	57.33	7 33 6	3568.6	-36.51	181.21
126.22	13 58 49	2769.43	-32.46	80.90	31.36	57.32	14 44 59	2169.4	-36.50	72.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.3173	TRA	-.8725	TC-10.8109	BAU	2.1852	SGT10682.7	SGR	1676.6	SG3	1224.9	ST	6427.4	SR	1063.4	SS	2362.1		
RDE	.7166	RRA	.0552	RC3-1.6713	FAU	.27881	RRT	.9707	RRF	.9801	RTF	.9679	CRT	.9931	CRS	-.9997	CST	-.9947	
FDE	-4.5205	FRA	.1738	FC-16.1543	BSP	37190	SGB10813.4	R23	.1629	R13	.9689	LSA	6925.2	MSA	252.1	SSA	20.6		
BDE	4.3763	BRA	.8742	BC310.9393	FSP	4156	SG110806.1	SG2	398.0	THA	8.67	EL1	6513.6	EL2	123.1	ALF	9.33		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 710.926 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.052	GAL	2.81	AZL	86.39	HCA	208.12	SMA	186.62	ECC	.21680	INC	3.6130
RP	210.70	LAP	-1.70	LOP	296.23	VP	23.423	GAP	-10.12	AZP	93.19	TAL	15.90	TAP	224.02	RCA	146.16	APO	227.08
RC	306.243	GL	33.09	GP	-13.94	ZAL	62.76	ZAP	49.23	ETS	166.85	ZAE	73.90	ETE	175.16	ZAC	70.71	ETC	257.20

V1	30.273	V2	26.029	CLP	47.72														

PLANETOCENTRIC CONIC

C3	14.522	VHL	3.811	DLA	43.78	RAL	161.98	RAD	6567.6	VEL	11.658	PTH	2.05	VHP	4.113	DPA	-4.94	RAP	160.35
ECC	1.2390																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.10	6 31 29	4148.78	-32.07	187.07	31.16	58.43	7 40 38	3548.8	-35.98	179.07
124.90	13 56 27	2776.58	-32.06	81.25	31.15	58.42	14 42 43	2176.6	-35.97	73.25
55.10	6 31 29	4148.78	-32.07	187.07	31.16	58.43	7 40 38	3548.8	-35.98	179.07
124.90	13 56 27	2776.58	-32.06	81.25	31.15	58.42	14 42 43	2176.6	-35.97	73.25
55.10	6 31 29	4148.78	-32.07	187.07	31.16	58.43	7 40 38	3548.8	-35.98	179.07
124.90	13 56 27	2776.58	-32.06	81.25	31.15	58.42	14 42 43	2176.6	-35.97	73.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.2471	TRA	-.8354	TC-11.2836	BAU	2.2123	SGT10851.7	SGR	1578.7	SG3	1199.3	ST	6412.2	SR	1003.5	SS	2269.5		
RDE	.6665	RRA	.0658	RC3-1.5905	FAU	.27114	RRT	.9681	RRF	.9762	RTF	.9676	CRT	.9925	CRS	-.9996	CST	-.9942	
FDE	4.2395	FRA	.2501	FC-16.1641	BSP	37735	SGB10966.0	R23	.1529	R13	.9683	LSA	6870.9	MSA	253.5	SSA	21.6		
BDE	4.2991	BRA	.8380	BC311.3951	FSP	4057	SG110959.0	SG2	391.8	THA	8.03	EL1	6489.1	EL2	121.2	ALF	8.83		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 715.253 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.059	GAL	2.70	AZL	86.49	HCA	209.34	SMA	186.75	ECC	.21690	INC	3.5058
RP	210.46	LAP	-1.72	LOP	297.45	VP	23.464	GAP	-10.21	AZP	93.06	TAL	15.27	TAP	224.61	RCA	146.24	APO	227.25
RC	307.229	GL	32.49	GP	-13.28	ZAL	63.42	ZAP	48.23	ETS	167.03	ZAE	72.69	ETE	175.07	ZAC	71.42	ETC	257.22

V1	30.273	V2	26.057	CLP	46.81														

PLANETOCENTRIC CONIC

C3	14.132	VHL	3.759	DLA	42.84	RAL	162.73	RAD	6567.6	VEL	11.641	PTH	2.04	VHP	4.155	DPA	-4.46	RAP	160.89
ECC	1.2326																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.41	6 39 44	4128.64	-31.66	184.98	31.05	59.49	7 48 33	3528.6	-35.45	176.94
123.59	13 54 10	2784.67	-31.65	81.69	31.04	59.48	14 40 35	2184.7	-35.44	73.64
56.41	6 39 44	4128.64	-31.66	184.98	31.05	59.49	7 48 33	3528.6	-35.45	176.94
123.59	13 54 10	2784.67	-31.65	81.69	31.04	59.48	14 40 35	2184.7	-35.44	73.64
56.41	6 39 44	4128.64	-31.66	184.98	31.05	59.49	7 48 33	3528.6	-35.45	176.94
123.59	13 54 10	2784.67	-31.65	81.69	31.04	59.48	14 40 35	2184.7	-35.44	73.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.1790	TRA	-.7919	TC-11.7566	BAU	2.2395	SGT11018.5	SGR	1488.9	SG3	1172.7	ST	6394.0	SR	949.9	SS	2177.9		
RDE	.6221	RRA	.0760	RC3-1.5124	FAU	.26335	RRT	.9649	RRF	.9718	RTF	.9672	CRT	.9919	CRS	-.9996	CST	-.9937	
FDE	3.9714	FRA	.3273	FC-16.1331	BSP	38287	SGB11118.7	R23	.1423	R13	.9679	LSA	6816.4	MSA	254.8	SSA	22.6		
BDE	4.2250	BRA	.7955	BC311.8535	FSP	3955	SG111111.9	SG2	387.8	THA	7.44	EL1	6463.0	EL2	119.4	ALF	8.39		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 719.587 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.067 GAL 2.59 AZL 86.59 HCA 210.57 SMA 186.87 ECC .21701 INC 3.4062 V1 30.273
RP 210.22 LAP -1.73 LOP 298.68 VP 23.504 GAP -10.30 AZP 92.93 TAL 14.62 TAP 225.19 RCA 146.32 APO 227.42 V2 26.085
RC 308.206 GL 31.93 GP -12.67 ZAL 64.15 ZAP 47.26 ETS 167.20 ZAE 71.49 ETE 175.00 ZAC 72.08 ETC 257.22 CLP 45.92

PLANETOCENTRIC CONIC

C3 13.768 VHL 3.711 DLA 41.91 RAL 163.53 RAD 6567.5 VEL 11.626 PTH 2.04 VHP 4.199 DPA -4.03 RAP 161.44 ECC 1.2266

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.70	6 48 21	4108.18	-31.24	182.90	31.04	60.50	7 56 49	3508.2	-34.90	174.82
122.30	13 51 57	2793.68	-31.23	82.19	31.03	60.48	14 38 31	2193.7	-34.89	74.12
57.70	6 48 21	4108.18	-31.24	182.90	31.04	60.50	7 56 49	3508.2	-34.90	174.82
122.30	13 51 57	2793.68	-31.23	82.19	31.03	60.48	14 38 31	2193.7	-34.89	74.12
57.70	6 48 21	4108.18	-31.24	182.90	31.04	60.50	7 56 49	3508.2	-34.90	174.82
122.30	13 51 57	2793.68	-31.23	82.19	31.03	60.48	14 38 31	2193.7	-34.89	74.12

DIFFERENTIAL CORRECTIONS
TDE 4.1133 TRA -.7406 TC-12.2270 BAU 2.2660
RDE .5829 RRA .0861 RC3-1.4359 FAU .25535
FDE 3.7178 FRA .4076 FC-16.0561 BSP 38847
BDE 4.1544 BRA .7455 BC312.3110 FSP 3852

MID-COURSE EXECUTION ACCURACY
SGT11181.9 SGR 1406.2 SG3 1145.1
RRT .9610 RRF .9666 RTF .9668
SGB11270.0 R23 .1316 R13 .9674
SG111263.4 SG2 386.1 THA 6.90

ORBIT DETERMINATION ACCURACY
ST 6374.1 SR 902.2 SS 2088.6
CRT .9913 CRS -.9995 CST -.9930
LSA 6763.0 MSA 256.5 SSA 23.5
EL1 6436.5 EL2 117.6 ALF 7.99

LAUNCH DATE DEC 20 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 723.923 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.074 GAL 2.48 AZL 86.69 HCA 211.80 SMA 187.00 ECC .21715 INC 3.3133 V1 30.273
RP 209.99 LAP -1.75 LOP 299.90 VP 23.544 GAP -10.39 AZP 92.82 TAL 13.97 TAP 225.76 RCA 146.39 APO 227.60 V2 26.111
RC 309.174 GL 31.41 GP -12.11 ZAL 64.93 ZAP 46.32 ETS 167.36 ZAE 70.32 ETE 174.94 ZAC 72.71 ETC 257.21 CLP 45.06

PLANETOCENTRIC CONIC

C3 13.428 VHL 3.664 DLA 41.01 RAL 164.39 RAD 6567.5 VEL 11.611 PTH 2.03 VHP 4.244 DPA -3.65 RAP 162.00 ECC 1.2210

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.01	6 57 23	4087.21	-30.80	180.80	31.12	61.47	8 5 31	3487.2	-34.34	172.70
120.99	13 49 45	2803.72	-30.79	82.78	31.11	61.46	14 36 29	2203.7	-34.33	74.68
59.01	6 57 23	4087.21	-30.80	180.80	31.12	61.47	8 5 31	3487.2	-34.34	172.70
120.99	13 49 45	2803.72	-30.79	82.78	31.11	61.46	14 36 29	2203.7	-34.33	74.68
59.01	6 57 23	4087.21	-30.80	180.80	31.12	61.47	8 5 31	3487.2	-34.34	172.70
120.99	13 49 45	2803.72	-30.79	82.78	31.11	61.46	14 36 29	2203.7	-34.33	74.68

DIFFERENTIAL CORRECTIONS
TDE 4.0669 TRA -.6629 TC-12.6432 BAU 2.2826
RDE .5508 RRA .0992 RC3-1.3517 FAU .24566
FDE 3.5054 FRA .5237 FC-15.8385 BSP 39891
BDE 4.1040 BRA .6703 BC312.7152 FSP 3821

MID-COURSE EXECUTION ACCURACY
SGT11321.6 SGR 1328.6 SG3 1113.0
RRT .9555 RRF .9606 RTF .9662
SGB11399.3 R23 .1232 R13 .9667
SG111392.6 SG2 389.4 THA 6.41

ORBIT DETERMINATION ACCURACY
ST 6378.3 SR 863.9 SS 2017.5
CRT .9907 CRS -.9995 CST -.9921
LSA 6740.2 MSA 262.4 SSA 23.9
EL1 6435.5 EL2 116.4 ALF 7.65

LAUNCH DATE DEC 20 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 728.269 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.081 GAL 2.36 AZL 86.77 HCA 213.03 SMA 187.12 ECC .21730 INC 3.2266 V1 30.273
RP 209.77 LAP -1.76 LOP 301.14 VP 23.582 GAP -10.48 AZP 92.71 TAL 13.30 TAP 226.32 RCA 146.46 APO 227.79 V2 26.137
RC 310.132 GL 30.92 GP -11.58 ZAL 65.77 ZAP 45.41 ETS 167.52 ZAE 69.17 ETE 174.89 ZAC 73.30 ETC 257.20 CLP 44.22

PLANETOCENTRIC CONIC

C3 13.110 VHL 3.621 DLA 40.11 RAL 165.29 RAD 6567.5 VEL 11.597 PTH 2.03 VHP 4.292 DPA -3.33 RAP 162.56 ECC 1.2158

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.32	7 6 51	4065.63	-30.35	178.67	31.28	62.41	8 14 37	3465.6	-33.78	170.56
119.68	13 47 30	2814.91	-30.34	83.46	31.27	62.39	14 34 25	2214.9	-33.77	75.34
60.32	7 6 51	4065.63	-30.35	178.67	31.28	62.41	8 14 37	3465.6	-33.78	170.56
119.68	13 47 30	2814.91	-30.34	83.46	31.27	62.39	14 34 25	2214.9	-33.77	75.34
60.32	7 6 51	4065.63	-30.35	178.67	31.28	62.41	8 14 37	3465.6	-33.78	170.56
119.68	13 47 30	2814.91	-30.34	83.46	31.27	62.39	14 34 25	2214.9	-33.77	75.34

DIFFERENTIAL CORRECTIONS
TDE 3.9919 TRA -.6065 TC-13.1367 BAU 2.3134
RDE .5176 RRA .1067 RC3-1.2848 FAU .23844
FDE 3.2564 FRA .5879 FC-15.7459 BSP 40247
BDE 4.0253 BRA .6158 BC313.1994 FSP 3684

MID-COURSE EXECUTION ACCURACY
SGT11487.9 SGR 1259.1 SG3 1086.2
RRT .9504 RRF .9538 RTF .9659
SGB11556.7 R23 .1118 R13 .9663
SG111550.2 SG2 389.3 THA 5.95

ORBIT DETERMINATION ACCURACY
ST 6334.6 SR 822.2 SS 1919.9
CRT .9901 CRS -.9994 CST -.9913
LSA 6664.8 MSA 262.4 SSA 25.0
EL1 6386.7 EL2 114.3 ALF 7.33

LAUNCH DATE DEC 20 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 732.619 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.089 GAL 2.24 AZL 86.85 HCA 214.26 SMA 187.25 ECC .21747 INC 3.1451 V1 30.273
RP 209.55 LAP -1.77 LOP 302.37 VP 23.621 GAP -10.56 AZP 92.60 TAL 12.62 TAP 226.88 RCA 146.53 APO 227.98 V2 26.162
RC 311.080 GL 30.45 GP -11.10 ZAL 66.67 ZAP 44.53 ETS 167.66 ZAE 68.04 ETE 174.85 ZAC 73.86 ETC 257.19 CLP 43.41

PLANETOCENTRIC CONIC

C3 12.811 VHL 3.579 DLA 39.22 RAL 166.24 RAD 6567.5 VEL 11.584 PTH 2.03 VHP 4.341 DPA -3.04 RAP 163.13 ECC 1.2108

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.65	7 16 49	4043.17	-29.88	176.50	31.51	63.32	8 24 12	3443.2	-33.20	168.38
118.35	13 45 8	2827.46	-29.87	84.23	31.51	63.30	14 32 15	2227.5	-33.19	76.11
61.65	7 16 49	4043.17	-29.88	176.50	31.51	63.32	8 24 12	3443.2	-33.20	168.38
118.35	13 45 8	2827.46	-29.87	84.23	31.51	63.30	14 32 15	2227.5	-33.19	76.11
61.65	7 16 49	4043.17	-29.88	176.50	31.51	63.32	8 24 12	3443.2	-33.20	168.38
118.35	13 45 8	2827.46	-29.87	84.23	31.51	63.30	14 32 15	2227.5	-33.19	76.11

DIFFERENTIAL CORRECTIONS
TDE 3.9194 TRA -.5404 TC-13.6258 BAU 2.3431
RDE .4883 RRA .1147 RC3-1.2193 FAU .23115
FDE 3.0239 FRA .6584 FC-15.6200 BSP 40667
BDE 3.9497 BRA .5524 BC313.6802 FSP 3562

MID-COURSE EXECUTION ACCURACY
SGT11651.3 SGR 1195.4 SG3 1059.3
RRT .9444 RRF .9461 RTF .9655
SGB11712.5 R23 .1012 R13 .9658
SG111705.9 SG2 391.2 THA 5.54

ORBIT DETERMINATION ACCURACY
ST 6289.8 SR 785.3 SS 1826.3
CRT .9896 CRS -.9993 CST -.9903
LSA 6591.2 MSA 263.4 SSA 26.1
EL1 6337.6 EL2 112.2 ALF 7.05

LAUNCH DATE DEC 20 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 736.974 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.096 GAL 2.12 AZL 86.93 HCA 215.49 SMA 187.39 ECC .21766 INC 3.0686 V1 30.273
RP 209.34 LAP -1.78 LOP 303.61 VP 23.658 GAP -10.64 AZP 92.50 TAL 11.92 TAP 227.42 RCA 146.60 APO 228.17 V2 26.186
RC 312.019 GL 30.01 GP -10.64 ZAL 67.62 ZAP 43.67 ETS 167.80 ZAE 66.94 ETE 174.82 ZAC 74.40 ETC 257.16 CLP 42.61

PLANETOCENTRIC CONIC

C3 12.531 VHL 3.540 DLA 38.33 RAL 167.24 RAD 6567.5 VEL 11.572 PTH 2.02 VHP 4.392 DPA -2.80 RAP 163.71 ECC 1.2062

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.00	7 27 21	4019.65	-29.39	174.27	31.82	64.20	8 34 20	3419.7	-32.60	166.14
117.00	13 42 34	2841.53	-29.38	85.13	31.82	64.19	14 29 55	2241.5	-32.60	77.00
63.00	7 27 21	4019.65	-29.39	174.27	31.82	64.20	8 34 20	3419.7	-32.60	166.14
117.00	13 42 34	2841.53	-29.38	85.13	31.82	64.19	14 29 55	2241.5	-32.60	77.00
63.00	7 27 21	4019.65	-29.39	174.27	31.82	64.20	8 34 20	3419.7	-32.60	166.14
117.00	13 42 34	2841.53	-29.38	85.13	31.82	64.19	14 29 55	2241.5	-32.60	77.00

DIFFERENTIAL CORRECTIONS
TDE 3.8475 TRA -.4663 TC-14.1045 BAU 2.3709
RDE .4622 RRA .1226 RC3-1.1536 FAU .22357
FDE 2.8053 FRA .7321 FC-15.4451 BSP 41123
BDE 3.8752 BRA .4821 BC314.1516 FSP 3444

MID-COURSE EXECUTION ACCURACY
SGT11807.8 SGR 1136.1 SG3 1031.3
RRT .9371 RRF .9373 RTF .9651
SGB11862.3 R23 .0913 R13 .9654
SG111855.7 SG2 394.9 THA 5.16

ORBIT DETERMINATION ACCURACY
ST 6241.2 SR 752.3 SS 1735.9
CRT .9891 CRS -.9992 CST -.9891
LSA 6516.2 MSA 265.2 SSA 27.0
EL1 6285.4 EL2 110.2 ALF 6.80

LAUNCH DATE DEC 20 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 741.334 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.104 GAL 2.00 AZL 87.00 HCA 216.73 SMA 187.52 ECC .21787 INC 2.9963 V1 30.273
RP 209.14 LAP -1.79 LOP 304.85 VP 23.694 GAP -10.73 AZP 92.40 TAL 11.21 TAP 227.95 RCA 146.66 APO 228.37 V2 26.209
RC 312.950 GL 29.58 GP -10.22 ZAL 68.62 ZAP 42.84 ETS 167.93 ZAE 65.85 ETE 174.79 ZAC 74.91 ETC 257.14 CLP 41.84

PLANETOCENTRIC CONIC

C3 12.269 VHL 3.503 DLA 37.45 RAL 168.28 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 4.444 DPA -2.60 RAP 164.30 ECC 1.2019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.40	7 38 30	3994.78	-28.89	171.96	32.20	65.06	8 45 5	3394.8	-32.00	163.82
115.60	13 39 42	2857.40	-28.88	86.16	32.19	65.05	14 27 19	2257.4	-31.99	78.02
64.40	7 38 30	3994.78	-28.89	171.96	32.20	65.06	8 45 5	3394.8	-32.00	163.82
115.60	13 39 42	2857.40	-28.88	86.16	32.19	65.05	14 27 19	2257.4	-31.99	78.02
64.40	7 38 30	3994.78	-28.89	171.96	32.20	65.06	8 45 5	3394.8	-32.00	163.82
115.60	13 39 42	2857.40	-28.88	86.16	32.19	65.05	14 27 19	2257.4	-31.99	78.02

DIFFERENTIAL CORRECTIONS
TDE 3.7752 TRA -.3841 TC-14.5806 BAU 2.3983
RDE .4388 RRA .1303 RC3-1.0893 FAU .21599
FDE 2.5982 FRA .8066 FC-15.2409 BSP 41592
BDE 3.8006 BRA .4056 BC314.6212 FSP 3333

MID-COURSE EXECUTION ACCURACY
SGT11962.2 SGR 1081.4 SG3 1003.2
RRT .9287 RRF .9273 RTF .9647
SGB12011.0 R23 .0820 R13 .9649
SG112004.3 SG2 399.6 THA 4.80

ORBIT DETERMINATION ACCURACY
ST 6187.4 SR 722.6 SS 1647.5
CRT .9886 CRS -.9991 CST -.9877
LSA 6438.0 MSA 267.3 SSA 27.9
EL1 6228.5 EL2 108.1 ALF 6.59

LAUNCH DATE DEC 20 1964 FLIGHT TIME 346.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 745.698 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.111 GAL 1.87 AZL 87.07 HCA 217.97 SMA 187.65 ECC .21810 INC 2.9280 V1 30.273
RP 208.94 LAP -1.80 LOP 306.09 VP 23.730 GAP -10.81 AZP 92.31 TAL 10.49 TAP 228.46 RCA 146.73 APO 228.58 V2 26.232
RC 313.871 GL 29.18 GP -9.82 ZAL 69.68 ZAP 42.04 ETS 168.05 ZAE 64.79 ETE 174.77 ZAC 75.39 ETC 257.11 CLP 41.08

PLANETOCENTRIC CONIC

C3 12.024 VHL 3.467 DLA 36.56 RAL 169.36 RAD 6567.5 VEL 11.550 PTH 2.02 VHP 4.497 DPA -2.43 RAP 164.90 ECC 1.1979

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.84	7 50 22	3968.29	-28.37	169.54	32.65	65.91	8 56 31	3368.3	-31.37	161.40
114.16	13 36 28	2875.33	-28.36	87.34	32.64	65.89	14 24 23	2275.3	-31.36	79.20
65.84	7 50 22	3968.29	-28.37	169.54	32.65	65.91	8 56 31	3368.3	-31.37	161.40
114.16	13 36 28	2875.33	-28.36	87.34	32.64	65.89	14 24 23	2275.3	-31.36	79.20
65.84	7 50 22	3968.29	-28.37	169.54	32.65	65.91	8 56 31	3368.3	-31.37	161.40
114.16	13 36 28	2875.33	-28.36	87.34	32.64	65.89	14 24 23	2275.3	-31.36	79.20

DIFFERENTIAL CORRECTIONS
TDE 3.7008 TRA -.2950 TC-15.0532 BAU 2.4253
RDE .4175 RRA .1377 RC3-1.0266 FAU .20852
FDE 2.3994 FRA .8805 FC-15.0139 BSP 42084
BDE 3.7243 BRA .3256 BC315.0882 FSP 3227

MID-COURSE EXECUTION ACCURACY
SGT12113.8 SGR 1031.1 SG3 975.3
RRT .9191 RRF .9161 RTF .9642
SGB12157.6 R23 .0734 R13 .9644
SG112150.9 SG2 405.1 THA 4.48

ORBIT DETERMINATION ACCURACY
ST 6125.9 SR 695.4 SS 1559.6
CRT .9882 CRS -.9988 CST -.9860
LSA 6353.6 MSA 269.8 SSA 28.8
EL1 6164.3 EL2 105.7 ALF 6.40

LAUNCH DATE DEC 20 1964 FLIGHT TIME 348.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 750.066 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.119 GAL 1.74 AZL 87.14 HCA 219.21 SMA 187.79 ECC .21835 INC 2.8633 V1 30.273
RP 208.76 LAP -1.81 LOP 307.33 VP 23.765 GAP -10.88 AZP 92.22 TAL 9.76 TAP 228.97 RCA 146.79 APO 228.79 V2 26.254
RC 314.784 GL 28.78 GP -9.45 ZAL 70.78 ZAP 41.26 ETS 168.17 ZAE 63.74 ETE 174.76 ZAC 75.86 ETC 257.07 CLP 40.35

PLANETOCENTRIC CONIC

C3 11.794 VHL 3.434 DLA 35.67 RAL 170.49 RAD 6567.4 VEL 11.540 PTH 2.01 VHP 4.551 DPA -2.29 RAP 165.50 ECC 1.1941

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.35	8 3 3	3939.85	-27.83	166.99	33.16	66.73	9 8 43	3339.9	-30.72	158.86
112.65	13 32 45	2895.67	-27.82	88.70	33.15	66.72	14 21 0	2295.7	-30.71	80.57
67.35	8 3 3	3939.85	-27.83	166.99	33.16	66.73	9 8 43	3339.9	-30.72	158.86
112.65	13 32 45	2895.67	-27.82	88.70	33.15	66.72	14 21 0	2295.7	-30.71	80.57
67.35	8 3 3	3939.85	-27.83	166.99	33.16	66.73	9 8 43	3339.9	-30.72	158.86
112.65	13 32 45	2895.67	-27.82	88.70	33.15	66.72	14 21 0	2295.7	-30.71	80.57

DIFFERENTIAL CORRECTIONS
TDE 3.6250 TRA -.1991 TC-15.5190 BAU 2.4517
RDE .3984 RRA .1447 RC3 -.9653 FAU .20111
FDE 2.2114 FRA .9514 FC-14.7624 BSP 42587
BDE 3.6469 BRA .2461 BC315.5490 FSP 3123

MID-COURSE EXECUTION ACCURACY
SGT12262.2 SGR 984.8 SG3 947.4
RRT .9081 RRF .9035 RTF .9638
SGB12301.7 R23 .0650 R13 .9640
SG112294.8 SG2 411.2 THA 4.18

ORBIT DETERMINATION ACCURACY
ST 6057.6 SR 671.0 SS 1473.9
CRT .9880 CRS -.9984 CST -.9839
LSA 6264.3 MSA 272.3 SSA 29.7
EL1 6093.7 EL2 103.1 ALF 6.25

LAUNCH DATE DEC 20 1964 FLIGHT TIME 350.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 754.438 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.127 GAL 1.61 AZL 87.20 HCA 220.46 SMA 187.93 ECC .21863 INC 2.8018 V1 30.273
RP 208.58 LAP -1.82 LOP 308.58 VP 23.799 GAP -10.96 AZP 92.13 TAL 9.01 TAP 229.47 RCA 146.84 APO 229.01 V2 26.274
RC 315.690 GL 28.40 GP -9.11 ZAL 71.94 ZAP 40.50 ETS 168.28 ZAE 62.71 ETE 174.74 ZAC 76.31 ETC 257.03 CLP 39.63

PLANETOCENTRIC CONIC

C3 11.580 VHL 3.403 DLA 34.77 RAL 171.65 RAD 6567.4 VEL 11.531 PTH 2.01 VHP 4.607 DPA -2.18 RAP 166.12 ECC 1.1906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.93	8 16 43	3908.82	-27.26	164.27	33.73	67.54	9 21 52	3308.8	-30.06	156.14
111.07	13 28 20	2919.06	-27.25	90.28	33.72	67.52	14 16 59	2319.1	-30.05	82.16
68.93	8 16 43	3908.82	-27.26	164.27	33.73	67.54	9 21 52	3308.8	-30.06	156.14
111.07	13 28 20	2919.06	-27.25	90.28	33.72	67.52	14 16 59	2319.1	-30.05	82.16
68.93	8 16 43	3908.82	-27.26	164.27	33.73	67.54	9 21 52	3308.8	-30.06	156.14
111.07	13 28 20	2919.06	-27.25	90.28	33.72	67.52	14 16 59	2319.1	-30.05	82.16

DIFFERENTIAL CORRECTIONS
TDE 3.5475 TRA -.0959 TC-15.9739 BAU 2.4770
RDE .3812 RRA .1515 RC3 -.9042 FAU .19358
FDE 2.0327 FRA 1.0224 FC-14.4721 BSP 43098
BDE 3.5679 BRA .1793 BC315.9995 FSP 3024

MID-COURSE EXECUTION ACCURACY
SGT12406.0 SGR 941.8 SG3 918.9
RRT .8955 RRF .8894 RTF .9634
SGB12441.7 R23 .0577 R13 .9635
SG112434.7 SG2 418.2 THA 3.89

ORBIT DETERMINATION ACCURACY
ST 5982.2 SR 648.8 SS 1390.1
CRT .9879 CRS -.9977 CST -.9814
LSA 6169.5 MSA 275.4 SSA 30.5
EL1 6016.4 EL2 100.2 ALF 6.12

LAUNCH DATE DEC 20 1964 FLIGHT TIME 352.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 758.813 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.135 GAL 1.48 AZL 87.26 HCA 221.71 SMA 188.07 ECC .21893 INC 2.7433 V1 30.273
RP 208.40 LAP -1.82 LOP 309.82 VP 23.832 GAP -11.04 AZP 92.05 TAL 8.25 TAP 229.96 RCA 146.89 APO 229.24 V2 26.294
RC 316.588 GL 28.03 GP -8.78 ZAL 73.16 ZAP 39.76 ETS 168.38 ZAE 61.70 ETE 174.74 ZAC 76.74 ETC 256.99 CLP 38.93

PLANETOCENTRIC CONIC

C3 11.382 VHL 3.374 DLA 33.85 RAL 172.84 RAD 6567.4 VEL 11.523 PTH 2.01 VHP 4.664 DPA -2.11 RAP 166.75 ECC 1.1873

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.62	8 31 33	3874.62	-26.67	161.32	34.36	68.34	9 36 8	3274.6	-29.37	153.21
109.38	13 23 3	2946.07	-26.66	92.13	34.36	68.32	14 12 9	2346.1	-29.36	84.01
70.62	8 31 33	3874.62	-26.67	161.32	34.36	68.34	9 36 8	3274.6	-29.37	153.21
109.38	13 23 3	2946.07	-26.66	92.13	34.36	68.32	14 12 9	2346.1	-29.36	84.01
110.00	14 2 52	2824.49	-29.48	83.81	35.52	71.86	14 49 56	2224.5	-31.67	75.29
110.00	12 50 55	3044.20	-23.92	98.46	33.05	64.82	13 41 39	2444.2	-27.11	90.74

DIFFERENTIAL CORRECTIONS
TDE 3.4660 TRA .0131 TC-16.4231 BAU 2.5023
RDE .3653 RRA .1577 RC3 -.8453 FAU .18634
FDE 1.8591 FRA 1.0890 FC-14.1736 BSP 43586
BDE 3.4852 BRA .1582 BC316.4449 FSP 2924

MID-COURSE EXECUTION ACCURACY
SGT12547.7 SGR 902.4 SG3 891.2
RRT .8815 RRF .8737 RTF .9629
SGB12580.1 R23 .0506 R13 .9630
SG112572.9 SG2 425.2 THA 3.63

ORBIT DETERMINATION ACCURACY
ST 5895.8 SR 628.2 SS 1305.5
CRT .9879 CRS -.9967 CST -.9782
LSA 6064.7 MSA 278.4 SSA 31.4
EL1 5928.4 EL2 97.0 ALF 6.01

LAUNCH DATE DEC 20 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 763.192 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.143 GAL 1.34 AZL 87.31 HCA 222.95 SMA 188.21 ECC .21925 INC 2.6875 V1 30.273
RP 208.24 LAP -1.83 LOP 311.07 VP 23.864 GAP -11.11 AZP 91.97 TAL 7.48 TAP 230.43 RCA 146.94 APO 229.47 V2 26.314
RC 317.480 GL 27.66 GP -8.48 ZAL 74.42 ZAP 39.04 ETS 168.48 ZAE 60.71 ETE 174.73 ZAC 77.16 ETC 256.95 CLP 38.25

PLANETOCENTRIC CONIC

C3 11.199 VHL 3.346 DLA 32.93 RAL 174.08 RAD 6567.4 VEL 11.515 PTH 2.01 VHP 4.721 DPA -2.05 RAP 167.39 ECC 1.1843

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.45	8 47 53	3836.17	-26.06	158.08	35.06	69.12	9 51 50	3236.2	-28.66	149.98
107.55	13 16 33	2977.81	-26.05	94.32	35.05	69.11	14 6 11	2377.8	-28.65	86.21
72.45	8 47 53	3836.17	-26.06	158.08	35.06	69.12	9 51 50	3236.2	-28.66	149.98
107.55	13 16 33	2977.81	-26.05	94.32	35.05	69.11	14 6 11	2377.8	-28.65	86.21
110.00	14 41 45	2715.84	-31.53	76.01	37.01	76.05	15 27 1	2115.8	-33.12	67.15
110.00	12 21 52	3146.13	-20.83	104.75	32.48	62.26	13 14 18	2546.1	-24.37	97.40

DIFFERENTIAL CORRECTIONS
TDE 3.3824 TRA .1295 TC-16.8630 BAU 2.5274
RDE .3511 RRA .1636 RC3 -.7877 FAU .17922
FDE 1.6955 FRA 1.1544 FC-13.8552 BSP 44096
BDE 3.4006 BRA .2087 BC316.8814 FSP 2829

MID-COURSE EXECUTION ACCURACY
SGT12688.0 SGR 866.5 SG3 863.8
RRT .8659 RRF .8565 RTF .9624
SGB12717.6 R23 .0443 R13 .9625
SG112710.2 SG2 432.7 THA 3.39

ORBIT DETERMINATION ACCURACY
ST 5801.6 SR 609.7 SS 1224.0
CRT .9881 CRS -.9951 CST -.9743
LSA 5953.8 MSA 282.0 SSA 32.2
EL1 5832.8 EL2 93.4 ALF 5.93

LAUNCH DATE DEC 20 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 767.574 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.151 GAL 1.20 AZL 87.37 HCA 224.20 SMA 188.35 ECC .21960 INC 2.6341 V1 30.273
RP 208.08 LAP -1.84 LOP 312.33 VP 23.895 GAP -11.19 AZP 91.89 TAL 6.70 TAP 230.90 RCA 146.99 APO 229.71 V2 26.332
RC 318.367 GL 27.30 GP -8.19 ZAL 75.73 ZAP 38.34 ETS 168.57 ZAE 59.73 ETE 174.73 ZAC 77.56 ETC 256.91 CLP 37.59

PLANETOCENTRIC CONIC

C3 11.031 VHL 3.321 DLA 31.99 RAL 175.34 RAD 6567.4 VEL 11.507 PTH 2.00 VHP 4.780 DPA -2.03 RAP 168.04 ECC 1.1815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.46	9 6 10	3791.94	-25.42	154.44	35.81	69.90	10 9 22	3191.9	-27.93	146.35
105.54	13 8 23	3015.81	-25.41	96.96	35.80	69.88	13 58 38	2415.8	-27.92	88.87
74.46	9 6 10	3791.94	-25.42	154.44	35.81	69.90	10 9 22	3191.9	-27.93	146.35
105.54	13 8 23	3015.81	-25.41	96.96	35.80	69.88	13 58 38	2415.8	-27.92	88.87
110.00	15 9 7	2642.05	-32.61	70.53	38.08	79.13	15 53 9	2042.0	-33.76	61.49
110.00	12 4 37	3213.70	-18.63	108.76	32.45	60.81	12 58 10	2613.7	-22.38	101.63

DIFFERENTIAL CORRECTIONS
TDE 3.2969 TRA .2531 TC-17.2866 BAU 2.5516
RDE .3384 RRA .1693 RC3 -.7307 FAU .17214
FDE 1.5407 FRA 1.2176 FC-13.5099 BSP 44617
BDE 3.3142 BRA .3044 BC317.3020 FSP 2736

MID-COURSE EXECUTION ACCURACY
SGT12824.4 SGR 833.6 SG3 836.5
RRT .8485 RRF .8376 RTF .9620
SGB12851.5 R23 .0386 R13 .9620
SG112843.9 SG2 440.5 THA 3.16

ORBIT DETERMINATION ACCURACY
ST 5700.1 SR 593.0 SS 1145.2
CRT .9885 CRS -.9926 CST -.9696
LSA 5837.1 MSA 286.0 SSA 32.9
EL1 5730.2 EL2 89.4 ALF 5.87

LAUNCH DATE DEC 20 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 771.959 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.159	GAL	1.06	AZL	87.42	HCA	225.46	SMA	188.49	ECC	.21998	INC	2.5831
RP	207.93	LAP	-1.84	LOP	313.58	VP	23.925	GAP	-11.26	AZP	91.81	TAL	5.90	TAP	231.35	RCA	147.03	APO	229.95
RC	319.247	GL	26.94	GP	-7.92	ZAL	77.09	ZAP	37.66	ETS	168.65	ZAE	58.77	ETE	174.72	ZAC	77.95	ETC	256.86

PLANETOCENTRIC CONIC

C3	10.878	VHL	3.298	DLA	31.03	RAL	176.64	RAD	6567.4	VEL	11.501	PTH	2.00	VHP	4.840	DPA	-2.02	RAP	168.69

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.74	9 27 9	3739.48	-24.76	150.20	36.62	70.67	10 29 29	3139.5	-27.17	142.13
103.26	12 57 46	3062.57	-24.75	100.23	36.61	70.65	13 48 48	2462.6	-27.16	92.16
76.74	9 27 9	3739.48	-24.76	150.20	36.62	70.67	10 29 29	3139.5	-27.17	142.13
103.26	12 57 46	3062.57	-24.75	100.23	36.61	70.65	13 48 48	2462.6	-27.16	92.16
110.00	15 32 19	2580.94	-33.30	65.90	39.01	81.79	16 15 20	1980.9	-34.08	56.74
110.00	11 51 47	3269.10	-16.76	111.97	32.67	59.76	12 46 16	2669.1	-20.65	105.01

DIFFERENTIAL CORRECTIONS

TDE	3.2046	TRA	.3808	TC-17.7098	BAU	2.5775	
RDE	.3266	RRA	.1742	RC3 -.6765	FAU	.16550	
FDE	1.3888	FRA	1.2740	FC-13.1710	BSP	45070	
BDE	3.2212	BRA	.4187	BC317.7227	FSP	2639	

MID-COURSE EXECUTION ACCURACY

SGT12963.8	SGR	803.6	SG3	810.4			
RRT .8298	RRF	.8170	RTF	.9616			
SGB12988.7	R23	.0326	R13	.9616			
SG112981.0	SG2	447.9	THA	2.95			

ORBIT DETERMINATION ACCURACY

ST	5582.8	SR	577.3	SS	1065.2		
CRT	.9890	CRS	-.9890	CST	-.9635		
LSA	5705.3	MSA	289.8	SSA	33.8		
EL1	5612.0	EL2	84.9	ALF	5.84		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 776.346 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.167	GAL	.92	AZL	87.47	HCA	226.71	SMA	188.63	ECC	.22038	INC	2.5341
RP	207.79	LAP	-1.84	LOP	314.83	VP	23.955	GAP	-11.34	AZP	91.74	TAL	5.09	TAP	231.80	RCA	147.06	APO	230.21
RC	320.122	GL	26.58	GP	-7.66	ZAL	78.50	ZAP	37.00	ETS	168.73	ZAE	57.82	ETE	174.72	ZAC	78.33	ETC	256.81

PLANETOCENTRIC CONIC

C3	10.741	VHL	3.277	DLA	30.06	RAL	177.97	RAD	6567.4	VEL	11.495	PTH	2.00	VHP	4.900	DPA	-2.04	RAP	169.36

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.46	9 52 27	3673.48	-24.07	145.00	37.48	71.43	10 53 40	3073.5	-26.38	136.95
100.54	12 43 4	3123.38	-24.06	104.52	37.48	71.41	13 35 8	2523.4	-26.37	96.48
79.46	9 52 27	3673.48	-24.07	145.00	37.48	71.43	10 53 40	3073.5	-26.38	136.95
100.54	12 43 4	3123.38	-24.06	104.52	37.48	71.41	13 35 8	2523.4	-26.37	96.48
110.00	15 53 13	2526.87	-33.75	61.74	39.86	84.21	16 35 19	1926.9	-34.18	52.52
110.00	11 41 29	3318.00	-15.07	114.74	33.07	58.95	12 36 47	2718.0	-19.07	107.92

DIFFERENTIAL CORRECTIONS

TDE	3.1091	TRA	.5149	TC-18.1083	BAU	2.6019	
RDE	.3160	RRA	.1788	RC3 -.6218	FAU	.15867	
FDE	1.2446	FRA	1.3275	FC-12.7886	BSP	45531	
BDE	3.1251	BRA	.5450	BC318.1189	FSP	2547	

MID-COURSE EXECUTION ACCURACY

SGT13096.2	SGR	775.8	SG3	783.3			
RRT .8087	RRF	.7944	RTF	.9611			
SGB13119.2	R23	.0275	R13	.9612			
SG113111.3	SG2	455.8	THA	2.75			

ORBIT DETERMINATION ACCURACY

ST	5455.9	SR	563.2	SS	987.9		
CRT	.9898	CRS	-.9835	CST	-.9557		
LSA	5565.3	MSA	294.2	SSA	34.6		
EL1	5484.3	EL2	79.8	ALF	5.83		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 780.735 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.175	GAL	.77	AZL	87.51	HCA	227.97	SMA	188.78	ECC	.22082	INC	2.4870
RP	207.66	LAP	-1.85	LOP	316.09	VP	23.983	GAP	-11.41	AZP	91.67	TAL	4.26	TAP	232.23	RCA	147.09	APO	230.47
RC	320.992	GL	26.21	GP	-7.42	ZAL	79.96	ZAP	36.35	ETS	168.81	ZAE	56.89	ETE	174.72	ZAC	78.70	ETC	256.76

PLANETOCENTRIC CONIC

C3	10.620	VHL	3.259	DLA	29.07	RAL	179.33	RAD	6567.4	VEL	11.490	PTH	2.00	VHP	4.962	DPA	-2.08	RAP	170.04

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.14	10 26 28	3579.55	-23.35	137.79	38.40	72.18	11 26 7	2979.5	-25.57	129.76
96.86	12 19 54	3212.70	-23.34	110.88	38.40	72.16	13 13 26	2612.7	-25.56	102.85
100.00	13 43 22	2944.86	-27.42	92.30	39.62	77.60	14 32 27	2344.9	-28.85	83.79
100.00	11 45 41	3322.62	-19.40	117.42	36.81	66.80	12 41 3	2722.6	-22.37	109.88
110.00	16 12 38	2477.38	-34.02	57.90	40.69	86.47	16 53 56	1877.4	-34.14	48.66
110.00	11 32 53	3362.86	-13.48	117.25	33.61	58.28	12 28 56	2762.9	-17.57	110.53

DIFFERENTIAL CORRECTIONS

TDE	3.0121	TRA	.6572	TC-18.4885	BAU	2.6263	
RDE	.3068	RRA	.1832	RC3 -.5691	FAU	.15217	
FDE	1.1100	FRA	1.3794	FC-12.4047	BSP	46010	
BDE	3.0277	BRA	.6823	BC318.4972	FSP	2456	

MID-COURSE EXECUTION ACCURACY

SGT13228.8	SGR	751.2	SG3	757.5			
RRT .7863	RRF	.7704	RTF	.9607			
SGB13250.1	R23	.0228	R13	.9607			
SG113242.0	SG2	463.7	THA	2.56			

ORBIT DETERMINATION ACCURACY

ST	5322.9	SR	550.7	SS	915.5		
CRT	.9908	CRS	-.9756	CST	-.9460		
LSA	5420.6	MSA	299.2	SSA	35.4		
EL1	5350.8	EL2	74.2	ALF	5.85		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 785.126 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.183	GAL	.62	AZL	87.56	HCA	229.23	SMA	188.93	ECC	.22129	INC	2.4417
RP	207.54	LAP	-1.85	LOP	317.35	VP	24.010	GAP	-11.49	AZP	91.60	TAL	3.43	TAP	232.65	RCA	147.12	APO	230.73
RC	321.856	GL	25.85	GP	-7.20	ZAL	81.46	ZAP	35.73	ETS	168.87	ZAE	55.98	ETE	174.72	ZAC	79.06	ETC	256.71

PLANETOCENTRIC CONIC

C3	10.515	VHL	3.243	DLA	28.06	RAL	180.72	RAD	6567.4	VEL	11.485	PTH	2.00	VHP	5.024	DPA	-2.14	RAP	170.73

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 2 13	3285.32	-24.81	116.66	40.05	75.89	12 56 58	2685.3	-26.50	108.40
90.00	10 55 12	3502.90	-20.43	131.09	38.59	69.95	11 53 35	2902.9	-22.98	123.35
100.00	14 17 45	2848.36	-28.64	85.38	40.92	81.04	15 5 13	2248.4	-29.58	76.71
100.00	11 22 21	3415.09	-16.82	123.07	37.01	64.92	12 19 16	2815.1	-20.06	115.78
110.00	16 31 3	2431.16	-34.16	54.30	41.51	88.60	17 11 34	1831.2	-33.97	45.06
110.00	11 25 32	3405.06	-11.95	119.57	34.26	57.73	12 22 17	2805.1	-16.13	112.95

DIFFERENTIAL CORRECTIONS

TDE	2.9101	TRA	.8062	TC-18.8467	BAU	2.6504	
RDE	.2983	RRA	.1872	RC3 -.5172	FAU	.14573	
FDE	.9784	FRA	1.4286	FC-11.9987	BSP	46455	
BDE	2.9253	BRA	.8277	BC318.8538	FSP	2363	

MID-COURSE EXECUTION ACCURACY

SGT13358.2	SGR	728.6	SG3	731.7			
RRT .7619	RRF	.7445	RTF	.9601			
SGB13378.0	R23	.0186	R13	.9602			
SG113369.7	SG2	471.5	THA	2.38			

ORBIT DETERMINATION ACCURACY

ST	5177.7	SR	539.1	SS	843.9		
CRT	.9919	CRS	-.9638	CST	-.9329		
LSA	5264.7	MSA	305.1	SSA	36.2		
EL1	5205.2	EL2	68.1	ALF	5.90		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 789.519 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.192	GAL	.47	AZL	87.60	HCA	230.48	SMA	189.07	ECC	.22178	INC	2.3980
RP	207.42	LAP	-1.85	LOP	318.61	VP	24.037	GAP	-11.56	AZP	91.53	TAL	2.58	TAP	233.06	RCA	147.14	APO	231.01
RC	322.714	GL	25.47	GP	-6.98	ZAL	83.01	ZAP	35.11	ETS	168.94	ZAE	55.08	ETE	174.73	ZAC	79.41	ETC	256.66

PLANETOCENTRIC CONIC

C3	10.426	VHL	3.229	DLA	27.03	RAL	182.13	RAD	6567.4	VEL	11.481	PTH	2.00	VHP	5.087	DPA	-2.22	RAP	171.42

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 49 11	3147.80	-26.74	107.06	41.65	80.32	13 41 39	2547.8	-27.81	98.55
90.00	10 19 28	3637.00	-17.08	139.50	38.60	67.06	11 20 5	3037.0	-20.04	132.08
100.00	14 45 7	2774.05	-29.30	79.96	42.05	83.81	15 31 22	2174.0	-29.85	71.20
100.00	11 6 13	3485.98	-14.72	127.30	37.48	63.69	12 4 19	2886.0	-18.14	120.17
110.00	16 48 41	2387.38	-34.18	50.88	42.33	90.62	17 28 29	1787.4	-33.71	41.67
110.00	11 19 8	3445.41	-10.48	121.76	35.02	57.27	12 16 34	2845.4	-14.72	115.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.8044	TRA	.9599	TC-19.1893	BAU	2.6756	SGT13490.4	SGR	708.5	SG3	707.3	ST	5022.9	SR	528.9	SS	776.8
RDE	.2910	RRA	.1904	RC3 -.4681	FAU	.13976	RRT .7367	RRF	.7170	RTF	.9600	CRT	.9932	CRS	-.9475	CST	-.9169
FDE	.8554	FRA	1.4678	FC-11.6046	BSP	46923	SGB13509.0	R23	.0131	R13	.9600	LSA	5100.5	MSA	310.2	SSA	37.0
BDE	2.8195	BRA	.9786	BC319.1950	FSP	2279	SG113500.5	SG2	478.7	THA	2.22	EL1	5050.3	EL2	61.3	ALF	5.97

LAUNCH DATE DEC 20 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 793.912 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.200	GAL	.31	AZL	87.64	HCA	231.74	SMA	189.22	ECC	.22232	INC	2.3558
RP	207.31	LAP	-1.85	LOP	319.87	VP	24.062	GAP	-11.63	AZP	91.46	TAL	1.71	TAP	233.46	RCA	147.16	APO	231.29
RC	323.566	GL	25.09	GP	-6.78	ZAL	84.60	ZAP	34.52	ETS	169.00	ZAE	54.19	ETE	174.73	ZAC	79.75	ETC	256.61

PLANETOCENTRIC CONIC

C3	10.355	VHL	3.218	DLA	25.98	RAL	183.56	RAD	6567.4	VEL	11.478	PTH	2.00	VHP	5.151	DPA	-2.31	RAP	172.13

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 20 49	3059.67	-27.59	100.75	42.90	83.37	14 11 48	2459.7	-28.22	92.14
90.00	9 59 17	3722.35	-14.74	144.68	39.07	65.55	11 1 19	3122.4	-17.92	137.45
100.00	15 9 11	2710.28	-29.68	75.26	43.11	86.26	15 54 21	2110.3	-29.88	66.46
100.00	10 53 36	3546.97	-12.85	130.86	38.13	62.78	11 52 43	2947.0	-16.40	123.86
110.00	17 5 45	2345.55	-34.10	47.61	43.17	92.55	17 44 51	1745.5	-33.37	38.45
110.00	11 13 31	3484.47	-9.03	123.86	35.87	56.89	12 11 35	2884.5	-13.33	117.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.6943	TRA	1.1216	TC-19.4961	BAU	2.6996	SGT13615.6	SGR	690.1	SG3	681.8	ST	4858.0	SR	519.7	SS	714.2
RDE	.2846	RRA	.1936	RC3 -.4182	FAU	.13354	RRT .7088	RRF	.6876	RTF	.9595	CRT	.9945	CRS	-.9239	CST	-.8954
FDE	.7378	FRA	1.5082	FC-11.1648	BSP	47398	SGB13633.1	R23	.0095	R13	.9595	LSA	4927.3	MSA	317.2	SSA	37.8
BDE	2.7093	BRA	1.1382	BC319.5006	FSP	2206	SG113624.4	SG2	486.5	THA	2.06	EL1	4885.4	EL2	54.3	ALF	6.07

LAUNCH DATE DEC 20 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 798.307 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.208	GAL	.15	AZL	87.68	HCA	233.01	SMA	189.37	ECC	.22288	INC	2.3151
RP	207.21	LAP	-1.85	LOP	321.13	VP	24.086	GAP	-11.71	AZP	91.39	TAL	.84	TAP	233.85	RCA	147.16	APO	231.58
RC	324.413	GL	24.71	GP	-6.58	ZAL	86.24	ZAP	33.93	ETS	169.05	ZAE	53.31	ETE	174.73	ZAC	80.09	ETC	256.56

PLANETOCENTRIC CONIC

C3	10.301	VHL	3.209	DLA	24.91	RAL	185.01	RAD	6567.4	VEL	11.476	PTH	1.99	VHP	5.217	DPA	-2.43	RAP	172.84

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 47 24	2987.74	-28.05	95.54	44.05	85.95	14 37 12	2387.7	-28.32	86.88
90.00	9 44 18	3792.17	-12.73	148.82	39.75	64.49	10 47 30	3192.2	-16.06	141.73
100.00	15 31 14	2652.95	-29.86	71.01	44.15	88.49	16 15 27	2053.0	-29.75	62.20
100.00	10 43 9	3602.19	-11.11	134.03	38.92	62.07	11 43 11	3002.2	-14.76	127.15
110.00	17 22 22	2305.29	-33.93	44.48	44.03	94.40	18 0 47	1705.3	-32.95	35.38
110.00	11 8 31	3522.62	-7.61	125.90	36.81	56.57	12 7 13	2922.6	-11.95	119.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.5808	TRA	1.2868	TC-19.7787	BAU	2.7243	SGT13741.5	SGR	673.6	SG3	658.5	ST	4685.0	SR	511.3	SS	653.6
RDE	.2790	RRA	.1957	RC3 -.3725	FAU	.12806	RRT .6814	RRF	.6565	RTF	.9594	CRT	.9957	CRS	-.8907	CST	-.8676
FDE	.6233	FRA	1.5350	FC-10.7624	BSP	47827	SGB13758.0	R23	.0026	R13	.9594	LSA	4746.7	MSA	323.4	SSA	38.5
BDE	2.5958	BRA	1.3016	BC319.7822	FSP	2106	SG113749.2	SG2	492.7	THA	1.92	EL1	4712.6	EL2	47.3	ALF	6.20

LAUNCH DATE DEC 20 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 802.698 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.217	GAL	-.01	AZL	87.72	HCA	234.27	SMA	189.52	ECC	.22348	INC	2.2757
RP	207.12	LAP	-1.85	LOP	322.40	VP	24.110	GAP	-11.78	AZP	91.33	TAL	359.95	TAP	234.22	RCA	147.17	APO	231.88
RC	325.253	GL	24.31	GP	-6.40	ZAL	87.91	ZAP	33.36	ETS	169.10	ZAE	52.45	ETE	174.73	ZAC	80.42	ETC	256.51

PLANETOCENTRIC CONIC

C3	10.265	VHL	3.204	DLA	23.82	RAL	186.49	RAD	6567.4	VEL	11.474	PTH	1.99	VHP	5.283	DPA	-2.55	RAP	173.56

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 11 16	2924.65	-28.27	90.94	45.17	88.25	15 0 0	2324.6	-28.21	82.27
90.00	9 32 12	3853.86	-10.90	152.42	40.58	63.70	10 36 26	3253.9	-14.34	145.44
100.00	15 51 56	2600.07	-29.89	67.08	45.18	90.56	16 35 16	2000.1	-29.49	58.29
100.00	10 34 13	3653.68	-9.46	136.96	39.82	61.51	11 35 7	3053.7	-13.19	130.16
110.00	17 38 36	2266.36	-33.69	41.47	44.92	96.17	18 16 22	1666.4	-32.47	32.45
110.00	11 4 2	3560.14	-6.19	127.89	37.84	56.32	12 3 23	2960.1	-10.58	121.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.6350	TRA	1.5043	TC-19.8953	BAU	2.7306	SGT13906.0	SGR	693.1	SG3	634.1	ST	4809.2	SR	544.6	SS	866.2
RDE	.2970	RRA	.2049	RC3 -.3035	FAU	.11767	RRT .6392	RRF	.6704	RTF	.9635	CRT	.9969	CRS	-.9430	CST	-.9344
FDE	.9001	FRA	1.6833	FC3-9.9240	BSP	48296	SGB13923.2	R23	.0697	R13	.9636	LSA	4907.3	MSA	304.4	SSA	38.6
BDE	2.6516	BRA	1.5181	BC319.8976	FSP	2057	SG113913.0	SG2	532.8	THA	1.83	EL1	4839.8	EL2	42.4	ALF	6.44

LAUNCH DATE DEC 20 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 807.095 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.225 GAL -.17 AZL 87.76 HCA 235.53 SMA 189.67 ECC .22412 INC 2.2374 V1 30.273
RP 207.04 LAP -1.84 LOP 323.66 VP 24.132 GAP -11.86 AZP 91.27 TAL 359.05 TAP 234.58 RCA 147.16 APO 232.18 V2 26.454
RC 326.088 GL 23.90 GP -6.23 ZAL 89.62 ZAP 32.81 ETS 169.15 ZAE 51.60 ETE 174.73 ZAC 80.75 ETC 256.46 CLP 32.28

PLANETOCENTRIC CONIC

C3 10.248 VHL 3.201 DLA 22.71 RAL 187.98 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 5.349 DPA -2.70 RAP 174.30 ECC 1.1687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 22	2867.30	-28.32	86.74	46.27	90.35	15 21 9	2267.3	-27.97	78.10
90.00	9 22 0	3910.54	-9.17	155.69	41.52	63.09	10 27 10	3310.5	-12.71	148.80
100.00	16 11 37	2550.49	-29.80	63.39	46.23	92.50	16 54 7	1950.5	-29.13	54.65
100.00	10 26 25	3702.58	-7.86	139.71	40.82	61.07	11 28 8	3102.6	-11.66	132.98
110.00	17 54 30	2228.60	-33.38	38.57	45.85	97.86	18 31 39	1628.6	-31.93	29.63
110.00	11 0 1	3597.24	-4.79	129.84	38.94	56.11	11 59 59	2997.2	-9.21	123.54

DIFFERENTIAL CORRECTIONS
TDE 2.3486 TRA 1.6565 TC-20.2064 BAU 2.7687
RDE .2713 RRA .2020 RC3 -.2755 FAU .11551
FDE .4277 FRA 1.6285 FC3-9.7579 BSP 48832
BDE 2.3642 BRA 1.6688 BC320.2083 FSP 1973

MID-COURSE EXECUTION ACCURACY
SGT13977.5 SGR 648.5 SG3 608.5
RRT .6159 RRF .5938 RTF .9569
SGB13992.5 R23 .0046 R13 .9569
SG113983.2 SG2 510.7 THA 1.64

ORBIT DETERMINATION ACCURACY
ST 4330.2 SR 499.7 SS 569.8
CRT .9968 CRS -.7861 CST -.7877
LSA 4381.9 MSA 349.1 SSA 39.7
EL1 4358.7 EL2 39.7 ALF 6.56

LAUNCH DATE DEC 20 1964 FLIGHT TIME 376.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 811.489 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.233 GAL -.34 AZL 87.80 HCA 236.80 SMA 189.83 ECC .22480 INC 2.2003 V1 30.273
RP 206.96 LAP -1.84 LOP 324.93 VP 24.153 GAP -11.93 AZP 91.21 TAL 358.14 TAP 234.94 RCA 147.15 APO 232.50 V2 26.463
RC 326.917 GL 23.49 GP -6.06 ZAL 91.36 ZAP 32.27 ETS 169.19 ZAE 50.76 ETE 174.73 ZAC 81.07 ETC 256.41 CLP 31.76

PLANETOCENTRIC CONIC

C3 10.251 VHL 3.202 DLA 21.59 RAL 189.48 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 5.417 DPA -2.85 RAP 175.04 ECC 1.1687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 54 13	2814.09	-28.23	82.85	47.39	92.30	15 41 7	2214.1	-27.61	74.24
90.00	9 13 9	3963.85	-7.51	158.73	42.57	62.62	10 19 13	3363.9	-11.12	151.92
100.00	16 30 32	2503.52	-29.61	59.91	47.30	94.32	17 12 15	1903.5	-28.69	51.23
100.00	10 19 31	3749.66	-6.30	142.33	41.91	60.72	11 22 1	3149.7	-10.15	135.67
110.00	18 10 9	2191.87	-33.00	35.77	46.82	99.47	18 46 40	1591.9	-31.34	26.93
110.00	10 56 24	3634.07	-3.39	131.77	40.11	55.96	11 56 58	3034.1	-7.83	125.50

DIFFERENTIAL CORRECTIONS
TDE 2.2268 TRA 1.8437 TC-20.3705 BAU 2.7918
RDE .2688 RRA .2031 RC3 -.2317 FAU .10995
FDE .3385 FRA 1.6453 FC3-9.2862 BSP 49246
BDE 2.2430 BRA 1.8548 BC320.3718 FSP 1890

MID-COURSE EXECUTION ACCURACY
SGT14093.0 SGR 637.3 SG3 584.4
RRT .5833 RRF .5593 RTF .9568
SGB14107.4 R23 .0006 R13 .9569
SG114097.9 SG2 517.5 THA 1.51

ORBIT DETERMINATION ACCURACY
ST 4143.3 SR 495.1 SS 533.9
CRT .9961 CRS -.7145 CST -.7395
LSA 4191.3 MSA 358.3 SSA 40.2
EL1 4172.5 EL2 43.4 ALF 6.79

LAUNCH DATE DEC 20 1964 FLIGHT TIME 378.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 815.882 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.242 GAL -.51 AZL 87.84 HCA 238.06 SMA 189.98 ECC .22552 INC 2.1641 V1 30.273
RP 206.89 LAP -1.84 LOP 326.20 VP 24.173 GAP -12.01 AZP 91.15 TAL 357.21 TAP 235.28 RCA 147.14 APO 232.82 V2 26.471
RC 327.742 GL 23.06 GP -5.90 ZAL 93.14 ZAP 31.74 ETS 169.23 ZAE 49.94 ETE 174.73 ZAC 81.38 ETC 256.36 CLP 31.24

PLANETOCENTRIC CONIC

C3 10.274 VHL 3.205 DLA 20.45 RAL 191.00 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 5.486 DPA -3.02 RAP 175.79 ECC 1.1691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 14 7	2764.06	-28.04	79.21	48.52	94.12	16 0 11	2164.1	-27.17	70.65
90.00	9 5 21	4014.78	-5.91	161.61	43.71	62.26	10 12 16	3414.8	-9.57	154.86
100.00	16 48 49	2458.69	-29.33	56.61	48.39	96.04	17 29 48	1858.7	-28.19	47.99
100.00	10 13 20	3795.39	-4.77	144.86	43.09	60.46	11 16 36	3195.4	-8.67	138.25
110.00	18 25 32	2156.10	-32.57	33.06	47.83	101.02	19 1 28	1556.1	-30.70	24.34
110.00	10 53 7	3670.74	-1.99	133.69	41.36	55.87	11 54 18	3070.7	-6.46	127.45

DIFFERENTIAL CORRECTIONS
TDE 2.0997 TRA 2.0404 TC-20.4967 BAU 2.8153
RDE .2666 RRA .2044 RC3 -.1893 FAU .10450
FDE .2454 FRA 1.6687 FC3-8.8059 BSP 49676
BDE 2.1165 BRA 2.0506 BC320.4976 FSP 1814

MID-COURSE EXECUTION ACCURACY
SGT14208.5 SGR 627.6 SG3 561.2
RRT .5496 RRF .5239 RTF .9558
SGB14222.4 R23 -.0026 R13 .9558
SG114212.7 SG2 524.1 THA 1.39

ORBIT DETERMINATION ACCURACY
ST 3950.5 SR 490.7 SS 504.5
CRT .9939 CRS -.6153 CST -.6725
LSA 3995.1 MSA 374.1 SSA 40.6
EL1 3980.5 EL2 53.8 ALF 7.04

LAUNCH DATE DEC 20 1964 FLIGHT TIME 380.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 820.274 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.250 GAL -.69 AZL 87.87 HCA 239.33 SMA 190.13 ECC .22628 INC 2.1290 V1 30.273
RP 206.84 LAP -1.83 LOP 327.46 VP 24.192 GAP -12.08 AZP 91.09 TAL 356.27 TAP 235.60 RCA 147.11 APO 233.16 V2 26.477
RC 328.562 GL 22.61 GP -5.75 ZAL 94.94 ZAP 31.23 ETS 169.27 ZAE 49.13 ETE 174.72 ZAC 81.70 ETC 256.32 CLP 30.74

PLANETOCENTRIC CONIC

C3 10.318 VHL 3.212 DLA 19.29 RAL 192.53 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 5.555 DPA -3.20 RAP 176.54 ECC 1.1698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 17	2716.59	-27.76	75.76	49.68	95.82	16 18 34	2116.6	-26.66	67.27
90.00	8 58 23	4063.98	-4.34	164.38	44.94	61.99	10 6 7	3464.0	-8.05	157.67
100.00	17 6 36	2415.68	-28.98	53.46	49.52	97.66	17 46 51	1815.7	-27.62	44.92
100.00	10 7 46	3840.12	-3.26	147.33	44.34	60.27	11 11 46	3240.1	-7.20	140.75
110.00	18 40 43	2121.22	-32.08	30.46	48.88	102.49	19 16 4	1521.2	-30.03	21.85
110.00	10 50 8	3707.34	-.59	135.60	42.68	55.82	11 51 55	3107.3	-5.07	129.38

DIFFERENTIAL CORRECTIONS
TDE 1.9731 TRA 2.2449 TC-20.5788 BAU 2.8387
RDE .2658 RRA .2053 RC3 -.1489 FAU .09921
FDE .1692 FRA 1.6871 FC3-8.3248 BSP 50131
BDE 1.9909 BRA 2.2543 BC320.5794 FSP 1745

MID-COURSE EXECUTION ACCURACY
SGT14323.5 SGR 620.1 SG3 538.6
RRT .5156 RRF .4894 RTF .9553
SGB14336.9 R23 -.0044 R13 .9553
SG114327.0 SG2 531.2 THA 1.28

ORBIT DETERMINATION ACCURACY
ST 3763.5 SR 488.2 SS 487.5
CRT .9894 CRS -.5140 CST -.6130
LSA 3806.2 MSA 388.8 SSA 41.0
EL1 3794.4 EL2 70.3 ALF 7.32

LAUNCH DATE DEC 20 1964 FLIGHT TIME 382.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 824.664 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.259	GAL	-.87	AZL	87.91	HCA	240.60	SMA	190.29	ECC	.22708	INC	2.0947
RP	206.79	LAP	-1.82	LOP	328.73	VP	24.210	GAP	-12.16	AZP	91.03	TAL	355.32	TAP	235.92	RCA	147.08	APO	233.50
RC	329.378	GL	22.16	GP	-5.61	ZAL	96.77	ZAP	30.72	ETS	169.30	ZAE	48.32	ETE	174.72	ZAC	82.00	ETC	256.27

V1 30.273 V2 26.483 CLP 30.26

PLANETOCENTRIC CONIC

C3	10.384	VHL	3.222	DLA	18.12	RAL	194.07	RAD	6567.4	VEL	11.479	PTH	2.00	VHP	5.626	DPA	-3.40	RAP	177.31

ECC 1.1709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 51 50	2671.28	-27.40	72.49	50.87	97.42	16 36 21	2071.3	-26.09	64.07
90.00	8 52 6	4111.87	-2.80	167.06	46.24	61.81	10 0 38	3511.9	-6.55	160.39
100.00	17 23 56	2374.28	-28.57	50.45	50.68	99.19	18 3 30	1774.3	-27.00	42.00
100.00	10 2 41	3884.10	-1.77	149.75	45.67	60.16	11 7 25	3284.1	-5.73	143.20
110.00	18 55 41	2087.22	-31.55	27.95	49.98	103.89	19 30 28	1487.2	-29.32	19.45
110.00	10 47 25	3743.93	.81	137.51	44.06	55.83	11 49 49	3143.9	-3.68	131.30

DIFFERENTIAL CORRECTIONS

TDE	1.8418	TRA	2.4562	TC-20.6180	BAU	2.8623	
RDE	.2656	RRA	.2058	RC3 -.1105	FAU	.09412	
FDE	.0929	FRA	1.7011	FC3-7.8466	BSP	50558	
BDE	1.8608	BRA	2.4648	BC320.6183	FSP	1668	

MID-COURSE EXECUTION ACCURACY

SGT14436.3	SGR	613.4	SG3	516.4			
RRT	.4813	RRF	.4536	RTF	.9545		
SGB14449.3	R23	-.0073	R13	.9545			
SG114439.3	SG2	537.6	THA	1.17			

ORBIT DETERMINATION ACCURACY

ST	3575.4	SR	486.2	SS	476.7		
CRT	.9818	CRS	-.3955	CST	-.5468		
LSA	3616.5	MSA	407.2	SSA	41.1		
EL1	3607.1	EL2	91.6	ALF	7.61		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 384.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 829.051 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.267	GAL	-1.05	AZL	87.94	HCA	241.87	SMA	190.44	ECC	.22793	INC	2.0613
RP	206.75	LAP	-1.82	LOP	330.00	VP	24.227	GAP	-12.24	AZP	90.97	TAL	354.36	TAP	236.23	RCA	147.03	APO	233.85
RC	330.190	GL	21.70	GP	-5.48	ZAL	98.62	ZAP	30.23	ETS	169.33	ZAE	47.53	ETE	174.72	ZAC	82.31	ETC	256.23

V1 30.273 V2 26.488 CLP 29.78

PLANETOCENTRIC CONIC

C3	10.473	VHL	3.236	DLA	16.94	RAL	195.61	RAD	6567.4	VEL	11.483	PTH	2.00	VHP	5.697	DPA	-3.60	RAP	178.08

ECC 1.1724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 52	2627.85	-26.98	69.38	52.10	98.93	16 53 39	2027.9	-25.47	61.04
90.00	8 46 23	4158.76	-1.29	169.68	47.62	61.71	9 55 42	3558.8	-5.06	163.03
100.00	17 40 53	2334.34	-28.10	47.58	51.89	100.64	18 19 47	1734.3	-26.35	39.21
100.00	9 58 3	3927.50	-.30	152.13	47.07	60.11	11 3 30	3327.5	-4.28	145.60
110.00	19 10 27	2054.06	-30.99	25.53	51.13	105.21	19 44 41	1454.1	-28.59	17.15
110.00	10 44 57	3780.55	2.21	139.42	45.50	55.88	11 47 58	3180.5	-2.28	133.21

DIFFERENTIAL CORRECTIONS

TDE	1.7083	TRA	2.6753	TC-20.6066	BAU	2.8853	
RDE	.2663	RRA	.2058	RC3 -.0734	FAU	.08900	
FDE	.0235	FRA	1.7115	FC3-7.3568	BSP	51005	
BDE	1.7289	BRA	2.6833	BC320.6067	FSP	1600	

MID-COURSE EXECUTION ACCURACY

SGT14544.9	SGR	608.0	SG3	494.1			
RRT	.4462	RRF	.4178	RTF	.9535		
SGB14557.6	R23	-.0093	R13	.9535			
SG114547.5	SG2	544.0	THA	1.07			

ORBIT DETERMINATION ACCURACY

ST	3393.2	SR	485.1	SS	473.5		
CRT	.9697	CRS	-.2752	CST	-.4885		
LSA	3433.5	MSA	427.6	SSA	41.1		
EL1	3425.7	EL2	117.4	ALF	7.90		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 833.436 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.276	GAL	-1.23	AZL	87.97	HCA	243.13	SMA	190.60	ECC	.22883	INC	2.0286
RP	206.71	LAP	-1.81	LOP	331.27	VP	24.243	GAP	-12.32	AZP	90.92	TAL	353.38	TAP	236.52	RCA	146.98	APO	234.22
RC	331.000	GL	21.22	GP	-5.35	ZAL	100.49	ZAP	29.75	ETS	169.35	ZAE	46.75	ETE	174.71	ZAC	82.61	ETC	256.18

V1 30.273 V2 26.492 CLP 29.31

PLANETOCENTRIC CONIC

C3	10.587	VHL	3.254	DLA	15.75	RAL	197.16	RAD	6567.4	VEL	11.488	PTH	2.00	VHP	5.770	DPA	-3.82	RAP	178.86

ECC 1.1742

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 27 26	2586.11	-26.51	66.42	53.37	100.34	17 10 32	1986.1	-24.81	58.16
90.00	8 41 9	4204.87	.20	172.25	49.07	61.68	9 51 14	3604.9	-3.59	165.62
100.00	17 57 28	2295.74	-27.59	44.82	53.13	102.00	18 35 44	1695.7	-25.65	36.56
100.00	9 53 47	3970.47	1.15	154.49	48.54	60.13	10 59 58	3370.5	-2.83	147.96
110.00	19 25 2	2021.75	-30.39	23.21	52.32	106.47	19 58 44	1421.8	-27.83	14.94
110.00	10 42 43	3817.22	3.61	141.33	47.01	55.98	11 46 20	3217.2	-.88	135.13

DIFFERENTIAL CORRECTIONS

TDE	1.5730	TRA	2.9025	TC-20.5477	BAU	2.9083	
RDE	.2676	RRA	.2056	RC3 -.0382	FAU	.08395	
FDE	-.0437	FRA	1.7189	FC3-6.8653	BSP	51474	
BDE	1.5956	BRA	2.9097	BC320.5477	FSP	1534	

MID-COURSE EXECUTION ACCURACY

SGT14651.5	SGR	603.5	SG3	472.1			
RRT	.4111	RRF	.3814	RTF	.9521		
SGB14663.9	R23	-.0116	R13	.9521			
SG114653.6	SG2	550.1	THA	.97			

ORBIT DETERMINATION ACCURACY

ST	3220.4	SR	484.6	SS	476.6		
CRT	.9518	CRS	-.1517	CST	-.4364		
LSA	3260.0	MSA	451.9	SSA	41.0		
EL1	3253.4	EL2	147.1	ALF	8.17		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 837.818 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.285	GAL	-1.42	AZL	88.00	HCA	244.40	SMA	190.76	ECC	.22978	INC	1.9966
RP	206.69	LAP	-1.80	LOP	332.54	VP	24.258	GAP	-12.40	AZP	90.86	TAL	352.40	TAP	236.80	RCA	146.93	APO	234.59
RC	331.806	GL	20.73	GP	-5.22	ZAL	102.38	ZAP	29.28	ETS	169.37	ZAE	45.98	ETE	174.70	ZAC	82.90	ETC	256.14

V1 30.273 V2 26.494 CLP 28.86

PLANETOCENTRIC CONIC

C3	10.726	VHL	3.275	DLA	14.55	RAL	198.70	RAD	6567.4	VEL	11.494	PTH	2.00	VHP	5.843	DPA	-4.05	RAP	179.65

ECC 1.1765

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 36	2545.92	-25.99	63.59	54.68	101.66	17 27 2	1945.9	-24.12	55.42
90.00	8 36 20	4250.36	1.66	174.79	50.59	61.73	9 47 10	3650.4	-2.13	168.16
100.00	18 13 45	2258.43	-27.03	42.19	54.42	103.28	18 51 23	1658.4	-24.93	34.02
100.00	9 49 52	4013.08	2.60	156.83	50.08	60.21	10 56 45	3413.1	-1.39	150.30
110.00	19 39 26	1990.31	-29.76	20.97	53.57	107.65	20 12 36	1390.3	-27.06	12.83
110.00	10 40 40	3853.97	5.00	143.26	48.58	56.14	11 44 54	3254.0	.52	137.04

DIFFERENTIAL CORRECTIONS

TDE	1.4350	TRA	3.1353	TC-20.4479	BAU	2.9321	
RDE	.2699	RRA	.2049	RC3 -.0053	FAU	.07911	
FDE	-.1038	FRA	1.7218	FC3-6.3856	BSP	51886	
BDE	1.4601	BRA	3.1420	BC320.4479	FSP	1467	

MID-COURSE EXECUTION ACCURACY

SGT14758.1	SGR	600.1	SG3	450.7			
RRT	.3761	RRF	.3454	RTF	.9508		
SGB14770.3	R23	-.0137	R13	.9508			
SG114759.8	SG2	556.0	THA	.88			

ORBIT DETERMINATION ACCURACY

ST	3058.4	SR	485.1	SS	484.3		
CRT	.9263	CRS	-.0386	CST	-.4027		
LSA	3097.4	MSA	477.7	SSA	40.7		
EL1	3091.4	EL2	180.8	ALF	8.39		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 842.196 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.293	GAL	-1.61	AZL	88.03	HCA	245.67	SMA	190.91	ECC	.23077	INC	1.9654	V1	30.273
RP	206.68	LAP	-1.79	LOP	333.81	VP	24.272	GAP	-12.49	AZP	90.81	TAL	351.40	TAP	237.07	RCA	146.86	APO	234.97	V2	26.496
RC	332.609	GL	20.23	GP	-5.11	ZAL	104.27	ZAP	28.83	ETS	169.39	ZAE	45.22	ETE	174.70	ZAC	83.20	ETC	256.10	CLP	28.41

PLANETOCENTRIC CONIC

C3	10.891	VHL	3.300	DLA	13.35	RAL	200.25	RAD	6567.4	VEL	11.501	PTH	2.00	VHP	5.917	DPA	-4.28	RAP	180.45	ECC	1.1792

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 24	2507.18	-25.43	60.90	56.03	102.90	17 43 11	1907.2	-23.40	52.81
90.00	8 31 52	4295.34	3.11	177.30	52.18	61.84	9 43 28	3695.3	-.68	170.67
100.00	18 29 43	2222.35	-26.44	39.67	55.76	104.48	19 6 45	1622.4	-24.19	31.59
100.00	9 46 14	4055.40	4.03	159.16	51.67	60.36	10 53 50	3455.4	.05	152.63
110.00	19 53 39	1959.74	-29.11	18.83	54.86	108.77	20 26 18	1359.7	-26.27	10.80
110.00	10 38 48	3890.78	6.40	145.20	50.21	56.35	11 43 39	3290.8	1.93	138.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2962	TRA	3.3780	TC-20.2957	BAU	2.9551	SGT14860.8	SGR	597.6	SG3	429.7	ST	2914.7	SR	486.3	SS	495.7
RDE	.2729	RRA	.2039	RC3 .0255	FAU	.07433	RRT .3415	RRF	.3099	RTF	.9491	CRT	.8915	CRS	.0649	CST	-.3861
FDE	-.1594	FRA	1.7222	FC3-5.9086	BSP	52320	SGB14872.8	R23	-.0157	R13	.9491	LSA	2953.0	MSA	506.0	SSA	40.2
BDE	1.3246	BRA	3.3841	BC320.2957	FSP	1399	SG114862.2	SG2	561.6	THA	.79	EL1	2947.0	EL2	217.9	ALF	8.51

LAUNCH DATE DEC 20 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 846.569 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.302	GAL	-1.81	AZL	88.07	HCA	246.94	SMA	191.07	ECC	.23182	INC	1.9347	V1	30.273
RP	206.67	LAP	-1.78	LOP	335.08	VP	24.285	GAP	-12.57	AZP	90.76	TAL	350.38	TAP	237.33	RCA	146.78	APO	235.37	V2	26.497
RC	333.409	GL	19.73	GP	-4.99	ZAL	106.17	ZAP	28.38	ETS	169.41	ZAE	44.47	ETE	174.69	ZAC	83.49	ETC	256.06	CLP	27.97

PLANETOCENTRIC CONIC

C3	11.084	VHL	3.329	DLA	12.15	RAL	201.80	RAD	6567.4	VEL	11.510	PTH	2.00	VHP	5.993	DPA	-4.53	RAP	181.25	ECC	1.1824

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 17 51	2469.84	-24.83	58.32	57.43	104.06	17 59 1	1869.8	-22.66	50.33
90.00	8 27 44	4339.90	4.54	179.80	53.82	62.02	9 40 4	3739.9	.76	173.16
100.00	18 45 24	2187.48	-25.82	37.26	57.13	105.60	19 21 52	1587.5	-23.43	29.28
100.00	9 42 52	4097.49	5.44	161.48	53.33	60.56	10 51 10	3497.5	1.48	154.94
110.00	20 7 40	1930.07	-28.44	16.78	56.20	109.82	20 39 50	1330.1	-25.47	8.86
110.00	10 37 6	3927.66	7.78	147.16	51.89	56.61	11 42 34	3327.7	3.34	140.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1575	TRA	3.6276	TC-20.0971	BAU	2.9781	SGT14960.7	SGR	596.0	SG3	408.9	ST	2792.8	SR	488.3	SS	508.2
RDE	.2769	RRA	.2024	RC3 .0542	FAU	.06966	RRT .3075	RRF	.2751	RTF	.9474	CRT	.8458	CRS	.1543	CST	-.3895
FDE	-.2083	FRA	1.7179	FC3-5.4406	BSP	52768	SGB14972.6	R23	-.0175	R13	.9474	LSA	2830.1	MSA	534.2	SSA	39.6
BDE	1.1902	BRA	3.6333	BC320.0972	FSP	1337	SG114961.8	SG2	567.1	THA	.70	EL1	2823.4	EL2	257.7	ALF	8.48

LAUNCH DATE DEC 20 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 850.938 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.311	GAL	-2.00	AZL	88.10	HCA	248.21	SMA	191.23	ECC	.23293	INC	1.9046	V1	30.273
RP	206.67	LAP	-1.77	LOP	336.35	VP	24.296	GAP	-12.66	AZP	90.71	TAL	349.36	TAP	237.57	RCA	146.69	APO	235.78	V2	26.497
RC	334.204	GL	19.21	GP	-4.89	ZAL	108.07	ZAP	27.95	ETS	169.42	ZAE	43.73	ETE	174.67	ZAC	83.78	ETC	256.03	CLP	27.55

PLANETOCENTRIC CONIC

C3	11.306	VHL	3.362	DLA	10.95	RAL	203.34	RAD	6567.4	VEL	11.519	PTH	2.01	VHP	6.069	DPA	-4.78	RAP	182.06	ECC	1.1861

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 33 59	2433.84	-24.21	55.87	58.86	105.15	18 14 33	1833.8	-21.90	47.96
90.00	8 23 54	4384.08	5.95	182.28	55.53	62.26	9 36 58	3784.1	2.19	175.62
100.00	19 0 49	2153.80	-25.19	34.96	58.56	106.65	19 36 42	1553.8	-22.67	27.07
100.00	9 39 45	4139.36	6.83	163.81	55.05	60.83	10 48 44	3539.4	2.89	157.24
110.00	20 21 29	1901.32	-27.76	14.82	57.58	110.80	20 53 11	1301.3	-24.68	7.00
110.00	10 35 33	3964.60	9.16	149.13	53.63	56.92	11 41 38	3364.6	4.74	142.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0149	TRA	3.8836	TC-19.8650	BAU	3.0027	SGT15062.8	SGR	595.0	SG3	388.8	ST	2690.8	SR	490.9	SS	521.9
RDE	.2815	RRA	.2005	RC3 .0803	FAU	.06516	RRT .2738	RRF	.2401	RTF	.9453	CRT	.7873	CRS	.2362	CST	-.4068
FDE	-.2547	FRA	1.7092	FC3-4.9891	BSP	53168	SGB15074.6	R23	-.0198	R13	.9453	LSA	2726.7	MSA	563.3	SSA	38.8
BDE	1.0532	BRA	3.8888	BC319.8652	FSP	1274	SG115063.7	SG2	572.2	THA	.62	EL1	2718.7	EL2	299.5	ALF	8.27

LAUNCH DATE DEC 20 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 855.301 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.319	GAL	-2.21	AZL	88.12	HCA	249.48	SMA	191.39	ECC	.23409	INC	1.8751	V1	30.273
RP	206.68	LAP	-1.76	LOP	337.62	VP	24.307	GAP	-12.75	AZP	90.66	TAL	348.33	TAP	237.80	RCA	146.59	APO	236.20	V2	26.495
RC	334.996	GL	18.69	GP	-4.78	ZAL	109.97	ZAP	27.52	ETS	169.44	ZAE	43.00	ETE	174.66	ZAC	84.06	ETC	256.00	CLP	27.13

PLANETOCENTRIC CONIC

C3	11.559	VHL	3.400	DLA	9.76	RAL	204.87	RAD	6567.4	VEL	11.530	PTH	2.01	VHP	6.147	DPA	-5.05	RAP	182.88	ECC	1.1902

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 49 48	2399.16	-23.58	53.52	60.34	106.15	18 29 47	1799.2	-21.14	45.70
90.00	8 20 19	4427.94	7.33	184.76	57.30	62.57	9 34 6	3827.9	3.60	178.07
100.00	19 15 57	2121.30	-24.54	32.77	60.02	107.63	19 51 18	1521.3	-21.89	24.97
100.00	9 36 51	4181.03	8.21	166.13	56.82	61.16	10 46 32	3581.0	4.30	159.53
110.00	20 35 7	1873.53	-27.07	12.95	59.01	111.71	21 6 21	1273.5	-23.88	5.24
110.00	10 34 9	4001.56	10.53	151.12	55.42	57.29	11 40 51	3401.6	6.14	144.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8746	TRA	4.1493	TC-19.5793	BAU	3.0256	SGT15157.7	SGR	594.8	SG3	368.6	ST	2619.7	SR	494.2	SS	534.3
RDE	.2870	RRA	.1982	RC3 .1046	FAU	.06063	RRT .2408	RRF	.2065	RTF	.9428	CRT	.7171	CRS	.3046	CST	-.4399
FDE	-.2942	FRA	1.6970	FC3-4.5411	BSP	53623	SGB15169.4	R23	-.0214	R13	.9428	LSA	2654.0	MSA	589.4	SSA	38.0
BDE	.9204	BRA	4.1540	BC319.5796	FSP	1212	SG115158.4	SG2	577.3	THA	.54	EL1	2644.0	EL2	341.3	ALF	7.84

LAUNCH DATE DEC 20 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 859.659 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.328 GAL -2.41 AZL 88.15 HCA 250.75 SMA 191.55 ECC .23531 INC 1.8460 V1 30.273
RP 206.70 LAP -1.74 LOP 338.89 VP 24.316 GAP -12.84 AZP 90.61 TAL 347.28 TAP 238.02 RCA 146.48 APO 236.63 V2 26.493
RC 335.784 GL 18.16 GP -4.69 ZAL 111.86 ZAP 27.10 ETS 169.45 ZAE 42.28 ETE 174.64 ZAC 84.35 ETC 255.96 CLP 26.73

PLANETOCENTRIC CONIC

C3 11.843 VHL 3.441 DLA 8.58 RAL 206.39 RAD 6567.5 VEL 11.543 PTH 2.01 VHP 6.226 DPA -5.32 RAP 183.70 ECC 1.1949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 19	2365.78	-22.93	51.29	61.86	107.09	18 44 44	1765.8	-20.37	43.55
90.00	8 16 57	4471.48	8.69	187.24	59.12	62.94	9 31 29	3871.5	4.99	180.52
100.00	19 30 49	2090.00	-23.87	30.68	61.53	108.54	20 5 39	1490.0	-21.12	22.97
100.00	9 34 8	4222.50	9.56	168.47	58.65	61.54	10 44 30	3622.5	5.69	161.82
110.00	20 48 33	1846.72	-26.39	11.17	60.49	112.56	21 19 20	1246.7	-23.10	3.55
110.00	10 32 53	4038.54	11.88	153.13	57.27	57.71	11 40 12	3438.5	7.53	146.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7315 TRA 4.4210 TC-19.2671 BAU 3.0506 SGT15256.1 SGR 595.0 SG3 349.1 ST 2574.6 SR 497.9 SS 546.4
RDE .2931 RRA .1954 RC3 .1263 FAU .05627 RRT .2083 RRF .1730 RTF .9399 CRT .6348 CRS .3667 CST -.4811
FDE -.3312 FRA 1.6806 FC3-4.1137 BSP 54015 SGB15267.7 R23 -.0236 R13 .9399 LSA 2607.2 MSA 613.3 SSA 37.0
BDE .7880 BRA 4.4254 BC319.2675 FSP 1152 SG115256.6 SG2 581.9 THA .47 EL1 2594.3 EL2 381.8 ALF 7.16

LAUNCH DATE DEC 20 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 864.010 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.337 GAL -2.62 AZL 88.18 HCA 252.02 SMA 191.71 ECC .23659 INC 1.8174 V1 30.273
RP 206.73 LAP -1.73 LOP 340.16 VP 24.324 GAP -12.94 AZP 90.56 TAL 346.22 TAP 238.23 RCA 146.36 APO 237.07 V2 26.490
RC 336.567 GL 17.63 GP -4.59 ZAL 113.74 ZAP 26.70 ETS 169.45 ZAE 41.57 ETE 174.63 ZAC 84.63 ETC 255.94 CLP 26.33

PLANETOCENTRIC CONIC

C3 12.161 VHL 3.487 DLA 7.40 RAL 207.91 RAD 6567.5 VEL 11.556 PTH 2.02 VHP 6.305 DPA -5.60 RAP 184.54 ECC 1.2001

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 32	2333.70	-22.27	49.17	63.42	107.96	18 59 26	1733.7	-19.61	41.51
90.00	8 13 49	4514.73	10.01	189.73	60.99	63.37	9 29 4	3914.7	6.36	182.95
100.00	19 45 26	2059.89	-23.21	28.69	63.08	109.39	20 19 46	1459.9	-20.35	21.06
100.00	9 31 36	4263.77	10.89	170.81	60.53	61.99	10 42 40	3663.8	7.06	164.12
110.00	21 1 47	1820.93	-25.70	9.48	62.00	113.35	21 32 8	1220.9	-22.32	1.95
110.00	10 31 44	4075.50	13.22	155.16	59.16	58.18	11 39 40	3475.5	8.91	148.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5894 TRA 4.7006 TC-18.9176 BAU 3.0757 SGT15351.8 SGR 595.8 SG3 330.2 ST 2559.9 SR 502.3 SS 556.0
RDE .3001 RRA .1923 RC3 .1456 FAU .05208 RRT .1771 RRF .1407 RTF .9368 CRT .5441 CRS .4192 CST -.5291
FDE -.3624 FRA 1.6604 FC3-3.7073 BSP 54402 SGB15363.3 R23 -.0258 R13 .9367 LSA 2591.3 MSA 631.5 SSA 36.0
BDE .6614 BRA 4.7046 BC318.9182 FSP 1093 SG115352.1 SG2 586.4 THA .39 EL1 2574.9 EL2 419.0 ALF 6.26

LAUNCH DATE DEC 20 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 868.353 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.346 GAL -2.84 AZL 88.21 HCA 253.28 SMA 191.88 ECC .23793 INC 1.7892 V1 30.273
RP 206.77 LAP -1.71 LOP 341.43 VP 24.332 GAP -13.04 AZP 90.51 TAL 345.15 TAP 238.43 RCA 146.22 APO 237.53 V2 26.485
RC 337.346 GL 17.09 GP -4.50 ZAL 115.62 ZAP 26.30 ETS 169.46 ZAE 40.87 ETE 174.61 ZAC 84.91 ETC 255.91 CLP 25.94

PLANETOCENTRIC CONIC

C3 12.514 VHL 3.538 DLA 6.24 RAL 209.41 RAD 6567.5 VEL 11.572 PTH 2.02 VHP 6.386 DPA -5.88 RAP 185.37 ECC 1.2059

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 28	2302.90	-21.61	47.15	65.02	108.76	19 13 51	1702.9	-18.85	39.57
90.00	8 10 52	4557.68	11.31	192.21	62.92	63.87	9 26 50	3957.7	7.71	185.39
100.00	19 59 47	2030.98	-22.54	26.80	64.66	110.17	20 33 38	1431.0	-19.59	19.25
100.00	9 29 15	4304.84	12.20	173.17	62.46	62.50	10 40 59	3704.8	8.42	166.41
110.00	21 14 48	1796.17	-25.02	7.87	63.56	114.09	21 44 45	1196.2	-21.56	.44
110.00	10 30 42	4112.41	14.53	157.21	61.11	58.71	11 39 15	3512.4	10.28	150.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4479 TRA 4.9893 TC-18.5327 BAU 3.1006 SGT15444.4 SGR 597.0 SG3 311.5 ST 2574.6 SR 507.1 SS 563.3
RDE .3078 RRA .1887 RC3 .1629 FAU .04788 RRT .1465 RRF .1092 RTF .9329 CRT .4484 CRS .4655 CST -.5783
FDE -.3895 FRA 1.6359 FC3-3.3127 BSP 54798 SGB15456.0 R23 -.0279 R13 .9329 LSA 2605.1 MSA 644.2 SSA 34.9
BDE .5435 BRA 4.9928 BC318.5334 FSP 1034 SG115444.7 SG2 590.6 THA .32 EL1 2584.9 EL2 451.4 ALF 5.21

LAUNCH DATE DEC 20 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 872.689 EARTH TO MARS

RL 147.17 LAL -.00 LOL 88.15 VL 33.354 GAL -3.06 AZL 88.24 HCA 254.55 SMA 192.04 ECC .23934 INC 1.7614 V1 30.273
RP 206.81 LAP -1.70 LOP 342.70 VP 24.338 GAP -13.14 AZP 90.47 TAL 344.07 TAP 238.62 RCA 146.08 APO 238.00 V2 26.480
RC 338.120 GL 16.56 GP -4.42 ZAL 117.47 ZAP 25.92 ETS 169.46 ZAE 40.17 ETE 174.59 ZAC 85.19 ETC 255.89 CLP 25.56

PLANETOCENTRIC CONIC

C3 12.904 VHL 3.592 DLA 5.10 RAL 210.90 RAD 6567.5 VEL 11.588 PTH 2.03 VHP 6.468 DPA -6.17 RAP 186.22 ECC 1.2124

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 7	2273.39	-20.95	45.24	66.66	109.50	19 28 1	1673.4	-18.10	37.73
90.00	8 8 6	4600.33	12.58	194.70	64.89	64.42	9 24 46	4000.3	9.04	187.82
100.00	20 13 52	2003.28	-21.88	25.01	66.29	110.89	20 47 15	1403.3	-18.84	17.53
100.00	9 27 2	4345.68	13.47	175.53	64.45	63.06	10 39 28	3745.7	9.75	168.72
110.00	21 27 37	1772.47	-24.36	6.35	65.16	114.76	21 57 9	1172.5	-20.81	359.00
110.00	10 29 47	4149.25	15.82	159.28	63.11	59.30	11 38 56	3549.2	11.63	152.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3071 TRA 5.2856 TC-18.1204 BAU 3.1261 SGT15535.7 SGR 598.6 SG3 293.3 ST 2615.4 SR 512.2 SS 568.3
RDE .3163 RRA .1847 RC3 .1779 FAU .04383 RRT .1169 RRF .0784 RTF .9285 CRT .3515 CRS .5066 CST -.6254
FDE -.4128 FRA 1.6076 FC3-2.9407 BSP 55204 SGB15547.3 R23 -.0305 R13 .9285 LSA 2645.7 MSA 651.6 SSA 33.8
BDE .4408 BRA 5.2889 BC318.1212 FSP 976 SG115535.9 SG2 594.5 THA .26 EL1 2621.8 EL2 478.3 ALF 4.07

LAUNCH DATE DEC 20 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 877.016 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.363	GAL	-3.28	AZL	88.27	HCA	255.82	SMA	192.20	ECC	.24082	INC	1.7339	V1	30.273
RP	206.87	LAP	-1.68	LOP	343.96	VP	24.343	GAP	-13.24	AZP	90.43	TAL	342.97	TAP	238.79	RCA	145.91	APO	238.49	V2	26.474
RC	338.890	GL	16.02	GP	-4.33	ZAL	119.31	ZAP	25.54	ETS	169.46	ZAE	39.49	ETE	174.56	ZAC	85.47	ETC	255.87	CLP	25.19

PLANETOCENTRIC CONIC

C3	13.333	VHL	3.651	DLA	3.97	RAL	212.37	RAD	6567.5	VEL	11.607	PTH	2.03	VHP	6.552	DPA	-6.47	RAP	187.07	ECC	1.2194

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 30	2245.16	-20.30	43.43	68.33	110.18	19 41 55	1645.2	-17.37	35.98
90.00	8 5 29	4642.68	13.81	197.21	66.92	65.03	9 22 52	4042.7	10.33	190.26
100.00	20 27 42	1976.80	-21.23	23.31	67.95	111.56	21 0 39	1376.8	-18.11	15.90
100.00	9 24 58	4386.28	14.71	177.91	66.48	63.68	10 38 5	3786.3	11.05	171.02
110.00	21 40 12	1749.86	-23.70	4.92	66.79	115.38	22 9 22	1149.9	-20.09	357.64
110.00	10 28 57	4185.98	17.09	161.38	65.15	59.93	11 38 43	3586.0	12.96	154.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1655	TRA	5.5890	TC-17.6858	BAU	3.1526	SGT15625.7	SGR	600.5	SG3	275.6	ST	2678.3	SR	517.6	SS	570.7
RDE	.3254	RRA	.1803	RC3 .1908	FAU	.03986	RRT .0881	RRF	.0485	RTF	.9234	CRT	.2563	CRS	.5433	CST	-.6689
FDE	-.4325	FRA	1.5752	FC3-2.5883	BSP	55559	SGB15637.2	R23	-.0331	R13	.9234	LSA	2708.8	MSA	654.1	SSA	32.8
BDE	.3651	BRA	5.5919	BC317.6869	FSP	920	SG115625.8	SG2	598.1	THA	.19	EL1	2681.7	EL2	499.7	ALF	2.94

LAUNCH DATE DEC 20 1964 FLIGHT TIME 408.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 881.334 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.372	GAL	-3.51	AZL	88.29	HCA	257.08	SMA	192.36	ECC	.24237	INC	1.7067	V1	30.273
RP	206.93	LAP	-1.66	LOP	345.23	VP	24.347	GAP	-13.35	AZP	90.38	TAL	341.87	TAP	238.95	RCA	145.74	APO	238.99	V2	26.466
RC	339.657	GL	15.49	GP	-4.25	ZAL	121.12	ZAP	25.17	ETS	169.46	ZAE	38.81	ETE	174.54	ZAC	85.75	ETC	255.85	CLP	24.83

PLANETOCENTRIC CONIC

C3	13.802	VHL	3.715	DLA	2.86	RAL	213.83	RAD	6567.5	VEL	11.627	PTH	2.04	VHP	6.636	DPA	-6.78	RAP	187.93	ECC	1.2271

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 30	2218.21	-19.66	41.71	70.03	110.80	19 55 34	1618.2	-16.65	34.32
90.00	8 3 2	4684.72	15.01	199.72	68.99	65.70	9 21 7	4084.7	11.60	192.69
100.00	20 41 16	1951.53	-20.59	21.71	69.64	112.17	21 13 48	1351.5	-17.40	14.37
100.00	9 23 2	4426.63	15.91	180.30	68.55	64.36	10 36 49	3826.6	12.33	173.34
110.00	21 52 35	1728.35	-23.07	3.57	68.45	115.95	22 21 23	1128.3	-19.39	356.37
110.00	10 28 13	4222.58	18.32	163.50	67.24	60.62	11 38 36	3622.6	14.27	156.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0250	TRA	5.9017	TC-17.2300	BAU	3.1795	SGT15714.6	SGR	602.6	SG3	258.3	ST	2761.1	SR	523.4	SS	570.2
RDE	.3352	RRA	.1755	RC3 .2017	FAU	.03597	RRT .0602	RRF	.0194	RTF	.9174	CRT	.1664	CRS	.5761	CST	-.7071
FDE	-.4484	FRA	1.5387	FC3-2.2564	BSP	55926	SGB15726.1	R23	-.0360	R13	.9174	LSA	2792.1	MSA	652.7	SSA	31.7
BDE	.3362	BRA	5.9043	BC317.2312	FSP	864	SG115714.6	SG2	601.5	THA	.13	EL1	2762.5	EL2	515.8	ALF	1.87

LAUNCH DATE DEC 20 1964 FLIGHT TIME 410.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 885.641 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.381	GAL	-3.74	AZL	88.32	HCA	258.35	SMA	192.53	ECC	.24399	INC	1.6799	V1	30.273
RP	207.00	LAP	-1.65	LOP	346.50	VP	24.350	GAP	-13.46	AZP	90.34	TAL	340.75	TAP	239.10	RCA	145.55	APO	239.50	V2	26.458
RC	340.420	GL	14.96	GP	-4.18	ZAL	122.91	ZAP	24.81	ETS	169.46	ZAE	38.15	ETE	174.51	ZAC	86.02	ETC	255.84	CLP	24.48

PLANETOCENTRIC CONIC

C3	14.314	VHL	3.783	DLA	1.78	RAL	215.28	RAD	6567.6	VEL	11.649	PTH	2.05	VHP	6.722	DPA	-7.09	RAP	188.80	ECC	1.2356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 25	2192.54	-19.03	40.09	71.77	111.37	20 8 57	1592.5	-15.96	32.76
90.00	8 0 43	4726.43	16.16	202.24	71.10	66.43	9 19 29	4126.4	12.83	195.14
100.00	20 54 35	1927.49	-19.96	20.20	71.37	112.72	21 26 43	1327.5	-16.71	12.91
100.00	9 21 14	4466.70	17.08	182.71	70.67	65.09	10 35 41	3866.7	13.58	175.66
110.00	22 4 44	1707.95	-22.46	2.31	70.14	116.48	22 33 11	1108.0	-18.72	355.17
110.00	10 27 35	4259.01	19.53	165.64	69.37	61.37	11 38 34	3659.0	15.55	158.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1130	TRA	6.2218	TC-16.7579	BAU	3.2071	SGT15801.5	SGR	605.0	SG3	241.4	ST	2858.7	SR	529.3	SS	566.7
RDE	.3457	RRA	.1702	RC3 .2108	FAU	.03215	RRT .0333	RRF	-.0085	RTF	.9102	CRT	.0842	CRS	.6053	CST	-.7394
FDE	-.4603	FRA	1.4984	FC3-1.9447	BSP	56273	SGB15813.0	R23	-.0389	R13	.9101	LSA	2890.0	MSA	648.4	SSA	30.7
BDE	.3637	BRA	6.2241	BC316.7593	FSP	809	SG115801.5	SG2	604.7	THA	.07	EL1	2859.0	EL2	527.3	ALF	.92

LAUNCH DATE DEC 20 1964 FLIGHT TIME 412.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 889.938 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.390	GAL	-3.98	AZL	88.35	HCA	259.61	SMA	192.69	ECC	.24568	INC	1.6533	V1	30.273
RP	207.08	LAP	-1.63	LOP	347.76	VP	24.352	GAP	-13.57	AZP	90.30	TAL	339.63	TAP	239.24	RCA	145.35	APO	240.03	V2	26.449
RC	341.179	GL	14.43	GP	-4.10	ZAL	124.67	ZAP	24.46	ETS	169.45	ZAE	37.49	ETE	174.48	ZAC	86.29	ETC	255.82	CLP	24.14

PLANETOCENTRIC CONIC

C3	14.871	VHL	3.856	DLA	.72	RAL	216.70	RAD	6567.6	VEL	11.673	PTH	2.05	VHP	6.810	DPA	-7.41	RAP	189.67	ECC	1.2447

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 58	2168.13	-18.41	38.56	73.53	111.90	20 22 6	1568.1	-15.28	31.29
90.00	7 58 32	4767.80	17.27	204.77	73.26	67.20	9 18 0	4167.8	14.03	197.58
100.00	21 7 38	1904.68	-19.35	18.77	73.12	113.23	21 39 23	1304.7	-16.05	11.55
100.00	9 19 33	4506.49	18.20	185.12	72.83	65.87	10 34 39	3906.5	14.79	177.99
110.00	22 16 39	1688.67	-21.87	1.12	71.87	116.95	22 44 48	1088.7	-18.08	354.04
110.00	10 27 2	4295.25	20.69	167.80	71.55	62.16	11 38 37	3695.3	16.81	160.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2505	TRA	6.5499	TC-16.2724	BAU	3.2354	SGT15886.1	SGR	607.6	SG3	225.0	ST	2967.4	SR	535.3	SS	560.6
RDE	.3569	RRA	.1644	RC3 .2180	FAU	.02844	RRT .0073	RRF	-.0359	RTF	.9017	CRT	.0093	CRS	.6324	CST	-.7661
FDE	-.4694	FRA	1.4535	FC3-1.6556	BSP	56584	SGB15897.7	R23	-.0425	R13	.9017	LSA	2998.7	MSA	642.5	SSA	29.8
BDE	.4360	BRA	6.5520	BC316.2738	FSP	755	SG115886.1	SG2	607.5	THA	.02	EL1	2967.4	EL2	535.3	ALF	.10

LAUNCH DATE DEC 20 1964 FLIGHT TIME 414.00 ARRIVAL DATE FEB 7 1966

HELIOCENTRIC CONIC DISTANCE 894.224 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.398	GAL	-4.22	AZL	88.37	HCA	260.88	SMA	192.86	ECC	.24746	INC	1.6269
RP	207.17	LAP	-1.61	LOP	349.03	VP	24.353	GAP	-13.69	AZP	90.26	TAL	338.49	TAP	239.37	RCA	145.13	APO	240.58
RC	341.936	GL	13.91	GP	-4.03	ZAL	126.41	ZAP	24.12	ETS	169.45	ZAE	36.84	ETE	174.45	ZAC	86.57	ETC	255.82

PLANETOCENTRIC CONIC

C3	15.475	VHL	3.934	DLA	-.32	RAL	218.11	RAD	6567.6	VEL	11.699	PTH	2.06	VHP	6.898	DPA	-7.73	RAP	190.55

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 15	2144.98	-17.82	37.12	75.33	112.38	20 35 0	1545.0	-14.63	29.90
90.00	7 56 28	4808.82	18.33	207.31	75.45	68.03	9 16 37	4208.8	15.19	200.04
100.00	21 20 26	1883.08	-18.77	17.44	74.90	113.70	21 51 49	1283.1	-15.41	10.26
100.00	9 17 58	4545.96	19.28	187.56	75.04	66.71	10 33 44	3946.0	15.96	180.33
110.00	22 28 21	1670.53	-21.30	.02	73.62	117.39	22 56 11	1070.5	-17.46	352.99
110.00	10 26 33	4331.27	21.82	169.99	73.76	63.01	11 38 44	3731.3	18.03	162.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3865	TRA	6.8871	TC-	15.7783	BAU	3.2647	SGT	15970.1	SGR	610.2	SG3	209.1	ST	3084.1	SR	541.4	SS	551.7
RDE	.3687	RRA	.1583	RC3	.2235	FAU	.02480	RRT	-.0177	RRF	-.0623	RTF	.8917	CRT	-.0576	CRS	.6572	CST	-.7877
FDE	-.4752	FRA	1.4048	FC3-	1.3875	BSP	56893	SGB	15981.7	R23	.0464	R13	-.8917	LSA	3115.2	MSA	635.6	SSA	28.8
BDE	.5341	BRA	6.8889	BC3	15.7799	FSP	702	SG1	15970.1	SG2	610.1	THA	179.96	EL1	3084.2	EL2	540.5	ALF	179.40

LAUNCH DATE DEC 20 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 9 1966

HELIOCENTRIC CONIC DISTANCE 898.497 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.407	GAL	-4.46	AZL	88.40	HCA	262.14	SMA	193.02	ECC	.24931	INC	1.6008
RP	207.27	LAP	-1.59	LOP	350.29	VP	24.353	GAP	-13.82	AZP	90.22	TAL	337.34	TAP	239.48	RCA	144.90	APO	241.15
RC	342.690	GL	13.40	GP	-3.97	ZAL	128.11	ZAP	23.79	ETS	169.44	ZAE	36.20	ETE	174.41	ZAC	86.84	ETC	255.81

PLANETOCENTRIC CONIC

C3	16.129	VHL	4.016	DLA	-1.33	RAL	219.49	RAD	6567.6	VEL	11.727	PTH	2.07	VHP	6.989	DPA	-8.05	RAP	191.44

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 15	2123.09	-17.25	35.77	77.15	112.81	20 47 38	1523.1	-14.01	28.59
90.00	7 54 32	4849.47	19.35	209.86	77.69	68.91	9 15 21	4249.5	16.31	202.50
100.00	21 32 59	1862.69	-18.21	16.19	76.71	114.13	22 4 2	1262.7	-14.80	9.05
100.00	9 16 29	4585.10	20.32	190.00	77.28	67.59	10 32 54	3985.1	17.10	182.69
110.00	22 39 48	1653.50	-20.76	358.99	75.39	117.78	23 7 22	1053.5	-16.88	352.01
110.00	10 26 9	4367.05	22.91	172.19	76.02	63.91	11 38 56	3767.0	19.22	165.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5202	TRA	7.2320	TC-	15.2797	BAU	3.2951	SGT	16052.6	SGR	613.0	SG3	193.7	ST	3205.1	SR	547.5	SS	540.5
RDE	.3811	RRA	.1517	RC3	.2276	FAU	.02121	RRT	-.0420	RRF	-.0876	RTF	.8794	CRT	-.1165	CRS	.6804	CST	-.8047
FDE	-.4782	FRA	1.3520	FC3-	1.1387	BSP	57183	SGB	16064.3	R23	.0507	R13	-.8794	LSA	3235.5	MSA	628.4	SSA	27.9
BDE	.6449	BRA	7.2336	BC3	15.2814	FSP	648	SG1	16052.6	SG2	612.5	THA	179.91	EL1	3205.7	EL2	543.7	ALF	178.83

LAUNCH DATE DEC 20 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 11 1966

HELIOCENTRIC CONIC DISTANCE 902.756 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.416	GAL	-4.72	AZL	88.43	HCA	263.40	SMA	193.19	ECC	.25125	INC	1.5748
RP	207.37	LAP	-1.56	LOP	351.55	VP	24.352	GAP	-13.94	AZP	90.18	TAL	336.18	TAP	239.58	RCA	144.65	APO	241.73
RC	343.441	GL	12.89	GP	-3.90	ZAL	129.78	ZAP	23.47	ETS	169.44	ZAE	35.56	ETE	174.38	ZAC	87.11	ETC	255.81

PLANETOCENTRIC CONIC

C3	16.835	VHL	4.103	DLA	-2.31	RAL	220.86	RAD	6567.7	VEL	11.757	PTH	2.08	VHP	7.080	DPA	-8.38	RAP	192.33

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 25 0	2102.42	-16.70	34.50	78.99	113.21	21 0 3	1502.4	-13.42	27.36
90.00	7 52 42	4889.74	20.31	212.42	79.95	69.84	9 14 11	4289.7	17.38	204.97
100.00	21 45 16	1843.50	-17.67	15.01	78.54	114.51	22 16 0	1243.5	-14.21	7.93
100.00	9 15 7	4623.89	21.30	192.46	79.55	68.52	10 32 11	4023.9	18.20	185.04
110.00	22 51 3	1637.60	-20.26	358.03	77.18	118.14	23 18 20	1037.6	-16.34	351.10
110.00	10 25 50	4402.56	23.96	174.42	78.31	64.85	11 39 12	3802.6	20.37	167.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6521	TRA	7.5857	TC-	14.7770	BAU	3.3263	SGT	16132.7	SGR	615.9	SG3	178.8	ST	3328.2	SR	553.6	SS	526.6
RDE	.3941	RRA	.1446	RC3	.2302	FAU	.01772	RRT	-.0653	RRF	-.1119	RTF	.8647	CRT	-.1684	CRS	.7020	CST	-.8178
FDE	-.4781	FRA	1.2952	FC3	-.9110	BSP	57466	SGB	16144.5	R23	.0555	R13	-.8647	LSA	3357.6	MSA	621.2	SSA	27.0
BDE	.7619	BRA	7.5871	BC3	14.7788	FSP	597	SG1	16132.8	SG2	614.6	THA	179.86	EL1	3329.5	EL2	545.5	ALF	178.35

LAUNCH DATE DEC 20 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 13 1966

HELIOCENTRIC CONIC DISTANCE 907.002 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.425	GAL	-4.97	AZL	88.45	HCA	264.66	SMA	193.36	ECC	.25327	INC	1.5490
RP	207.48	LAP	-1.54	LOP	352.81	VP	24.350	GAP	-14.07	AZP	90.14	TAL	335.01	TAP	239.68	RCA	144.38	APO	242.33
RC	344.188	GL	12.39	GP	-3.84	ZAL	131.42	ZAP	23.15	ETS	169.43	ZAE	34.94	ETE	174.34	ZAC	87.37	ETC	255.82

PLANETOCENTRIC CONIC

C3	17.596	VHL	4.195	DLA	-3.27	RAL	222.21	RAD	6567.7	VEL	11.789	PTH	2.08	VHP	7.174	DPA	-8.72	RAP	193.23

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 37 29	2082.97	-16.17	33.32	80.85	113.56	21 12 12	1483.0	-12.85	26.22
90.00	7 50 57	4929.62	21.23	214.98	82.25	70.81	9 13 7	4329.6	18.41	207.44
100.00	21 57 18	1825.49	-17.16	13.92	80.39	114.86	22 27 44	1225.5	-13.66	6.87
100.00	9 13 50	4662.33	22.24	194.93	81.86	69.50	10 31 32	4062.3	19.25	187.41
110.00	23 2 3	1622.81	-19.78	357.15	79.00	118.46	23 29 6	1022.8	-15.82	350.26
110.00	10 25 34	4437.78	24.96	176.67	80.64	65.84	11 39 32	3837.8	21.48	169.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7810	TRA	7.9486	TC-	14.2736	BAU	3.3583	SGT	16210.8	SGR	618.8	SG3	164.3	ST	3451.0	SR	559.6	SS	510.2
RDE	.4076	RRA	.1372	RC3	.2315	FAU	.01427	RRT	-.0877	RRF	-.1350	RTF	.8466	CRT	-.2135	CRS	.7224	CST	-.8274
FDE	-.4750	FRA	1.2340	FC3	-.7021	BSP	57727	SGB	16222.6	R23	.0609	R13	-.8466	LSA	3479.2	MSA	614.3	SSA	26.2
BDE	.8809	BRA	7.9497	BC3	14.2755	FSP	546	SG1	16210.9	SG2	616.4	THA	179.81	EL1	3453.2	EL2	546.4	ALF	177.97

LAUNCH DATE DEC 20 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 15 1966

HELIOCENTRIC CONIC DISTANCE 911.232 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.434	GAL	-5.23	AZL	88.48	HCA	265.92	SMA	193.52	ECC	.25539	INC	1.5233	V1	30.273
RP	207.61	LAP	-1.52	LOP	354.07	VP	24.346	GAP	-14.21	AZP	90.11	TAL	333.84	TAP	239.76	RCA	144.10	APO	242.95	V2	26.387
RC	344.932	GL	11.90	GP	-3.78	ZAL	133.03	ZAP	22.84	ETS	169.42	ZAE	34.32	ETE	174.29	ZAC	87.64	ETC	255.82	CLP	22.55

PLANETOCENTRIC CONIC

C3	18.415	VHL	4.291	DLA	-4.19	RAL	223.54	RAD	6567.7	VEL	11.824	PTH	2.09	VHP	7.268	DPA	-9.06	RAP	194.13	ECC	1.3031

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 49 43	2064.71	-15.67	32.21	82.73	113.89	21 24 7	1464.7	-12.31	25.14
90.00	7 49 19	4969.09	22.09	217.56	84.58	71.82	9 12 8	4369.1	19.40	209.92
100.00	22 9 5	1808.65	-16.67	12.91	82.26	115.18	22 39 14	1208.7	-13.14	5.89
100.00	9 12 38	4700.38	23.13	197.41	84.20	70.51	10 30 58	4100.4	20.26	189.79
110.00	23 12 50	1608.93	-19.33	356.34	80.83	118.76	23 39 39	1008.9	-15.35	349.49
110.00	10 25 23	4472.69	25.91	178.93	83.01	66.88	11 39 55	3872.7	22.55	171.39

DIFFERENTIAL CORRECTIONS

TDE	-.9090	TRA	8.3195	TC-13.7751	BAU	3.3918	
RDE	.4217	RRA	.1293	RC3 .2317	FAU	.01090	
FDE	-.4697	FRA	1.1690	FC3 -.5126	BSP	57950	
BDE	1.0021	BRA	8.3205	BC313.7771	FSP	495	

MID-COURSE EXECUTION ACCURACY

SGT16287.9	SGR	621.7	SG3	150.6			
RRT -.1093	RRF	-.1567	RTF	.8243			
SGB16299.7	R23	.0669	R13	-.8243			
SG116288.0	SG2	618.0	THA	179.76			

ORBIT DETERMINATION ACCURACY

ST	3572.5	SR	565.5	SS	492.0		
CRT	-.2535	CRS	.7421	CST	-.8340		
LSA	3599.3	MSA	607.8	SSA	25.5		
EL1	3575.5	EL2	546.6	ALF	177.65		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 17 1966

HELIOCENTRIC CONIC DISTANCE 915.446 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.443	GAL	-5.50	AZL	88.50	HCA	267.18	SMA	193.69	ECC	.25759	INC	1.4978	V1	30.273
RP	207.74	LAP	-1.50	LOP	355.33	VP	24.342	GAP	-14.35	AZP	90.07	TAL	332.65	TAP	239.83	RCA	143.80	APO	243.58	V2	26.372
RC	345.671	GL	11.43	GP	-3.72	ZAL	134.60	ZAP	22.55	ETS	169.41	ZAE	33.71	ETE	174.25	ZAC	87.91	ETC	255.83	CLP	22.25

PLANETOCENTRIC CONIC

C3	19.295	VHL	4.393	DLA	-5.09	RAL	224.84	RAD	6567.8	VEL	11.861	PTH	2.10	VHP	7.365	DPA	-9.40	RAP	195.05	ECC	1.3175

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 1 41	2047.62	-15.20	31.18	84.63	114.18	21 35 48	1447.6	-11.81	24.14
90.00	7 47 47	5008.15	22.89	220.14	86.94	72.87	9 11 15	4408.1	20.33	212.40
100.00	22 20 37	1792.95	-16.21	11.96	84.14	115.46	22 50 30	1193.0	-12.65	4.98
100.00	9 11 31	4738.05	23.96	199.90	86.56	71.57	10 30 29	4138.1	21.22	192.18
110.00	23 23 23	1596.49	-18.92	355.59	82.68	119.02	23 49 59	996.5	-14.90	348.78
110.00	10 25 15	4507.28	26.81	181.22	85.40	67.96	11 40 23	3907.3	23.58	173.54

DIFFERENTIAL CORRECTIONS

TDE	-1.0342	TRA	8.6985	TC-13.2839	BAU	3.4272	
RDE	.4364	RRA	.1209	RC3 .2309	FAU	.00760	
FDE	-.4623	FRA	1.0996	FC3 -.3408	BSP	58156	
BDE	1.1225	BRA	8.6993	BC313.2860	FSP	446	

MID-COURSE EXECUTION ACCURACY

SGT16363.6	SGR	624.7	SG3	137.3			
RRT -.1302	RRF	-.1772	RTF	.7962			
SGB16375.5	R23	.0740	R13	-.7962			
SG116363.8	SG2	619.3	THA	179.71			

ORBIT DETERMINATION ACCURACY

ST	3690.5	SR	571.2	SS	472.0		
CRT	-.2882	CRS	.7617	CST	-.8375		
LSA	3715.7	MSA	602.0	SSA	24.8		
EL1	3694.3	EL2	546.4	ALF	177.39		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 19 1966

HELIOCENTRIC CONIC DISTANCE 919.642 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.451	GAL	-5.77	AZL	88.53	HCA	268.43	SMA	193.86	ECC	.25990	INC	1.4723	V1	30.273
RP	207.87	LAP	-1.47	LOP	356.58	VP	24.337	GAP	-14.49	AZP	90.04	TAL	331.45	TAP	239.88	RCA	143.48	APO	244.24	V2	26.356
RC	346.405	GL	10.96	GP	-3.67	ZAL	136.13	ZAP	22.26	ETS	169.40	ZAE	33.11	ETE	174.20	ZAC	88.17	ETC	255.85	CLP	21.97

PLANETOCENTRIC CONIC

C3	20.239	VHL	4.499	DLA	-5.95	RAL	226.13	RAD	6567.8	VEL	11.900	PTH	2.11	VHP	7.463	DPA	-9.75	RAP	195.97	ECC	1.3331

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 13 24	2031.67	-14.75	30.22	86.54	114.45	21 47 15	1431.7	-11.33	23.22
90.00	7 46 19	5046.79	23.65	222.72	89.32	73.95	9 10 26	4446.8	21.22	214.89
100.00	22 31 55	1778.37	-15.79	11.09	86.04	115.72	23 1 33	1178.4	-12.20	4.14
100.00	9 10 29	4775.32	24.74	202.39	88.96	72.66	10 30 4	4175.3	22.13	194.57
110.00	23 33 42	1584.93	-18.54	354.92	84.54	119.25	24 0 7	984.9	-14.50	348.13
110.00	10 25 11	4541.52	27.67	183.51	87.82	69.07	11 40 53	3941.5	24.57	175.71

DIFFERENTIAL CORRECTIONS

TDE	-1.1561	TRA	9.0880	TC-12.7984	BAU	3.4635	
RDE	.4515	RRA	.1121	RC3 .2291	FAU	.00435	
FDE	-.4523	FRA	1.0261	FC3 -.1859	BSP	58338	
BDE	1.2411	BRA	9.0887	BC312.8005	FSP	397	

MID-COURSE EXECUTION ACCURACY

SGT16437.6	SGR	627.5	SG3	124.8			
RRT -.1503	RRF	-.1954	RTF	.7609			
SGB16449.6	R23	.0819	R13	-.7609			
SG116437.9	SG2	620.4	THA	179.67			

ORBIT DETERMINATION ACCURACY

ST	3804.6	SR	576.7	SS	450.1		
CRT	-.3183	CRS	.7808	CST	-.8382		
LSA	3828.0	MSA	596.6	SSA	24.1		
EL1	3809.1	EL2	546.0	ALF	177.18		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 21 1966

HELIOCENTRIC CONIC DISTANCE 923.821 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.460	GAL	-6.05	AZL	88.55	HCA	269.69	SMA	194.03	ECC	.26230	INC	1.4469	V1	30.273
RP	208.02	LAP	-1.45	LOP	357.84	VP	24.331	GAP	-14.65	AZP	90.01	TAL	330.24	TAP	239.93	RCA	143.13	APO	244.92	V2	26.339
RC	347.135	GL	10.50	GP	-3.61	ZAL	137.64	ZAP	21.97	ETS	169.39	ZAE	32.52	ETE	174.15	ZAC	88.44	ETC	255.87	CLP	21.69

PLANETOCENTRIC CONIC

C3	21.250	VHL	4.610	DLA	-6.79	RAL	227.39	RAD	6567.9	VEL	11.943	PTH	2.13	VHP	7.563	DPA	-10.09	RAP	196.89	ECC	1.3497

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 24 52	2016.83	-14.33	29.33	88.47	114.69	21 58 29	1416.8	-10.88	22.35
90.00	7 44 57	5084.99	24.34	225.30	91.72	75.07	9 9 42	4485.0	22.05	217.38
100.00	22 42 58	1764.88	-15.39	10.29	87.95	115.95	23 12 23	1164.9	-11.77	3.37
100.00	9 9 32	4812.18	25.46	204.89	91.37	73.79	10 29 44	4212.2	23.00	196.96
110.00	23 43 48	1574.41	-18.18	354.30	86.42	119.46	24 10 2	974.4	-14.12	347.54
110.00	10 25 11	4575.41	28.47	185.82	90.27	70.23	11 41 27	3975.4	25.51	177.90

DIFFERENTIAL CORRECTIONS

TDE	-1.2763	TRA	9.4853	TC-12.3221	BAU	3.5012	
RDE	.4671	RRA	.1029	RC3 .2266	FAU	.00114	
FDE	-.4404	FRA	.9484	FC3 -.0464	BSP	58478	
BDE	1.3591	BRA	9.4859	BC312.3241	FSP	348	

MID-COURSE EXECUTION ACCURACY

SGT16508.7	SGR	630.4	SG3	113.0			
RRT -.1696	RRF	-.2109	RTF	.7154			
SGB16520.8	R23	.0907	R13	-.7155			
SG116509.1	SG2	621.2	THA	179.63			

ORBIT DETERMINATION ACCURACY

ST	3914.0	SR	581.9	SS	426.8		
CRT	-.3449	CRS	.8001	CST	-.8362		
LSA	3935.6	MSA	591.7	SSA	23.5		
EL1	3919.2	EL2	545.5	ALF	177.01		

LAUNCH DATE DEC 20 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 23 1966

HELIOCENTRIC CONIC DISTANCE 927.979 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.469	GAL	-6.34	AZL	88.58	HCA	270.94	SMA	194.20	ECC	.26480	INC	1.4216	V1	30.273
RP	208.17	LAP	-1.42	LOP	359.09	VP	24.324	GAP	-14.80	AZP	89.98	TAL	329.03	TAP	239.96	RCA	142.77	APO	245.62	V2	26.322
RC	347.858	GL	10.06	GP	-3.56	ZAL	139.11	ZAP	21.70	ETS	169.38	ZAE	31.93	ETE	174.09	ZAC	88.70	ETC	255.89	CLP	21.42

PLANETOCENTRIC CONIC

C3	22.333	VHL	4.726	DLA	-7.60	RAL	228.64	RAD	6567.9	VEL	11.988	PTH	2.14	VHP	7.665	DPA	-10.45	RAP	197.82	ECC	1.3675

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 36 5	2003.07	-13.94	28.51	90.40	114.90	22 9 28	1403.1	-10.47	21.56
90.00	7 43 39	5122.75	24.98	227.89	94.13	76.21	9 9 2	4522.8	22.84	219.87
100.00	22 53 46	1752.44	-15.01	9.56	89.87	116.16	23 22 59	1152.4	-11.38	2.65
100.00	9 8 39	4848.61	26.13	207.39	93.80	74.94	10 29 28	4248.6	23.81	199.37
110.00	23 53 40	1564.89	-17.86	353.75	88.30	119.64	24 19 45	964.9	-13.78	347.01
110.00	10 25 14	4608.93	29.22	188.14	92.75	71.42	11 42 3	4008.9	26.40	180.09

DIFFERENTIAL CORRECTIONS

TDE	-1.3928	TRA	9.8927	TC	-11.8551	BAU	3.5402
RDE	.4832	RRA	.0933	RC3	.2234	FAU	-.00202
FDE	-.4269	FRA	.8664	FC3	.0783	BSP	58628
BDE	1.4742	BRA	9.8932	BC3	11.8572	FSP	302

MID-COURSE EXECUTION ACCURACY

SGT	16577.7	SGR	633.1	SG3	102.1		
RRT	-.1882	RRF	-.2228	RTF	.6569		
SGB	16589.7	R23	.1008	R13	-.6569		
SG1	16578.1	SG2	621.8	THA	179.59		

ORBIT DETERMINATION ACCURACY

ST	4017.7	SR	586.9	SS	402.3
CRT	-.3678	CRS	.8200	CST	-.8307
LSA	4037.7	MSA	587.5	SSA	22.9
EL1	4023.6	EL2	544.9	ALF	176.87

LAUNCH DATE DEC 20 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 25 1966

HELIOCENTRIC CONIC DISTANCE 932.117 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.478	GAL	-6.63	AZL	88.60	HCA	272.19	SMA	194.37	ECC	.26740	INC	1.3962	V1	30.273
RP	208.33	LAP	-1.40	LOP	.34	VP	24.316	GAP	-14.97	AZP	89.95	TAL	327.80	TAP	239.99	RCA	142.39	APO	246.34	V2	26.303
RC	348.577	GL	9.62	GP	-3.51	ZAL	140.54	ZAP	21.44	ETS	169.37	ZAE	31.36	ETE	174.04	ZAC	88.96	ETC	255.91	CLP	21.16

PLANETOCENTRIC CONIC

C3	23.490	VHL	4.847	DLA	-8.38	RAL	229.86	RAD	6568.0	VEL	12.036	PTH	2.15	VHP	7.769	DPA	-10.80	RAP	198.76	ECC	1.3866

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 4	1990.35	-13.57	27.76	92.35	115.09	22 20 14	1390.4	-10.08	20.82
90.00	7 42 26	5160.07	25.56	230.46	96.56	77.38	9 8 26	4560.1	23.57	222.36
100.00	23 4 21	1741.04	-14.67	8.88	91.80	116.34	23 33 22	1141.0	-11.01	2.00
100.00	9 7 51	4884.62	26.74	209.90	96.25	76.13	10 29 15	4284.6	24.57	201.77
110.00	0 7 16	1556.35	-17.58	353.26	90.19	119.80	0 33 12	956.3	-13.48	346.54
110.00	10 25 21	4642.08	29.92	190.47	95.24	72.63	11 42 43	4042.1	27.25	182.30

DIFFERENTIAL CORRECTIONS

TDE	-1.5063	TRA	10.3102	TC	-11.3999	BAU	3.5807
RDE	.4997	RRA	.0832	RC3	.2197	FAU	-.00514
FDE	-.4113	FRA	.7804	FC3	.1894	BSP	58737
BDE	1.5870	BRA	10.3105	BC3	11.4020	FSP	255

MID-COURSE EXECUTION ACCURACY

SGT	16645.2	SGR	635.8	SG3	92.2		
RRT	-.2060	RRF	-.2290	RTF	.5811		
SGB	16657.3	R23	.1116	R13	-.5811		
SG1	16645.7	SG2	622.1	THA	179.55		

ORBIT DETERMINATION ACCURACY

ST	4115.9	SR	591.5	SS	376.6
CRT	-.3876	CRS	.8403	CST	-.8220
LSA	4134.2	MSA	583.6	SSA	22.3
EL1	4122.4	EL2	544.4	ALF	176.75

LAUNCH DATE DEC 20 1964 FLIGHT TIME 434.00 ARRIVAL DATE FEB 27 1966

HELIOCENTRIC CONIC DISTANCE 936.233 EARTH TO MARS

RL	147.17	LAL	-.00	LOL	88.15	VL	33.487	GAL	-6.92	AZL	88.63	HCA	273.43	SMA	194.54	ECC	.27012	INC	1.3709	V1	30.273
RP	208.50	LAP	-1.37	LOP	1.59	VP	24.307	GAP	-15.13	AZP	89.92	TAL	326.57	TAP	240.00	RCA	141.99	APO	247.08	V2	26.283
RC	349.290	GL	9.20	GP	-3.47	ZAL	141.94	ZAP	21.18	ETS	169.36	ZAE	30.79	ETE	173.97	ZAC	89.22	ETC	255.94	CLP	20.91

PLANETOCENTRIC CONIC

C3	24.727	VHL	4.973	DLA	-9.13	RAL	231.07	RAD	6568.0	VEL	12.087	PTH	2.16	VHP	7.875	DPA	-11.16	RAP	199.71	ECC	1.4069

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 49	1978.64	-13.23	27.07	94.30	115.26	22 30 48	1378.6	-9.72	20.15
90.00	7 41 18	5196.94	26.08	233.04	99.00	78.56	9 7 55	4596.9	24.24	224.85
100.00	23 14 42	1730.62	-14.35	8.27	93.74	116.50	23 43 32	1130.6	-10.68	1.41
100.00	9 7 6	4920.19	27.30	212.39	98.71	77.33	10 29 6	4320.2	25.28	204.17
110.00	0 16 42	1548.75	-17.32	352.82	92.09	119.94	0 42 31	948.7	-13.21	346.12
110.00	10 25 31	4674.83	30.56	192.81	97.76	73.88	11 43 25	4074.8	28.05	184.51

DIFFERENTIAL CORRECTIONS

TDE	-1.6165	TRA	10.7371	TC	-10.9579	BAU	3.6231
RDE	.5166	RRA	.0727	RC3	.2154	FAU	-.00822
FDE	-.3939	FRA	.6899	FC3	.2877	BSP	58816
BDE	1.6970	BRA	10.7373	BC3	10.9600	FSP	210

MID-COURSE EXECUTION ACCURACY

SGT	16710.6	SGR	638.3	SG3	83.6		
RRT	-.2231	RRF	-.2276	RTF	.4834		
SGB	16722.8	R23	.1227	R13	-.4834		
SG1	16711.2	SG2	622.2	THA	179.51		

ORBIT DETERMINATION ACCURACY

ST	4208.0	SR	595.9	SS	349.9
CRT	-.4049	CRS	.8615	CST	-.8090
LSA	4224.6	MSA	580.2	SSA	21.8
EL1	4215.0	EL2	543.9	ALF	176.66

LAUNCH DATE DEC 21 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 348.449 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	35.122	GAL	2.97	AZL	88.94	HCA	107.05	SMA	232.76	ECC	.37092	INC	1.0560
RP	243.12	LAP	1.01	LOP	196.22	VP	22.838	GAP	21.63	AZP	90.31	TAL	10.98	TAP	118.03	RCA	146.43	APO	319.10
RC	142.373	GL	7.13	GP	2.64	ZAL	68.24	ZAP	172.07	ETS	159.28	ZAE	152.15	ETE	3.58	ZAC	92.18	ETC	255.91

V1	30.275	V2	22.572	CLP	172.52														

PLANETOCENTRIC CONIC

C3	27.129	VHL	5.209	DLA	15.46	RAL	161.68	RAD	6568.1	VEL	12.186	PTH	2.19	VHP	9.992	DPA	.04	RAP	189.60
ECC	1.4465																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 38	2791.09	-28.16	81.17	34.17	93.14	14 51 9	2191.1	-27.43	72.59
90.00	6 13 4	4430.34	7.40	184.90	26.53	62.59	7 26 54	3830.3	3.67	178.21
100.00	15 34 27	2501.43	-29.60	59.76	34.06	94.40	16 16 8	1901.4	-28.67	51.08
100.00	7 25 56	4195.23	8.68	166.93	25.84	61.28	8 35 51	3595.2	4.78	160.31
110.00	17 1 34	2228.87	-33.38	38.59	33.58	97.84	17 38 42	1628.9	-31.93	29.65
110.00	8 15 18	4040.56	11.95	153.24	23.88	57.73	9 22 39	3440.6	7.61	146.84

DIFFERENTIAL CORRECTIONS

TDE	.2301	TRA	-.8845	TC3	1.2683	BAU	.4600
RDE	-.5647	RRA	-.2145	RC3	.0178	FAU	.06686
FDE	.1877	FRA	.0254	FC3	-2.1337	BSP	5336
BDE	.6098	BRA	.9102	BC3	1.2684	FSP	525

MID-COURSE EXECUTION ACCURACY

SGT	1681.9	SGR	668.0	SG3	192.9		
RRT	.1019	RRF	-.1185	RTF	-.7760		
SGB	1809.7	R23	-.0249	R13	-.7766		
SG1	1683.6	SG2	663.9	THA	2.75		

ORBIT DETERMINATION ACCURACY

ST	396.7	SR	625.6	SS	187.4		
CRT	-.5439	CRS	.9492	CST	-.5455		
LSA	695.7	MSA	310.8	SSA	56.4		
EL1	673.0	EL2	309.4	ALF	114.54		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 350.934 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	35.007	GAL	3.09	AZL	88.96	HCA	107.97	SMA	229.51	ECC	.36233	INC	1.0351
RP	242.87	LAP	.98	LOP	197.14	VP	22.686	GAP	20.99	AZP	90.32	TAL	11.65	TAP	119.62	RCA	146.35	APO	312.67
RC	144.629	GL	7.08	GP	2.71	ZAL	67.01	ZAP	171.45	ETS	160.22	ZAE	152.30	ETE	3.89	ZAC	92.31	ETC	255.90

V1	30.275	V2	22.598	CLP	171.89														

PLANETOCENTRIC CONIC

C3	26.260	VHL	5.124	DLA	15.88	RAL	160.48	RAD	6568.1	VEL	12.151	PTH	2.18	VHP	9.740	DPA	-.01	RAP	189.89
ECC	1.4322																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 55 56	2798.19	-28.18	81.69	32.54	92.88	14 42 34	2198.2	-27.49	73.10
90.00	6 12 11	4407.08	6.67	183.58	24.90	62.42	7 25 39	3807.1	2.93	176.91
100.00	15 26 5	2507.48	-29.63	60.21	32.43	94.17	16 7 52	1907.5	-28.73	51.52
100.00	7 24 44	4173.02	7.95	165.69	24.21	61.09	8 34 17	3573.0	4.03	159.09
110.00	16 53 52	2232.80	-33.41	38.89	31.97	97.67	17 31 5	1632.8	-31.99	29.95
110.00	8 13 26	4020.47	11.22	152.14	22.23	57.50	9 20 26	3420.5	6.85	145.77

DIFFERENTIAL CORRECTIONS

TDE	.2117	TRA	-.8532	TC3	1.3422	BAU	.4713
RDE	-.5559	RRA	-.2069	RC3	.0240	FAU	.06942
FDE	.2089	FRA	-.0105	FC3	-2.2885	BSP	5465
BDE	.5949	BRA	.8779	BC3	1.3424	FSP	559

MID-COURSE EXECUTION ACCURACY

SGT	1712.3	SGR	667.0	SG3	203.7		
RRT	.1097	RRF	-.1272	RTF	-.7827		
SGB	1837.6	R23	-.0264	R13	-.7833		
SG1	1714.2	SG2	662.2	THA	2.88		

ORBIT DETERMINATION ACCURACY

ST	382.5	SR	625.8	SS	205.3		
CRT	-.5250	CRS	.9496	CST	-.5732		
LSA	694.9	MSA	306.1	SSA	59.2		
EL1	666.7	EL2	305.5	ALF	112.85		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 353.520 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	34.897	GAL	3.21	AZL	88.99	HCA	108.89	SMA	226.50	ECC	.35420	INC	1.0138
RP	242.60	LAP	.96	LOP	198.06	VP	22.542	GAP	20.36	AZP	90.33	TAL	12.32	TAP	121.21	RCA	146.27	APO	306.72
RC	146.900	GL	7.02	GP	2.79	ZAL	65.79	ZAP	170.82	ETS	161.03	ZAE	152.49	ETE	4.22	ZAC	92.45	ETC	255.89

V1	30.275	V2	22.624	CLP	171.25														

PLANETOCENTRIC CONIC

C3	25.470	VHL	5.047	DLA	16.29	RAL	159.28	RAD	6568.0	VEL	12.118	PTH	2.17	VHP	9.496	DPA	-.06	RAP	190.18
ECC	1.4192																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 47 18	2805.42	-28.21	82.22	30.93	92.61	14 34 4	2205.4	-27.55	73.62
90.00	6 11 13	4384.74	5.97	182.32	23.30	62.27	7 24 18	3784.7	2.21	175.66
100.00	15 17 46	2513.67	-29.66	60.67	30.84	93.93	15 59 40	1913.7	-28.80	51.97
100.00	7 23 26	4151.73	7.24	164.50	22.60	60.92	8 32 38	3551.7	3.31	157.92
110.00	16 46 14	2236.89	-33.45	39.20	30.39	97.49	17 23 31	1636.9	-32.05	30.25
110.00	8 11 28	4001.27	10.52	151.10	20.62	57.29	9 18 9	3401.3	6.13	144.76

DIFFERENTIAL CORRECTIONS

TDE	.1935	TRA	-.8217	TC3	1.4150	BAU	.4819
RDE	-.5477	RRA	-.1994	RC3	.0308	FAU	.07207
FDE	.2313	FRA	-.0496	FC3	-2.4498	BSP	5589
BDE	.5809	BRA	.8455	BC3	1.4153	FSP	595

MID-COURSE EXECUTION ACCURACY

SGT	1741.4	SGR	665.8	SG3	214.9		
RRT	.1182	RRF	-.1367	RTF	-.7889		
SGB	1864.3	R23	-.0280	R13	-.7896		
SG1	1743.5	SG2	660.3	THA	3.02		

ORBIT DETERMINATION ACCURACY

ST	367.5	SR	625.8	SS	224.4		
CRT	-.5039	CRS	.9473	CST	-.5933		
LSA	694.8	MSA	300.9	SSA	62.0		
EL1	660.5	EL2	300.8	ALF	111.05		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 356.197 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	34.792	GAL	3.33	AZL	89.01	HCA	109.81	SMA	223.71	ECC	.34652	INC	.9924
RP	242.34	LAP	.93	LOP	198.98	VP	22.406	GAP	19.73	AZP	90.34	TAL	12.99	TAP	122.80	RCA	146.19	APO	301.23
RC	149.184	GL	6.95	GP	2.87	ZAL	64.57	ZAP	170.17	ETS	161.74	ZAE	152.72	ETE	4.56	ZAC	92.59	ETC	255.88

V1	30.275	V2	22.651	CLP	170.60														

PLANETOCENTRIC CONIC

C3	24.753	VHL	4.975	DLA	16.67	RAL	158.08	RAD	6568.0	VEL	12.088	PTH	2.16	VHP	9.258	DPA	-.09	RAP	190.46
ECC	1.4074																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 38 47	2812.72	-28.23	82.75	29.36	92.35	14 25 39	2212.7	-27.60	74.14
90.00	6 10 9	4363.37	5.29	181.12	21.74	62.14	7 22 52	3763.4	1.52	174.46
100.00	15 9 34	2519.94	-29.69	61.13	29.27	93.68	15 51 34	1919.9	-28.86	52.42
100.00	7 22 3	4131.39	6.57	163.36	21.04	60.77	8 30 54	3531.4	2.63	156.80
110.00	16 38 41	2241.10	-33.49	39.52	28.84	97.30	17 16 2	1641.1	-32.12	30.56
110.00	8 9 25	3982.99	9.84	150.12	19.04	57.10	9 15 48	3383.0	5.44	143.79

DIFFERENTIAL CORRECTIONS

TDE	.1761	TRA	-.7901	TC3	1.4887	BAU	.4928
RDE	-.5400	RRA	-.1919	RC3	.0383	FAU	.07489
FDE	.2541	FRA	-.0913	FC3	-2.6194	BSP	5709
BDE	.5680	BRA	.8131	BC3	1.4892	FSP	633

MID-COURSE EXECUTION ACCURACY

SGT	1771.3	SGR	664.4	SG3	226.8		
RRT	.1270	RRF	-.1468	RTF	-.7951		
SGB	1891.8	R23	-.0298	R13	-.7959		
SG1	1773.6	SG2	658.1	THA	3.16		

ORBIT DETERMINATION ACCURACY

ST	352.5	SR	625.7	SS	243.7		
CRT	-.4820	CRS	.9431	CST	-.6074		
LSA	695.5	MSA	295.3	SSA	64.9		
EL1	654.7	EL2	295.2	ALF	109.25		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 358.958 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	34.692	GAL	3.45	AZL	89.03	HCA	110.73	SMA	221.12	ECC	.33926	INC	.9707
RP	242.06	LAP	.91	LOP	199.91	VP	22.279	GAP	19.10	AZP	90.34	TAL	13.66	TAP	124.40	RCA	146.10	APO	296.14
RC	151.478	GL	6.86	GP	2.96	ZAL	63.37	ZAP	169.51	ETS	162.36	ZAE	152.98	ETE	4.92	ZAC	92.73	ETC	255.87

V1 30.275 V2 22.678 CLP 169.93

PLANETOCENTRIC CONIC

C3	24.103	VHL	4.909	DLA	17.04	RAL	156.88	RAD	6568.0	VEL	12.062	PTH	2.16	VHP	9.027	DPA	-.13	RAP	190.73

ECC 1.3967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 30 23	2820.02	-28.25	83.29	27.82	92.08	14 17 23	2220.0	-27.66	74.67
90.00	6 8 58	4343.00	4.64	179.97	20.21	62.03	7 21 21	3743.0	.86	173.33
100.00	15 1 29	2526.21	-29.71	61.59	27.73	93.44	15 43 35	1926.2	-28.92	52.88
100.00	7 20 33	4112.04	5.93	162.29	19.50	60.65	8 29 5	3512.0	1.97	155.73
110.00	16 31 15	2245.35	-33.52	39.85	27.32	97.11	17 8 41	1645.4	-32.18	30.88
110.00	8 7 16	3965.67	9.20	149.19	17.50	56.93	9 13 22	3365.7	4.78	142.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1587	TRA	-.7584	TC3	1.5606	BAU	.5031	SGT	1799.9	SGR	662.9	SG3	239.3	ST	336.9	SR	625.4	SS	264.2
RDE	-.5328	RRA	-.1844	RC3	.0465	FAU	.07785	RRT	.1368	RRF	-.1578	RTF	-.8009	CRT	-.4570	CRS	.9377	CST	-.6154
FDE	.2783	FRA	-.1366	FC3	-2.7962	BSP	5830	SGB	1918.0	R23	-.0318	R13	-.8018	LSA	697.2	MSA	289.4	SSA	67.9
BDE	.5559	BRA	.7805	BC3	1.5613	FSP	674	SG1	1802.5	SG2	655.7	THA	3.33	EL1	649.1	EL2	288.8	ALF	107.38

LAUNCH DATE DEC 21 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 361.796 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	34.597	GAL	3.56	AZL	89.05	HCA	111.66	SMA	218.71	ECC	.33240	INC	.9486
RP	241.79	LAP	.88	LOP	200.83	VP	22.158	GAP	18.48	AZP	90.35	TAL	14.34	TAP	126.00	RCA	146.01	APO	291.42
RC	153.781	GL	6.77	GP	3.05	ZAL	62.17	ZAP	168.84	ETS	162.90	ZAE	153.29	ETE	5.31	ZAC	92.88	ETC	255.87

V1 30.275 V2 22.706 CLP 169.26

PLANETOCENTRIC CONIC

C3	23.514	VHL	4.849	DLA	17.39	RAL	155.68	RAD	6568.0	VEL	12.037	PTH	2.15	VHP	8.801	DPA	-.15	RAP	191.00

ECC 1.3870

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 22 8	2827.25	-28.26	83.81	26.31	91.82	14 9 15	2227.2	-27.71	75.19
90.00	6 7 41	4323.67	4.02	178.89	18.72	61.95	7 19 45	3723.7	.24	172.25
100.00	14 53 33	2532.44	-29.74	62.05	26.23	93.20	15 35 46	1932.4	-28.98	53.33
100.00	7 18 57	4093.71	5.31	161.27	18.01	60.54	8 27 11	3493.7	1.35	154.73
110.00	16 23 57	2249.61	-33.56	40.18	25.83	96.92	17 1 27	1649.6	-32.24	31.19
110.00	8 5 3	3949.31	8.59	148.31	16.00	56.79	9 10 52	3349.3	4.16	142.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1420	TRA	-.7271	TC3	1.6318	BAU	.5133	SGT	1828.4	SGR	661.2	SG3	252.5	ST	321.5	SR	625.0	SS	284.8
RDE	-.5260	RRA	-.1769	RC3	.0554	FAU	.08097	RRT	.1473	RRF	-.1696	RTF	-.8065	CRT	-.4302	CRS	.9313	CST	-.6186
FDE	.3028	FRA	-.1851	FC3	-2.9811	BSP	5945	SGB	1944.3	R23	-.0338	R13	-.8074	LSA	699.7	MSA	283.7	SSA	71.0
BDE	.5448	BRA	.7483	BC3	1.6327	FSP	717	SG1	1831.4	SG2	652.9	THA	3.49	EL1	643.9	EL2	281.7	ALF	105.52

LAUNCH DATE DEC 21 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 364.703 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	34.506	GAL	3.67	AZL	89.07	HCA	112.59	SMA	216.48	ECC	.32592	INC	.9262
RP	241.51	LAP	.86	LOP	201.76	VP	22.045	GAP	17.86	AZP	90.36	TAL	15.01	TAP	127.60	RCA	145.92	APO	287.03
RC	156.092	GL	6.67	GP	3.14	ZAL	61.00	ZAP	168.15	ETS	163.39	ZAE	153.63	ETE	5.72	ZAC	93.02	ETC	255.86

V1 30.275 V2 22.734 CLP 168.57

PLANETOCENTRIC CONIC

C3	22.981	VHL	4.794	DLA	17.72	RAL	154.50	RAD	6567.9	VEL	12.015	PTH	2.14	VHP	8.582	DPA	-.16	RAP	191.26

ECC 1.3782

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 14 4	2834.33	-28.28	84.33	24.83	91.56	14 1 18	2234.3	-27.76	75.70
90.00	6 6 17	4305.41	3.44	177.87	17.27	61.88	7 18 3	3705.4	-.35	171.23
100.00	14 45 47	2538.54	-29.76	62.51	24.76	92.96	15 28 6	1938.5	-29.03	53.78
100.00	7 17 15	4076.43	4.73	160.32	16.56	60.45	8 25 11	3476.4	.76	153.78
110.00	16 16 48	2253.80	-33.59	40.50	24.38	96.73	16 54 22	1653.8	-32.30	31.51
110.00	8 2 44	3933.93	8.02	147.49	14.54	56.66	9 8 18	3333.9	3.58	141.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1260	TRA	-.6954	TC3	1.7010	BAU	.5230	SGT	1855.8	SGR	659.5	SG3	266.3	ST	305.9	SR	624.4	SS	305.9
RDE	-.5197	RRA	-.1694	RC3	.0651	FAU	.08424	RRT	.1584	RRF	-.1822	RTF	-.8118	CRT	-.4018	CRS	.9244	CST	-.6180
FDE	.3282	FRA	-.2374	FC3	-3.1736	BSP	6052	SGB	1969.5	R23	-.0361	R13	-.8128	LSA	703.1	MSA	278.0	SSA	74.0
BDE	.5348	BRA	.7158	BC3	1.7023	FSP	761	SG1	1859.1	SG2	650.0	THA	3.67	EL1	639.2	EL2	273.7	ALF	103.70

LAUNCH DATE DEC 21 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 367.675 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	34.419	GAL	3.78	AZL	89.10	HCA	113.52	SMA	214.39	ECC	.31978	INC	.9035
RP	241.22	LAP	.83	LOP	202.69	VP	21.939	GAP	17.25	AZP	90.36	TAL	15.69	TAP	129.20	RCA	145.83	APO	282.94
RC	158.408	GL	6.56	GP	3.24	ZAL	59.83	ZAP	167.45	ETS	163.82	ZAE	154.01	ETE	6.16	ZAC	93.17	ETC	255.85

V1 30.275 V2 22.762 CLP 167.87

PLANETOCENTRIC CONIC

C3	22.500	VHL	4.743	DLA	18.04	RAL	153.32	RAD	6567.9	VEL	11.995	PTH	2.14	VHP	8.369	DPA	-.17	RAP	191.51

ECC 1.3703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 6 11	2841.23	-28.29	84.84	23.39	91.30	13 53 32	2241.2	-27.81	76.20
90.00	6 4 46	4288.21	2.88	176.90	15.86	61.82	7 16 14	3688.2	-.91	170.27
100.00	14 38 12	2544.49	-29.78	62.95	23.33	92.73	15 20 37	1944.5	-29.08	54.21
100.00	7 15 26	4060.19	4.19	159.42	15.14	60.38	8 23 6	3460.2	.21	152.89
110.00	16 9 48	2257.91	-33.63	40.82	22.96	96.55	16 47 26	1657.9	-32.35	31.81
110.00	8 0 20	3919.53	7.48	146.72	13.11	56.55	9 5 39	3319.5	3.03	140.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1213	TRA	-.6526	TC3	1.7882	BAU	.5384	SGT	1893.8	SGR	657.8	SG3	280.7	ST	293.1	SR	623.8	SS	328.7
RDE	-.5139	RRA	-.1620	RC3	.0754	FAU	.08763	RRT	.1614	RRF	-.1962	RTF	-.8216	CRT	-.4128	CRS	.9180	CST	-.6445
FDE	.3561	FRA	-.2926	FC3	-3.3719	BSP	5905	SGB	2004.8	R23	-.0466	R13	-.8228	LSA	710.7	MSA	268.2	SSA	77.2
BDE	.5280	BRA	.6725	BC3	1.7898	FSP	812	SG1	1897.2	SG2	648.1	THA	3.63	EL1	637.8	EL2	261.1	ALF	103.24

LAUNCH DATE DEC 21 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 370.706 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	34.337	GAL	3.89	AZL	89.12	HCA	114.45	SMA	212.44	ECC	.31400	INC	.8804	V1	30.275
RP	240.93	LAP	.80	LOP	203.62	VP	21.840	GAP	16.65	AZP	90.36	TAL	16.35	TAP	130.80	RCA	145.73	APO	279.15	V2	22.791
RC	160.729	GL	6.43	GP	3.34	ZAL	58.69	ZAP	166.74	ETS	164.20	ZAE	154.43	ETE	6.63	ZAC	93.31	ETC	255.85	CLP	167.16

PLANETOCENTRIC CONIC

C3	22.065	VHL	4.697	DLA	18.33	RAL	152.16	RAD	6567.9	VEL	11.977	PTH	2.13	VHP	8.161	DPA	-.17	RAP	191.75	ECC	1.3631

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 58 34	2847.80	-28.30	85.32	21.99	91.06	13 46 2	2247.8	-27.85	76.68
90.00	6 3 8	4272.18	2.37	176.01	14.49	61.77	7 14 20	3672.2	-1.42	169.38
100.00	14 30 52	2550.15	-29.80	63.37	21.93	92.51	15 13 22	1950.2	-29.13	54.63
100.00	7 13 31	4045.07	3.68	158.59	13.76	60.31	8 20 56	3445.1	-.30	152.06
110.00	16 3 1	2261.83	-33.66	41.12	21.58	96.37	16 40 43	1661.8	-32.41	32.11
110.00	7 57 51	3906.15	6.97	146.01	11.72	56.45	9 2 57	3306.2	2.52	139.77

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.1008	TRA	-.6272	TC3	1.8433	BAU	.5444	SGT 1914.0	SGR 656.0	SG3 296.2	ST	276.2	SR 622.8	SS 349.6
RDE	-.5082	RRA	-.1543	RC3	.0868	FAU	.09130	RRT .1791	RRF -.2105	RTF -.8238	CRT	-.3588	CRS .9100	CST -.6206
FDE	.3820	FRA	-.3534	FC3	-3.5823	BSP	6145	SGB 2023.3	R23 -.0448	R13 -.8251	LSA	713.7	MSA 265.7	SSA 79.8
BDE	.5181	BRA	.6459	BC3	1.8453	FSP	860	SG1 1918.1	SG2 644.0	THA 3.96	EL1	632.2	EL2 253.9	ALF 100.81

LAUNCH DATE DEC 21 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 373.792 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	34.258	GAL	3.99	AZL	89.14	HCA	115.39	SMA	210.62	ECC	.30853	INC	.8568	V1	30.275
RP	240.64	LAP	.77	LOP	204.56	VP	21.747	GAP	16.05	AZP	90.37	TAL	17.02	TAP	132.40	RCA	145.64	APO	275.61	V2	22.821
RC	163.052	GL	6.30	GP	3.45	ZAL	57.58	ZAP	166.01	ETS	164.54	ZAE	154.87	ETE	7.14	ZAC	93.46	ETC	255.84	CLP	166.44

PLANETOCENTRIC CONIC

C3	21.673	VHL	4.655	DLA	18.59	RAL	151.01	RAD	6567.9	VEL	11.960	PTH	2.13	VHP	7.959	DPA	-.16	RAP	191.99	ECC	1.3567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 51 11	2854.05	-28.31	85.77	20.62	90.83	13 38 45	2254.0	-27.89	77.13
90.00	6 1 22	4257.28	1.89	175.18	13.15	61.74	7 12 20	3657.3	-1.91	168.55
100.00	14 23 46	2555.53	-29.81	63.77	20.57	92.30	15 6 21	1955.5	-29.17	55.02
100.00	7 11 29	4031.03	3.20	157.81	12.42	60.26	8 18 40	3431.0	-.78	151.29
110.00	15 56 27	2265.55	-33.68	41.41	20.23	96.20	16 34 12	1665.5	-32.46	32.39
110.00	7 55 17	3893.78	6.51	145.36	10.37	56.37	9 0 11	3293.8	2.04	139.12

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.0836	TRA	-.5992	TC3	1.9007	BAU	.5515	SGT 1936.0	SGR 654.2	SG3 312.4	ST	260.5	SR 621.7	SS 371.6
RDE	-.5030	RRA	-.1466	RC3	.0990	FAU	.09516	RRT .1956	RRF -.2262	RTF -.8270	CRT	-.3098	CRS .9022	CST -.5984
FDE	.4096	FRA	-.4182	FC3	-3.8009	BSP	6321	SGB 2043.5	R23 -.0455	R13 -.8283	LSA	718.7	MSA 262.9	SSA 82.1
BDE	.5099	BRA	.6169	BC3	1.9033	FSP	913	SG1 1940.7	SG2 640.0	THA 4.24	EL1	627.8	EL2 245.3	ALF 98.74

LAUNCH DATE DEC 21 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 376.928 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	34.183	GAL	4.09	AZL	89.17	HCA	116.32	SMA	208.92	ECC	.30337	INC	.8329	V1	30.275
RP	240.34	LAP	.75	LOP	205.49	VP	21.660	GAP	15.46	AZP	90.37	TAL	17.67	TAP	134.00	RCA	145.54	APO	272.30	V2	22.851
RC	165.375	GL	6.16	GP	3.56	ZAL	56.48	ZAP	165.27	ETS	164.85	ZAE	155.36	ETE	7.68	ZAC	93.62	ETC	255.83	CLP	165.70

PLANETOCENTRIC CONIC

C3	21.321	VHL	4.617	DLA	18.84	RAL	149.89	RAD	6567.9	VEL	11.946	PTH	2.13	VHP	7.763	DPA	-.14	RAP	192.21	ECC	1.3509

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 44 5	2859.91	-28.31	86.20	19.29	90.62	13 31 45	2259.9	-27.92	77.56
90.00	5 59 30	4243.51	1.44	174.41	11.85	61.72	7 10 13	3643.5	-2.35	167.78
100.00	14 16 55	2560.56	-29.83	64.14	19.25	92.11	14 59 35	1960.6	-29.21	55.39
100.00	7 9 21	4018.09	2.77	157.10	11.12	60.22	8 16 19	3418.1	-1.22	150.58
110.00	15 50 5	2269.02	-33.71	41.67	18.92	96.05	16 27 54	1669.0	-32.51	32.65
110.00	7 52 39	3882.39	6.08	144.76	9.06	56.30	8 57 22	3282.4	1.61	138.52

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.0691	TRA	-.5698	TC3	1.9577	BAU	.5589	SGT 1958.1	SGR 652.5	SG3 329.4	ST	246.0	SR 620.4	SS 392.9
RDE	-.4980	RRA	-.1388	RC3	.1121	FAU	.09918	RRT .2114	RRF -.2427	RTF -.8306	CRT	-.2660	CRS .8942	CST -.5787
FDE	.4370	FRA	-.4873	FC3	-4.0270	BSP	6454	SGB 2063.9	R23 -.0475	R13 -.8320	LSA	724.5	MSA 260.3	SSA 84.2
BDE	.5028	BRA	.5865	BC3	1.9609	FSP	968	SG1 1963.5	SG2 635.9	THA 4.50	EL1	624.4	EL2 235.6	ALF 97.03

LAUNCH DATE DEC 21 1964 FLIGHT TIME 162.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 380.111 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	34.112	GAL	4.18	AZL	89.19	HCA	117.26	SMA	207.33	ECC	.29849	INC	.8085	V1	30.275
RP	240.04	LAP	.72	LOP	206.43	VP	21.579	GAP	14.87	AZP	90.37	TAL	18.33	TAP	135.59	RCA	145.44	APO	269.21	V2	22.881
RC	167.697	GL	6.01	GP	3.68	ZAL	55.41	ZAP	164.51	ETS	165.12	ZAE	155.87	ETE	8.27	ZAC	93.77	ETC	255.83	CLP	164.94

PLANETOCENTRIC CONIC

C3	21.004	VHL	4.583	DLA	19.06	RAL	148.78	RAD	6567.9	VEL	11.932	PTH	2.12	VHP	7.571	DPA	-.11	RAP	192.43	ECC	1.3457

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 37 15	2865.32	-28.31	86.60	18.00	90.42	13 25 1	2265.3	-27.96	77.95
90.00	5 57 29	4230.90	1.04	173.70	10.60	61.70	7 8 0	3630.9	-2.75	167.07
100.00	14 10 19	2565.20	-29.84	64.49	17.96	91.92	14 53 5	1965.2	-29.25	55.73
100.00	7 7 6	4006.25	2.37	156.45	9.86	60.19	8 13 53	3406.2	-1.62	149.93
110.00	15 43 58	2272.22	-33.73	41.92	17.65	95.90	16 21 50	1672.2	-32.55	32.89
110.00	7 49 57	3872.00	5.69	144.21	7.79	56.24	8 54 29	3272.0	1.21	137.98

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	.0556	TRA	-.5403	TC3	2.0134	BAU	.5665	SGT 1980.3	SGR 650.9	SG3 347.2	ST	232.1	SR 619.0	SS 415.3
RDE	-.4933	RRA	-.1309	RC3	.1260	FAU	.10341	RRT .2281	RRF -.2608	RTF -.8343	CRT	-.2196	CRS .8867	CST -.5546
FDE	.4663	FRA	-.5603	FC3	-4.2621	BSP	6568	SGB 2084.5	R23 -.0503	R13 -.8359	LSA	731.6	MSA 258.5	SSA 85.8
BDE	.4965	BRA	.5560	BC3	2.0174	FSP	1028	SG1 1986.5	SG2 631.8	THA 4.77	EL1	621.4	EL2 225.6	ALF 95.43

LAUNCH DATE DEC 21 1964 FLIGHT TIME 164.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 383.338 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	34.043	GAL	4.28	AZL	89.22	HCA	118.20	SMA	205.84	ECC	.29389	INC	.7835	V1	30.275
RP	239.73	LAP	.69	LOP	207.38	VP	21.504	GAP	14.29	AZP	90.37	TAL	18.97	TAP	137.17	RCA	145.34	APO	266.33	V2	22.912
RC	170.016	GL	5.85	GP	3.80	ZAL	54.37	ZAP	163.74	ETS	165.37	ZAE	156.42	ETE	8.92	ZAC	93.93	ETC	255.82	CLP	164.18

PLANETOCENTRIC CONIC

C3	20.720	VHL	4.552	DLA	19.27	RAL	147.69	RAD	6567.8	VEL	11.921	PTH	2.12	VHP	7.385	DPA	-.07	RAP	192.64	ECC	1.3410

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 30 44	2870.24	-28.32	86.96	16.75	90.24	13 18 34	2270.2	-27.98	78.31
90.00	5 55 22	4219.44	.67	173.06	9.37	61.69	7 5 41	3619.4	-3.12	166.43
100.00	14 4 2	2569.41	-29.85	64.80	16.72	91.76	14 46 51	1969.4	-29.28	56.04
100.00	7 4 45	3995.50	2.00	155.86	8.63	60.17	8 11 21	3395.5	-1.98	149.34
110.00	15 38 6	2275.10	-33.75	42.14	16.41	95.77	16 16 1	1675.1	-32.58	33.10
110.00	7 47 10	3862.58	5.33	143.71	6.56	56.18	8 51 33	3262.6	.85	137.49

DIFFERENTIAL CORRECTIONS

TDE	.0442	TRA	-.5105	TC3	2.0669	BAU	.5739
RDE	-.4889	RRA	-.1228	RC3	.1409	FAU	.10786
FDE	.4950	FRA	-.6388	FC3	-4.5068	BSP	6660
BDE	.4909	BRA	.5251	BC3	2.0717	FSP	1090

MID-COURSE EXECUTION ACCURACY

SGT	2001.8	SGR	649.6	SG3	366.0		
RRT	.2450	RRF	-.2799	RTF	-.8379		
SGB	2104.6	R23	-.0538	R13	-.8397		
SG1	2008.8	SG2	627.6	THA	5.04		

ORBIT DETERMINATION ACCURACY

ST	219.0	SR	617.3	SS	436.8
CRT	-.1772	CRS	.8787	CST	-.5326
LSA	738.9	MSA	257.5	SSA	87.1
EL1	618.7	EL2	215.1	ALF	94.09

LAUNCH DATE DEC 21 1964 FLIGHT TIME 166.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 386.605 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.979	GAL	4.37	AZL	89.24	HCA	119.15	SMA	204.44	ECC	.28955	INC	.7581	V1	30.275
RP	239.42	LAP	.66	LOP	208.32	VP	21.435	GAP	13.71	AZP	90.37	TAL	19.60	TAP	138.75	RCA	145.24	APO	263.63	V2	22.943
RC	172.331	GL	5.69	GP	3.93	ZAL	53.36	ZAP	162.94	ETS	165.59	ZAE	157.00	ETE	9.62	ZAC	94.09	ETC	255.82	CLP	163.39

PLANETOCENTRIC CONIC

C3	20.465	VHL	4.524	DLA	19.45	RAL	146.63	RAD	6567.8	VEL	11.910	PTH	2.12	VHP	7.203	DPA	-.02	RAP	192.84	ECC	1.3368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 24 32	2874.63	-28.32	87.28	15.53	90.08	13 12 27	2274.6	-28.01	78.63
90.00	5 53 6	4209.14	.33	172.49	8.19	61.68	7 3 15	3609.1	-3.45	165.86
100.00	13 58 2	2573.15	-29.85	65.08	15.50	91.61	14 40 55	1973.2	-29.31	56.31
100.00	7 2 18	3985.85	1.68	155.33	7.44	60.15	8 8 44	3385.8	-2.31	148.81
110.00	15 32 29	2277.64	-33.77	42.34	15.21	95.66	16 10 26	1677.6	-32.62	33.29
110.00	7 44 20	3854.12	5.01	143.27	5.37	56.14	8 48 34	3254.1	.53	137.05

DIFFERENTIAL CORRECTIONS

TDE	.0335	TRA	-.4808	TC3	2.1165	BAU	.5806
RDE	-.4846	RRA	-.1145	RC3	.1568	FAU	.11254
FDE	.5246	FRA	-.7229	FC3	-4.7608	BSP	6748
BDE	.4858	BRA	.4943	BC3	2.1223	FSP	1156

MID-COURSE EXECUTION ACCURACY

SGT	2021.3	SGR	648.5	SG3	385.8		
RRT	.2631	RRF	-.3002	RTF	-.8413		
SGB	2122.8	R23	-.0577	R13	-.8433		
SG1	2029.3	SG2	623.2	THA	5.33		

ORBIT DETERMINATION ACCURACY

ST	206.5	SR	615.5	SS	458.6
CRT	-.1328	CRS	.8707	CST	-.5075
LSA	746.9	MSA	257.5	SSA	87.9
EL1	616.2	EL2	204.4	ALF	92.87

LAUNCH DATE DEC 21 1964 FLIGHT TIME 168.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 389.911 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.917	GAL	4.45	AZL	89.27	HCA	120.10	SMA	203.12	ECC	.28545	INC	.7321	V1	30.275
RP	239.11	LAP	.63	LOP	209.27	VP	21.371	GAP	13.15	AZP	90.37	TAL	20.23	TAP	140.33	RCA	145.14	APO	261.11	V2	22.975
RC	174.639	GL	5.51	GP	4.06	ZAL	52.38	ZAP	162.13	ETS	165.79	ZAE	157.61	ETE	10.39	ZAC	94.25	ETC	255.81	CLP	162.59

PLANETOCENTRIC CONIC

C3	20.237	VHL	4.499	DLA	19.60	RAL	145.60	RAD	6567.8	VEL	11.900	PTH	2.11	VHP	7.026	DPA	.05	RAP	193.02	ECC	1.3330

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 18 40	2878.43	-28.32	87.56	14.35	89.94	13 6 38	2278.4	-28.03	78.90
90.00	5 50 43	4199.98	.04	171.98	7.04	61.68	7 0 43	3600.0	-3.75	165.35
100.00	13 52 20	2576.38	-29.86	65.32	14.33	91.49	14 35 16	1976.4	-29.33	56.55
100.00	6 59 44	3977.27	1.39	154.86	6.29	60.14	8 6 1	3377.3	-2.60	148.34
110.00	15 27 8	2279.79	-33.78	42.51	14.05	95.56	16 5 8	1679.8	-32.64	33.46
110.00	7 41 25	3846.62	4.72	142.88	4.22	56.11	8 45 32	3246.6	.24	136.66

DIFFERENTIAL CORRECTIONS

TDE	.0239	TRA	-.4521	TC3	2.1635	BAU	.5872
RDE	-.4806	RRA	-.1060	RC3	.1737	FAU	.11747
FDE	.5545	FRA	-.8112	FC3	-5.0252	BSP	6821
BDE	.4811	BRA	.4644	BC3	2.1705	FSP	1225

MID-COURSE EXECUTION ACCURACY

SGT	2040.5	SGR	647.8	SG3	406.6		
RRT	.2823	RRF	-.3220	RTF	-.8445		
SGB	2140.8	R23	-.0619	R13	-.8467		
SG1	2049.5	SG2	618.7	THA	5.64		

ORBIT DETERMINATION ACCURACY

ST	194.8	SR	613.6	SS	480.1
CRT	-.0876	CRS	.8629	CST	-.4797
LSA	755.2	MSA	258.5	SSA	88.2
EL1	613.8	EL2	194.0	ALF	91.77

LAUNCH DATE DEC 21 1964 FLIGHT TIME 170.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 393.252 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.858	GAL	4.54	AZL	89.29	HCA	121.05	SMA	201.89	ECC	.28159	INC	.7058	V1	30.275
RP	238.79	LAP	.60	LOP	210.22	VP	21.312	GAP	12.59	AZP	90.36	TAL	20.84	TAP	141.89	RCA	145.04	APO	258.74	V2	23.007
RC	176.939	GL	5.33	GP	4.20	ZAL	51.43	ZAP	161.30	ETS	165.98	ZAE	158.25	ETE	11.24	ZAC	94.42	ETC	255.81	CLP	161.77

PLANETOCENTRIC CONIC

C3	20.034	VHL	4.476	DLA	19.74	RAL	144.59	RAD	6567.8	VEL	11.892	PTH	2.11	VHP	6.854	DPA	.12	RAP	193.20	ECC	1.3297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 13 7	2881.65	-28.32	87.79	13.21	89.82	13 1 9	2281.6	-28.04	79.14
90.00	5 48 13	4191.95	-.22	171.53	5.93	61.68	6 58 4	3592.0	-4.00	164.89
100.00	13 46 57	2579.08	-29.86	65.52	13.19	91.38	14 29 56	1979.1	-29.35	56.75
100.00	6 57 4	3969.75	1.13	154.45	5.18	60.13	8 3 14	3369.7	-2.85	147.92
110.00	15 22 3	2281.56	-33.79	42.64	12.92	95.48	16 0 4	1681.6	-32.67	33.59
110.00	7 38 27	3840.04	4.47	142.53	3.10	56.08	8 42 27	3240.0	-.01	136.32

DIFFERENTIAL CORRECTIONS

TDE	.0197	TRA	-.4193	TC3	2.2150	BAU	.5955
RDE	-.4766	RRA	-.0973	RC3	.1916	FAU	.12263
FDE	.5843	FRA	-.9062	FC3	-5.2995	BSP	6793
BDE	.4770	BRA	.4304	BC3	2.2232	FSP	1298

MID-COURSE EXECUTION ACCURACY

SGT	2063.3	SGR	647.5	SG3	428.4		
RRT	.2995	RRF	-.3449	RTF	-.8489		
SGB	2162.5	R23	-.0690	R13	-.8514		
SG1	2073.3	SG2	614.8	THA	5.89		

ORBIT DETERMINATION ACCURACY

ST	182.9	SR	611.5	SS	501.2
CRT	-.0745	CRS	.8549	CST	-.4761
LSA	764.0	MSA	258.9	SSA	88.5
EL1	611.6	EL2	182.3	ALF	91.40

LAUNCH DATE DEC 21 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 396.626 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.802 GAL 4.62 AZL 89.32 HCA 122.00 SMA 200.73 ECC .27794 INC .6785 V1 30.275
RP 238.47 LAP .58 LOP 211.17 VP 21.258 GAP 12.03 AZP 90.36 TAL 21.45 TAP 143.44 RCA 144.94 APO 256.53 V2 23.040
RC 179.231 GL 5.14 GP 4.35 ZAL 50.51 ZAP 160.46 ETS 166.14 ZAE 158.91 ETE 12.18 ZAC 94.59 ETC 255.80 CLP 160.93

PLANETOCENTRIC CONIC

C3 19.852 VHL 4.456 DLA 19.85 RAL 143.61 RAD 6567.8 VEL 11.884 PTH 2.11 VHP 6.687 DPA .21 RAP 193.36 ECC 1.3267

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 7 56	2884.19	-28.32	87.98	12.11	89.73	12 56 1	2284.2	-28.05	79.32
90.00	5 45 35	4185.07	-.44	171.15	4.86	61.69	6 55 20	3585.1	-4.23	164.51
100.00	13 41 54	2581.20	-29.87	65.67	12.09	91.30	14 24 55	1981.2	-29.37	56.90
100.00	6 54 18	3963.30	.91	154.09	4.11	60.12	8 0 21	3363.3	-3.07	147.57
110.00	15 17 15	2282.89	-33.80	42.75	11.82	95.42	15 55 18	1682.9	-32.68	33.69
110.00	7 35 26	3834.37	4.26	142.23	2.02	56.05	8 39 21	3234.4	-.23	136.02

DIFFERENTIAL CORRECTIONS
TDE .0072 TRA -.3968 TC3 2.2442 BAU .5982
RDE -.4729 RRA -.0883 RC3 .2107 FAU .12802
FDE .6156 FRA-1.0053 FC3-5.5830 BSP 6969
BDE .4729 BRA .4065 BC3 2.2541 FSP 1375

MID-COURSE EXECUTION ACCURACY
SGT 2072.1 SGR 647.8 SG3 451.2
RRT .3243 RRF -.3695 RTF -.8499
SGB 2171.0 R23 -.0715 R13 -.8527
SG1 2083.7 SG2 609.3 THA 6.33

ORBIT DETERMINATION ACCURACY
ST 173.7 SR 609.2 SS 522.8
CRT .0055 CRS .8476 CST -.4167
LSA 773.0 MSA 263.4 SSA 87.6
EL1 609.2 EL2 173.7 ALF 89.90

LAUNCH DATE DEC 21 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 400.032 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.749 GAL 4.69 AZL 89.35 HCA 122.95 SMA 199.64 ECC .27450 INC .6508 V1 30.275
RP 238.14 LAP .55 LOP 212.12 VP 21.209 GAP 11.48 AZP 90.35 TAL 22.04 TAP 144.99 RCA 144.84 APO 254.45 V2 23.073
RC 181.513 GL 4.94 GP 4.51 ZAL 49.61 ZAP 159.59 ETS 166.29 ZAE 159.61 ETE 13.22 ZAC 94.76 ETC 255.80 CLP 160.07

PLANETOCENTRIC CONIC

C3 19.690 VHL 4.437 DLA 19.94 RAL 142.66 RAD 6567.8 VEL 11.877 PTH 2.11 VHP 6.524 DPA .31 RAP 193.51 ECC 1.3241

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 3 6	2886.12	-28.32	88.12	11.04	89.66	12 51 12	2286.1	-28.06	79.46
90.00	5 42 49	4179.27	-.63	170.82	3.82	61.69	6 52 28	3579.3	-4.41	164.18
100.00	13 37 10	2582.76	-29.87	65.79	11.03	91.24	14 20 13	1982.8	-29.38	57.02
100.00	6 51 26	3957.86	.73	153.79	3.07	60.12	7 57 23	3357.9	-3.25	147.27
110.00	15 12 44	2283.80	-33.81	42.82	10.76	95.38	15 50 47	1683.8	-32.70	33.76
110.00	7 32 21	3829.58	4.08	141.98	.98	56.03	8 36 11	3229.6	-.41	135.77

DIFFERENTIAL CORRECTIONS
TDE .0086 TRA -.3620 TC3 2.2952 BAU .6072
RDE -.4691 RRA -.0788 RC3 .2312 FAU .13380
FDE .6439 FRA-1.1139 FC3-5.8830 BSP 6843
BDE .4692 BRA .3704 BC3 2.3068 FSP 1453

MID-COURSE EXECUTION ACCURACY
SGT 2096.7 SGR 648.6 SG3 475.5
RRT .3419 RRF -.3948 RTF -.8548
SGB 2194.8 R23 -.0807 R13 -.8580
SG1 2109.5 SG2 605.8 THA 6.58

ORBIT DETERMINATION ACCURACY
ST 161.6 SR 606.6 SS 542.5
CRT -.0153 CRS .8386 CST -.4380
LSA 781.5 MSA 264.5 SSA 87.6
EL1 606.6 EL2 161.6 ALF 90.25

LAUNCH DATE DEC 21 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 403.466 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.698 GAL 4.77 AZL 89.38 HCA 123.91 SMA 198.62 ECC .27126 INC .6223 V1 30.275
RP 237.81 LAP .52 LOP 213.08 VP 21.165 GAP 10.95 AZP 90.35 TAL 22.61 TAP 146.52 RCA 144.74 APO 252.50 V2 23.106
RC 183.786 GL 4.73 GP 4.67 ZAL 48.76 ZAP 158.70 ETS 166.42 ZAE 160.32 ETE 14.38 ZAC 94.94 ETC 255.79 CLP 159.19

PLANETOCENTRIC CONIC

C3 19.546 VHL 4.421 DLA 20.01 RAL 141.74 RAD 6567.8 VEL 11.871 PTH 2.11 VHP 6.365 DPA .43 RAP 193.65 ECC 1.3217

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 58 37	2887.31	-28.31	88.21	10.02	89.61	12 46 45	2287.3	-28.07	79.55
90.00	5 39 56	4174.59	-.78	170.56	2.82	61.69	6 49 31	3574.6	-4.56	163.92
100.00	13 32 47	2583.68	-29.87	65.86	10.00	91.20	14 15 51	1983.7	-29.38	57.09
100.00	6 48 28	3953.45	.58	153.55	2.06	60.11	7 54 21	3353.4	-3.40	147.03
110.00	15 8 30	2284.22	-33.81	42.85	9.74	95.36	15 46 34	1684.2	-32.70	33.79
110.00	7 29 14	3825.67	3.93	141.78	359.97	56.02	8 33 0	3225.7	-.56	135.57

DIFFERENTIAL CORRECTIONS
TDE -.0045 TRA -.3436 TC3 2.3108 BAU .6075
RDE -.4656 RRA -.0691 RC3 .2527 FAU .13969
FDE .6765 FRA-1.2251 FC3-6.1873 BSP 7069
BDE .4656 BRA .3505 BC3 2.3246 FSP 1541

MID-COURSE EXECUTION ACCURACY
SGT 2097.5 SGR 650.4 SG3 500.5
RRT .3703 RRF -.4221 RTF -.8545
SGB 2196.1 R23 -.0834 R13 -.8580
SG1 2112.5 SG2 599.9 THA 7.13

ORBIT DETERMINATION ACCURACY
ST 154.9 SR 604.1 SS 564.2
CRT .0850 CRS .8319 CST -.3583
LSA 791.5 MSA 270.8 SSA 85.9
EL1 604.2 EL2 154.3 ALF 88.66

LAUNCH DATE DEC 21 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 406.930 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.649 GAL 4.84 AZL 89.41 HCA 124.87 SMA 197.66 ECC .26820 INC .5931 V1 30.275
RP 237.48 LAP .49 LOP 214.04 VP 21.125 GAP 10.41 AZP 90.34 TAL 23.18 TAP 148.04 RCA 144.65 APO 250.67 V2 23.140
RC 186.049 GL 4.52 GP 4.84 ZAL 47.93 ZAP 157.78 ETS 166.54 ZAE 161.07 ETE 15.68 ZAC 95.12 ETC 255.79 CLP 158.29

PLANETOCENTRIC CONIC

C3 19.419 VHL 4.407 DLA 20.06 RAL 140.84 RAD 6567.8 VEL 11.866 PTH 2.10 VHP 6.211 DPA .56 RAP 193.78 ECC 1.3196

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 54 29	2887.85	-28.31	88.25	9.02	89.59	12 42 37	2287.9	-28.07	79.59
90.00	5 36 56	4170.95	-.90	170.36	1.85	61.70	6 46 27	3570.9	-4.68	163.72
100.00	13 28 43	2584.03	-29.87	65.88	9.01	91.19	14 11 47	1984.0	-29.39	57.11
100.00	6 45 24	3950.00	.46	153.36	1.09	60.11	7 51 14	3350.0	-3.52	146.84
110.00	15 4 32	2284.22	-33.81	42.85	8.74	95.36	15 42 37	1684.2	-32.70	33.79
110.00	7 26 3	3822.58	3.81	141.61	359.00	56.00	8 29 46	3222.6	-.68	135.41

DIFFERENTIAL CORRECTIONS
TDE .0007 TRA -.3092 TC3 2.3573 BAU .6162
RDE -.4619 RRA -.0588 RC3 .2759 FAU .14611
FDE .7037 FRA-1.3474 FC3-6.5140 BSP 6882
BDE .4619 BRA .3148 BC3 2.3734 FSP 1624

MID-COURSE EXECUTION ACCURACY
SGT 2121.2 SGR 653.0 SG3 527.5
RRT .3895 RRF -.4499 RTF -.8593
SGB 2219.5 R23 -.0938 R13 -.8633
SG1 2137.7 SG2 596.8 THA 7.42

ORBIT DETERMINATION ACCURACY
ST 142.7 SR 601.1 SS 582.9
CRT .0358 CRS .8226 CST -.3992
LSA 799.8 MSA 272.9 SSA 85.5
EL1 601.1 EL2 142.6 ALF 89.48

LAUNCH DATE DEC 21 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 410.418 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.603 GAL 4.91 AZL 89.44 HCA 125.83 SMA 196.75 ECC .26532 INC .5631 V1 30.275
RP 237.15 LAP .46 LOP 215.00 VP 21.089 GAP 9.89 AZP 90.33 TAL 23.72 TAP 149.55 RCA 144.55 APO 248.96 V2 23.174
RC 188.300 GL 4.30 GP 5.02 ZAL 47.14 ZAP 156.85 ETS 166.66 ZAE 161.83 ETE 17.15 ZAC 95.30 ETC 255.78 CLP 157.37

PLANETOCENTRIC CONIC

C3 19.305 VHL 4.394 DLA 20.09 RAL 139.98 RAD 6567.8 VEL 11.861 PTH 2.10 VHP 6.061 DPA .70 RAP 193.89 ECC 1.3177

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 50 44	2887.62	-28.31	88.23	8.06	89.60	12 38 52	2287.6	-28.07	79.57
90.00	5 33 49	4168.39	-.98	170.22	.91	61.70	6 43 17	3568.4	-4.76	163.57
100.00	13 25 0	2583.69	-29.87	65.86	8.05	91.20	14 8 3	1983.7	-29.38	57.09
100.00	6 42 15	3947.55	.38	153.23	.16	60.11	7 48 2	3347.6	-3.60	146.70
110.00	15 0 53	2283.68	-33.81	42.81	7.78	95.38	15 38 57	1683.7	-32.69	33.75
110.00	7 22 51	3820.33	3.72	141.50	358.07	56.00	8 26 31	3220.3	-.76	135.29

DIFFERENTIAL CORRECTIONS
TDE -.0139 TRA -.2968 TC3 2.3562 BAU .6130
RDE -.4586 RRA -.0483 RC3 .2999 FAU .15247
FDE .7384 FRA-1.4693 FC3-6.8379 BSP 7180
BDE .4588 BRA .3007 BC3 2.3752 FSP 1727

MID-COURSE EXECUTION ACCURACY
SGT 2111.2 SGR 656.9 SG3 554.5
RRT .4212 RRF -.4796 RTF -.8574
SGB 2211.1 R23 -.0968 R13 -.8619
SG1 2130.8 SG2 590.4 THA 8.09

ORBIT DETERMINATION ACCURACY
ST 139.6 SR 598.4 SS 604.9
CRT .1658 CRS .8173 CST -.2915
LSA 811.1 MSA 280.3 SSA 83.3
EL1 598.9 EL2 137.5 ALF 87.66

LAUNCH DATE DEC 21 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 413.932 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.560 GAL 4.97 AZL 89.47 HCA 126.80 SMA 195.90 ECC .26261 INC .5324 V1 30.275
RP 236.81 LAP .43 LOP 215.97 VP 21.057 GAP 9.37 AZP 90.32 TAL 24.25 TAP 151.05 RCA 144.46 APO 247.34 V2 23.209
RC 190.540 GL 4.07 GP 5.21 ZAL 46.38 ZAP 155.89 ETS 166.76 ZAE 162.61 ETE 18.81 ZAC 95.49 ETC 255.78 CLP 156.43

PLANETOCENTRIC CONIC

C3 19.204 VHL 4.382 DLA 20.10 RAL 139.15 RAD 6567.8 VEL 11.857 PTH 2.10 VHP 5.915 DPA .87 RAP 193.99 ECC 1.3160

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 47 20	2886.70	-28.31	88.16	7.14	89.64	12 35 27	2286.7	-28.07	79.51
90.00	5 30 35	4166.83	-1.03	170.13	.01	61.70	6 40 2	3566.8	-4.81	163.49
100.00	13 21 36	2582.74	-29.87	65.79	7.12	91.24	14 4 39	1982.7	-29.38	57.02
100.00	6 39 0	3946.03	.33	153.15	359.25	60.11	7 44 46	3346.0	-3.65	146.62
110.00	14 57 30	2282.67	-33.80	42.73	6.85	95.43	15 35 33	1682.7	-32.68	33.67
110.00	7 19 35	3818.86	3.67	141.42	357.17	55.99	8 23 14	3218.9	-.82	135.21

DIFFERENTIAL CORRECTIONS
TDE -.0164 TRA -.2747 TC3 2.3728 BAU .6149
RDE -.4551 RRA -.0372 RC3 .3257 FAU .15933
FDE .7683 FRA-1.6024 FC3-7.1827 BSP 7213
BDE .4554 BRA .2773 BC3 2.3951 FSP 1827

MID-COURSE EXECUTION ACCURACY
SGT 2114.7 SGR 662.0 SG3 583.5
RRT .4474 RRF -.5098 RTF -.8584
SGB 2215.9 R23 -.1048 R13 -.8635
SG1 2137.0 SG2 585.9 THA 8.63

ORBIT DETERMINATION ACCURACY
ST 132.4 SR 595.3 SS 624.4
CRT .1914 CRS .8098 CST -.2688
LSA 820.8 MSA 285.2 SSA 82.0
EL1 595.9 EL2 129.8 ALF 87.44

LAUNCH DATE DEC 21 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 417.469 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.518 GAL 5.04 AZL 89.50 HCA 127.76 SMA 195.10 ECC .26004 INC .5007 V1 30.275
RP 236.46 LAP .40 LOP 216.93 VP 21.030 GAP 8.86 AZP 90.31 TAL 24.77 TAP 152.53 RCA 144.36 APO 245.83 V2 23.244
RC 192.768 GL 3.83 GP 5.41 ZAL 45.65 ZAP 154.91 ETS 166.85 ZAE 163.40 ETE 20.69 ZAC 95.68 ETC 255.77 CLP 155.46

PLANETOCENTRIC CONIC

C3 19.114 VHL 4.372 DLA 20.09 RAL 138.35 RAD 6567.8 VEL 11.853 PTH 2.10 VHP 5.773 DPA 1.05 RAP 194.07 ECC 1.3146

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 44 17	2885.05	-28.32	88.04	6.25	89.70	12 32 22	2285.1	-28.06	79.39
90.00	5 27 14	4166.28	-1.05	170.10	359.14	61.70	6 36 40	3566.3	-4.83	163.45
100.00	13 18 32	2581.14	-29.87	65.67	6.23	91.30	14 1 33	1981.1	-29.37	56.90
100.00	6 35 40	3945.42	.31	153.11	358.38	60.11	7 41 26	3345.4	-3.67	146.59
110.00	14 54 25	2281.17	-33.79	42.61	5.96	95.50	15 32 26	1681.2	-32.66	33.56
110.00	7 16 17	3818.16	3.64	141.38	356.30	55.99	8 19 55	3218.2	-.85	135.18

DIFFERENTIAL CORRECTIONS
TDE -.0174 TRA -.2534 TC3 2.3865 BAU .6165
RDE -.4516 RRA -.0255 RC3 .3533 FAU .16652
FDE .7977 FRA-1.7429 FC3-7.5420 BSP 7224
BDE .4520 BRA .2547 BC3 2.4125 FSP 1931

MID-COURSE EXECUTION ACCURACY
SGT 2116.6 SGR 668.6 SG3 614.0
RRT .4739 RRF -.5407 RTF -.8593
SGB 2219.7 R23 -.1137 R13 -.8652
SG1 2142.1 SG2 581.7 THA 9.20

ORBIT DETERMINATION ACCURACY
ST 125.3 SR 592.0 SS 643.5
CRT .2048 CRS .8023 CST -.2551
LSA 830.5 MSA 290.1 SSA 80.6
EL1 592.6 EL2 122.5 ALF 87.41

LAUNCH DATE DEC 21 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 421.029 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.479 GAL 5.10 AZL 89.53 HCA 128.73 SMA 194.34 ECC .25763 INC .4681 V1 30.275
RP 236.12 LAP .37 LOP 217.90 VP 21.006 GAP 8.36 AZP 90.29 TAL 25.27 TAP 154.00 RCA 144.27 APO 244.41 V2 23.279
RC 194.983 GL 3.58 GP 5.62 ZAL 44.95 ZAP 153.90 ETS 166.93 ZAE 164.21 ETE 22.86 ZAC 95.88 ETC 255.77 CLP 154.47

PLANETOCENTRIC CONIC

C3 19.035 VHL 4.363 DLA 20.05 RAL 137.57 RAD 6567.8 VEL 11.850 PTH 2.10 VHP 5.636 DPA 1.24 RAP 194.14 ECC 1.3133

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 41 35	2882.67	-28.32	87.87	5.38	89.78	12 29 37	2282.7	-28.05	79.21
90.00	5 23 46	4166.69	-1.04	170.12	358.29	61.70	6 33 13	3566.7	-4.81	163.48
100.00	13 15 47	2578.89	-29.86	65.50	5.37	91.39	13 58 46	1978.9	-29.35	56.74
100.00	6 32 15	3945.71	.32	153.13	357.54	60.11	7 38 1	3345.7	-3.66	146.60
110.00	14 51 35	2279.16	-33.78	42.46	5.08	95.59	15 29 35	1679.2	-32.64	33.41
110.00	7 12 56	3818.20	3.64	141.39	355.47	55.99	8 16 34	3218.2	-.85	135.18

DIFFERENTIAL CORRECTIONS
TDE -.0160 TRA -.2321 TC3 2.3980 BAU .6180
RDE -.4481 RRA -.0132 RC3 .3826 FAU .17407
FDE .8261 FRA-1.8921 FC3-7.9169 BSP 7183
BDE .4484 BRA .2325 BC3 2.4284 FSP 2037

MID-COURSE EXECUTION ACCURACY
SGT 2117.6 SGR 676.8 SG3 646.0
RRT .5002 RRF -.5723 RTF -.8603
SGB 2223.1 R23 -.1238 R13 -.8670
SG1 2146.6 SG2 578.1 THA 9.80

ORBIT DETERMINATION ACCURACY
ST 117.7 SR 588.6 SS 662.2
CRT .1954 CRS .7946 CST -.2588
LSA 840.0 MSA 294.7 SSA 79.3
EL1 589.1 EL2 115.4 ALF 87.67

LAUNCH DATE DEC 21 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 424.611 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.441	GAL	5.15	AZL	89.57	HCA	129.71	SMA	193.63	ECC	.25536	INC	.4345	V1	30.275
RP	235.77	LAP	.33	LOP	218.88	VP	20.986	GAP	7.87	AZP	90.28	TAL	25.75	TAP	155.46	RCA	144.18	APO	243.07	V2	23.315
RC	197.185	GL	3.33	GP	5.83	ZAL	44.28	ZAP	152.87	ETS	167.01	ZAE	165.02	ETE	25.35	ZAC	96.09	ETC	255.76	CLP	153.46

PLANETOCENTRIC CONIC

C3	18.965	VHL	4.355	DLA	20.00	RAL	136.83	RAD	6567.8	VEL	11.847	PTH	2.10	VHP	5.502	DPA	1.46	RAP	194.19	ECC	1.3121

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 39 13	2879.56	-28.32	87.64	4.55	89.90	12 27 13	2279.6	-28.03	78.99
90.00	5 20 12	4168.06	-.99	170.20	357.48	61.70	6 29 40	3568.1	-4.77	163.55
100.00	13 13 22	2575.99	-29.86	65.29	4.53	91.50	13 56 18	1976.0	-29.33	56.52
100.00	6 28 45	3946.86	.35	153.19	356.73	60.11	7 34 32	3346.9	-3.63	146.67
110.00	14 49 3	2276.64	-33.76	42.26	4.24	95.70	15 26 59	1676.6	-32.60	33.22
110.00	7 9 33	3818.98	3.67	141.43	354.66	55.99	8 13 12	3219.0	-.82	135.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0074	TRA	-.2067	TC3	2.4170	BAU	.6217	SGT	2125.0	SGR	686.9	SG3	680.1	ST	107.8	SR	584.6	SS	678.4
RDE	-.4443	RRA	.0000	RC3	.4142	FAU	.18214	RRT	.5242	RRF	-.6039	RTF	-.8624	CRT	.1016	CRS	.7848	CST	-.3264
FDE	.8484	FRA	-2.0533	FC3	-8.3149	BSP	7007	SGB	2233.2	R23	-.1360	R13	-.8701	LSA	847.5	MSA	298.9	SSA	78.3
BDE	.4444	BRA	.2067	BC3	2.4522	FSP	2141	SG1	2157.6	SG2	576.1	THA	10.36	EL1	584.7	EL2	107.2	ALF	88.89

LAUNCH DATE DEC 21 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 428.211 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.406	GAL	5.21	AZL	89.60	HCA	130.68	SMA	192.96	ECC	.25321	INC	.4000	V1	30.275
RP	235.42	LAP	.30	LOP	219.85	VP	20.969	GAP	7.38	AZP	90.26	TAL	26.21	TAP	156.90	RCA	144.10	APO	241.82	V2	23.351
RC	199.372	GL	3.06	GP	6.07	ZAL	43.65	ZAP	151.81	ETS	167.08	ZAE	165.83	ETE	28.22	ZAC	96.30	ETC	255.76	CLP	152.41

PLANETOCENTRIC CONIC

C3	18.901	VHL	4.348	DLA	19.93	RAL	136.12	RAD	6567.8	VEL	11.844	PTH	2.10	VHP	5.372	DPA	1.70	RAP	194.23	ECC	1.3111

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 37 14	2875.67	-28.32	87.35	3.75	90.04	12 25 9	2275.7	-28.01	78.70
90.00	5 16 32	4170.37	-.92	170.33	356.70	61.70	6 26 2	3570.4	-4.69	163.68
100.00	13 11 17	2572.38	-29.85	65.02	3.72	91.64	13 54 9	1972.4	-29.30	56.26
100.00	6 25 10	3948.88	.42	153.30	355.95	60.11	7 30 59	3348.9	-3.56	146.78
110.00	14 46 48	2273.55	-33.74	42.02	3.43	95.84	15 24 41	1673.6	-32.56	32.99
110.00	7 6 8	3820.48	3.73	141.50	353.89	56.00	8 9 49	3220.5	-.76	135.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0162	TRA	-.2011	TC3	2.3930	BAU	.6151	SGT	2099.8	SGR	699.2	SG3	713.6	ST	107.3	SR	581.4	SS	699.1
RDE	-.4411	RRA	.0133	RC3	.4464	FAU	.19000	RRT	.5549	RRF	-.6358	RTF	-.8590	CRT	.2025	CRS	.7813	CST	-.2454
FDE	.8829	FRA	-2.2094	FC3	-8.7027	BSP	7241	SGB	2213.2	R23	-.1453	R13	-.8679	LSA	860.1	MSA	304.3	SSA	76.5
BDE	.4414	BRA	.2016	BC3	2.4343	FSP	2276	SG1	2138.2	SG2	571.3	THA	11.29	EL1	581.9	EL2	105.0	ALF	87.79

LAUNCH DATE DEC 21 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 431.832 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.372	GAL	5.26	AZL	89.64	HCA	131.66	SMA	192.33	ECC	.25120	INC	.3638	V1	30.275
RP	235.06	LAP	.27	LOP	220.83	VP	20.956	GAP	6.90	AZP	90.24	TAL	26.66	TAP	158.32	RCA	144.02	APO	240.64	V2	23.387
RC	201.544	GL	2.79	GP	6.31	ZAL	43.05	ZAP	150.72	ETS	167.14	ZAE	166.62	ETE	31.57	ZAC	96.52	ETC	255.75	CLP	151.35

PLANETOCENTRIC CONIC

C3	18.844	VHL	4.341	DLA	19.83	RAL	135.44	RAD	6567.8	VEL	11.842	PTH	2.10	VHP	5.246	DPA	1.96	RAP	194.25	ECC	1.3101

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 35 33	2871.05	-28.32	87.02	2.98	90.21	12 23 25	2271.0	-27.99	78.37
90.00	5 12 45	4173.57	-.81	170.51	355.94	61.69	6 22 18	3573.6	-4.59	163.86
100.00	13 9 30	2568.13	-29.84	64.70	2.94	91.81	13 52 18	1968.1	-29.27	55.94
100.00	6 21 29	3951.73	.52	153.46	355.20	60.11	7 27 21	3351.7	-3.46	146.93
110.00	14 44 48	2269.96	-33.72	41.75	2.63	96.00	15 22 38	1670.0	-32.52	32.72
110.00	7 2 41	3822.66	3.81	141.62	353.15	56.00	8 6 23	3222.7	-.68	135.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0136	TRA	-.1870	TC3	2.3861	BAU	.6133	SGT	2088.3	SGR	713.9	SG3	749.8	ST	101.9	SR	577.6	SS	716.7
RDE	-.4374	RRA	.0278	RC3	.4816	FAU	.19854	RRT	.5811	RRF	-.6673	RTF	-.8581	CRT	.1732	CRS	.7744	CST	-.2648
FDE	.9089	FRA	-2.3812	FC3	-9.1213	BSP	7218	SGB	2207.0	R23	-.1578	R13	-.8685	LSA	869.9	MSA	308.6	SSA	75.2
BDE	.4377	BRA	.1890	BC3	2.4343	FSP	2401	SG1	2132.3	SG2	569.0	THA	12.11	EL1	577.9	EL2	100.3	ALF	88.20

LAUNCH DATE DEC 21 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 435.471 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.340	GAL	5.31	AZL	89.67	HCA	132.65	SMA	191.73	ECC	.24929	INC	.3271	V1	30.275
RP	234.71	LAP	.24	LOP	221.82	VP	20.946	GAP	6.43	AZP	90.22	TAL	27.09	TAP	159.73	RCA	143.94	APO	239.53	V2	23.424
RC	203.699	GL	2.51	GP	6.56	ZAL	42.48	ZAP	149.60	ETS	167.20	ZAE	167.39	ETE	35.47	ZAC	96.74	ETC	255.75	CLP	150.25

PLANETOCENTRIC CONIC

C3	18.793	VHL	4.335	DLA	19.72	RAL	134.78	RAD	6567.8	VEL	11.840	PTH	2.10	VHP	5.124	DPA	2.24	RAP	194.25	ECC	1.3093

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 34 13	2865.68	-28.31	86.62	2.23	90.41	12 21 59	2265.7	-27.96	77.98
90.00	5 8 52	4177.67	-.68	170.74	355.21	61.69	6 18 29	3577.7	-4.46	164.09
100.00	13 8 2	2563.19	-29.83	64.34	2.19	92.00	13 50 45	1963.2	-29.23	55.58
100.00	6 17 44	3955.39	.64	153.66	354.48	60.11	7 23 40	3355.4	-3.34	147.13
110.00	14 43 5	2265.81	-33.69	41.43	1.87	96.19	15 20 51	1665.8	-32.46	32.41
110.00	6 59 11	3825.53	3.92	141.77	352.43	56.02	8 2 56	3225.5	-.57	135.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0097	TRA	-.1750	TC3	2.3730	BAU	.6103	SGT	2072.1	SGR	731.2	SG3	787.3	ST	97.0	SR	573.7	SS	733.8
RDE	-.4337	RRA	.0431	RC3	.5188	FAU	.20735	RRT	.6059	RRF	-.6980	RTF	-.8565	CRT	.1227	CRS	.7681	CST	-.3009
FDE	.9338	FRA	-2.5600	FC3	-9.5516	BSP	7187	SGB	2197.3	R23	-.1717	R13	-.8688	LSA	879.7	MSA	312.5	SSA	73.9
BDE	.4339	BRA	.1803	BC3	2.4290	FSP	2533	SG1	2122.7	SG2	567.8	THA	13.02	EL1	573.8	EL2	96.2	ALF	88.78

LAUNCH DATE DEC 21 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 439.129 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.309 GAL 5.35 AZL 89.71 HCA 133.63 SMA 191.17 ECC .24750 INC .2887 V1 30.275
RP 234.35 LAP .21 LOP 222.80 VP 20.939 GAP 5.97 AZP 90.20 TAL 27.50 TAP 161.13 RCA 143.86 APO 238.49 V2 23.461
RC 205.837 GL 2.21 GP 6.83 ZAL 41.94 ZAP 148.45 ETS 167.26 ZAE 168.11 ETE 40.03 ZAC 96.97 ETC 255.74 CLP 149.12

PLANETOCENTRIC CONIC

C3 18.748 VHL 4.330 DLA 19.59 RAL 134.16 RAD 6567.8 VEL 11.838 PTH 2.10 VHP 5.006 DPA 2.54 RAP 194.24 ECC 1.3085

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 33 13	2859.57	-28.31	86.18	1.50	90.63	12 20 53	2259.6	-27.92	77.53
90.00	5 4 52	4182.63	-.52	171.01	354.51	61.69	6 14 35	3582.6	-4.30	164.37
100.00	13 6 52	2557.58	-29.82	63.92	1.46	92.22	13 49 30	1957.6	-29.19	55.17
100.00	6 13 54	3959.85	.79	153.90	353.78	60.12	7 19 54	3359.9	-3.19	147.38
110.00	14 41 37	2261.12	-33.65	41.06	1.12	96.40	15 19 19	1661.1	-32.40	32.05
110.00	6 55 38	3829.07	4.06	141.95	351.74	56.03	7 59 27	3229.1	-.43	135.74

DIFFERENTIAL CORRECTIONS
TDE -.0018 TRA -.1618 TC3 2.3612 BAU .6082
RDE -.4297 RRA .0595 RC3 .5590 FAU .21670
FDE .9524 FRA-2.7520 FC-10.0068 BSP 7070
BDE .4297 BRA .1724 BC3 2.4264 FSP 2662

MID-COURSE EXECUTION ACCURACY
SGT 2057.3 SGR 751.4 SG3 827.0
RRT .6288 RRF -.7278 RTF -.8553
SGB 2190.2 R23 -.1867 R13 -.8697
SG1 2115.2 SG2 568.2 THA 13.96

ORBIT DETERMINATION ACCURACY
ST 91.7 SR 569.3 SS 749.2
CRT .0097 CRS .7599 CST -.3787
LSA 887.9 MSA 316.4 SSA 72.8
EL1 569.3 EL2 91.7 ALF 89.91

LAUNCH DATE DEC 21 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 442.803 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.281 GAL 5.40 AZL 89.75 HCA 134.62 SMA 190.65 ECC .24581 INC .2491 V1 30.275
RP 233.98 LAP .18 LOP 223.79 VP 20.935 GAP 5.51 AZP 90.17 TAL 27.89 TAP 162.51 RCA 143.79 APO 237.51 V2 23.498
RC 207.958 GL 1.91 GP 7.12 ZAL 41.42 ZAP 147.27 ETS 167.32 ZAE 168.76 ETE 45.32 ZAC 97.21 ETC 255.74 CLP 147.97

PLANETOCENTRIC CONIC

C3 18.705 VHL 4.325 DLA 19.43 RAL 133.56 RAD 6567.8 VEL 11.836 PTH 2.10 VHP 4.891 DPA 2.87 RAP 194.20 ECC 1.3078

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 32 33	2852.68	-28.30	85.67	.80	90.88	12 20 5	2252.7	-27.88	77.03
90.00	5 0 46	4188.45	-.33	171.34	353.83	61.68	6 10 35	3588.5	-4.12	164.70
100.00	13 6 1	2551.26	-29.80	63.45	.75	92.47	13 48 32	1951.3	-29.14	54.71
100.00	6 9 59	3965.11	.97	154.19	353.11	60.12	7 16 4	3365.1	-3.01	147.67
110.00	14 40 26	2255.85	-33.61	40.66	.39	96.64	15 18 2	1655.9	-32.33	31.66
110.00	6 52 3	3833.28	4.22	142.18	351.08	56.05	7 55 56	3233.3	-.27	135.96

DIFFERENTIAL CORRECTIONS
TDE .0004 TRA -.1577 TC3 2.3296 BAU .6016
RDE -.4259 RRA .0765 RC3 .6008 FAU .22606
FDE .9767 FRA-2.9444 FC-10.4625 BSP 7101
BDE .4259 BRA .1753 BC3 2.4059 FSP 2813

MID-COURSE EXECUTION ACCURACY
SGT 2027.2 SGR 774.6 SG3 867.0
RRT .6515 RRF -.7563 RTF -.8514
SGB 2170.2 R23 -.2026 R13 -.8686
SG1 2094.3 SG2 568.8 THA 15.12

ORBIT DETERMINATION ACCURACY
ST 89.8 SR 565.4 SS 766.3
CRT -.0301 CRS .7553 CST -.4101
LSA 898.7 MSA 319.5 SSA 71.6
EL1 565.4 EL2 89.8 ALF 90.28

LAUNCH DATE DEC 21 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 446.494 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.253 GAL 5.44 AZL 89.79 HCA 135.61 SMA 190.15 ECC .24422 INC .2074 V1 30.275
RP 233.62 LAP .15 LOP 224.78 VP 20.934 GAP 5.07 AZP 90.15 TAL 28.26 TAP 163.87 RCA 143.71 APO 236.59 V2 23.536
RC 210.060 GL 1.59 GP 7.42 ZAL 40.94 ZAP 146.05 ETS 167.37 ZAE 169.33 ETE 51.43 ZAC 97.46 ETC 255.73 CLP 146.78

PLANETOCENTRIC CONIC

C3 18.667 VHL 4.320 DLA 19.26 RAL 132.99 RAD 6567.8 VEL 11.834 PTH 2.10 VHP 4.781 DPA 3.22 RAP 194.15 ECC 1.3072

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 32 11	2845.05	-28.30	85.12	.12	91.16	12 19 36	2245.0	-27.83	76.48
90.00	4 56 34	4195.12	-.12	171.71	353.18	61.68	6 6 29	3595.1	-3.90	165.07
100.00	13 5 28	2544.26	-29.78	62.93	.06	92.74	13 47 52	1944.3	-29.08	54.20
100.00	6 5 59	3971.14	1.18	154.52	352.46	60.13	7 12 10	3371.1	-2.81	148.00
110.00	14 39 30	2250.02	-33.56	40.21	359.69	96.90	15 17 0	1650.0	-32.24	31.23
110.00	6 48 25	3838.15	4.40	142.43	350.45	56.07	7 52 23	3238.1	-.08	136.22

DIFFERENTIAL CORRECTIONS
TDE .0083 TRA -.1515 TC3 2.3021 BAU .5967
RDE -.4217 RRA .0950 RC3 .6461 FAU .23600
FDE .9924 FRA-3.1511 FC-10.9454 BSP 7015
BDE .4217 BRA .1788 BC3 2.3911 FSP 2959

MID-COURSE EXECUTION ACCURACY
SGT 2000.7 SGR 801.4 SG3 909.4
RRT .6712 RRF -.7833 RTF -.8481
SGB 2155.2 R23 -.2198 R13 -.8685
SG1 2077.9 SG2 572.0 THA 16.32

ORBIT DETERMINATION ACCURACY
ST 88.1 SR 560.9 SS 781.1
CRT -.1565 CRS .7485 CST -.4946
LSA 907.4 MSA 322.7 SSA 70.5
EL1 561.0 EL2 87.0 ALF 91.44

LAUNCH DATE DEC 21 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 450.201 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.228 GAL 5.47 AZL 89.83 HCA 136.61 SMA 189.69 ECC .24271 INC .1648 V1 30.275
RP 233.25 LAP .11 LOP 225.77 VP 20.936 GAP 4.63 AZP 90.12 TAL 28.61 TAP 165.22 RCA 143.65 APO 235.73 V2 23.574
RC 212.144 GL 1.26 GP 7.73 ZAL 40.49 ZAP 144.81 ETS 167.43 ZAE 169.77 ETE 58.38 ZAC 97.72 ETC 255.73 CLP 145.56

PLANETOCENTRIC CONIC

C3 18.631 VHL 4.316 DLA 19.06 RAL 132.44 RAD 6567.8 VEL 11.833 PTH 2.10 VHP 4.674 DPA 3.60 RAP 194.08 ECC 1.3066

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 32 8	2836.63	-28.28	84.50	359.46	91.47	12 19 25	2236.6	-27.78	75.87
90.00	4 52 16	4202.62	.12	172.13	352.55	61.68	6 2 18	3602.6	-3.66	165.49
100.00	13 5 12	2536.54	-29.75	62.36	359.39	93.04	13 47 29	1936.5	-29.01	53.63
100.00	6 1 53	3977.96	1.41	154.90	351.83	60.14	7 8 11	3378.0	-2.58	148.38
110.00	14 38 50	2243.59	-33.51	39.71	359.00	97.19	15 16 14	1643.6	-32.15	30.75
110.00	6 44 44	3843.67	4.61	142.72	349.84	56.09	7 48 48	3243.7	.13	136.51

DIFFERENTIAL CORRECTIONS
TDE .0158 TRA -.1489 TC3 2.2664 BAU .5904
RDE -.4174 RRA .1145 RC3 .6941 FAU .24619
FDE 1.0077 FRA-3.3636 FC-11.4402 BSP 6937
BDE .4177 BRA .1878 BC3 2.3703 FSP 3113

MID-COURSE EXECUTION ACCURACY
SGT 1967.7 SGR 831.8 SG3 952.9
RRT .6886 RRF -.8087 RTF -.8435
SGB 2136.3 R23 -.2378 R13 -.8681
SG1 2056.9 SG2 577.0 THA 17.66

ORBIT DETERMINATION ACCURACY
ST 88.4 SR 556.4 SS 796.0
CRT -.2759 CRS .7429 CST -.5711
LSA 916.7 MSA 325.3 SSA 69.5
EL1 556.9 EL2 84.9 ALF 92.57

LAUNCH DATE DEC 21 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 453.924 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.203	GAL	5.51	AZL	89.88	HCA	137.60	SMA	189.25	ECC	.24130	INC	.1197	V1	30.275
RP	232.88	LAP	.08	LOP	226.77	VP	20.940	GAP	4.19	AZP	90.09	TAL	28.95	TAP	166.55	RCA	143.58	APO	234.91	V2	23.612
RC	214.210	GL	.92	GP	8.06	ZAL	40.07	ZAP	143.53	ETS	167.48	ZAE	170.04	ETE	66.07	ZAC	97.99	ETC	255.72	CLP	144.31

PLANETOCENTRIC CONIC

C3	18.597	VHL	4.312	DLA	18.84	RAL	131.92	RAD	6567.8	VEL	11.831	PTH	2.10	VHP	4.571	DPA	4.00	RAP	193.99	ECC	1.3061

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 32 24	2827.44	-28.26	83.83	358.81	91.81	12 19 32	2227.4	-27.71	75.21
90.00	4 47 51	4210.96	.39	172.59	351.94	61.69	5 58 2	3611.0	-3.40	165.96
100.00	13 5 14	2528.09	-29.72	61.73	358.74	93.37	13 47 22	1928.1	-28.94	53.02
100.00	5 57 42	3985.55	1.67	155.31	351.23	60.15	7 4 7	3385.5	-2.32	148.79
110.00	14 38 25	2236.55	-33.45	39.17	358.32	97.50	15 15 42	1636.5	-32.05	30.22
110.00	6 41 0	3849.85	4.85	143.05	349.25	56.12	7 45 10	3249.9	.36	136.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0239	TRA	-.1494	TC3	2.2234	BAU	.5830	SGT	1929.4	SGR	866.0	SG3	997.8	ST	91.0	SR	551.8	SS	810.3
RDE	-.4129	RRA	.1352	RC3	.7452	FAU	.25668	RRT	.7034	RRF	-.8321	RTF	-.8377	CRT	-.3957	CRS	.7376	CST	-.6438
FDE	1.0199	FRA	-3.5843	FC	-11.9491	BSP	6859	SGB	2114.8	R23	-.2567	R13	-.8675	LSA	926.0	MSA	327.5	SSA	68.5
BDE	.4136	BRA	.2015	BC3	2.3450	FSP	3273	SG1	2032.5	SG2	584.3	THA	19.17	EL1	553.0	EL2	83.4	ALF	93.82

LAUNCH DATE DEC 21 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 457.661 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.180	GAL	5.54	AZL	89.93	HCA	138.60	SMA	188.84	ECC	.23996	INC	.0723	V1	30.275
RP	232.51	LAP	.05	LOP	227.77	VP	20.947	GAP	3.77	AZP	90.06	TAL	29.26	TAP	167.86	RCA	143.52	APO	234.15	V2	23.650
RC	216.258	GL	.57	GP	8.41	ZAL	39.67	ZAP	142.21	ETS	167.53	ZAE	170.13	ETE	74.31	ZAC	98.27	ETC	255.72	CLP	143.03

PLANETOCENTRIC CONIC

C3	18.565	VHL	4.309	DLA	18.60	RAL	131.42	RAD	6567.8	VEL	11.830	PTH	2.10	VHP	4.472	DPA	4.44	RAP	193.88	ECC	1.3055

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 32 59	2817.45	-28.24	83.10	358.19	92.17	12 19 56	2217.5	-27.64	74.48
90.00	4 43 19	4220.14	.69	173.10	351.35	61.69	5 53 39	3620.1	-3.10	166.47
100.00	13 5 34	2518.91	-29.68	61.05	358.10	93.72	13 47 33	1918.9	-28.85	52.35
100.00	5 53 25	3993.92	1.95	155.77	350.65	60.17	6 59 59	3393.9	-2.03	149.25
110.00	14 38 16	2228.88	-33.38	38.59	357.66	97.84	15 15 24	1628.9	-31.93	29.66
110.00	6 37 12	3856.70	5.11	143.41	348.69	56.15	7 41 29	3256.7	.63	137.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0333	TRA	-.1526	TC3	2.1751	BAU	.5752	SGT	1887.0	SGR	904.5	SG3	1044.2	ST	96.2	SR	546.9	SS	823.4
RDE	-.4080	RRA	.1573	RC3	.7998	FAU	.26752	RRT	.7151	RRF	-.8536	RTF	-.8307	CRT	-.5156	CRS	.7319	CST	-.7094
FDE	1.0260	FRA	-3.8135	FC	-12.4752	BSP	6765	SGB	2092.6	R23	-.2759	R13	-.8670	LSA	934.4	MSA	329.5	SSA	67.5
BDE	.4093	BRA	.2192	BC3	2.3175	FSP	3436	SG1	2006.3	SG2	594.7	THA	20.83	EL1	549.2	EL2	82.1	ALF	95.30

LAUNCH DATE DEC 21 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 461.413 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.158	GAL	5.57	AZL	89.97	HCA	139.61	SMA	188.45	ECC	.23870	INC	.0198	V1	30.275
RP	232.14	LAP	.02	LOP	228.78	VP	20.957	GAP	3.35	AZP	90.02	TAL	29.56	TAP	169.16	RCA	143.47	APO	233.44	V2	23.689
RC	218.287	GL	.20	GP	8.78	ZAL	39.31	ZAP	140.87	ETS	167.59	ZAE	170.00	ETE	82.78	ZAC	98.56	ETC	255.71	CLP	141.71

PLANETOCENTRIC CONIC

C3	18.534	VHL	4.305	DLA	18.34	RAL	130.95	RAD	6567.8	VEL	11.829	PTH	2.09	VHP	4.376	DPA	4.90	RAP	193.75	ECC	1.3050

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 33 52	2806.65	-28.21	82.31	357.57	92.57	12 20 38	2206.7	-27.56	73.71
90.00	4 38 40	4230.16	1.01	173.66	350.79	61.70	5 49 10	3630.2	-2.78	167.03
100.00	13 6 11	2508.97	-29.63	60.32	357.48	94.11	13 48 0	1909.0	-28.75	51.62
100.00	5 49 2	4003.08	2.26	156.28	350.10	60.19	6 55 45	3403.1	-1.72	149.76
110.00	14 38 21	2220.57	-33.30	37.95	357.02	98.21	15 15 22	1620.6	-31.81	29.04
110.00	6 33 21	3864.23	5.39	143.80	348.15	56.19	7 37 45	3264.2	.91	137.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0437	TRA	-.1585	TC3	2.1195	BAU	.5666	SGT	1839.4	SGR	947.3	SG3	1091.7	ST	104.0	SR	541.9	SS	835.9
RDE	-.4028	RRA	.1810	RC3	.8578	FAU	.27858	RRT	.7234	RRF	-.8731	RTF	-.8220	CRT	-.6211	CRS	.7266	CST	-.7597
FDE	1.0279	FRA	-4.0510	FC	-13.0127	BSP	6662	SGB	2068.9	R23	-.2950	R13	-.8668	LSA	942.9	MSA	331.3	SSA	66.6
BDE	.4051	BRA	.2406	BC3	2.2866	FSP	3605	SG1	1977.5	SG2	608.4	THA	22.70	EL1	545.8	EL2	80.9	ALF	96.95

LAUNCH DATE DEC 21 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 465.179 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.138	GAL	5.60	AZL	90.03	HCA	140.62	SMA	188.09	ECC	.23752	INC	.0210	V1	30.275
RP	231.76	LAP	-.02	LOP	229.78	VP	20.968	GAP	2.95	AZP	89.98	TAL	29.83	TAP	170.45	RCA	143.41	APO	232.76	V2	23.728
RC	220.299	GL	-.19	GP	9.17	ZAL	38.97	ZAP	139.48	ETS	167.65	ZAE	169.64	ETE	91.10	ZAC	98.86	ETC	255.71	CLP	140.36

PLANETOCENTRIC CONIC

C3	18.504	VHL	4.302	DLA	18.05	RAL	130.50	RAD	6567.7	VEL	11.827	PTH	2.09	VHP	4.285	DPA	5.40	RAP	193.60	ECC	1.3045

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 35 3	2795.02	-28.17	81.46	356.97	92.99	12 21 38	2195.0	-27.46	72.87
90.00	4 33 53	4241.03	1.36	174.27	350.24	61.71	5 44 34	3641.0	-2.43	167.64
100.00	13 7 5	2498.24	-29.58	59.52	356.87	94.52	13 48 43	1898.2	-28.64	50.85
100.00	5 44 32	4013.04	2.60	156.82	349.56	60.21	6 51 25	3413.0	-1.39	150.30
110.00	14 38 42	2211.59	-33.21	37.27	356.38	98.61	15 15 34	1611.6	-31.66	28.38
110.00	6 29 25	3872.46	5.70	144.23	347.63	56.24	7 33 57	3272.5	1.23	138.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0544	TRA	-.1679	TC3	2.0574	BAU	.5575	SGT	1787.1	SGR	994.8	SG3	1140.5	ST	114.2	SR	536.7	SS	847.8
RDE	-.3973	RRA	.2061	RC3	.9198	FAU	.28992	RRT	.7281	RRF	-.8906	RTF	-.8115	CRT	-.7043	CRS	.7219	CST	-.7940
FDE	1.0253	FRA	-4.2944	FC	-13.5643	BSP	6559	SGB	2045.3	R23	-.3134	R13	-.8669	LSA	951.3	MSA	332.7	SSA	65.7
BDE	.4010	BRA	.2659	BC3	2.2537	FSP	3781	SG1	1947.2	SG2	625.8	THA	24.79	EL1	542.9	EL2	80.2	ALF	98.72

LAUNCH DATE DEC 21 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 468.959 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.119	GAL	5.62	AZL	90.08	HCA	141.63	SMA	187.75	ECC	.23640	INC	.0769	V1	30.275
RP	231.38	LAP	-.05	LOP	230.79	VP	20.982	GAP	2.55	AZP	89.94	TAL	30.09	TAP	171.71	RCA	143.37	APO	232.13	V2	23.768
RC	222.292	GL	-.60	GP	9.59	ZAL	38.66	ZAP	138.06	ETS	167.71	ZAE	169.06	ETE	98.93	ZAC	99.18	ETC	255.70	CLP	138.97

PLANETOCENTRIC CONIC

C3	18.474	VHL	4.298	DLA	17.74	RAL	130.08	RAD	6567.7	VEL	11.826	PTH	2.09	VHP	4.197	DPA	5.93	RAP	193.44	ECC	1.3040

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 36 32	2782.54	-28.12	80.55	356.39	93.45	12 22 55	2182.5	-27.35	71.97
90.00	4 28 59	4252.73	1.74	174.92	349.72	61.73	5 39 52	3652.7	-2.05	168.30
100.00	13 8 17	2486.71	-29.51	58.67	356.27	94.97	13 49 43	1886.7	-28.51	50.01
100.00	5 39 56	4023.83	2.96	157.42	349.04	60.24	6 47 0	3423.8	-1.02	150.89
110.00	14 39 18	2201.91	-33.11	36.53	355.75	99.03	15 16 0	1601.9	-31.51	27.67
110.00	6 25 24	3881.39	6.04	144.71	347.13	56.29	7 30 5	3281.4	1.57	138.47

DIFFERENTIAL CORRECTIONS

TDE	.0664	TRA	-.1803	TC3	1.9884	BAU	.5481
RDE	-.3912	RRA	.2330	RC3	.9858	FAU	.30147
FDE	1.0149	FRA	-4.5460	FC	-14.1270	BSP	6444
BDE	.3968	BRA	.2946	BC3	2.2193	FSP	3957

MID-COURSE EXECUTION ACCURACY

SGT	1730.1	SGR	1047.1	SG3	1190.3		
RRT	.7287	RRF	-.9061	RTF	-.7985		
SGB	2022.3	R23	-.3301	R13	-.8677		
SG1	1915.8	SG2	647.6	THA	27.15		

ORBIT DETERMINATION ACCURACY

ST	127.2	SR	531.2	SS	858.5
CRT	-.7729	CRS	.7168	CST	-.8150
LSA	959.0	MSA	334.1	SSA	64.7
EL1	540.5	EL2	79.3	ALF	100.72

LAUNCH DATE DEC 21 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 472.751 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.101	GAL	5.64	AZL	90.13	HCA	142.64	SMA	187.43	ECC	.23534	INC	.1338	V1	30.275
RP	231.01	LAP	-.08	LOP	231.81	VP	20.999	GAP	2.15	AZP	89.89	TAL	30.33	TAP	172.97	RCA	143.32	APO	231.54	V2	23.807
RC	224.266	GL	-1.03	GP	10.02	ZAL	38.38	ZAP	136.60	ETS	167.78	ZAE	168.26	ETE	106.03	ZAC	99.52	ETC	255.70	CLP	137.55

PLANETOCENTRIC CONIC

C3	18.446	VHL	4.295	DLA	17.40	RAL	129.67	RAD	6567.7	VEL	11.825	PTH	2.09	VHP	4.113	DPA	6.49	RAP	193.25	ECC	1.3036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 38 20	2769.17	-28.07	79.58	355.81	93.93	12 24 29	2169.2	-27.22	71.01
90.00	4 23 56	4265.41	2.15	175.63	349.21	61.76	5 35 2	3665.4	-1.64	169.00
100.00	13 9 46	2474.35	-29.44	57.76	355.68	95.44	13 51 0	1874.3	-28.37	49.12
100.00	5 35 12	4035.46	3.35	158.06	348.54	60.28	6 42 27	3435.5	-.63	151.53
110.00	14 40 10	2191.51	-32.99	35.74	355.13	99.49	15 16 41	1591.5	-31.33	26.91
110.00	6 21 17	3891.07	6.41	145.22	346.65	56.35	7 26 8	3291.1	1.94	138.98

DIFFERENTIAL CORRECTIONS

TDE	.0786	TRA	-.1965	TC3	1.9114	BAU	.5385
RDE	-.3848	RRA	.2616	RC3	1.0559	FAU	.31310
FDE	.9999	FRA	-4.8021	FC	-14.6954	BSP	6341
BDE	.3928	BRA	.3272	BC3	2.1836	FSP	4142

MID-COURSE EXECUTION ACCURACY

SGT	1667.9	SGR	1104.5	SG3	1240.6		
RRT	.7245	RRF	-.9199	RTF	-.7825		
SGB	2000.5	R23	-.3443	R13	-.8694		
SG1	1883.5	SG2	674.2	THA	29.83		

ORBIT DETERMINATION ACCURACY

ST	142.1	SR	525.7	SS	868.9
CRT	-.8232	CRS	.7127	CST	-.8262
LSA	967.0	MSA	335.2	SSA	63.7
EL1	538.8	EL2	78.7	ALF	102.83

LAUNCH DATE DEC 21 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 476.557 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.083	GAL	5.66	AZL	90.19	HCA	143.66	SMA	187.13	ECC	.23434	INC	.1926	V1	30.275
RP	230.62	LAP	-.11	LOP	232.83	VP	21.017	GAP	1.77	AZP	89.84	TAL	30.55	TAP	174.20	RCA	143.28	APO	230.99	V2	23.847
RC	226.222	GL	-1.48	GP	10.48	ZAL	38.12	ZAP	135.10	ETS	167.86	ZAE	167.28	ETE	112.31	ZAC	99.87	ETC	255.69	CLP	136.09

PLANETOCENTRIC CONIC

C3	18.417	VHL	4.292	DLA	17.03	RAL	129.28	RAD	6567.7	VEL	11.824	PTH	2.09	VHP	4.033	DPA	7.09	RAP	193.05	ECC	1.3031

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 40 26	2754.88	-27.99	78.54	355.23	94.45	12 26 21	2154.9	-27.08	69.99
90.00	4 18 45	4278.97	2.59	176.39	348.72	61.79	5 30 3	3679.0	-1.21	169.76
100.00	13 11 32	2461.11	-29.35	56.79	355.09	95.94	13 52 33	1861.1	-28.22	48.17
100.00	5 30 20	4047.97	3.78	158.75	348.07	60.33	6 37 48	3448.0	-.20	152.22
110.00	14 41 17	2180.33	-32.87	34.89	354.52	99.98	15 17 37	1580.3	-31.14	26.09
110.00	6 17 5	3901.52	6.80	145.77	346.20	56.42	7 22 6	3301.5	2.34	139.52

DIFFERENTIAL CORRECTIONS

TDE	.0913	TRA	-.2163	TC3	1.8267	BAU	.5290
RDE	-.3777	RRA	.2922	RC3	1.1306	FAU	.32487
FDE	.9759	FRA	-5.0637	FC	-15.2712	BSP	6237
BDE	.3886	BRA	.3636	BC3	2.1483	FSP	4326

MID-COURSE EXECUTION ACCURACY

SGT	1601.3	SGR	1167.2	SG3	1291.6		
RRT	.7152	RRF	-.9319	RTF	-.7626		
SGB	1981.6	R23	-.3544	R13	-.8728		
SG1	1851.7	SG2	705.5	THA	32.90		

ORBIT DETERMINATION ACCURACY

ST	159.0	SR	519.7	SS	878.1
CRT	-.8615	CRS	.7085	CST	-.8298
LSA	974.4	MSA	336.3	SSA	62.7
EL1	537.9	EL2	78.0	ALF	105.09

LAUNCH DATE DEC 21 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 480.375 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.068	GAL	5.68	AZL	90.25	HCA	144.68	SMA	186.85	ECC	.23340	INC	.2539	V1	30.275
RP	230.24	LAP	-.15	LOP	233.85	VP	21.037	GAP	1.39	AZP	89.79	TAL	30.75	TAP	175.42	RCA	143.24	APO	230.47	V2	23.887
RC	228.159	GL	-1.95	GP	10.97	ZAL	37.90	ZAP	133.57	ETS	167.94	ZAE	166.13	ETE	117.76	ZAC	100.24	ETC	255.69	CLP	134.59

PLANETOCENTRIC CONIC

C3	18.389	VHL	4.288	DLA	16.63	RAL	128.91	RAD	6567.7	VEL	11.822	PTH	2.09	VHP	3.957	DPA	7.73	RAP	192.83	ECC	1.3026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 42 51	2739.63	-27.91	77.43	354.67	95.00	12 28 31	2139.6	-26.92	68.90
90.00	4 13 23	4293.51	3.05	177.20	348.25	61.83	5 24 57	3693.5	-.74	170.57
100.00	13 13 36	2446.97	-29.24	55.75	354.52	96.48	13 54 23	1847.0	-28.04	47.15
100.00	5 25 19	4061.41	4.23	159.49	347.60	60.38	6 33 0	3461.4	.25	152.96
110.00	14 42 39	2168.36	-32.72	33.99	353.91	100.49	15 18 47	1568.4	-30.93	25.22
110.00	6 12 45	3912.78	7.22	146.37	345.76	56.50	7 17 58	3312.8	2.77	140.11

DIFFERENTIAL CORRECTIONS

TDE	.1048	TRA	-.2399	TC3	1.7342	BAU	.5199
RDE	-.3697	RRA	.3249	RC3	1.2105	FAU	.33678
FDE	.9412	FRA	-5.3312	FC	-15.8552	BSP	6144
BDE	.3843	BRA	.4039	BC3	2.1149	FSP	4511

MID-COURSE EXECUTION ACCURACY

SGT	1530.9	SGR	1235.8	SG3	1343.4		
RRT	.6995	RRF	-.9423	RTF	-.7378		
SGB	1967.5	R23	-.3589	R13	-.8782		
SG1	1822.2	SG2	741.9	THA	36.43		

ORBIT DETERMINATION ACCURACY

ST	178.0	SR	513.3	SS	886.4
CRT	-.8913	CRS	.7041	CST	-.8273
LSA	981.3	MSA	337.8	SSA	61.7
EL1	537.8	EL2	77.0	ALF	107.54

LAUNCH DATE DEC 21 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 484.206 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.053 GAL 5.69 AZL 90.32 HCA 145.70 SMA 186.59 ECC .23251 INC .3191 V1 30.275
RP 229.86 LAP -.18 LOP 234.87 VP 21.060 GAP 1.02 AZP 89.74 TAL 30.93 TAP 176.63 RCA 143.21 APO 229.98 V2 23.927
RC 230.076 GL -2.45 GP 11.48 ZAL 37.71 ZAP 132.00 ETS 168.04 ZAE 164.83 ETE 122.45 ZAC 100.63 ETC 255.68 CLP 133.06

PLANETOCENTRIC CONIC

C3 18.362 VHL 4.285 DLA 16.20 RAL 128.56 RAD 6567.7 VEL 11.821 PTH 2.09 VHP 3.885 DPA 8.40 RAP 192.59 ECC 1.3022

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 45 35	2723.39	-27.81	76.25	354.11	95.58	12 30 58	2123.4	-26.74	67.75
90.00	4 7 51	4309.05	3.55	178.07	347.80	61.89	5 19 40	3709.1	-.23	171.44
100.00	13 15 59	2431.86	-29.12	54.64	353.94	97.05	13 56 30	1831.9	-27.84	46.07
100.00	5 20 8	4075.81	4.71	160.28	347.16	60.45	6 28 4	3475.8	.74	153.75
110.00	14 44 18	2155.53	-32.56	33.02	353.30	101.04	15 20 13	1555.5	-30.69	24.30
110.00	6 8 18	3924.90	7.68	147.01	345.33	56.59	7 13 43	3324.9	3.23	140.75

DIFFERENTIAL CORRECTIONS
TDE .1188 TRA -.2672 TC3 1.6346 BAU .5120
RDE -.3610 RRA .3598 RC3 1.2953 FAU .34865
FDE .8979 FRA-5.6013 FC-16.4385 BSP 6069
BDE .3801 BRA .4482 BC3 2.0856 FSP 4698

MID-COURSE EXECUTION ACCURACY
SGT 1458.1 SGR 1310.1 SG3 1395.1
RRT .6764 RRF -.9514 RTF -.7069
SGB 1960.2 R23 -.3557 R13 -.8866
SG1 1797.0 SG2 782.9 THA 40.50

ORBIT DETERMINATION ACCURACY
ST 198.6 SR 506.7 SS 894.1
CRT -.9147 CRS .7004 CST -.8205
LSA 988.3 MSA 339.4 SSA 60.5
EL1 538.9 EL2 75.5 ALF 110.14

LAUNCH DATE DEC 21 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 488.049 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.039 GAL 5.70 AZL 90.39 HCA 146.73 SMA 186.35 ECC .23166 INC .3878 V1 30.275
RP 229.47 LAP -.21 LOP 235.90 VP 21.084 GAP .66 AZP 89.68 TAL 31.09 TAP 177.82 RCA 143.18 APO 229.52 V2 23.968
RC 231.973 GL -2.98 GP 12.03 ZAL 37.54 ZAP 130.39 ETS 168.14 ZAE 163.41 ETE 126.47 ZAC 101.04 ETC 255.68 CLP 131.49

PLANETOCENTRIC CONIC

C3 18.335 VHL 4.282 DLA 15.74 RAL 128.22 RAD 6567.7 VEL 11.820 PTH 2.09 VHP 3.817 DPA 9.12 RAP 192.34 ECC 1.3017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 48 38	2706.08	-27.69	75.00	353.55	96.20	12 33 44	2106.1	-26.54	66.52
90.00	4 2 7	4325.68	4.08	179.00	347.37	61.96	5 14 13	3725.7	.30	172.36
100.00	13 18 39	2415.74	-28.98	53.47	353.37	97.66	13 58 55	1815.7	-27.62	44.93
100.00	5 14 47	4091.24	5.23	161.14	346.74	60.53	6 22 58	3491.2	1.27	154.59
110.00	14 46 12	2141.81	-32.37	31.99	352.70	101.62	15 21 54	1541.8	-30.43	23.31
110.00	6 3 43	3937.94	8.17	147.70	344.93	56.69	7 9 21	3337.9	3.73	141.43

DIFFERENTIAL CORRECTIONS
TDE .1326 TRA -.2986 TC3 1.5264 BAU .5054
RDE -.3512 RRA .3972 RC3 1.3858 FAU .36051
FDE .8430 FRA-5.8747 FC-17.0225 BSP 6019
BDE .3754 BRA .4969 BC3 2.0617 FSP 4881

MID-COURSE EXECUTION ACCURACY
SGT 1382.9 SGR 1390.8 SG3 1447.0
RRT .6441 RRF -.9591 RTF -.6678
SGB 1961.3 R23 -.3424 R13 -.8983
SG1 1778.3 SG2 827.3 THA 45.25

ORBIT DETERMINATION ACCURACY
ST 220.3 SR 499.6 SS 901.2
CRT -.9325 CRS .6971 CST -.8108
LSA 995.1 MSA 341.4 SSA 59.3
EL1 541.0 EL2 73.5 ALF 112.80

LAUNCH DATE DEC 21 1964 FLIGHT TIME 224.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 491.904 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.026 GAL 5.71 AZL 90.46 HCA 147.76 SMA 186.13 ECC .23087 INC .4609 V1 30.275
RP 229.09 LAP -.25 LOP 236.93 VP 21.109 GAP .30 AZP 89.61 TAL 31.23 TAP 178.99 RCA 143.16 APO 229.10 V2 24.009
RC 233.848 GL -3.54 GP 12.60 ZAL 37.41 ZAP 128.75 ETS 168.26 ZAE 161.88 ETE 129.91 ZAC 101.48 ETC 255.68 CLP 129.89

PLANETOCENTRIC CONIC

C3 18.309 VHL 4.279 DLA 15.23 RAL 127.90 RAD 6567.7 VEL 11.819 PTH 2.09 VHP 3.754 DPA 9.88 RAP 192.07 ECC 1.3013

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 52 0	2687.65	-27.54	73.67	352.99	96.85	12 36 48	2087.6	-26.31	65.22
90.00	3 56 11	4343.44	4.65	180.00	346.95	62.04	5 8 34	3743.4	.88	173.35
100.00	13 21 39	2398.55	-28.82	52.21	352.79	98.30	14 1 37	1798.5	-27.37	43.71
100.00	5 9 13	4107.77	5.78	162.05	346.33	60.62	6 17 41	3507.8	1.83	155.50
110.00	14 48 24	2127.12	-32.17	30.90	352.09	102.24	15 23 51	1527.1	-30.15	22.27
110.00	5 58 58	3951.96	8.69	148.45	344.55	56.81	7 4 50	3352.0	4.26	142.16

DIFFERENTIAL CORRECTIONS
TDE .1464 TRA -.3342 TC3 1.4090 BAU .5004
RDE -.3404 RRA .4370 RC3 1.4815 FAU .37205
FDE .7778 FRA-6.1473 FC-17.5925 BSP 6010
BDE .3705 BRA .5501 BC3 2.0445 FSP 5065

MID-COURSE EXECUTION ACCURACY
SGT 1306.7 SGR 1477.5 SG3 1497.8
RRT .5999 RRF -.9658 RTF -.6177
SGB 1972.4 R23 -.3164 R13 -.9137
SG1 1768.5 SG2 873.4 THA 50.80

ORBIT DETERMINATION ACCURACY
ST 243.1 SR 492.2 SS 908.1
CRT -.9467 CRS .6948 CST -.7992
LSA 1002.2 MSA 343.7 SSA 57.9
EL1 544.4 EL2 70.8 ALF 115.52

LAUNCH DATE DEC 21 1964 FLIGHT TIME 226.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 495.768 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.013 GAL 5.72 AZL 90.54 HCA 148.79 SMA 185.92 ECC .23011 INC .5386 V1 30.275
RP 228.70 LAP -.28 LOP 237.96 VP 21.137 GAP -.05 AZP 89.54 TAL 31.36 TAP 180.15 RCA 143.14 APO 228.70 V2 24.049
RC 235.703 GL -4.14 GP 13.21 ZAL 37.30 ZAP 127.07 ETS 168.39 ZAE 160.24 ETE 132.86 ZAC 101.94 ETC 255.68 CLP 128.25

PLANETOCENTRIC CONIC

C3 18.284 VHL 4.276 DLA 14.69 RAL 127.59 RAD 6567.7 VEL 11.818 PTH 2.09 VHP 3.695 DPA 10.68 RAP 191.79 ECC 1.3009

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 55 43	2668.02	-27.38	72.26	352.42	97.54	12 40 11	2068.0	-26.05	63.84
90.00	3 50 0	4362.44	5.26	181.06	346.55	62.14	5 2 43	3762.4	1.49	174.41
100.00	13 24 58	2380.21	-28.63	50.88	352.22	98.97	14 4 38	1780.2	-27.10	42.42
100.00	5 3 27	4125.48	6.37	163.03	345.94	60.73	6 12 12	3525.5	2.43	156.47
110.00	14 50 52	2111.41	-31.93	29.73	351.48	102.90	15 26 4	1511.4	-29.83	21.15
110.00	5 54 2	3967.05	9.25	149.26	344.18	56.95	7 0 9	3367.0	4.83	142.96

DIFFERENTIAL CORRECTIONS
TDE .1598 TRA -.3745 TC3 1.2825 BAU .4980
RDE -.3281 RRA .4794 RC3 1.5829 FAU .38328
FDE .6993 FRA-6.4176 FC-18.1481 BSP 6057
BDE .3650 BRA .6083 BC3 2.0373 FSP 5249

MID-COURSE EXECUTION ACCURACY
SGT 1232.0 SGR 1570.6 SG3 1547.5
RRT .5406 RRF -.9714 RTF -.5533
SGB 1996.2 R23 -.2760 R13 -.9319
SG1 1772.3 SG2 918.5 THA 57.20

ORBIT DETERMINATION ACCURACY
ST 266.7 SR 484.4 SS 914.5
CRT -.9582 CRS .6933 CST -.7857
LSA 1009.3 MSA 346.7 SSA 56.3
EL1 548.9 EL2 67.4 ALF 118.28

LAUNCH DATE DEC 21 1964 FLIGHT TIME 228.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 499.648 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.002	GAL	5.72	AZL	90.62	HCA	149.83	SMA	185.72	ECC	.22940	INC	.6212
RP	228.31	LAP	-.31	LOP	239.00	VP	21.166	GAP	-.39	AZP	89.46	TAL	31.47	TAP	181.30	RCA	143.12	APO	228.33
RC	237.537	GL	-4.78	GP	13.86	ZAL	37.23	ZAP	125.35	ETS	168.54	ZAE	158.52	ETE	135.41	ZAC	102.43	ETC	255.67

V1	30.275	V2	24.090	CLP	126.58														

PLANETOCENTRIC CONIC

C3	18.262	VHL	4.273	DLA	14.11	RAL	127.30	RAD	6567.7	VEL	11.817	PTH	2.09	VHP	3.640	DPA	11.53	RAP	191.50

ECC	1.3005	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	11 59 48	2647.12	-27.18	70.76	351.86	98.26	12 43 55	2047.1	-25.76	62.38	
		90.00	3 43 34	4382.76	5.90	182.21	346.16	62.26	4 56 37	3782.8	2.14	175.55	
		100.00	13 28 37	2360.64	-28.42	49.47	351.64	99.69	14 7 58	1760.6	-26.79	41.05	
		100.00	4 57 25	4144.47	7.00	164.09	345.56	60.87	6 6 30	3544.5	3.07	157.52	
		110.00	14 53 39	2094.60	-31.67	28.49	350.86	103.59	15 28 34	1494.6	-29.48	19.97	
		110.00	5 48 53	3983.28	9.85	150.13	343.83	57.10	6 55 17	3383.3	5.45	143.81	

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.1731	TRA	-.4192	TC3	1.1483	BAU .4991	SGT 1163.2	SGR 1671.1	SG3 1596.2	ST 291.5	SR 476.0
RDE	-.3140	RRA	.5248	RC3	1.6911	FAU .39428	RRT .4632	RRF -.9761	RTF -.4716	CRT -.9680	CRS .6925
FDE	.6039	FRA	-6.6863	FC	-18.6917	BSP 6154	SGB 2036.1	R23 -.2215	R13 -.9509	LSA 1016.6	MSA 350.9
BDE	.3586	BRA	.6716	BC3	2.0441	FSP 5423	SG1 1796.0	SG2 959.2	THA 64.32	EL1 554.6	EL2 62.8

SS	920.9	CST	-.7684	SSA	54.5	ALF	121.10				

LAUNCH DATE DEC 21 1964 FLIGHT TIME 230.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 503.539 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.992	GAL	5.72	AZL	90.71	HCA	150.87	SMA	185.54	ECC	.22873	INC	.7092
RP	227.92	LAP	-.35	LOP	240.04	VP	21.196	GAP	-.72	AZP	89.38	TAL	31.56	TAP	182.43	RCA	143.11	APO	227.98
RC	239.350	GL	-5.46	GP	14.54	ZAL	37.20	ZAP	123.60	ETS	168.70	ZAE	156.71	ETE	137.62	ZAC	102.96	ETC	255.67

V1	30.275	V2	24.132	CLP	124.87														

PLANETOCENTRIC CONIC

C3	18.243	VHL	4.271	DLA	13.48	RAL	127.01	RAD	6567.7	VEL	11.816	PTH	2.09	VHP	3.589	DPA	12.42	RAP	191.20

ECC	1.3002	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	12 4 13	2624.89	-26.95	69.17	351.29	99.03	12 47 58	2024.9	-25.43	60.84	
		90.00	3 36 51	4404.52	6.59	183.44	345.80	62.40	4 50 15	3804.5	2.84	176.76	
		100.00	13 32 37	2339.80	-28.17	47.97	351.05	100.44	14 11 37	1739.8	-26.44	39.59	
		100.00	4 51 8	4164.85	7.68	165.23	345.21	61.02	6 0 33	3564.8	3.75	158.64	
		110.00	14 56 43	2076.63	-31.38	27.17	350.24	104.31	15 31 20	1476.6	-29.09	18.71	
		110.00	5 43 31	4000.77	10.50	151.08	343.50	57.28	6 50 12	3400.8	6.11	144.73	

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.1967	TRA	-.4566	TC3	1.0305	BAU .5091	SGT 1114.1	SGR 1787.7	SG3 1652.7	ST 325.6	SR 463.0
RDE	-.2935	RRA	.5781	RC3	1.8154	FAU .40702	RRT .3811	RRF -.9804	RTF -.3888	CRT -.9807	CRS .6843
FDE	.4432	FRA	-7.0020	FC	-19.3154	BSP 6126	SGB 2106.4	R23 -.1600	R13 -.9674	LSA 1023.3	MSA 368.4
BDE	.3533	BRA	.7366	BC3	2.0875	FSP 5482	SG1 1859.0	SG2 990.5	THA 71.08	EL1 563.6	EL2 52.3

SS	930.1	CST	-.7079	SSA	51.2	ALF	124.94				

LAUNCH DATE DEC 21 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 507.438 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.982	GAL	5.72	AZL	90.80	HCA	151.92	SMA	185.38	ECC	.22809	INC	.8040
RP	227.53	LAP	-.38	LOP	241.09	VP	21.228	GAP	-1.05	AZP	89.29	TAL	31.63	TAP	183.55	RCA	143.10	APO	227.66
RC	241.142	GL	-6.19	GP	15.27	ZAL	37.20	ZAP	121.82	ETS	168.88	ZAE	154.84	ETE	139.54	ZAC	103.51	ETC	255.67

V1	30.275	V2	24.173	CLP	123.13														

PLANETOCENTRIC CONIC

C3	18.227	VHL	4.269	DLA	12.79	RAL	126.73	RAD	6567.7	VEL	11.816	PTH	2.09	VHP	3.544	DPA	13.36	RAP	190.90

ECC	1.3000	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	12 9 3	2601.13	-26.69	67.48	350.71	99.83	12 52 24	2001.1	-25.06	59.20	
		90.00	3 29 48	4427.87	7.33	184.76	345.45	62.57	4 43 36	3827.9	3.59	178.07	
		100.00	13 37 0	2317.47	-27.88	46.37	350.46	101.23	14 15 38	1717.5	-26.05	38.05	
		100.00	4 44 32	4186.75	8.40	166.46	344.87	61.21	5 54 19	3586.8	4.49	159.85	
		110.00	15 0 8	2057.34	-31.04	25.77	349.61	105.08	15 34 26	1457.3	-28.66	17.38	
		110.00	5 37 53	4019.66	11.19	152.10	343.19	57.49	6 44 53	3419.7	6.82	145.73	

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.2041	TRA	-.5149	TC3	.8686	BAU .5164	SGT 1061.6	SGR 1900.0	SG3 1693.3	ST 347.4	SR 455.8
RDE	-.2768	RRA	.6284	RC3	1.9329	FAU .41598	RRT .2526	RRF -.9837	RTF -.2561	CRT -.9838	CRS .6924
FDE	.3344	FRA	-7.2406	FC	-19.7581	BSP 6450	SGB 2176.5	R23 -.0937	R13 -.9792	LSA 1034.0	MSA 370.9
BDE	.3439	BRA	.8124	BC3	2.1191	FSP 5679	SG1 1926.3	SG2 1013.2	THA 78.84	EL1 570.9	EL2 49.7

SS	938.4	CST	-.7016	SSA	49.4	ALF	127.19				

LAUNCH DATE DEC 21 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 511.348 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.973	GAL	5.72	AZL	90.91	HCA	152.96	SMA	185.23	ECC	.22748	INC	.9052
RP	227.14	LAP	-.41	LOP	242.14	VP	21.262	GAP	-1.37	AZP	89.19	TAL	31.69	TAP	184.65	RCA	143.09	APO	227.36
RC	242.914	GL	-6.98	GP	16.04	ZAL	37.24	ZAP	120.01	ETS	169.09	ZAE	152.90	ETE	141.22	ZAC	104.11	ETC	255.67

V1	30.275	V2	24.214	CLP	121.36														

PLANETOCENTRIC CONIC

C3	18.216	VHL	4.268	DLA	12.05	RAL	126.46	RAD	6567.7	VEL	11.815	PTH	2.09	VHP	3.503	DPA	14.36	RAP	190.60

ECC	1.2998	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	12 14 18	2575.76	-26.38	65.69	350.13	100.68	12 57 13	1975.8	-24.64	57.45	
		90.00	3 22 24	4452.96	8.11	186.19	345.13	62.78	4 36 37	3853.0	4.40	179.48	
		100.00	13 41 47	2293.61	-27.56	44.67	349.86	102.07	14 20 0	1693.6	-25.61	36.41	
		100.00	4 37 36	4210.34	9.17	167.78	344.56	61.42	5 47 46	3610.3	5.28	161.15	
		110.00	15 3 54	2036.64	-30.67	24.27	348.97	105.90	15 37 51	1436.6	-28.18	15.96	
		110.00	5 31 58	4040.07	11.94	153.21	342.91	57.73	6 39 18	3440.1	7.59	146.81	

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.2111	TRA	-.5763	TC3	.7004	BAU .5295	SGT 1031.3	SGR 2021.1	SG3 1732.2	ST 370.1	SR 448.2
RDE	-.2569	RRA	.6832	RC3	2.0582	FAU .42443	RRT .1011	RRF -.9864	RTF -.1014	CRT -.9861	CRS .7024
FDE	.2009	FRA	-7.4785	FC	-20.1715	BSP 6820	SGB 2269.0	R23 -.0329	R13 -.9859	LSA 1046.1	MSA 375.8
BDE	.3325	BRA	.8938	BC3	2.1741	FSP 5849	SG1 2024.7	SG2 1024.1	THA 86.03	EL1 579.3	EL2 47.6

SS	948.7	CST	-.6880	SSA	47.3	ALF	129.47				

LAUNCH DATE DEC 21 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 515.269 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.965	GAL	5.71	AZL	91.01	HCA	154.02	SMA	185.09	ECC	.22690	INC	1.0143
RP	226.75	LAP	-.44	LOP	243.19	VP	21.296	GAP	-1.68	AZP	89.09	TAL	31.72	TAP	185.74	RCA	143.09	APO	227.09
RC	244.666	GL	-7.82	GP	16.86	ZAL	37.32	ZAP	118.18	ETS	169.32	ZAE	150.89	ETE	142.70	ZAC	104.75	ETC	255.66

V1	30.275	V2	24.256	CLP	119.56														

PLANETOCENTRIC CONIC

C3	18.212	VHL	4.268	DLA	11.24	RAL	126.19	RAD	6567.7	VEL	11.815	PTH	2.09	VHP	3.468	DPA	15.41	RAP	190.30
ECC	1.2997																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 19 59	2548.63	-26.02	63.78	349.53	101.58	13 2 27	1948.6	-24.17	55.61
90.00	3 14 35	4479.99	8.95	187.73	344.82	63.02	4 29 15	3880.0	5.26	180.99
100.00	13 46 58	2268.05	-27.18	42.87	349.25	102.95	14 24 46	1668.1	-25.12	34.67
100.00	4 30 16	4235.80	10.00	169.22	344.27	61.68	5 40 52	3635.8	6.13	162.56
110.00	15 8 1	2014.43	-30.24	22.68	348.32	106.75	15 41 36	1414.4	-27.65	14.45
110.00	5 25 43	4062.19	12.74	154.42	342.64	58.01	6 33 25	3462.2	8.42	147.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2171	TRA	-.6422	TC3	.5261	BAU	.5487	SGT	1029.3	SGR	2151.3	SG3	1768.2	ST	393.3	SR	440.9	SS	961.3
RDE	-.2337	RRA	.7420	RC3	2.1913	FAU	.43222	RRT	-.0652	RRF	-.9888	RTF	.0673	CRT	-.9863	CRS	.7160	CST	-.6697
FDE	.0453	FRA	-7.7066	FC	-20.5459	BSP	7255	SGB	2384.9	R23	.0163	R13	-.9886	LSA	1060.6	MSA	382.6	SSA	44.9
BDE	.3190	BRA	.9813	BC3	2.2536	FSP	5996	SG1	2152.7	SG2	1026.5	THA	92.31	EL1	588.9	EL2	48.6	ALF	131.69

LAUNCH DATE DEC 21 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 519.201 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.957	GAL	5.70	AZL	91.13	HCA	155.07	SMA	184.96	ECC	.22636	INC	1.1328
RP	226.36	LAP	-.48	LOP	244.24	VP	21.332	GAP	-1.98	AZP	88.97	TAL	31.74	TAP	186.81	RCA	143.09	APO	226.83
RC	246.398	GL	-8.74	GP	17.73	ZAL	37.45	ZAP	116.32	ETS	169.57	ZAE	148.82	ETE	144.01	ZAC	105.43	ETC	255.66

V1	30.275	V2	24.297	CLP	117.74														

PLANETOCENTRIC CONIC

C3	18.218	VHL	4.268	DLA	10.36	RAL	125.93	RAD	6567.7	VEL	11.815	PTH	2.09	VHP	3.438	DPA	16.51	RAP	190.00
ECC	1.2998																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 26 8	2519.58	-25.61	61.76	348.92	102.51	13 8 7	1919.6	-23.63	53.65
90.00	3 6 18	4509.17	9.85	189.41	344.55	63.32	4 21 28	3909.2	6.19	182.64
100.00	13 52 37	2240.65	-26.75	40.95	348.63	103.87	14 29 58	1640.6	-24.57	32.82
100.00	4 22 30	4263.35	10.88	170.79	344.00	61.99	5 33 34	3663.3	7.05	164.09
110.00	15 12 32	1990.54	-29.76	20.99	347.66	107.65	15 45 43	1390.5	-27.06	12.84
110.00	5 19 4	4086.21	13.60	155.75	342.41	58.33	6 27 10	3486.2	9.31	149.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2217	TRA	-.7122	TC3	.3445	BAU	.5737	SGT	1058.2	SGR	2289.3	SG3	1799.1	ST	416.8	SR	435.1	SS	977.4
RDE	-.2068	RRA	.8052	RC3	2.3302	FAU	.43871	RRT	-.2335	RRF	-.9907	RTF	.2369	CRT	-.9829	CRS	.7350	CST	-.6481
FDE	-.1299	FRA	-7.9204	FC	-20.8480	BSP	7771	SGB	2522.0	R23	.0533	R13	-.9893	LSA	1078.6	MSA	391.3	SSA	42.2
BDE	.3032	BRA	1.0750	BC3	2.3555	FSP	6129	SG1	2305.9	SG2	1021.5	THA	97.67	EL1	599.9	EL2	55.7	ALF	133.75

LAUNCH DATE DEC 21 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 523.143 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.951	GAL	5.69	AZL	91.26	HCA	156.13	SMA	184.85	ECC	.22584	INC	1.2615
RP	225.97	LAP	-.51	LOP	245.30	VP	21.369	GAP	-2.28	AZP	88.85	TAL	31.75	TAP	187.88	RCA	143.10	APO	226.59
RC	248.110	GL	-9.73	GP	18.66	ZAL	37.63	ZAP	114.43	ETS	169.86	ZAE	146.70	ETE	145.18	ZAC	106.17	ETC	255.65

V1	30.275	V2	24.339	CLP	115.89														

PLANETOCENTRIC CONIC

C3	18.235	VHL	4.270	DLA	9.40	RAL	125.66	RAD	6567.7	VEL	11.816	PTH	2.09	VHP	3.413	DPA	17.68	RAP	189.72
ECC	1.3001																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 32 48	2488.41	-25.13	59.60	348.31	103.49	13 14 16	1888.4	-23.03	51.56
90.00	2 57 30	4540.79	10.81	191.23	344.30	63.67	4 13 11	3940.8	7.18	184.43
100.00	13 58 45	2211.20	-26.25	38.90	347.99	104.84	14 35 36	1611.2	-23.95	30.85
100.00	4 14 14	4293.24	11.83	172.50	343.77	62.35	5 25 47	3693.2	8.04	165.76
110.00	15 17 29	1964.82	-29.22	19.18	346.99	108.59	15 50 13	1364.8	-26.40	11.13
110.00	5 12 0	4112.38	14.53	157.21	342.20	58.71	6 20 32	3512.4	10.28	150.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2241	TRA	-.7870	TC3	.1564	BAU	.6049	SGT	1119.8	SGR	2437.0	SG3	1825.4	ST	439.9	SR	431.6	SS	998.2
RDE	-.1753	RRA	.8732	RC3	2.4764	FAU	.44410	RRT	-.3882	RRF	-.9924	RTF	.3923	CRT	-.9736	CRS	.7601	CST	-.6235
FDE	-.3296	FRA	-8.1184	FC	-21.0842	BSP	8359	SGB	2681.9	R23	.0793	R13	-.9892	LSA	1101.4	MSA	402.0	SSA	39.2
BDE	.2845	BRA	1.1755	BC3	2.4814	FSP	6235	SG1	2483.4	SG2	1012.7	THA	102.17	EL1	612.2	EL2	70.7	ALF	135.56

LAUNCH DATE DEC 21 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 527.095 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.945	GAL	5.68	AZL	91.40	HCA	157.19	SMA	184.74	ECC	.22535	INC	1.4018
RP	225.58	LAP	-.54	LOP	246.37	VP	21.408	GAP	-2.57	AZP	88.71	TAL	31.73	TAP	188.92	RCA	143.11	APO	226.37
RC	249.803	GL	-10.82	GP	19.66	ZAL	37.87	ZAP	112.53	ETS	170.17	ZAE	144.53	ETE	146.23	ZAC	106.96	ETC	255.64

V1	30.275	V2	24.381	CLP	114.01														

PLANETOCENTRIC CONIC

C3	18.268	VHL	4.274	DLA	8.35	RAL	125.39	RAD	6567.7	VEL	11.817	PTH	2.09	VHP	3.395	DPA	18.91	RAP	189.46
ECC	1.3007																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 40 1	2454.89	-24.58	57.30	347.68	104.52	13 20 56	1854.9	-22.35	49.34
90.00	2 48 6	4575.16	11.84	193.23	344.08	64.09	4 4 21	3975.2	8.26	186.38
100.00	14 5 24	2179.49	-25.68	36.72	347.35	105.86	14 41 44	1579.5	-23.25	28.75
100.00	4 5 24	4325.79	12.85	174.38	343.56	62.78	5 17 30	3725.8	9.10	167.59
110.00	15 22 52	1937.06	-28.60	17.26	346.30	109.57	15 55 10	1337.1	-25.66	9.31
110.00	5 4 25	4140.99	15.53	158.82	342.03	59.16	6 13 26	3541.0	11.33	152.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2239	TRA	-.8663	TC3	-.0375	BAU	.6423	SGT	1211.9	SGR	2595.0	SG3	1846.3	ST	462.6	SR	432.4	SS	1025.9
RDE	-.1380	RRA	.9470	RC3	2.6297	FAU	.44818	RRT	-.5194	RRF	-.9937	RTF	.5235	CRT	-.9554	CRS	.7920	CST	-.5964
FDE	-.5553	FRA	-8.3003	FC	-21.2390	BSP	9017	SGB	2864.0	R23	.0966	R13	-.9891	LSA	1131.4	MSA	414.6	SSA	36.0
BDE	.2630	BRA	1.2835	BC3	2.6300	FSP	6310	SG1	2683.2	SG2	1001.5	THA	105.91	EL1	626.2	EL2	94.3	ALF	137.03

LAUNCH DATE DEC 21 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 531.058 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 32.939 GAL 5.67 AZL 91.56 HCA 158.26 SMA 184.65 ECC .22488 INC 1.5559 V1 30.275
RP 225.19 LAP -.58 LOP 247.43 VP 21.447 GAP -2.86 AZP 88.55 TAL 31.70 TAP 189.96 RCA 143.13 APO 226.17 V2 24.423
RC 251.477 GL -12.00 GP 20.72 ZAL 38.17 ZAP 110.62 ETS 170.53 ZAE 142.31 ETE 147.16 ZAC 107.83 ETC 255.63 CLP 112.12

PLANETOCENTRIC CONIC

C3 18.322 VHL 4.280 DLA 7.20 RAL 125.10 RAD 6567.7 VEL 11.820 PTH 2.09 VHP 3.383 DPA 20.20 RAP 189.22 ECC 1.3015

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 47 52	2418.74	-23.94	54.84	347.04	105.59	13 28 11	1818.7	-21.57	46.97
90.00	2 38 0	4612.67	12.94	195.43	343.91	64.59	3 54 53	4012.7	9.42	188.53
100.00	14 12 39	2145.27	-25.02	34.39	346.69	106.91	14 48 24	1545.3	-22.47	26.52
100.00	3 55 54	4361.39	13.95	176.45	343.40	63.29	5 8 35	3761.4	10.26	169.61
110.00	15 28 47	1907.04	-27.90	15.21	345.60	110.61	16 0 34	1307.0	-24.84	7.37
110.00	4 56 16	4172.38	16.62	160.60	341.90	59.69	6 5 48	3572.4	12.47	153.95

DIFFERENTIAL CORRECTIONS
TDE .2194 TRA -.9510 TC3 -.2375 BAU .6853
RDE -.0951 RRA 1.0263 RC3 2.7876 FAU .45038
FDE -.7992 FRA-8.4549 FC-21.2811 BSP 9767
BDE .2391 BRA 1.3991 BC3 2.7976 FSP 6370

MID-COURSE EXECUTION ACCURACY
SGT 1331.8 SGR 2761.9 SG3 1859.5
RRT -.6250 RRF -.9948 RTF .6289
SGB 3066.3 R23 .1075 R13 -.9891
SG1 2902.3 SG2 989.4 THA 109.07

ORBIT DETERMINATION ACCURACY
ST 484.2 SR 440.3 SS 1060.1
CRT -.9273 CRS .8294 CST -.5730
LSA 1169.9 MSA 427.1 SSA 32.9
EL1 642.6 EL2 124.2 ALF 137.93

LAUNCH DATE DEC 21 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 535.030 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 32.934 GAL 5.65 AZL 91.73 HCA 159.33 SMA 184.57 ECC .22443 INC 1.7253 V1 30.275
RP 224.80 LAP -.61 LOP 248.50 VP 21.487 GAP -3.14 AZP 88.39 TAL 31.66 TAP 190.98 RCA 143.14 APO 225.99 V2 24.465
RC 253.132 GL -13.30 GP 21.86 ZAL 38.55 ZAP 108.70 ETS 170.92 ZAE 140.05 ETE 148.01 ZAC 108.76 ETC 255.60 CLP 110.21

PLANETOCENTRIC CONIC

C3 18.401 VHL 4.290 DLA 5.93 RAL 124.81 RAD 6567.7 VEL 11.823 PTH 2.09 VHP 3.378 DPA 21.57 RAP 189.01 ECC 1.3028

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 56 24	2379.65	-23.20	52.22	346.39	106.70	13 36 4	1779.7	-20.69	44.44
90.00	2 27 7	4653.80	14.13	197.87	343.79	65.20	3 44 40	4053.8	10.67	190.90
100.00	14 20 33	2108.22	-24.26	31.89	346.03	108.02	14 55 41	1508.2	-21.57	24.13
100.00	3 45 38	4400.47	15.13	178.75	343.29	63.91	4 58 59	3800.5	11.51	171.84
110.00	15 35 14	1874.49	-27.10	13.01	344.89	111.68	16 6 29	1274.5	-23.91	5.30
110.00	4 47 27	4206.96	17.80	162.59	341.82	60.32	5 57 34	3607.0	13.72	155.86

DIFFERENTIAL CORRECTIONS
TDE .2106 TRA-1.0410 TC3 -.4418 BAU .7345
RDE -.0434 RRA 1.1136 RC3 2.9530 FAU .45114
FDE-1.0756 FRA-8.5930 FC-21.2251 BSP 10560
BDE .2150 BRA 1.5244 BC3 2.9858 FSP 6377

MID-COURSE EXECUTION ACCURACY
SGT 1475.4 SGR 2942.5 SG3 1866.7
RRT -.7065 RRF -.9958 RTF .7099
SGB 3291.6 R23 .1135 R13 -.9893
SG1 3143.2 SG2 977.5 THA 111.71

ORBIT DETERMINATION ACCURACY
ST 505.1 SR 458.7 SS 1105.5
CRT -.8862 CRS .8698 CST -.5509
LSA 1221.7 MSA 440.6 SSA 29.6
EL1 662.8 EL2 162.0 ALF 138.10

LAUNCH DATE DEC 21 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 539.013 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 32.930 GAL 5.63 AZL 91.91 HCA 160.40 SMA 184.49 ECC .22401 INC 1.9131 V1 30.275
RP 224.41 LAP -.64 LOP 249.58 VP 21.528 GAP -3.41 AZP 88.20 TAL 31.60 TAP 191.99 RCA 143.17 APO 225.82 V2 24.506
RC 254.766 GL -14.73 GP 23.09 ZAL 39.01 ZAP 106.77 ETS 171.35 ZAE 137.74 ETE 148.78 ZAC 109.78 ETC 255.58 CLP 108.28

PLANETOCENTRIC CONIC

C3 18.515 VHL 4.303 DLA 4.54 RAL 124.49 RAD 6567.7 VEL 11.828 PTH 2.09 VHP 3.381 DPA 23.02 RAP 188.85 ECC 1.3047

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 5 43	2337.24	-22.34	49.40	345.73	107.86	13 44 40	1737.2	-19.69	41.73
90.00	2 15 17	4699.11	15.41	200.58	343.72	65.94	3 33 36	4099.1	12.03	193.53
100.00	14 29 11	2067.99	-23.39	29.22	345.35	109.16	15 3 39	1468.0	-20.56	21.57
100.00	3 34 29	4443.58	16.41	181.31	343.24	64.66	4 48 33	3843.6	12.86	174.32
110.00	15 42 19	1839.10	-26.19	10.67	344.17	112.80	16 12 58	1239.1	-22.87	3.08
110.00	4 37 51	4245.23	19.07	164.83	341.81	61.08	5 48 36	3645.2	15.07	158.00

DIFFERENTIAL CORRECTIONS
TDE .1970 TRA-1.1356 TC3 -.6469 BAU .7899
RDE .0184 RRA 1.2101 RC3 3.1250 FAU .45023
FDE-1.3818 FRA-8.7093 FC-21.0521 BSP 11400
BDE .1978 BRA 1.6595 BC3 3.1913 FSP 6333

MID-COURSE EXECUTION ACCURACY
SGT 1636.9 SGR 3137.8 SG3 1867.0
RRT -.7676 RRF -.9966 RTF .7704
SGB 3539.1 R23 .1159 R13 -.9898
SG1 3404.4 SG2 967.0 THA 113.87

ORBIT DETERMINATION ACCURACY
ST 525.5 SR 492.2 SS 1163.5
CRT -.8335 CRS .9088 CST -.5326
LSA 1290.3 MSA 454.6 SSA 26.3
EL1 689.5 EL2 207.3 ALF 137.25

LAUNCH DATE DEC 21 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 543.095 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 32.926 GAL 5.62 AZL 92.12 HCA 161.48 SMA 184.43 ECC .22370 INC 2.1226 V1 30.275
RP 224.02 LAP -.67 LOP 250.66 VP 21.570 GAP -3.70 AZP 87.99 TAL 31.58 TAP 193.05 RCA 143.17 APO 225.69 V2 24.548
RC 256.380 GL -16.29 GP 24.42 ZAL 39.51 ZAP 104.74 ETS 171.89 ZAE 135.28 ETE 149.59 ZAC 110.87 ETC 255.55 CLP 106.22

PLANETOCENTRIC CONIC

C3 18.716 VHL 4.326 DLA 3.03 RAL 124.10 RAD 6567.8 VEL 11.836 PTH 2.10 VHP 3.392 DPA 24.62 RAP 188.64 ECC 1.3080

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 15 27	2292.59	-21.38	46.48	345.07	109.02	13 53 40	1692.6	-18.59	38.92
90.00	2 2 22	4748.82	16.76	203.60	343.71	66.84	3 21 31	4148.8	13.48	196.46
100.00	14 38 13	2025.66	-22.42	26.46	344.67	110.31	15 11 58	1425.7	-19.45	18.92
100.00	3 22 18	4490.98	17.77	184.18	343.25	65.56	4 37 8	3891.0	14.32	177.08
110.00	15 49 42	1801.92	-25.18	8.24	343.44	113.92	16 19 44	1201.9	-21.73	.79
110.00	4 27 18	4287.49	20.45	167.34	341.85	61.99	5 38 45	3687.5	16.54	160.39

DIFFERENTIAL CORRECTIONS
TDE .3587 TRA-1.0336 TC3 -.4108 BAU 1.0130
RDE .4369 RRA 1.6615 RC3 4.0277 FAU .54940
FDE-3.9474 FR-11.0269 FC-25.4131 BSP 9385
BDE .5653 BRA 1.9568 BC3 4.0486 FSP 1581

MID-COURSE EXECUTION ACCURACY
SGT 1493.7 SGR 4163.6 SG3 2325.9
RRT -.6407 RRF -.9982 RTF .6312
SGB 4423.4 R23 .0751 R13 -.9954
SG1 4280.4 SG2 1115.6 THA 103.91

ORBIT DETERMINATION ACCURACY
ST 628.5 SR 884.8 SS 2009.4
CRT .0035 CRS .9881 CST .1561
LSA 2193.7 MSA 634.7 SSA 14.5
EL1 884.8 EL2 628.5 ALF 89.71

LAUNCH DATE DEC 21 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 547.005 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.923	GAL	5.58	AZL	92.36	HCA	162.56	SMA	184.38	ECC	.22323	INC	2.3578
RP	223.63	LAP	-.71	LOP	251.74	VP	21.613	GAP	-3.94	AZP	87.75	TAL	31.42	TAP	193.98	RCA	143.22	APO	225.53
RC	257.974	GL	-18.07	GP	25.84	ZAL	40.26	ZAP	102.94	ETS	172.36	ZAE	133.00	ETE	150.12	ZAC	112.10	ETC	255.48

V1	30.275	V2	24.590	CLP	104.41														

PLANETOCENTRIC CONIC

C3	18.890	VHL	4.346	DLA	1.28	RAL	123.78	RAD	6567.8	VEL	11.844	PTH	2.10	VHP	3.415	DPA	26.19	RAP	188.71

ECC	1.3109																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 27 11	2240.43	-20.19	43.13	344.43	110.29	14 4 32	1640.4	-17.24	35.69
90.00	1 48 5	4805.32	18.24	207.09	343.86	67.96	3 8 10	4205.3	15.09	199.83
100.00	14 49 7	1976.14	-21.21	23.27	344.01	111.57	15 22 4	1376.1	-18.09	15.86
100.00	3 8 49	4544.85	19.25	187.49	343.41	66.68	4 24 34	3944.8	15.93	180.27
110.00	15 58 44	1758.26	-23.95	5.45	342.73	115.15	16 28 2	1158.3	-20.36	358.15
110.00	4 15 42	4335.49	21.95	170.25	342.06	63.11	5 27 58	3735.5	18.17	163.16

DIFFERENTIAL CORRECTIONS

TDE	.1425	TRA	-1.3506	TC3	-1.0719	BAU	.9125
RDE	.1671	RRA	1.4211	RC3	3.4505	FAU	.43815
FDE	-1.9906	FRA	-8.7659	FC	-20.0811	BSP	13449
BDE	.2197	BRA	1.9605	BC3	3.6132	FSP	6262

MID-COURSE EXECUTION ACCURACY

SGT	2018.6	SGR	3543.4	SG3	1823.0		
RRT	-.8514	RRF	-.9977	RTF	.8536		
SGB	4078.1	R23	.1155	R13	-.9910		
SG1	3966.9	SG2	945.7	THA	117.58		

ORBIT DETERMINATION ACCURACY

ST	567.0	SR	610.5	SS	1292.5
CRT	-.7553	CRS	.9629	CST	-.5533
LSA	1464.9	MSA	467.2	SSA	20.7
EL1	780.9	EL2	290.5	ALF	132.21

LAUNCH DATE DEC 21 1964 FLIGHT TIME 254.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 551.016 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.920	GAL	5.56	AZL	92.62	HCA	163.64	SMA	184.33	ECC	.22286	INC	2.6240
RP	223.24	LAP	-.74	LOP	252.82	VP	21.656	GAP	-4.19	AZP	87.48	TAL	31.32	TAP	194.95	RCA	143.25	APO	225.41
RC	259.547	GL	-20.03	GP	27.40	ZAL	41.08	ZAP	101.05	ETS	172.95	ZAE	130.58	ETE	150.71	ZAC	113.44	ETC	255.41

V1	30.275	V2	24.632	CLP	102.47														

PLANETOCENTRIC CONIC

C3	19.185	VHL	4.380	DLA	-.64	RAL	123.35	RAD	6567.8	VEL	11.856	PTH	2.10	VHP	3.449	DPA	27.92	RAP	188.76

ECC	1.3157																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 39 40	2184.84	-18.84	39.61	343.81	111.54	14 16 5	1584.8	-15.74	32.29
90.00	1 32 13	4868.23	19.80	211.05	344.10	69.33	2 53 22	4268.2	16.81	203.64
100.00	15 0 43	1923.40	-19.85	19.94	343.37	112.82	15 32 46	1323.4	-16.59	12.67
100.00	2 53 52	4604.90	20.83	191.25	343.68	68.06	4 10 36	4004.9	17.66	183.89
110.00	16 8 17	1711.90	-22.58	2.55	342.03	116.38	16 36 49	1111.9	-18.85	355.40
110.00	4 2 47	4389.16	23.57	173.58	342.37	64.49	5 15 56	3789.2	19.94	166.32

DIFFERENTIAL CORRECTIONS

TDE	.1042	TRA	-1.4664	TC3	-1.2730	BAU	.9834
RDE	.2682	RRA	1.5483	RC3	3.6167	FAU	.42920
FDE	-2.3464	FRA	-8.7574	FC	-19.3683	BSP	14495
BDE	.2877	BRA	2.1325	BC3	3.8342	FSP	6108

MID-COURSE EXECUTION ACCURACY

SGT	2223.1	SGR	3776.7	SG3	1788.6		
RRT	-.8779	RRF	-.9981	RTF	.8796		
SGB	4382.4	R23	.1129	R13	-.9918		
SG1	4280.6	SG2	939.2	THA	118.85		

ORBIT DETERMINATION ACCURACY

ST	592.4	SR	708.0	SS	1381.4
CRT	-.7274	CRS	.9790	CST	-.5741
LSA	1592.2	MSA	474.4	SSA	17.9
EL1	860.4	EL2	334.5	ALF	128.07

LAUNCH DATE DEC 21 1964 FLIGHT TIME 256.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 555.035 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.918	GAL	5.53	AZL	92.93	HCA	164.73	SMA	184.29	ECC	.22251	INC	2.9277
RP	222.85	LAP	-.77	LOP	253.91	VP	21.701	GAP	-4.44	AZP	87.18	TAL	31.19	TAP	195.92	RCA	143.29	APO	225.30
RC	261.100	GL	-22.22	GP	29.09	ZAL	42.06	ZAP	99.19	ETS	173.60	ZAE	128.12	ETE	151.26	ZAC	114.91	ETC	255.31

V1	30.275	V2	24.674	CLP	100.53														

PLANETOCENTRIC CONIC

C3	19.585	VHL	4.425	DLA	-2.78	RAL	122.87	RAD	6567.8	VEL	11.873	PTH	2.11	VHP	3.496	DPA	29.76	RAP	188.92

ECC	1.3223																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 53 38	2123.33	-17.25	35.79	343.23	112.81	14 29 2	1523.3	-14.02	28.60
90.00	1 14 25	4939.50	21.45	215.63	344.51	71.05	2 36 44	4339.5	18.66	208.06
100.00	15 13 41	1865.11	-18.27	16.33	342.77	114.08	15 44 46	1265.1	-14.87	9.20
100.00	2 37 3	4672.96	22.49	195.62	344.11	69.78	3 54 56	4073.0	19.54	188.07
110.00	16 18 58	1660.77	-20.99	359.42	341.37	117.62	16 46 38	1060.8	-17.13	352.43
110.00	3 48 16	4450.06	25.30	177.46	342.87	66.20	5 2 26	3850.1	21.86	169.99

DIFFERENTIAL CORRECTIONS

TDE	.0524	TRA	-1.5926	TC3	-1.4692	BAU	1.0593
RDE	.3878	RRA	1.6892	RC3	3.7695	FAU	.41672
FDE	-2.7053	FRA	-8.6913	FC	-18.4209	BSP	15592
BDE	.3914	BRA	2.3216	BC3	4.0457	FSP	5914

MID-COURSE EXECUTION ACCURACY

SGT	2440.7	SGR	4022.2	SG3	1738.8		
RRT	-.8989	RRF	-.9985	RTF	.9003		
SGB	4704.8	R23	.1095	R13	-.9925		
SG1	4611.4	SG2	932.8	THA	119.96		

ORBIT DETERMINATION ACCURACY

ST	624.2	SR	832.8	SS	1477.7
CRT	-.7245	CRS	.9886	CST	-.6139
LSA	1743.3	MSA	477.3	SSA	15.5
EL1	973.6	EL2	368.1	ALF	124.01

LAUNCH DATE DEC 21 1964 FLIGHT TIME 258.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 559.064 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.916	GAL	5.50	AZL	93.28	HCA	165.82	SMA	184.26	ECC	.22218	INC	3.2785
RP	222.47	LAP	-.80	LOP	255.01	VP	21.745	GAP	-4.68	AZP	86.82	TAL	31.06	TAP	196.87	RCA	143.32	APO	225.20
RC	262.633	GL	-24.69	GP	30.94	ZAL	43.24	ZAP	97.37	ETS	174.32	ZAE	125.62	ETE	151.76	ZAC	116.54	ETC	255.19

V1	30.275	V2	24.716	CLP	98.60														

PLANETOCENTRIC CONIC

C3	20.128	VHL	4.486	DLA	-5.18	RAL	122.31	RAD	6567.8	VEL	11.896	PTH	2.11	VHP	3.561	DPA	31.74	RAP	189.21

ECC	1.3313																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 9 27	2054.78	-15.40	31.61	342.74	114.06	14 43 41	1454.8	-12.02	24.56
90.00	0 54 9	5021.06	23.15	221.00	345.15	73.22	2 17 50	4421.1	20.63	213.23
100.00	15 28 21	1800.26	-16.43	12.40	342.24	115.33	15 58 21	1200.3	-12.88	5.41
100.00	2 17 56	4750.82	24.23	200.75	344.78	71.94	3 37 7	4150.8	21.54	192.99
110.00	16 31 0	1604.11	-19.17	356.04	340.77	118.86	16 57 44	1004.1	-15.17	349.21
110.00	3 31 47	4519.73	27.13	182.05	343.62	68.36	4 47 7	3919.7	23.95	174.33

DIFFERENTIAL CORRECTIONS

TDE	-.0112	TRA	-1.7273	TC3	-1.6471	BAU	1.1393
RDE	.5299	RRA	1.8459	RC3	3.9005	FAU	.40037
FDE	-3.0571	FRA	-8.5569	FC	-17.2204	BSP	16822
BDE	.5301	BRA	2.5280	BC3	4.2340	FSP	5695

MID-COURSE EXECUTION ACCURACY

SGT	2662.8	SGR	4279.0	SG3	1671.8		
RRT	-.9149	RRF	-.9988	RTF	.9160		
SGB	5039.8	R23	.1057	R13	-.9932		
SG1	4953.6	SG2	928.3	THA	120.86		

ORBIT DETERMINATION ACCURACY

ST	666.1	SR	986.6	SS	1577.5
CRT	-.7398	CRS	.9940	CST	-.6627
LSA	1917.2	MSA	478.9	SSA	13.3
EL1	1123.4	EL2	393.6	ALF	120.71

LAUNCH DATE DEC 21 1964 FLIGHT TIME 260.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 563.101 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 32.915 GAL 5.47 AZL 93.69 HCA 166.91 SMA 184.24 ECC .22187 INC 3.6876 V1 30.275
RP 222.08 LAP -.83 LOP 256.10 VP 21.791 GAP -4.92 AZP 86.41 TAL 30.90 TAP 197.81 RCA 143.36 APO 225.12 V2 24.758
RC 264.145 GL -27.47 GP 32.97 ZAL 44.65 ZAP 95.60 ETS 175.12 ZAE 123.10 ETE 152.23 ZAC 118.35 ETC 255.02 CLP 96.68

PLANETOCENTRIC CONIC

C3 20.872 VHL 4.569 DLA -7.88 RAL 121.66 RAD 6567.8 VEL 11.927 PTH 2.12 VHP 3.646 DPA 33.85 RAP 189.67 ECC 1.3435

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 27 36	1977.68	-13.21	27.01	342.36	115.28	15 0 34	1377.7	-9.69	20.09
90.00	0 30 45	5115.50	24.86	227.39	346.07	75.99	1 56 1	4515.5	22.69	219.39
100.00	15 45 8	1727.53	-14.26	8.09	341.84	116.55	16 13 56	1127.5	-10.58	1.23
100.00	1 55 54	4840.89	25.99	206.86	345.74	74.70	3 16 35	4240.9	23.64	198.85
110.00	16 44 43	1541.01	-17.05	352.37	340.27	120.08	17 10 24	941.0	-12.93	345.69
110.00	3 12 49	4600.17	29.03	187.53	344.69	71.10	4 29 29	4000.2	26.17	179.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0914 TRA-1.8745 TC3-1.8044 BAU 1.2265 SGT 2892.1 SGR 4558.8 SG3 1590.5 ST 722.9 SR 1177.7 SS 1684.5
RDE .7051 RRA 2.0273 RC3 4.0082 FAU .38080 RRT -.9277 RRF -.9990 RTF .9285 CRT -.7695 CRS .9969 CST -.7179
FDE-3.4118 FRA-8.3686 FC-15.7954 BSP 18040 SGB 5398.8 R23 .1015 R13 -.9938 LSA 2125.4 MSA 479.3 SSA 11.2
BDE .7110 BRA 2.7611 BC3 4.3956 FSP 5394 SG1 5318.9 SG2 925.4 THA 121.54 EL1 1319.0 EL2 412.2 ALF 118.29

LAUNCH DATE DEC 21 1964 FLIGHT TIME 262.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 567.146 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 32.914 GAL 5.43 AZL 94.17 HCA 168.00 SMA 184.23 ECC .22157 INC 4.1717 V1 30.275
RP 221.70 LAP -.87 LOP 257.20 VP 21.837 GAP -5.15 AZP 85.92 TAL 30.74 TAP 198.74 RCA 143.41 APO 225.05 V2 24.799
RC 265.639 GL -30.62 GP 35.20 ZAL 46.34 ZAP 93.90 ETS 175.99 ZAE 120.54 ETE 152.68 ZAC 120.36 ETC 254.79 CLP 94.78

PLANETOCENTRIC CONIC

C3 21.900 VHL 4.680 DLA -10.94 RAL 120.87 RAD 6567.9 VEL 11.970 PTH 2.13 VHP 3.757 DPA 36.11 RAP 190.34 ECC 1.3604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 48 54	1889.79	-10.60	21.87	342.20	116.41	15 20 23	1289.8	-6.96	15.08
90.00	0 3 10	5226.55	26.46	235.12	347.35	79.54	1 30 17	4626.5	24.75	226.87
100.00	16 4 45	1645.04	-11.70	3.31	341.63	117.71	16 32 10	1045.0	-7.90	356.58
100.00	1 29 59	4946.53	27.68	214.26	347.08	78.24	2 52 26	4346.5	25.78	205.97
110.00	17 0 35	1470.21	-14.60	348.36	339.94	121.26	17 25 5	870.2	-10.35	341.83
110.00	2 50 39	4694.13	30.92	194.20	346.19	74.63	4 8 53	4094.1	28.50	185.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1902 TRA-2.0358 TC3-1.9296 BAU 1.3195 SGT 3124.2 SGR 4855.3 SG3 1490.4 ST 798.2 SR 1406.3 SS 1787.1
RDE .9184 RRA 2.2367 RC3 4.0727 FAU .35702 RRT -.9379 RRF -.9992 RTF .9385 CRT -.8064 CRS .9985 CST -.7729
FDE-3.7391 FRA-8.1033 FC-14.1137 BSP 19323 SGB 5773.6 R23 .0970 R13 -.9945 LSA 2362.0 MSA 478.8 SSA 9.5
BDE .9379 BRA 3.0245 BC3 4.5067 FSP 5037 SG1 5699.3 SG2 923.3 THA 122.05 EL1 1560.1 EL2 425.5 ALF 116.74

LAUNCH DATE DEC 21 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 571.199 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 32.914 GAL 5.40 AZL 94.75 HCA 169.10 SMA 184.22 ECC .22129 INC 4.7538 V1 30.275
RP 221.32 LAP -.90 LOP 258.31 VP 21.884 GAP -5.37 AZP 85.33 TAL 30.56 TAP 199.66 RCA 143.45 APO 224.99 V2 24.841
RC 267.114 GL -34.20 GP 37.67 ZAL 48.37 ZAP 92.30 ETS 176.96 ZAE 117.96 ETE 153.10 ZAC 122.60 ETC 254.50 CLP 92.90

PLANETOCENTRIC CONIC

C3 23.344 VHL 4.832 DLA -14.39 RAL 119.90 RAD 6567.9 VEL 12.030 PTH 2.15 VHP 3.904 DPA 38.54 RAP 191.27 ECC 1.3842

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 14 39	1787.50	-7.44	16.02	342.37	117.40	15 44 27	1187.5	-3.71	9.32
90.00	23 25 48	5359.87	27.76	244.66	349.06	84.15	24 55 7	4759.9	26.66	236.17
100.00	16 28 18	1549.85	-8.63	357.90	341.73	118.73	16 54 8	949.9	-4.73	351.29
100.00	0 58 45	5072.75	29.10	223.37	348.89	82.83	2 23 18	4472.7	27.80	214.80
110.00	17 19 21	1389.99	-11.72	343.93	339.88	122.34	17 42 31	790.0	-7.36	337.54
110.00	2 24 12	4805.38	32.63	202.41	348.24	79.21	3 44 18	4205.4	30.80	193.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3106 TRA-2.2149 TC3-2.0120 BAU 1.4192 SGT 3356.9 SGR 5169.0 SG3 1370.3 ST 894.9 SR 1674.6 SS 1875.8
RDE 1.1805 RRA 2.4814 RC3 4.0781 FAU .32887 RRT -.9460 RRF -.9993 RTF .9464 CRT -.8434 CRS .9992 CST -.8219
FDE-4.0182 FRA-7.7464 FC-12.1965 BSP 20676 SGB 6163.4 R23 .0926 R13 -.9950 LSA 2625.8 MSA 478.3 SSA 7.9
BDE 1.2207 BRA 3.3261 BC3 4.5475 FSP 4621 SG1 6093.9 SG2 922.8 THA 122.40 EL1 1848.1 EL2 435.7 ALF 115.80

LAUNCH DATE DEC 21 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 575.259 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 32.914 GAL 5.36 AZL 95.47 HCA 170.20 SMA 184.22 ECC .22102 INC 5.4678 V1 30.275
RP 220.94 LAP -.93 LOP 259.42 VP 21.931 GAP -5.59 AZP 84.61 TAL 30.37 TAP 200.57 RCA 143.50 APO 224.94 V2 24.883
RC 268.570 GL -38.27 GP 40.39 ZAL 50.77 ZAP 90.81 ETS 178.02 ZAE 115.36 ETE 153.51 ZAC 125.09 ETC 254.11 CLP 91.07

PLANETOCENTRIC CONIC

C3 25.419 VHL 5.042 DLA -18.30 RAL 118.71 RAD 6568.0 VEL 12.116 PTH 2.17 VHP 4.099 DPA 41.14 RAP 192.53 ECC 1.4183

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 47 25	1663.88	-3.52	9.05	343.11	118.12	16 15 9	1063.9	.27	2.42
90.00	22 43 27	5525.29	28.32	256.72	351.20	90.16	24 15 33	4925.3	28.04	248.06
100.00	16 57 50	1436.68	-4.88	351.60	342.35	119.53	17 21 47	836.7	-.91	345.06
100.00	0 19 40	5227.73	29.87	234.81	351.18	88.80	1 46 47	4627.7	29.38	226.04
110.00	17 42 14	1297.59	-8.30	338.95	340.25	123.28	18 3 51	697.6	-3.87	332.67
110.00	1 51 46	4939.58	33.88	212.68	350.93	85.16	3 14 5	4339.6	32.84	203.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4527 TRA-2.4139 TC3-2.0337 BAU 1.5250 SGT 3580.2 SGR 5495.1 SG3 1228.5 ST 1009.8 SR 1981.0 SS 1935.3
RDE 1.5035 RRA 2.7717 RC3 4.0004 FAU .29588 RRT -.9523 RRF -.9994 RTF .9525 CRT -.8743 CRS .9996 CST -.8605
FDE-4.2143 FRA-7.2817 FC-10.0774 BSP 22186 SGB 6558.5 R23 .0883 R13 -.9955 LSA 2908.6 MSA 479.5 SSA 6.6
BDE 1.5701 BRA 3.6755 BC3 4.4876 FSP 4153 SG1 6493.1 SG2 924.2 THA 122.56 EL1 2178.5 EL2 445.7 ALF 115.15

LAUNCH DATE DEC 21 1964 FLIGHT TIME 268.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 579.325 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 32.914 GAL 5.32 AZL 96.36 HCA 171.31 SMA 184.23 ECC .22077 INC 6.3632 V1 30.275
RP 220.56 LAP -.96 LOP 260.53 VP 21.978 GAP -5.81 AZP 83.71 TAL 30.16 TAP 201.47 RCA 143.55 APO 224.90 V2 24.924
RC 270.009 GL -42.89 GP 43.38 ZAL 53.61 ZAP 89.48 ETS 179.16 ZAE 112.75 ETE 153.90 ZAC 127.86 ETC 253.59 CLP 89.29

PLANETOCENTRIC CONIC

C3 28.487 VHL 5.337 DLA -22.70 RAL 117.18 RAD 6568.1 VEL 12.242 PTH 2.20 VHP 4.360 DPA 43.92 RAP 194.22 ECC 1.4688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 29	1501.16	1.73	359.97	344.89	118.27	16 58 30	901.2	5.50	353.31
90.00	21 45 13	5744.62	27.24	272.65	353.45	98.06	23 20 58	5144.6	28.07	264.08
100.00	17 37 56	1293.11	-.02	343.71	343.91	119.89	17 59 29	693.1	3.95	337.18
100.00	23 23 27	5427.89	29.23	249.64	353.74	96.56	24 53 55	4827.9	29.83	240.88
110.00	18 11 35	1187.64	-4.16	333.14	341.34	123.96	18 31 22	587.6	.33	326.93
110.00	1 10 14	5106.13	34.08	225.67	354.20	92.83	2 35 20	4506.1	34.10	216.42

DIFFERENTIAL CORRECTIONS
TDE -.6299 TRA-2.6511 TC3-1.9989 BAU 1.6483
RDE 1.9174 RRA 3.1381 RC3 3.8388 FAU .25958
FDE-4.3142 FRA-6.7238 FC3-7.8889 BSP 23431
BDE 2.0182 BRA 4.1081 BC3 4.3280 FSP 3569

MID-COURSE EXECUTION ACCURACY
SGT 3811.4 SGR 5861.9 SG3 1070.7
RRT -.9578 RRF -.9995 RTF .9577
SGB 6992.1 R23 .0838 R13 -.9960
SG1 6930.5 SG2 926.2 THA 122.57

ORBIT DETERMINATION ACCURACY
ST 1148.0 SR 2334.9 SS 1958.3
CRT -.9004 CRS .9998 CST -.8915
LSA 3220.7 MSA 481.5 SSA 5.4
EL1 2561.7 EL2 455.1 ALF 114.71

LAUNCH DATE DEC 21 1964 FLIGHT TIME 270.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 583.396 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 32.915 GAL 5.28 AZL 97.52 HCA 172.41 SMA 184.24 ECC .22054 INC 7.5213 V1 30.275
RP 220.18 LAP -.99 LOP 261.65 VP 22.026 GAP -6.02 AZP 82.54 TAL 29.95 TAP 202.36 RCA 143.61 APO 224.87 V2 24.965
RC 271.430 GL -48.12 GP 46.67 ZAL 56.94 ZAP 88.35 ETS 180.37 ZAE 110.16 ETE 154.28 ZAC 130.92 ETC 252.91 CLP 87.59

PLANETOCENTRIC CONIC

C3 33.205 VHL 5.762 DLA -27.64 RAL 115.18 RAD 6568.3 VEL 12.433 PTH 2.25 VHP 4.721 DPA 46.83 RAP 196.45 ECC 1.5465

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 55	1194.70	11.35	342.59	349.65	116.12	18 26 49	594.7	14.77	335.58
90.00	19 55 52	839.99	20.86	320.93	353.82	109.59	20 9 52	240.0	23.35	313.13
100.00	18 45 29	1070.03	7.48	331.39	347.60	119.03	19 3 19	470.0	11.29	324.68
100.00	21 59 59	5727.93	25.01	270.88	355.31	106.93	23 35 27	5127.9	27.09	262.69
110.00	18 53 10	1045.92	1.26	325.74	343.77	124.16	19 10 36	445.9	5.73	319.51
110.00	0 12 44	5324.81	32.08	242.38	357.42	102.51	1 41 28	4724.8	35.46	233.42

DIFFERENTIAL CORRECTIONS
TDE -.8308 TRA-2.9274 TC3-1.8796 BAU 1.7822
RDE 2.4289 RRA 3.5903 RC3 3.5474 FAU .21818
FDE-4.2228 FRA-6.0081 FC3-5.6883 BSP 24920
BDE 2.5671 BRA 4.6325 BC3 4.0146 FSP 2960

MID-COURSE EXECUTION ACCURACY
SGT 4021.2 SGR 6227.7 SG3 889.9
RRT -.9620 RRF -.9996 RTF .9616
SGB 7413.1 R23 .0800 R13 -.9964
SG1 7354.5 SG2 930.0 THA 122.43

ORBIT DETERMINATION ACCURACY
ST 1287.7 SR 2703.5 SS 1902.6
CRT -.9176 CRS .9999 CST -.9115
LSA 3514.2 MSA 487.6 SSA 4.4
EL1 2957.8 EL2 467.8 ALF 114.26

LAUNCH DATE DEC 21 1964 FLIGHT TIME 298.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 641.902 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 32.957 GAL 4.39 AZL 80.72 HCA 188.61 SMA 184.95 ECC .21767 INC 9.2761 V1 30.275
RP 215.21 LAP -1.38 LOP 277.67 VP 22.711 GAP -8.37 AZP 99.17 TAL 24.98 TAP 213.59 RCA 144.70 APO 225.21 V2 25.517
RC 289.516 GL 57.26 GP -41.73 ZAL 65.25 ZAP 72.64 ETS 162.80 ZAE 95.12 ETE 182.97 ZAC 43.76 ETC 252.47 CLP 66.44

PLANETOCENTRIC CONIC

C3 39.656 VHL 6.297 DLA 70.09 RAL 170.88 RAD 6568.5 VEL 12.689 PTH 2.31 VHP 4.666 DPA -30.24 RAP 148.15 ECC 1.6526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
10.77	9 16 42	4347.57	-50.17	244.60	131.91	14.89	10 29 9	3747.6	-57.85	241.16
10.77	0 57 29	4864.40	-15.72	251.28	15.62	9.84	2 18 34	4264.4	-23.60	250.21
20.77	7 6 18	4467.40	-39.25	235.01	90.14	23.78	8 20 46	3867.4	-46.48	230.76
20.77	3 48 7	4709.02	-23.96	241.18	47.64	19.98	5 6 36	4109.0	-31.45	238.40
22.76	5 31 27	4583.10	-31.30	236.34	68.17	23.49	6 47 50	3983.1	-38.57	232.68
157.24	15 59 37	2829.29	-31.29	86.17	68.15	23.48	16 46 47	2229.3	-38.57	82.52

DIFFERENTIAL CORRECTIONS
TDE 7.4525 TRA -.1128 TC3-3.2460 BAU 2.1635
RDE 4.2347 RRA .2872 RC3-2.4734 FAU .23212
FDE 7.7172 FRA .5919 FC3-5.0674 BSP 31457
BDE 8.5716 BRA .3086 BC3 4.0809 FSP 3012

MID-COURSE EXECUTION ACCURACY
SGT 7923.5 SGR 5013.7 SG3 831.1
RRT .9724 RRF .9983 RTF .9607
SGB 9376.5 R23 .2102 R13 .9769
SG1 9323.6 SG2 994.5 THA 32.01

ORBIT DETERMINATION ACCURACY
ST 6782.4 SR 3860.9 SS 2837.9
CRT .9973 CRS-1.0000 CST -.9967
LSA 8298.9 MSA 298.2 SSA 5.2
EL1 7800.5 EL2 245.7 ALF 29.62

LAUNCH DATE DEC 21 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 646.107 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 32.962 GAL 4.32 AZL 81.68 HCA 189.78 SMA 185.04 ECC .21758 INC 8.3217 V1 30.275
RP 214.88 LAP -1.41 LOP 278.84 VP 22.759 GAP -8.51 AZP 98.20 TAL 24.56 TAP 214.34 RCA 144.78 APO 225.30 V2 25.554
RC 290.691 GL 54.18 GP -38.31 ZAL 63.75 ZAP 70.48 ETS 162.79 ZAE 93.83 ETE 181.55 ZAC 46.95 ETC 253.51 CLP 64.80

PLANETOCENTRIC CONIC

C3 34.416 VHL 5.867 DLA 67.24 RAL 166.81 RAD 6568.4 VEL 12.481 PTH 2.26 VHP 4.427 DPA -27.02 RAP 149.54 ECC 1.5664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
26.07	5 22 25	4537.62	-32.80	231.75	61.13	27.40	6 38 3	3937.6	-39.81	227.39
153.93	15 36 10	2803.17	-32.79	85.13	61.12	27.40	16 22 53	2203.2	-39.81	80.76
26.07	5 22 25	4537.62	-32.80	231.75	61.13	27.40	6 38 3	3937.6	-39.81	227.39
153.93	15 36 10	2803.17	-32.79	85.13	61.12	27.40	16 22 53	2203.2	-39.81	80.76
26.07	5 22 25	4537.62	-32.80	231.75	61.13	27.40	6 38 3	3937.6	-39.81	227.39
153.93	15 36 10	2803.17	-32.79	85.13	61.12	27.40	16 22 53	2203.2	-39.81	80.76

DIFFERENTIAL CORRECTIONS
TDE 6.9330 TRA -.3184 TC3-3.7801 BAU 2.0998
RDE 3.5884 RRA .1648 RC3-2.5572 FAU .25722
FDE 8.0810 FRA .4262 FC3-6.4705 BSP 31497
BDE 7.8066 BRA .3586 BC3 4.5638 FSP 3427

MID-COURSE EXECUTION ACCURACY
SGT 8134.2 SGR 4632.3 SG3 950.7
RRT .9741 RRF .9983 RTF .9636
SGB 9360.7 R23 .2105 R13 .9767
SG1 9315.9 SG2 915.0 THA 29.33

ORBIT DETERMINATION ACCURACY
ST 6776.8 SR 3508.0 SS 3022.3
CRT .9974 CRS-1.0000 CST -.9970
LSA 8202.8 MSA 282.4 SSA 6.0
EL1 7627.7 EL2 222.5 ALF 27.33

LAUNCH DATE DEC 21 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 650.323 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.967	GAL	4.24	AZL	82.43	HCA	190.94	SMA	185.12	ECC	.21749	INC	7.5664
RP	214.56	LAP	-1.43	LOP	280.02	VP	22.808	GAP	-8.64	AZP	97.43	TAL	24.13	TAP	215.07	RCA	144.86	APO	225.39
RC	291.851	GL	51.48	GP	-35.24	ZAL	62.53	ZAP	68.45	ETS	162.89	ZAE	92.47	ETE	180.38	ZAC	49.84	ETC	254.30

V1 30.275 V2 25.590 CLP 63.27

PLANETOCENTRIC CONIC

C3	30.617	VHL	5.533	DLA	64.65	RAL	164.08	RAD	6568.2	VEL	12.328	PTH	2.22	VHP	4.261	DPA	-24.14	RAP	150.74

ECC 1.5039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
29.10	5 18 27	4497.81	-33.79	227.39	55.61	31.01	6 33 25	3897.8	-40.53	222.39
150.90	15 18 24	2784.07	-33.78	84.14	55.59	31.01	16 4 48	2184.1	-40.53	79.14
29.10	5 18 27	4497.81	-33.79	227.39	55.61	31.01	6 33 25	3897.8	-40.53	222.39
150.90	15 18 24	2784.07	-33.78	84.14	55.59	31.01	16 4 48	2184.1	-40.53	79.14
29.10	5 18 27	4497.81	-33.79	227.39	55.61	31.01	6 33 25	3897.8	-40.53	222.39
150.90	15 18 24	2784.07	-33.78	84.14	55.59	31.01	16 4 48	2184.1	-40.53	79.14

DIFFERENTIAL CORRECTIONS

TDE	6.5002	TRA	-.4879	TC3	-4.3190	BAU	2.0630
RDE	3.0564	RRA	.0811	RC3	-2.5979	FAU	.27720
FDE	8.1704	FRA	.2561	FC3	-7.8383	BSP	31390
BDE	7.1829	BRA	.4946	BC3	5.0401	FSP	3729

MID-COURSE EXECUTION ACCURACY

SGT	8339.1	SGR	4280.2	SG3	1048.3		
RRT	.9753	RRF	.9982	RTF	.9654		
SGB	9373.4	R23	.2120	R13	.9761		
SG1	9335.3	SG2	844.5	THA	26.83		

ORBIT DETERMINATION ACCURACY

ST	6741.7	SR	3166.5	SS	3116.8		
CRT	.9975	CRS	-1.0000	CST	-.9972		
LSA	8069.5	MSA	271.5	SSA	7.0		
EL1	7445.5	EL2	204.5	ALF	25.12		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 654.547 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.972	GAL	4.16	AZL	83.05	HCA	192.12	SMA	185.21	ECC	.21741	INC	6.9540
RP	214.24	LAP	-1.46	LOP	281.20	VP	22.856	GAP	-8.78	AZP	96.80	TAL	23.67	TAP	215.79	RCA	144.95	APO	225.48
RC	292.998	GL	49.10	GP	-32.50	ZAL	61.57	ZAP	66.53	ETS	163.08	ZAE	91.06	ETE	179.39	ZAC	52.44	ETC	254.91

V1 30.275 V2 25.626 CLP 61.82

PLANETOCENTRIC CONIC

C3	27.749	VHL	5.268	DLA	62.30	RAL	162.22	RAD	6568.1	VEL	12.212	PTH	2.19	VHP	4.146	DPA	-21.56	RAP	151.79

ECC 1.4567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
31.87	5 17 34	4462.42	-34.41	223.30	51.16	34.29	6 31 57	3862.4	-40.88	217.77
148.13	15 4 24	2770.27	-34.40	83.25	51.14	34.29	15 50 34	2170.3	-40.87	77.72
31.87	5 17 34	4462.42	-34.41	223.30	51.16	34.29	6 31 57	3862.4	-40.88	217.77
148.13	15 4 24	2770.27	-34.40	83.25	51.14	34.29	15 50 34	2170.3	-40.87	77.72
31.87	5 17 34	4462.42	-34.41	223.30	51.16	34.29	6 31 57	3862.4	-40.88	217.77
148.13	15 4 24	2770.27	-34.40	83.25	51.14	34.29	15 50 34	2170.3	-40.87	77.72

DIFFERENTIAL CORRECTIONS

TDE	6.1777	TRA	-.5957	TC3	-4.8121	BAU	2.0239
RDE	2.6417	RRA	.0463	RC3	-2.5699	FAU	.28881
FDE	8.1415	FRA	.1704	FC3	-9.0103	BSP	32241
BDE	6.7188	BRA	.5974	BC3	5.4554	FSP	4087

MID-COURSE EXECUTION ACCURACY

SGT	8531.9	SGR	3949.5	SG3	1122.2		
RRT	.9758	RRF	.9979	RTF	.9662		
SGB	9401.7	R23	.2147	R13	.9752		
SG1	9368.8	SG2	786.0	THA	24.49		

ORBIT DETERMINATION ACCURACY

ST	6733.9	SR	2874.7	SS	3173.9		
CRT	.9973	CRS	-1.0000	CST	-.9971		
LSA	7975.6	MSA	271.1	SSA	7.8		
EL1	7319.3	EL2	194.6	ALF	23.08		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 658.785 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.978	GAL	4.08	AZL	83.55	HCA	193.29	SMA	185.31	ECC	.21734	INC	6.4467
RP	213.93	LAP	-1.48	LOP	282.38	VP	22.903	GAP	-8.90	AZP	96.28	TAL	23.21	TAP	216.50	RCA	145.03	APO	225.58
RC	294.131	GL	46.99	GP	-30.05	ZAL	60.83	ZAP	64.72	ETS	163.31	ZAE	89.63	ETE	178.58	ZAC	54.77	ETC	255.39

V1 30.275 V2 25.662 CLP 60.44

PLANETOCENTRIC CONIC

C3	25.514	VHL	5.051	DLA	60.16	RAL	160.93	RAD	6568.0	VEL	12.120	PTH	2.17	VHP	4.067	DPA	-19.27	RAP	152.72

ECC 1.4199

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.41	5 18 41	4430.50	-34.75	219.50	47.50	37.26	6 32 31	3830.5	-40.95	213.51
145.59	14 53 1	2760.52	-34.74	82.49	47.48	37.26	15 39 1	2160.5	-40.94	76.50
34.41	5 18 41	4430.50	-34.75	219.50	47.50	37.26	6 32 31	3830.5	-40.95	213.51
145.59	14 53 1	2760.52	-34.74	82.49	47.48	37.26	15 39 1	2160.5	-40.94	76.50
34.41	5 18 41	4430.50	-34.75	219.50	47.50	37.26	6 32 31	3830.5	-40.95	213.51
145.59	14 53 1	2760.52	-34.74	82.49	47.48	37.26	15 39 1	2160.5	-40.94	76.50

DIFFERENTIAL CORRECTIONS

TDE	5.8844	TRA	-.7077	TC3	-5.3362	BAU	2.0169
RDE	2.2858	RRA	.0081	RC3	-2.5470	FAU	.29972
FDE	7.9334	FRA	.0351	FC	-10.1700	BSP	32254
BDE	6.3127	BRA	.7078	BC3	5.9128	FSP	4223

MID-COURSE EXECUTION ACCURACY

SGT	8730.2	SGR	3652.9	SG3	1180.1		
RRT	.9767	RRF	.9976	RTF	.9672		
SGB	9463.6	R23	.2160	R13	.9745		
SG1	9435.7	SG2	725.3	THA	22.37		

ORBIT DETERMINATION ACCURACY

ST	6694.2	SR	2594.0	SS	3164.2		
CRT	.9972	CRS	-1.0000	CST	-.9971		
LSA	7841.2	MSA	262.7	SSA	8.8		
EL1	7176.9	EL2	180.6	ALF	21.14		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 663.031 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.983	GAL	4.00	AZL	83.98	HCA	194.48	SMA	185.40	ECC	.21728	INC	6.0194
RP	213.62	LAP	-1.50	LOP	283.57	VP	22.951	GAP	-9.03	AZP	95.83	TAL	22.73	TAP	217.21	RCA	145.12	APO	225.69
RC	295.251	GL	45.11	GP	-27.87	ZAL	60.28	ZAP	63.02	ETS	163.57	ZAE	88.18	ETE	177.89	ZAC	56.87	ETC	255.78

V1 30.275 V2 25.697 CLP 59.12

PLANETOCENTRIC CONIC

C3	23.722	VHL	4.870	DLA	58.22	RAL	160.06	RAD	6568.0	VEL	12.046	PTH	2.15	VHP	4.015	DPA	-17.23	RAP	153.55

ECC 1.3904

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.75	5 21 12	4401.28	-34.90	215.96	44.47	39.95	6 34 33	3801.3	-40.85	209.60
143.25	14 43 32	2753.93	-34.88	81.86	44.45	39.94	15 29 26	2153.9	-40.83	75.50
36.75	5 21 12	4401.28	-34.90	215.96	44.47	39.95	6 34 33	3801.3	-40.85	209.60
143.25	14 43 32	2753.93	-34.88	81.86	44.45	39.94	15 29 26	2153.9	-40.83	75.50
36.75	5 21 12	4401.28	-34.90	215.96	44.47	39.95	6 34 33	3801.3	-40.85	209.60
143.25	14 43 32	2753.93	-34.88	81.86	44.45	39.94	15 29 26	2153.9	-40.83	75.50

DIFFERENTIAL CORRECTIONS

TDE	5.6419	TRA	-.7962	TC3	-5.8490	BAU	2.0170
RDE	1.9960	RRA	-.0128	RC3	-2.4979	FAU	.30644
FDE	7.6625	FRA	-.0632	FC	-11.1838	BSP	32437
BDE	5.9846	BRA	.7963	BC3	6.3601	FSP	4325

MID-COURSE EXECUTION ACCURACY

SGT	8926.1	SGR	3381.6	SG3	1221.7		
RRT	.9773	RRF	.9971	RTF	.9677		
SGB	9545.2	R23	.2167	R13	.9738		
SG1	9521.5	SG2	671.8	THA	20.42		

ORBIT DETERMINATION ACCURACY

ST	6660.7	SR	2349.3	SS	3129.2		
CRT	.9971	CRS	-1.0000	CST	-.9971		
LSA	7720.7	MSA	257.5	SSA	9.9		
EL1	7060.8	EL2	169.9	ALF	19.39		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 667.285 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.989	GAL	3.92	AZL	84.35	HCA	195.66	SMA	185.50	ECC	.21723	INC	5.6545
RP	213.31	LAP	-1.52	LOP	284.76	VP	22.997	GAP	-9.15	AZP	95.45	TAL	22.24	TAP	217.90	RCA	145.20	APO	225.80
RC	296.356	GL	43.43	GP	-25.91	ZAL	59.89	ZAP	61.41	ETS	163.84	ZAE	86.73	ETE	177.32	ZAC	58.75	ETC	256.08

V1	30.275	V2	25.731	CLP	57.85														

PLANETOCENTRIC CONIC

C3	22.250	VHL	4.717	DLA	56.44	RAL	159.50	RAD	6567.9	VEL	11.985	PTH	2.14	VHP	3.983	DPA	-15.42	RAP	154.32
ECC	1.3662																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.90	5 24 44	4374.23	-34.90	212.67	41.95	42.38	6 37 38	3774.2	-40.61	205.99
141.10	14 35 32	2749.79	-34.89	81.36	41.93	42.37	15 21 22	2149.8	-40.60	74.68
38.90	5 24 44	4374.23	-34.90	212.67	41.95	42.38	6 37 38	3774.2	-40.61	205.99
141.10	14 35 32	2749.79	-34.89	81.36	41.93	42.37	15 21 22	2149.8	-40.60	74.68
38.90	5 24 44	4374.23	-34.90	212.67	41.95	42.38	6 37 38	3774.2	-40.61	205.99
141.10	14 35 32	2749.79	-34.89	81.36	41.93	42.37	15 21 22	2149.8	-40.60	74.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	5.4412	TRA	-.8627	TC3	-6.3479	BAU	2.0220	SGT	9118.1	SGR	3134.1	SG3	1249.8	ST	6636.2	SR	2136.2	SS	3076.4
RDE	1.7577	RRA	-.0217	RC3	-2.4315	FAU	.30986	RRT	.9777	RRF	.9965	RTF	.9680	CRT	.9969	CRS	-1.0000	CST	-.9970
FDE	7.3536	FRA	-.1265	FC	-12.0565	BSP	32813	SGB	9641.7	R23	.2169	R13	.9730	LSA	7615.9	MSA	253.8	SSA	10.9
BDE	5.7181	BRA	.8630	BC3	6.7977	FSP	4395	SG1	9621.5	SG2	624.2	THA	18.66	EL1	6969.6	EL2	161.0	ALF	17.80

LAUNCH DATE DEC 21 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 671.547 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	32.995	GAL	3.83	AZL	84.66	HCA	196.85	SMA	185.60	ECC	.21719	INC	5.3390
RP	213.01	LAP	-1.55	LOP	285.95	VP	23.044	GAP	-9.27	AZP	95.11	TAL	21.73	TAP	218.58	RCA	145.29	APO	225.91
RC	297.448	GL	41.93	GP	-24.17	ZAL	59.65	ZAP	59.88	ETS	164.12	ZAE	85.30	ETE	176.85	ZAC	60.45	ETC	256.33

V1	30.275	V2	25.765	CLP	56.63														

PLANETOCENTRIC CONIC

C3	21.017	VHL	4.584	DLA	54.80	RAL	159.18	RAD	6567.9	VEL	11.933	PTH	2.12	VHP	3.967	DPA	-13.81	RAP	155.02
ECC	1.3459																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.90	5 29 0	4348.93	-34.80	209.60	39.84	44.58	6 41 29	3748.9	-40.28	202.66
139.10	14 28 43	2747.58	-34.79	80.97	39.82	44.57	15 14 30	2147.6	-40.27	74.04
40.90	5 29 0	4348.93	-34.80	209.60	39.84	44.58	6 41 29	3748.9	-40.28	202.66
139.10	14 28 43	2747.58	-34.79	80.97	39.82	44.57	15 14 30	2147.6	-40.27	74.04
40.90	5 29 0	4348.93	-34.80	209.60	39.84	44.58	6 41 29	3748.9	-40.28	202.66
139.10	14 28 43	2747.58	-34.79	80.97	39.82	44.57	15 14 30	2147.6	-40.27	74.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	5.2706	TRA	-.9135	TC3	-6.8393	BAU	2.0323	SGT	9307.9	SGR	2909.0	SG3	1266.6	ST	6616.6	SR	1950.7	SS	3011.8
RDE	1.5599	RRA	-.0233	RC3	-2.3542	FAU	.31068	RRT	.9779	RRF	.9957	RTF	.9682	CRT	.9966	CRS	-1.0000	CST	-.9969
FDE	7.0255	FRA	-.1617	FC	-12.7977	BSP	33237	SGB	9751.9	R23	.2161	R13	.9723	LSA	7522.8	MSA	251.6	SSA	12.0
BDE	5.4965	BRA	.9138	BC3	7.2331	FSP	4432	SG1	9734.5	SG2	582.0	THA	17.06	EL1	6896.4	EL2	153.9	ALF	16.38

LAUNCH DATE DEC 21 1964 FLIGHT TIME 314.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 675.818 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.001	GAL	3.74	AZL	84.94	HCA	198.05	SMA	185.71	ECC	.21716	INC	5.0632
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.090	GAP	-9.38	AZP	94.82	TAL	21.21	TAP	219.25	RCA	145.38	APO	226.03
RC	298.526	GL	40.58	GP	-22.59	ZAL	59.54	ZAP	58.43	ETS	164.40	ZAE	83.87	ETE	176.45	ZAC	61.98	ETC	256.52

V1	30.275	V2	25.798	CLP	55.45														

PLANETOCENTRIC CONIC

C3	19.965	VHL	4.468	DLA	53.29	RAL	159.05	RAD	6567.8	VEL	11.889	PTH	2.11	VHP	3.962	DPA	-12.38	RAP	155.69
ECC	1.3286																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.77	5 33 53	4324.99	-34.62	206.71	38.08	46.59	6 45 58	3725.0	-39.89	199.56
137.23	14 22 48	2746.97	-34.61	80.70	38.06	46.58	15 8 35	2147.0	-39.88	73.55
42.77	5 33 53	4324.99	-34.62	206.71	38.08	46.59	6 45 58	3725.0	-39.89	199.56
137.23	14 22 48	2746.97	-34.61	80.70	38.06	46.58	15 8 35	2147.0	-39.88	73.55
42.77	5 33 53	4324.99	-34.62	206.71	38.08	46.59	6 45 58	3725.0	-39.89	199.56
137.23	14 22 48	2746.97	-34.61	80.70	38.06	46.58	15 8 35	2147.0	-39.88	73.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	5.1213	TRA	-.9524	TC3	-7.3265	BAU	2.0473	SGT	9495.6	SGR	2704.2	SG3	1274.3	ST	6598.6	SR	1787.2	SS	2935.9
RDE	1.3929	RRA	-.0207	RC3	-2.2715	FAU	.30963	RRT	.9779	RRF	.9948	RTF	.9683	CRT	.9963	CRS	-1.0000	CST	-.9968
FDE	6.6820	FRA	-.1778	FC	-13.4265	BSP	33677	SGB	9873.2	R23	.2143	R13	.9717	LSA	7435.9	MSA	249.6	SSA	13.1
BDE	5.3074	BRA	.9527	BC3	7.6706	FSP	4434	SG1	9858.1	SG2	544.6	THA	15.61	EL1	6834.7	EL2	147.6	ALF	15.11

LAUNCH DATE DEC 21 1964 FLIGHT TIME 316.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 680.096 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.007	GAL	3.65	AZL	85.18	HCA	199.24	SMA	185.81	ECC	.21714	INC	4.8199
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.136	GAP	-9.49	AZP	94.55	TAL	20.67	TAP	219.92	RCA	145.47	APO	226.16
RC	299.592	GL	39.35	GP	-21.18	ZAL	59.55	ZAP	57.04	ETS	164.67	ZAE	82.47	ETE	176.12	ZAC	63.38	ETC	256.68

V1	30.275	V2	25.831	CLP	54.31														

PLANETOCENTRIC CONIC

C3	19.053	VHL	4.365	DLA	51.88	RAL	159.08	RAD	6567.8	VEL	11.851	PTH	2.10	VHP	3.967	DPA	-11.10	RAP	156.32
ECC	1.3136																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.52	5 39 16	4302.10	-34.39	203.99	36.61	48.42	6 50 58	3702.1	-39.46	196.66
135.48	14 17 39	2747.72	-34.38	80.52	36.59	48.41	15 3 26	2147.7	-39.45	73.19
44.52	5 39 16	4302.10	-34.39	203.99	36.61	48.42	6 50 58	3702.1	-39.46	196.66
135.48	14 17 39	2747.72	-34.38	80.52	36.59	48.41	15 3 26	2147.7	-39.45	73.19
44.52	5 39 16	4302.10	-34.39	203.99	36.61	48.42	6 50 58	3702.1	-39.46	196.66
135.48	14 17 39	2747.72	-34.38	80.52	36.59	48.41	15 3 26	2147.7	-39.45	73.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.9905	TRA	-.9798	TC3	-7.8102	BAU	2.0658	SGT	9682.0	SGR	2517.9	SG3	1274.5	ST	6583.5	SR	1644.3	SS	2855.0
RDE	1.2520	RRA	-.0146	RC3	-2.1849	FAU	.30693	RRT	.9777	RRF	.9937	RTF	.9682	CRT	.9960	CRS	-.9999	CST	-.9966
FDE	6.3396	FRA	-.1728	FC	-13.9460	BSP	34130	SGB	10004.0	R23	.2114	R13	.9711	LSA	7357.7	MSA	248.6	SSA	14.1
BDE	5.1452	BRA	.9799	BC3	8.1100	FSP	4411	SG1	9990.9	SG2	512.2	THA	14.30	EL1	6784.3	EL2	142.6	ALF	13.98

LAUNCH DATE DEC 21 1964 FLIGHT TIME 318.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 684.382 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.014	GAL	3.55	AZL	85.40	HCA	200.44	SMA	185.92	ECC	.21713	INC	4.6036	V1	30.275
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.181	GAP	-9.60	AZP	94.31	TAL	20.13	TAP	220.57	RCA	145.55	APO	226.29	V2	25.863
RC	300.645	GL	38.24	GP	-19.90	ZAL	59.66	ZAP	55.73	ETS	164.94	ZAE	81.09	ETE	175.84	ZAC	64.65	ETC	256.81	CLP	53.21

PLANETOCENTRIC CONIC

C3	16.254	VHL	4.272	DLA	50.57	RAL	159.24	RAD	6567.7	VEL	11.817	PTH	2.09	VHP	3.979	DPA	-9.96	RAP	156.92	ECC	1.3004

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.18	5 45 4	4280.13	-34.12	201.41	35.39	50.11	6 56 24	3680.1	-39.00	193.93
133.82	14 13 7	2749.54	-34.11	80.43	35.38	50.10	14 58 57	2149.5	-38.99	72.95
46.18	5 45 4	4280.13	-34.12	201.41	35.39	50.11	6 56 24	3680.1	-39.00	193.93
133.82	14 13 7	2749.54	-34.11	80.43	35.38	50.10	14 58 57	2149.5	-38.99	72.95
46.18	5 45 4	4280.13	-34.12	201.41	35.39	50.11	6 56 24	3680.1	-39.00	193.93
133.82	14 13 7	2749.54	-34.11	80.43	35.38	50.10	14 58 57	2149.5	-38.99	72.95

DIFFERENTIAL CORRECTIONS

TDE	4.8747	TRA	-.9961	TC3	-8.2885	BAU	2.0864
RDE	1.1319	RRA	-.0065	RC3	-2.0966	FAU	.30295
FDE	6.0012	FRA	-.1519	FC	-14.3682	BSP	34647
BDE	5.0044	BRA	.9962	BC3	8.5496	FSP	4377

MID-COURSE EXECUTION ACCURACY

SGT	9865.1	SGR	2348.2	SG3	1268.7		
RRT	.9774	RRF	.9924	RTF	.9681		
SGB	10140.7	R23	.2072	R13	.9705		
SG1	10129.1	SG2	484.0	THA	13.13		

ORBIT DETERMINATION ACCURACY

ST	6571.1	SR	1518.9	SS	2770.2		
CRT	.9956	CRS	-.9999	CST	-.9964		
LSA	7286.9	MSA	247.9	SSA	15.2		
EL1	6742.9	EL2	138.2	ALF	12.97		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 320.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 688.675 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.020	GAL	3.45	AZL	85.59	HCA	201.65	SMA	186.04	ECC	.21713	INC	4.4098	V1	30.275
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.225	GAP	-9.70	AZP	94.10	TAL	19.57	TAP	221.21	RCA	145.64	APO	226.43	V2	25.895
RC	301.687	GL	37.24	GP	-18.74	ZAL	59.86	ZAP	54.46	ETS	165.20	ZAE	79.74	ETE	175.60	ZAC	65.81	ETC	256.91	CLP	52.14

PLANETOCENTRIC CONIC

C3	17.543	VHL	4.188	DLA	49.33	RAL	159.51	RAD	6567.7	VEL	11.787	PTH	2.08	VHP	3.998	DPA	-8.95	RAP	157.51	ECC	1.2887

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.76	5 51 14	4258.84	-33.81	198.94	34.38	51.67	7 2 13	3658.8	-38.52	191.34
132.24	14 9 8	2752.34	-33.80	80.41	34.37	51.66	14 55 0	2152.3	-38.51	72.81
47.76	5 51 14	4258.84	-33.81	198.94	34.38	51.67	7 2 13	3658.8	-38.52	191.34
132.24	14 9 8	2752.34	-33.80	80.41	34.37	51.66	14 55 0	2152.3	-38.51	72.81
47.76	5 51 14	4258.84	-33.81	198.94	34.38	51.67	7 2 13	3658.8	-38.52	191.34
132.24	14 9 8	2752.34	-33.80	80.41	34.37	51.66	14 55 0	2152.3	-38.51	72.81

DIFFERENTIAL CORRECTIONS

TDE	4.7709	TRA	-1.0016	TC3	-8.7633	BAU	2.1085
RDE	1.0290	RRA	.0035	RC3	-2.0079	FAU	.29793
FDE	5.6709	FRA	-.1145	FC	-14.7026	BSP	35177
BDE	4.8806	BRA	1.0016	BC3	8.9904	FSP	4326

MID-COURSE EXECUTION ACCURACY

SGT	10045.0	SGR	2193.3	SG3	1257.8		
RRT	.9767	RRF	.9907	RTF	.9680		
SGB	10281.7	R23	.2020	R13	.9699		
SG1	10271.4	SG2	460.2	THA	12.06		

ORBIT DETERMINATION ACCURACY

ST	6560.5	SR	1408.5	SS	2683.1		
CRT	.9952	CRS	-.9999	CST	-.9961		
LSA	7222.3	MSA	247.8	SSA	16.2		
EL1	6708.7	EL2	134.6	ALF	12.07		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 322.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 692.975 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.027	GAL	3.36	AZL	85.76	HCA	202.86	SMA	186.15	ECC	.21715	INC	4.2352	V1	30.275
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.269	GAP	-9.81	AZP	93.90	TAL	18.99	TAP	221.85	RCA	145.73	APO	226.57	V2	25.926
RC	302.717	GL	36.31	GP	-17.68	ZAL	60.15	ZAP	53.25	ETS	165.45	ZAE	78.41	ETE	175.41	ZAC	66.88	ETC	256.99	CLP	51.10

PLANETOCENTRIC CONIC

C3	16.905	VHL	4.112	DLA	48.16	RAL	159.88	RAD	6567.7	VEL	11.760	PTH	2.08	VHP	4.023	DPA	-8.05	RAP	158.09	ECC	1.2782

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.27	5 57 46	4238.00	-33.49	196.58	33.57	53.11	7 8 24	3638.0	-38.03	188.87
130.73	14 5 33	2756.06	-33.48	80.48	33.56	53.11	14 51 29	2156.1	-38.02	72.77
49.27	5 57 46	4238.00	-33.49	196.58	33.57	53.11	7 8 24	3638.0	-38.03	188.87
130.73	14 5 33	2756.06	-33.48	80.48	33.56	53.11	14 51 29	2156.1	-38.02	72.77
49.27	5 57 46	4238.00	-33.49	196.58	33.57	53.11	7 8 24	3638.0	-38.03	188.87
130.73	14 5 33	2756.06	-33.48	80.48	33.56	53.11	14 51 29	2156.1	-38.02	72.77

DIFFERENTIAL CORRECTIONS

TDE	4.6767	TRA	-.9980	TC3	-9.2340	BAU	2.1316
RDE	.9401	RRA	.0140	RC3	-1.9201	FAU	.29213
FDE	5.3502	FRA	-.0677	FC	-14.9604	BSP	35720
BDE	4.7702	BRA	.9981	BC3	9.4315	FSP	4258

MID-COURSE EXECUTION ACCURACY

SGT	10221.3	SGR	2051.9	SG3	1242.9		
RRT	.9758	RRF	.9888	RTF	.9677		
SGB	10425.3	R23	.1955	R13	.9694		
SG1	10416.0	SG2	440.0	THA	11.10		

ORBIT DETERMINATION ACCURACY

ST	6550.9	SR	1311.0	SS	2594.4		
CRT	.9948	CRS	-.9998	CST	-.9959		
LSA	7162.6	MSA	247.7	SSA	17.3		
EL1	6679.5	EL2	131.3	ALF	11.26		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 697.281 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.034	GAL	3.25	AZL	85.92	HCA	204.07	SMA	186.27	ECC	.21718	INC	4.0767	V1	30.275
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.313	GAP	-9.91	AZP	93.72	TAL	18.41	TAP	222.47	RCA	145.81	APO	226.72	V2	25.956
RC	303.736	GL	35.47	GP	-16.72	ZAL	60.52	ZAP	52.09	ETS	165.69	ZAE	77.10	ETE	175.24	ZAC	67.86	ETC	257.06	CLP	50.10

PLANETOCENTRIC CONIC

C3	16.328	VHL	4.041	DLA	47.05	RAL	160.34	RAD	6567.7	VEL	11.735	PTH	2.07	VHP	4.051	DPA	-7.24	RAP	158.65	ECC	1.2687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.72	6 4 39	4217.47	-33.14	194.29	32.92	54.47	7 14 56	3617.5	-37.53	186.50
129.28	14 2 19	2760.66	-33.13	80.62	32.91	54.46	14 48 20	2160.7	-37.51	72.83
50.72	6 4 39	4217.47	-33.14	194.29	32.92	54.47	7 14 56	3617.5	-37.53	186.50
129.28	14 2 19	2760.66	-33.13	80.62	32.91	54.46	14 48 20	2160.7	-37.51	72.83
50.72	6 4 39	4217.47	-33.14	194.29	32.92	54.47	7 14 56	3617.5	-37.53	186.50
129.28	14 2 19	2760.66	-33.13	80.62	32.91	54.46	14 48 20	2160.7	-37.51	72.83

DIFFERENTIAL CORRECTIONS

TDE	4.5876	TRA	-.9873	TC3	-9.7093	BAU	2.1569
RDE	.8625	RRA	.0249	RC3	-1.8350	FAU	.28592
FDE	5.0370	FRA	-.0127	FC	-15.1600	BSP	36244
BDE	4.6680	BRA	.9877	BC3	9.8812	FSP	4181

MID-COURSE EXECUTION ACCURACY

SGT	10397.4	SGR	1922.9	SG3	1225.3		
RRT	.9746	RRF	.9865	RTF	.9674		
SGB	10573.7	R23	.1880	R13	.9688		
SG1	10565.2	SG2	423.7	THA	10.23		

ORBIT DETERMINATION ACCURACY

ST	6538.4	SR	1223.9	SS	2503.3		
CRT	.9943	CRS	-.9998	CST	-.9955		
LSA	7103.0	MSA	248.1	SSA	18.3		
EL1	6650.7	EL2	128.6	ALF	10.55		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 701.595 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.040 GAL 3.15 AZL 86.07 HCA 205.28 SMA 186.39 ECC .21722 INC 3.9323 V1 30.275
RP 211.08 LAP -1.68 LOP 294.40 VP 23.355 GAP -10.00 AZP 93.56 TAL 17.81 TAP 223.09 RCA 145.90 APO 226.87 V2 25.986
RC 304.746 GL 34.69 GP -15.84 ZAL 60.96 ZAP 50.98 ETS 165.92 ZAE 75.82 ETE 175.11 ZAC 68.77 ETC 257.10 CLP 49.12

PLANETOCENTRIC CONIC

C3 15.801 VHL 3.975 DLA 45.98 RAL 160.87 RAD 6567.6 VEL 11.713 PTH 2.06 VHP 4.084 DPA -6.53 RAP 159.22 ECC 1.2600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.13	6 11 50	4197.23	-32.78	192.07	32.41	55.74	7 21 47	3597.2	-37.01	184.20
127.87	13 59 25	2765.98	-32.77	80.82	32.40	55.73	14 45 31	2166.0	-37.00	72.96
52.13	6 11 50	4197.23	-32.78	192.07	32.41	55.74	7 21 47	3597.2	-37.01	184.20
127.87	13 59 25	2765.98	-32.77	80.82	32.40	55.73	14 45 31	2166.0	-37.00	72.96
52.13	6 11 50	4197.23	-32.78	192.07	32.41	55.74	7 21 47	3597.2	-37.01	184.20
127.87	13 59 25	2765.98	-32.77	80.82	32.40	55.73	14 45 31	2166.0	-37.00	72.96

DIFFERENTIAL CORRECTIONS
TDE 4.5078 TRA -.9663 TC-10.1762 BAU 2.1812
RDE .7954 RRA .0361 RC3-1.7500 FAU .27898
FDE 4.7407 FRA .0511 FC-15.2855 BSP 36837
BDE 4.5774 BRA .9670 BC310.3256 FSP 4102

MID-COURSE EXECUTION ACCURACY
SGT10568.1 SGR 1804.3 SG3 1204.6
RRT .9730 RRF .9838 RTF .9671
SGB10721.0 R23 .1792 R13 .9683
SG110713.2 SG2 410.5 THA 9.45

ORBIT DETERMINATION ACCURACY
ST 6529.8 SR 1147.4 SS 2414.5
CRT .9938 CRS -.9997 CST -.9952
LSA 7051.4 MSA 248.6 SSA 19.3
EL1 6628.6 EL2 126.1 ALF 9.91

LAUNCH DATE DEC 21 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 705.915 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.047 GAL 3.04 AZL 86.20 HCA 206.50 SMA 186.51 ECC .21728 INC 3.8000 V1 30.275
RP 210.82 LAP -1.69 LOP 295.62 VP 23.397 GAP -10.10 AZP 93.40 TAL 17.20 TAP 223.69 RCA 145.98 APO 227.03 V2 26.015
RC 305.746 GL 33.97 GP -15.03 ZAL 61.48 ZAP 49.90 ETS 166.14 ZAE 74.57 ETE 174.99 ZAC 69.61 ETC 257.14 CLP 48.17

PLANETOCENTRIC CONIC

C3 15.317 VHL 3.914 DLA 44.96 RAL 161.48 RAD 6567.6 VEL 11.692 PTH 2.06 VHP 4.119 DPA -5.89 RAP 159.78 ECC 1.2521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.50	6 19 22	4176.98	-32.40	189.89	32.04	56.94	7 28 59	3577.0	-36.49	181.96
126.50	13 56 43	2772.19	-32.39	81.10	32.03	56.93	14 42 55	2172.2	-36.48	73.18
53.50	6 19 22	4176.98	-32.40	189.89	32.04	56.94	7 28 59	3577.0	-36.49	181.96
126.50	13 56 43	2772.19	-32.39	81.10	32.03	56.93	14 42 55	2172.2	-36.48	73.18
53.50	6 19 22	4176.98	-32.40	189.89	32.04	56.94	7 28 59	3577.0	-36.49	181.96
126.50	13 56 43	2772.19	-32.39	81.10	32.03	56.93	14 42 55	2172.2	-36.48	73.18

DIFFERENTIAL CORRECTIONS
TDE 4.4313 TRA -.9380 TC-10.6454 BAU 2.2065
RDE .7365 RRA .0475 RC3-1.6675 FAU .27175
FDE 4.4569 FRA .1219 FC-15.3596 BSP 37394
BDE 4.4921 BRA .9392 BC310.7753 FSP 4014

MID-COURSE EXECUTION ACCURACY
SGT10737.0 SGR 1695.8 SG3 1182.1
RRT .9710 RRF .9806 RTF .9668
SGB10870.1 R23 .1698 R13 .9678
SG110862.7 SG2 400.8 THA 8.73

ORBIT DETERMINATION ACCURACY
ST 6518.2 SR 1079.3 SS 2326.1
CRT .9932 CRS -.9997 CST -.9948
LSA 7000.0 MSA 249.8 SSA 20.3
EL1 6605.8 EL2 124.1 ALF 9.34

LAUNCH DATE DEC 21 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 710.241 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.055 GAL 2.94 AZL 86.32 HCA 207.72 SMA 186.63 ECC .21735 INC 3.6781 V1 30.275
RP 210.58 LAP -1.71 LOP 296.84 VP 23.439 GAP -10.19 AZP 93.26 TAL 16.57 TAP 224.29 RCA 146.07 APO 227.19 V2 26.043
RC 306.737 GL 33.31 GP -14.29 ZAL 62.06 ZAP 48.87 ETS 166.35 ZAE 73.34 ETE 174.90 ZAC 70.39 ETC 257.16 CLP 47.25

PLANETOCENTRIC CONIC

C3 14.870 VHL 3.856 DLA 43.97 RAL 162.15 RAD 6567.6 VEL 11.673 PTH 2.05 VHP 4.158 DPA -5.32 RAP 160.34 ECC 1.2447

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.84	6 27 13	4156.74	-32.01	187.74	31.78	58.07	7 36 30	3556.7	-35.96	179.77
125.16	13 54 13	2779.16	-31.99	81.44	31.77	58.06	14 40 32	2179.2	-35.95	73.47
54.84	6 27 13	4156.74	-32.01	187.74	31.78	58.07	7 36 30	3556.7	-35.96	179.77
125.16	13 54 13	2779.16	-31.99	81.44	31.77	58.06	14 40 32	2179.2	-35.95	73.47
54.84	6 27 13	4156.74	-32.01	187.74	31.78	58.07	7 36 30	3556.7	-35.96	179.77
125.16	13 54 13	2779.16	-31.99	81.44	31.77	58.06	14 40 32	2179.2	-35.95	73.47

DIFFERENTIAL CORRECTIONS
TDE 4.3554 TRA -.9032 TC-11.1196 BAU 2.2330
RDE .6840 RRA .0586 RC3-1.5884 FAU .26442
FDE 4.1803 FRA .1955 FC-15.3945 BSP 37928
BDE 4.4088 BRA .9051 BC311.2325 FSP 3922

MID-COURSE EXECUTION ACCURACY
SGT10904.1 SGR 1596.3 SG3 1158.2
RRT .9684 RRF .9769 RTF .9664
SGB11020.4 R23 .1598 R13 .9672
SG111013.3 SG2 393.9 THA 8.08

ORBIT DETERMINATION ACCURACY
ST 6500.6 SR 1017.7 SS 2235.4
CRT .9926 CRS -.9996 CST -.9943
LSA 6944.6 MSA 251.1 SSA 21.3
EL1 6578.6 EL2 122.2 ALF 8.84

LAUNCH DATE DEC 21 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 714.573 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.062 GAL 2.83 AZL 86.43 HCA 208.94 SMA 186.76 ECC .21744 INC 3.5656 V1 30.275
RP 210.34 LAP -1.72 LOP 298.06 VP 23.480 GAP -10.28 AZP 93.12 TAL 15.93 TAP 224.87 RCA 146.15 APO 227.36 V2 26.071
RC 307.719 GL 32.69 GP -13.61 ZAL 62.70 ZAP 47.87 ETS 166.55 ZAE 72.13 ETE 174.82 ZAC 71.13 ETC 257.17 CLP 46.35

PLANETOCENTRIC CONIC

C3 14.455 VHL 3.802 DLA 43.01 RAL 162.88 RAD 6567.6 VEL 11.655 PTH 2.05 VHP 4.199 DPA -4.82 RAP 160.91 ECC 1.2379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.17	6 35 27	4136.27	-31.60	185.62	31.63	59.16	7 44 23	3536.3	-35.43	177.60
123.83	13 51 50	2787.04	-31.59	81.85	31.62	59.15	14 38 17	2187.0	-35.42	73.84
56.17	6 35 27	4136.27	-31.60	185.62	31.63	59.16	7 44 23	3536.3	-35.43	177.60
123.83	13 51 50	2787.04	-31.59	81.85	31.62	59.15	14 38 17	2187.0	-35.42	73.84
56.17	6 35 27	4136.27	-31.60	185.62	31.63	59.16	7 44 23	3536.3	-35.43	177.60
123.83	13 51 50	2787.04	-31.59	81.85	31.62	59.15	14 38 17	2187.0	-35.42	73.84

DIFFERENTIAL CORRECTIONS
TDE 4.2837 TRA -.8610 TC-11.5925 BAU 2.2593
RDE .6378 RRA .0693 RC3-1.5115 FAU .25692
FDE 3.9177 FRA .2717 FC-15.3868 BSP 38471
BDE 4.3309 BRA .8637 BC311.6906 FSP 3824

MID-COURSE EXECUTION ACCURACY
SGT11069.1 SGR 1505.1 SG3 1133.3
RRT .9654 RRF .9726 RTF .9660
SGB11170.9 R23 .1493 R13 .9667
SG111164.2 SG2 389.3 THA 7.49

ORBIT DETERMINATION ACCURACY
ST 6482.8 SR 962.8 SS 2146.5
CRT .9920 CRS -.9996 CST -.9937
LSA 6891.8 MSA 252.4 SSA 22.3
EL1 6552.8 EL2 120.5 ALF 8.38

LAUNCH DATE DEC 21 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 718.911 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.069	GAL	2.71	AZL	86.54	HCA	210.17	SMA	186.88	ECC	.21754	INC	3.4611	V1	30.275
RP	210.10	LAP	-1.74	LOP	299.29	VP	23.520	GAP	-10.37	AZP	92.99	TAL	15.28	TAP	225.45	RCA	146.23	APO	227.54	V2	26.098
RC	308.691	GL	32.12	GP	-12.98	ZAL	63.41	ZAP	46.91	ETS	166.73	ZAE	70.95	ETE	174.76	ZAC	71.82	ETC	257.18	CLP	45.48

PLANETOCENTRIC CONIC

C3	14.069	VHL	3.751	DLA	42.07	RAL	163.67	RAD	6567.6	VEL	11.639	PTH	2.04	VHP	4.242	DPA	-4.38	RAP	161.48	ECC	1.2315		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.49	6 44 4	4115.44	-31.18	183.49	31.58	60.20	7 52 40	3515.4	-34.88	175.45
122.51	13 49 30	2795.92	-31.17	82.35	31.57	60.18	14 36 6	2195.9	-34.87	74.30
57.49	6 44 4	4115.44	-31.18	183.49	31.58	60.20	7 52 40	3515.4	-34.88	175.45
122.51	13 49 30	2795.92	-31.17	82.35	31.57	60.18	14 36 6	2195.9	-34.87	74.30
57.49	6 44 4	4115.44	-31.18	183.49	31.58	60.20	7 52 40	3515.4	-34.88	175.45
122.51	13 49 30	2795.92	-31.17	82.35	31.57	60.18	14 36 6	2195.9	-34.87	74.30

DIFFERENTIAL CORRECTIONS

TDE	4.2112	TRA	-.8129	TC-12.0700	BAU	2.2863	
RDE	.5964	RRA	.0795	RC3-1.4376	FAU	.24942	
FDE	3.6634	FRA	.3477	FC-15.3479	BSP	38996	
BDE	4.2532	BRA	.8168	BC312.1553	FSP	3724	

MID-COURSE EXECUTION ACCURACY

SGT11232.3	SGR	1421.2	SG3	1107.8			
RRT	.9617	RRF	.9676	RTF	.9655		
SGB11321.9	R23	.1385	R13	.9661			
SG111315.3	SG2	386.7	THA	6.95			

ORBIT DETERMINATION ACCURACY

ST	6458.0	SR	912.9	SS	2056.4		
CRT	.9913	CRS	-.9995	CST	-.9931		
LSA	6833.9	MSA	253.8	SSA	23.2		
EL1	6521.1	EL2	118.7	ALF	7.98		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 723.252 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.076	GAL	2.60	AZL	86.64	HCA	211.39	SMA	187.01	ECC	.21766	INC	3.3639	V1	30.275		
RP	209.88	LAP	-1.75	LOP	300.52	VP	23.559	GAP	-10.45	AZP	92.87	TAL	14.62	TAP	226.01	RCA	146.31	APO	227.72	V2	26.124		
RC	309.654	GL	31.58	GP	-12.40	ZAL	64.18	ZAP	45.97	ETS	166.91	ZAE	69.79	ETE	174.71	ZAC	72.46	ETC	257.17	CLP	44.64		

PLANETOCENTRIC CONIC

C3	13.708	VHL	3.702	DLA	41.14	RAL	164.52	RAD	6567.5	VEL	11.623	PTH	2.04	VHP	4.287	DPA	-4.00	RAP	162.05	ECC	1.2256		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.81	6 53 6	4094.15	-30.75	181.36	31.62	61.19	8 1 20	3494.2	-34.33	173.29
121.19	13 47 13	2805.80	-30.74	82.92	31.62	61.18	14 33 59	2205.8	-34.32	74.85
58.81	6 53 6	4094.15	-30.75	181.36	31.62	61.19	8 1 20	3494.2	-34.33	173.29
121.19	13 47 13	2805.80	-30.74	82.92	31.62	61.18	14 33 59	2205.8	-34.32	74.85
58.81	6 53 6	4094.15	-30.75	181.36	31.62	61.19	8 1 20	3494.2	-34.33	173.29
121.19	13 47 13	2805.80	-30.74	82.92	31.62	61.18	14 33 59	2205.8	-34.32	74.85

DIFFERENTIAL CORRECTIONS

TDE	4.1622	TRA	-.7357	TC-12.4856	BAU	2.3016	
RDE	.5631	RRA	.0933	RC3-1.3534	FAU	.23987	
FDE	3.4561	FRA	.4644	FC-15.1492	BSP	40041	
BDE	4.2002	BRA	.7416	BC312.5587	FSP	3697	

MID-COURSE EXECUTION ACCURACY

SGT11368.9	SGR	1341.9	SG3	1076.9			
RRT	.9563	RRF	.9618	RTF	.9648		
SGB11447.8	R23	.1301	R13	.9653			
SG111441.2	SG2	389.8	THA	6.45			

ORBIT DETERMINATION ACCURACY

ST	6463.0	SR	873.9	SS	1987.9		
CRT	.9907	CRS	-.9995	CST	-.9922		
LSA	6813.1	MSA	260.1	SSA	23.7		
EL1	6520.8	EL2	117.8	ALF	7.63		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 727.602 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.084	GAL	2.48	AZL	86.73	HCA	212.63	SMA	187.14	ECC	.21780	INC	3.2731	V1	30.275		
RP	209.66	LAP	-1.76	LOP	301.75	VP	23.598	GAP	-10.54	AZP	92.76	TAL	13.94	TAP	226.57	RCA	146.38	APO	227.90	V2	26.149		
RC	310.607	GL	31.07	GP	-11.86	ZAL	65.00	ZAP	45.07	ETS	167.08	ZAE	68.65	ETE	174.66	ZAC	73.08	ETC	257.16	CLP	43.81		

PLANETOCENTRIC CONIC

C3	13.371	VHL	3.657	DLA	40.23	RAL	165.41	RAD	6567.5	VEL	11.608	PTH	2.03	VHP	4.334	DPA	-3.66	RAP	162.64	ECC	1.2200		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.13	7 2 34	4072.24	-30.30	179.21	31.75	62.15	8 10 26	3472.2	-33.76	171.11
119.87	13 44 53	2816.85	-30.29	83.59	31.74	62.14	14 31 50	2216.9	-33.75	75.50
60.13	7 2 34	4072.24	-30.30	179.21	31.75	62.15	8 10 26	3472.2	-33.76	171.11
119.87	13 44 53	2816.85	-30.29	83.59	31.74	62.14	14 31 50	2216.9	-33.75	75.50
60.13	7 2 34	4072.24	-30.30	179.21	31.75	62.15	8 10 26	3472.2	-33.76	171.11
119.87	13 44 53	2816.85	-30.29	83.59	31.74	62.14	14 31 50	2216.9	-33.75	75.50

DIFFERENTIAL CORRECTIONS

TDE	4.0848	TRA	-.6804	TC-12.9817	BAU	2.3319	
RDE	.5288	RRA	.1012	RC3-1.2882	FAU	.23299	
FDE	3.2123	FRA	.5276	FC-15.0855	BSP	40385	
BDE	4.1189	BRA	.6879	BC313.0454	FSP	3564	

MID-COURSE EXECUTION ACCURACY

SGT11534.6	SGR	1271.7	SG3	1051.9			
RRT	.9515	RRF	.9552	RTF	.9645		
SGB11604.5	R23	.1185	R13	.9649			
SG111598.0	SG2	389.2	THA	6.00			

ORBIT DETERMINATION ACCURACY

ST	6420.5	SR	831.4	SS	1892.9		
CRT	.9901	CRS	-.9994	CST	-.9914		
LSA	6740.1	MSA	259.9	SSA	24.8		
EL1	6473.1	EL2	115.7	ALF	7.31		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 731.956 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.092	GAL	2.36	AZL	86.81	HCA	213.86	SMA	187.27	ECC	.21796	INC	3.1880	V1	30.275		
RP	209.44	LAP	-1.78	LOP	302.99	VP	23.636	GAP	-10.62	AZP	92.65	TAL	13.25	TAP	227.11	RCA	146.46	APO	228.09	V2	26.174		
RC	311.551	GL	30.59	GP	-11.36	ZAL	65.88	ZAP	44.20	ETS	167.24	ZAE	67.53	ETE	174.63	ZAC	73.66	ETC	257.14	CLP	43.01		

PLANETOCENTRIC CONIC

C3	13.055	VHL	3.613	DLA	39.33	RAL	166.35	RAD	6567.5	VEL	11.595	PTH	2.03	VHP	4.383	DPA	-3.37	RAP	163.22	ECC	1.2148		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.47	7 12 32	4049.50	-29.84	177.01	31.95	63.08	8 20 1	3449.5	-33.18	168.90
118.53	13 42 26	2829.23	-29.82	84.36	31.95	63.07	14 29 35	2229.2	-33.17	76.25
61.47	7 12 32	4049.50	-29.84	177.01	31.95	63.08	8 20 1	3449.5	-33.18	168.90
118.53	13 42 26	2829.23	-29.82	84.36	31.95	63.07	14 29 35	2229.2	-33.17	76.25
61.47	7 12 32	4049.50	-29.84	177.01	31.95	63.08	8 20 1	3449.5	-33.18	168.90
118.53	13 42 26	2829.23	-29.82	84.36	31.95	63.07	14 29 35	2229.2	-33.17	76.25

DIFFERENTIAL CORRECTIONS

TDE	4.0085	TRA	-.6159	TC-13.4719	BAU	2.3609	
RDE	.4983	RRA	.1096	RC3-1.2229	FAU	.22580	
FDE	2.9833	FRA	.5979	FC-14.9743	BSP	40800	
BDE	4.0393	BRA	.6256	BC313.5273	FSP	3449	

MID-COURSE EXECUTION ACCURACY

SGT11695.0	SGR	1206.5	SG3	1025.8			
RRT	.9455	RRF	.9477	RTF	.9641		
SGB11757.0	R23	.1078	R13	.9644			
SG111750.5	SG2	390.9	THA	5.58			

ORBIT DETERMINATION ACCURACY

ST	6374.5	SR	793.5	SS	1801.1		
CRT	.9895	CRS	-.9994	CST	-.9904		
LSA	6666.3	MSA	261.0	SSA	25.8		
EL1	6422.7	EL2	113.8	ALF	7.02		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 736.316 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.099 GAL 2.24 AZL 86.89 HCA 215.10 SMA 187.41 ECC .21813 INC 3.1081 V1 30.275
RP 209.24 LAP -1.79 LOP 304.23 VP 23.673 GAP -10.70 AZP 92.54 TAL 12.55 TAP 227.65 RCA 146.53 APO 228.29 V2 26.198
RC 312.486 GL 30.14 GP -10.89 ZAL 66.82 ZAP 43.35 ETS 167.39 ZAE 66.43 ETE 174.60 ZAC 74.21 ETC 257.12 CLP 42.23

PLANETOCENTRIC CONIC

C3 12.758 VHL 3.572 DLA 38.44 RAL 167.34 RAD 6567.5 VEL 11.582 PTH 2.03 VHP 4.433 DPA -3.12 RAP 163.82 ECC 1.2100

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.84	7 23 2	4025.76	-29.35	174.76	32.23	63.98	8 30 7	3425.8	-32.59	166.64
117.16	13 39 49	2843.08	-29.34	85.24	32.23	63.97	14 27 12	2243.1	-32.58	77.12
62.84	7 23 2	4025.76	-29.35	174.76	32.23	63.98	8 30 7	3425.8	-32.59	166.64
117.16	13 39 49	2843.08	-29.34	85.24	32.23	63.97	14 27 12	2243.1	-32.58	77.12
62.84	7 23 2	4025.76	-29.35	174.76	32.23	63.98	8 30 7	3425.8	-32.59	166.64
117.16	13 39 49	2843.08	-29.34	85.24	32.23	63.97	14 27 12	2243.1	-32.58	77.12

DIFFERENTIAL CORRECTIONS
TDE 3.9351 TRA -.5420 TC-13.9513 BAU 2.3877
RDE .4713 RRA .1178 RC3-1.1578 FAU .21839
FDE 2.7689 FRA .6703 FC-14.8197 BSP 41282
BDE 3.9632 BRA .5546 BC313.9993 FSP 3341

MID-COURSE EXECUTION ACCURACY
SGT11849.2 SGR 1146.2 SG3 999.0
RRT .9386 RRF .9390 RTF .9636
SGB11904.6 R23 .0974 R13 .9639
SG111898.0 SG2 393.9 THA 5.19

ORBIT DETERMINATION ACCURACY
ST 6328.1 SR 759.8 SS 1712.8
CRT .9890 CRS -.9993 CST -.9892
LSA 6594.5 MSA 262.4 SSA 26.7
EL1 6372.6 EL2 111.8 ALF 6.77

LAUNCH DATE DEC 21 1964 FLIGHT TIME 344.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 740.680 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.107 GAL 2.11 AZL 86.97 HCA 216.33 SMA 187.54 ECC .21833 INC 3.0328 V1 30.275
RP 209.04 LAP -1.80 LOP 305.47 VP 23.709 GAP -10.78 AZP 92.44 TAL 11.84 TAP 228.17 RCA 146.60 APO 228.49 V2 26.221
RC 313.411 GL 29.70 GP -10.45 ZAL 67.81 ZAP 42.53 ETS 167.53 ZAE 65.36 ETE 174.58 ZAC 74.73 ETC 257.09 CLP 41.46

PLANETOCENTRIC CONIC

C3 12.480 VHL 3.533 DLA 37.54 RAL 168.37 RAD 6567.5 VEL 11.570 PTH 2.02 VHP 4.485 DPA -2.91 RAP 164.43 ECC 1.2054

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.25	7 34 10	4000.65	-28.86	172.42	32.59	64.86	8 40 51	3400.6	-31.98	164.29
115.75	13 36 55	2858.77	-28.84	86.25	32.58	64.85	14 24 33	2258.8	-31.97	78.13
64.25	7 34 10	4000.65	-28.86	172.42	32.59	64.86	8 40 51	3400.6	-31.98	164.29
115.75	13 36 55	2858.77	-28.84	86.25	32.58	64.85	14 24 33	2258.8	-31.97	78.13
64.25	7 34 10	4000.65	-28.86	172.42	32.59	64.86	8 40 51	3400.6	-31.98	164.29
115.75	13 36 55	2858.77	-28.84	86.25	32.58	64.85	14 24 33	2258.8	-31.97	78.13

DIFFERENTIAL CORRECTIONS
TDE 3.8600 TRA -.4608 TC-14.4322 BAU 2.4148
RDE .4469 RRA .1259 RC3-1.0944 FAU .21104
FDE 2.5645 FRA .7448 FC-14.6401 BSP 41757
BDE 3.8858 BRA .4777 BC314.4736 FSP 3235

MID-COURSE EXECUTION ACCURACY
SGT12002.4 SGR 1090.7 SG3 972.2
RRT .9304 RRF .9293 RTF .9631
SGB12051.8 R23 .0879 R13 .9634
SG112045.3 SG2 398.4 THA 4.84

ORBIT DETERMINATION ACCURACY
ST 6274.3 SR 729.3 SS 1625.8
CRT .9884 CRS -.9991 CST -.9878
LSA 6517.0 MSA 264.6 SSA 27.7
EL1 6315.6 EL2 109.8 ALF 6.56

LAUNCH DATE DEC 21 1964 FLIGHT TIME 346.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 745.048 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.115 GAL 1.99 AZL 87.04 HCA 217.58 SMA 187.68 ECC .21855 INC 2.9616 V1 30.275
RP 208.85 LAP -1.81 LOP 306.71 VP 23.744 GAP -10.86 AZP 92.35 TAL 11.11 TAP 228.69 RCA 146.66 APO 228.70 V2 26.243
RC 314.329 GL 29.29 GP -10.05 ZAL 68.85 ZAP 41.73 ETS 167.66 ZAE 64.30 ETE 174.57 ZAC 75.23 ETC 257.06 CLP 40.72

PLANETOCENTRIC CONIC

C3 12.219 VHL 3.496 DLA 36.65 RAL 169.45 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 4.537 DPA -2.73 RAP 165.04 ECC 1.2011

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.70	7 46 2	3973.95	-28.34	169.98	33.01	65.72	8 52 16	3373.9	-31.36	161.85
114.30	13 33 38	2876.50	-28.33	87.42	33.00	65.71	14 21 35	2276.5	-31.35	79.29
65.70	7 46 2	3973.95	-28.34	169.98	33.01	65.72	8 52 16	3373.9	-31.36	161.85
114.30	13 33 38	2876.50	-28.33	87.42	33.00	65.71	14 21 35	2276.5	-31.35	79.29
65.70	7 46 2	3973.95	-28.34	169.98	33.01	65.72	8 52 16	3373.9	-31.36	161.85
114.30	13 33 38	2876.50	-28.33	87.42	33.00	65.71	14 21 35	2276.5	-31.35	79.29

DIFFERENTIAL CORRECTIONS
TDE 3.7821 TRA -.3735 TC-14.9109 BAU 2.4417
RDE .4248 RRA .1336 RC3-1.0326 FAU .20377
FDE 2.3680 FRA .8178 FC-14.4375 BSP 42203
BDE 3.8059 BRA .3967 BC314.9466 FSP 3128

MID-COURSE EXECUTION ACCURACY
SGT12152.5 SGR 1039.4 SG3 945.4
RRT .9210 RRF .9183 RTF .9626
SGB12196.9 R23 .0791 R13 .9628
SG112190.2 SG2 403.8 THA 4.51

ORBIT DETERMINATION ACCURACY
ST 6211.4 SR 701.4 SS 1538.8
CRT .9880 CRS -.9989 CST -.9861
LSA 6431.9 MSA 267.1 SSA 28.6
EL1 6249.9 EL2 107.7 ALF 6.37

LAUNCH DATE DEC 21 1964 FLIGHT TIME 348.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 749.420 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.123 GAL 1.86 AZL 87.11 HCA 218.82 SMA 187.82 ECC .21879 INC 2.8943 V1 30.275
RP 208.67 LAP -1.81 LOP 307.95 VP 23.779 GAP -10.94 AZP 92.26 TAL 10.37 TAP 229.19 RCA 146.73 APO 228.91 V2 26.264
RC 315.238 GL 28.88 GP -9.67 ZAL 69.95 ZAP 40.96 ETS 167.79 ZAE 63.26 ETE 174.56 ZAC 75.71 ETC 257.03 CLP 40.00

PLANETOCENTRIC CONIC

C3 11.975 VHL 3.461 DLA 35.75 RAL 170.57 RAD 6567.5 VEL 11.548 PTH 2.02 VHP 4.591 DPA -2.59 RAP 165.67 ECC 1.1971

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.21	7 58 41	3945.31	-27.80	167.41	33.49	66.56	9 4 26	3345.3	-30.72	159.29
112.79	13 29 53	2896.62	-27.79	88.76	33.49	66.55	14 18 10	2296.6	-30.71	80.64
67.21	7 58 41	3945.31	-27.80	167.41	33.49	66.56	9 4 26	3345.3	-30.72	159.29
112.79	13 29 53	2896.62	-27.79	88.76	33.49	66.55	14 18 10	2296.6	-30.71	80.64
67.21	7 58 41	3945.31	-27.80	167.41	33.49	66.56	9 4 26	3345.3	-30.72	159.29
112.79	13 29 53	2896.62	-27.79	88.76	33.49	66.55	14 18 10	2296.6	-30.71	80.64

DIFFERENTIAL CORRECTIONS
TDE 3.7057 TRA -.2777 TC-15.3802 BAU 2.4673
RDE .4051 RRA .1410 RC3 -.9717 FAU .19650
FDE 2.1845 FRA .8894 FC-14.2059 BSP 42716
BDE 3.7278 BRA .3115 BC315.4108 FSP 3030

MID-COURSE EXECUTION ACCURACY
SGT12299.4 SGR 992.4 SG3 918.6
RRT .9103 RRF .9060 RTF .9622
SGB12339.4 R23 .0706 R13 .9623
SG112332.6 SG2 409.8 THA 4.21

ORBIT DETERMINATION ACCURACY
ST 6146.2 SR 676.5 SS 1455.6
CRT .9877 CRS -.9985 CST -.9840
LSA 6346.6 MSA 269.6 SSA 29.4
EL1 6182.4 EL2 105.2 ALF 6.21

LAUNCH DATE DEC 21 1964 FLIGHT TIME 350.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 753.796 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.131 GAL 1.72 AZL 87.17 HCA 220.07 SMA 187.96 ECC .21905 INC 2.8303 V1 30.275
RP 208.49 LAP -1.82 LOP 309.20 VP 23.812 GAP -11.01 AZP 92.17 TAL 9.62 TAP 229.68 RCA 146.79 APO 229.13 V2 26.285
RC 316.140 GL 28.50 GP -9.31 ZAL 71.10 ZAP 40.21 ETS 167.91 ZAE 62.24 ETE 174.55 ZAC 76.17 ETC 256.99 CLP 39.29

PLANETOCENTRIC CONIC

C3 11.748 VHL 3.428 DLA 34.84 RAL 171.72 RAD 6567.4 VEL 11.538 PTH 2.01 VHP 4.646 DPA -2.48 RAP 166.30 ECC 1.1933

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.80	8 12 19	3914.15	-27.24	164.68	34.04	67.39	9 17 33	3314.1	-30.05	156.56
111.20	13 25 28	2919.73	-27.23	90.32	34.04	67.37	14 14 8	2319.7	-30.04	82.21
68.80	8 12 19	3914.15	-27.24	164.68	34.04	67.39	9 17 33	3314.1	-30.05	156.56
111.20	13 25 28	2919.73	-27.23	90.32	34.04	67.37	14 14 8	2319.7	-30.04	82.21
68.80	8 12 19	3914.15	-27.24	164.68	34.04	67.39	9 17 33	3314.1	-30.05	156.56
111.20	13 25 28	2919.73	-27.23	90.32	34.04	67.37	14 14 8	2319.7	-30.04	82.21

DIFFERENTIAL CORRECTIONS
TDE 3.6257 TRA -.1750 TC-15.8416 BAU 2.4922
RDE .3871 RRA .1480 RC3 -.9119 FAU .18929
FDE 2.0067 FRA .9593 FC-13.9497 BSP 43228
BDE 3.6463 BRA .2292 BC315.8679 FSP 2934

MID-COURSE EXECUTION ACCURACY
SGT12441.5 SGR 948.8 SG3 891.7
RRT .8981 RRF .8922 RTF .9617
SGB12477.6 R23 .0627 R13 .9618
SG112470.7 SG2 416.2 THA 3.92

ORBIT DETERMINATION ACCURACY
ST 6070.6 SR 653.6 SS 1371.9
CRT .9875 CRS -.9979 CST -.9815
LSA 6251.9 MSA 272.4 SSA 30.3
EL1 6104.9 EL2 102.5 ALF 6.07

LAUNCH DATE DEC 21 1964 FLIGHT TIME 352.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 758.176 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.139 GAL 1.59 AZL 87.23 HCA 221.31 SMA 188.10 ECC .21934 INC 2.7696 V1 30.275
RP 208.32 LAP -1.83 LOP 310.45 VP 23.845 GAP -11.09 AZP 92.08 TAL 8.85 TAP 230.16 RCA 146.84 APO 229.36 V2 26.304
RC 317.035 GL 28.12 GP -8.97 ZAL 72.31 ZAP 39.48 ETS 168.02 ZAE 61.24 ETE 174.54 ZAC 76.61 ETC 256.95 CLP 38.61

PLANETOCENTRIC CONIC

C3 11.536 VHL 3.397 DLA 33.92 RAL 172.92 RAD 6567.4 VEL 11.529 PTH 2.01 VHP 4.703 DPA -2.40 RAP 166.94 ECC 1.1899

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.50	8 27 7	3879.83	-26.65	161.72	34.66	68.20	9 31 47	3279.8	-29.37	153.61
109.50	13 20 12	2946.46	-26.64	92.15	34.65	68.19	14 9 18	2346.5	-29.36	84.04
70.50	8 27 7	3879.83	-26.65	161.72	34.66	68.20	9 31 47	3279.8	-29.37	153.61
109.50	13 20 12	2946.46	-26.64	92.15	34.65	68.19	14 9 18	2346.5	-29.36	84.04
110.00	13 55 22	2839.09	-29.17	84.83	35.71	71.33	14 42 41	2239.1	-31.43	76.36
110.00	12 51 7	3035.20	-24.18	97.89	33.48	65.07	13 41 42	2435.2	-27.33	90.14

DIFFERENTIAL CORRECTIONS
TDE 3.5437 TRA -.0655 TC-16.2979 BAU 2.5171
RDE .3708 RRA .1547 RC3 -.8534 FAU .18220
FDE 1.8377 FRA 1.0280 FC-13.6729 BSP 43720
BDE 3.5631 BRA .1680 BC316.3202 FSP 2836

MID-COURSE EXECUTION ACCURACY
SGT12582.7 SGR 908.9 SG3 865.1
RRT .8844 RRF .8769 RTF .9611
SGB12615.5 R23 .0555 R13 .9612
SG112608.4 SG2 423.3 THA 3.66

ORBIT DETERMINATION ACCURACY
ST 5987.2 SR 632.8 SS 1290.0
CRT .9874 CRS -.9969 CST -.9784
LSA 6151.0 MSA 275.7 SSA 31.1
EL1 6019.8 EL2 99.5 ALF 5.96

LAUNCH DATE DEC 21 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 762.558 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.147 GAL 1.45 AZL 87.29 HCA 222.56 SMA 188.24 ECC .21965 INC 2.7116 V1 30.275
RP 208.16 LAP -1.83 LOP 311.70 VP 23.877 GAP -11.16 AZP 92.00 TAL 8.07 TAP 230.63 RCA 146.89 APO 229.59 V2 26.323
RC 317.924 GL 27.74 GP -8.66 ZAL 73.56 ZAP 38.77 ETS 168.12 ZAE 60.26 ETE 174.54 ZAC 77.04 ETC 256.91 CLP 37.94

PLANETOCENTRIC CONIC

C3 11.341 VHL 3.368 DLA 32.99 RAL 174.15 RAD 6567.4 VEL 11.521 PTH 2.01 VHP 4.760 DPA -2.35 RAP 167.59 ECC 1.1866

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.32	8 43 26	3841.23	-26.05	158.47	35.33	69.00	9 47 28	3241.2	-28.66	150.37
107.68	13 13 42	2977.96	-26.03	94.32	35.33	68.98	14 3 20	2378.0	-28.65	86.22
72.32	8 43 26	3841.23	-26.05	158.47	35.33	69.00	9 47 28	3241.2	-28.66	150.37
107.68	13 13 42	2977.96	-26.03	94.32	35.33	68.98	14 3 20	2378.0	-28.65	86.22
110.00	14 36 22	2723.87	-31.40	76.60	37.27	75.73	15 21 46	2123.9	-33.04	67.76
110.00	12 19 57	3143.31	-20.92	104.58	32.80	62.33	13 12 20	2543.3	-24.45	97.22

DIFFERENTIAL CORRECTIONS
TDE 3.4576 TRA .0491 TC-16.7481 BAU 2.5423
RDE .3559 RRA .1607 RC3 -.7969 FAU .17536
FDE 1.6755 FRA 1.0902 FC-13.3869 BSP 44221
BDE 3.4758 BRA .1680 BC316.7671 FSP 2747

MID-COURSE EXECUTION ACCURACY
SGT12722.3 SGR 872.4 SG3 839.1
RRT .8694 RRF .8601 RTF .9607
SGB12752.2 R23 .0483 R13 .9608
SG112744.9 SG2 430.3 THA 3.42

ORBIT DETERMINATION ACCURACY
ST 5892.5 SR 613.7 SS 1208.8
CRT .9876 CRS -.9955 CST -.9747
LSA 6039.9 MSA 278.5 SSA 32.0
EL1 5923.6 EL2 96.0 ALF 5.87

LAUNCH DATE DEC 21 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 766.944 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.155 GAL 1.31 AZL 87.34 HCA 223.81 SMA 188.39 ECC .21999 INC 2.6563 V1 30.275
RP 208.01 LAP -1.84 LOP 312.95 VP 23.908 GAP -11.23 AZP 91.92 TAL 7.28 TAP 231.09 RCA 146.94 APO 229.83 V2 26.341
RC 318.808 GL 27.38 GP -8.37 ZAL 74.87 ZAP 38.07 ETS 168.22 ZAE 59.29 ETE 174.54 ZAC 77.45 ETC 256.87 CLP 37.28

PLANETOCENTRIC CONIC

C3 11.161 VHL 3.341 DLA 32.05 RAL 175.41 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 4.818 DPA -2.32 RAP 168.25 ECC 1.1837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.33	9 1 39	3797.03	-25.41	154.82	36.06	69.79	10 4 56	3197.0	-27.93	146.74
105.67	13 5 34	3015.54	-25.40	96.93	36.06	69.77	13 55 50	2415.5	-27.92	88.85
74.33	9 1 39	3797.03	-25.41	154.82	36.06	69.79	10 4 56	3197.0	-27.93	146.74
105.67	13 5 34	3015.54	-25.40	96.93	36.06	69.77	13 55 50	2415.5	-27.92	88.85
110.00	15 4 16	2648.27	-32.53	71.00	38.35	78.86	15 48 24	2048.3	-33.72	61.97
110.00	12 2 8	3212.29	-18.68	108.68	32.73	60.84	12 55 41	2612.3	-22.42	101.54

DIFFERENTIAL CORRECTIONS
TDE 3.3727 TRA .1750 TC-17.1727 BAU 2.5646
RDE .3429 RRA .1669 RC3 -.7394 FAU .16827
FDE 1.5250 FRA 1.1581 FC-13.0528 BSP 44789
BDE 3.3900 BRA .2418 BC317.1887 FSP 2661

MID-COURSE EXECUTION ACCURACY
SGT12854.4 SGR 839.0 SG3 812.3
RRT .8521 RRF .8415 RTF .9601
SGB12881.7 R23 .0430 R13 .9601
SG112874.3 SG2 438.4 THA 3.19

ORBIT DETERMINATION ACCURACY
ST 5795.5 SR 596.9 SS 1132.7
CRT .9879 CRS -.9932 CST -.9698
LSA 5928.4 MSA 283.1 SSA 32.7
EL1 5825.5 EL2 92.2 ALF 5.81

LAUNCH DATE DEC 21 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 771.333 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.163 GAL 1.17 AZL 87.40 HCA 225.07 SMA 188.53 ECC .22035 INC 2.6033 V1 30.275
RP 207.86 LAP -1.84 LOP 314.21 VP 23.938 GAP -11.31 AZP 91.84 TAL 6.48 TAP 231.54 RCA 146.99 APO 230.08 V2 26.357
RC 319.685 GL 27.01 GP -8.09 ZAL 76.23 ZAP 37.40 ETS 168.31 ZAE 58.34 ETE 174.54 ZAC 77.85 ETC 256.82 CLP 36.64

PLANETOCENTRIC CONIC

C3 10.996 VHL 3.316 DLA 31.09 RAL 176.71 RAD 6567.4 VEL 11.506 PTH 2.00 VHP 4.877 DPA -2.31 RAP 168.92 ECC 1.1810

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.61	9 22 32	3744.68	-24.75	150.59	36.86	70.56	10 24 57	3144.7	-27.17	142.53
103.39	12 55 3	3061.78	-24.74	100.17	36.85	70.55	13 46 4	2461.8	-27.16	92.11
76.61	9 22 32	3744.68	-24.75	150.59	36.86	70.56	10 24 57	3144.7	-27.17	142.53
103.39	12 55 3	3061.78	-24.74	100.17	36.85	70.55	13 46 4	2461.8	-27.16	92.11
110.00	15 27 44	2586.12	-33.25	66.29	39.26	81.56	16 10 50	1986.1	-34.06	57.15
110.00	11 49 1	3268.34	-16.79	111.93	32.92	59.78	12 43 30	2668.3	-20.68	104.96

DIFFERENTIAL CORRECTIONS
TDE 3.2768 TRA .2984 TC-17.6163 BAU 2.5917
RDE .3305 RRA .1718 RC3 -.6862 FAU .16187
FDE 1.3748 FRA 1.2112 FC-12.7437 BSP 45156
BDE 3.2934 BRA .3443 BC317.6297 FSP 2559

MID-COURSE EXECUTION ACCURACY
SGT12996.9 SGR 808.4 SG3 787.4
RRT .8337 RRF .8213 RTF .9597
SGB13022.0 R23 .0367 R13 .9598
SG113014.3 SG2 445.7 THA 2.97

ORBIT DETERMINATION ACCURACY
ST 5675.4 SR 580.7 SS 1053.0
CRT .9883 CRS -.9899 CST -.9639
LSA 5794.2 MSA 286.4 SSA 33.6
EL1 5704.3 EL2 88.0 ALF 5.78

LAUNCH DATE DEC 21 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 775.724 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.171 GAL 1.02 AZL 87.45 HCA 226.32 SMA 188.68 ECC .22075 INC 2.5525 V1 30.275
RP 207.73 LAP -1.85 LOP 315.46 VP 23.967 GAP -11.38 AZP 91.76 TAL 5.66 TAP 231.98 RCA 147.03 APO 230.33 V2 26.373
RC 320.558 GL 26.65 GP -7.83 ZAL 77.63 ZAP 36.75 ETS 168.40 ZAE 57.40 ETE 174.54 ZAC 78.24 ETC 256.77 CLP 36.02

PLANETOCENTRIC CONIC

C3 10.848 VHL 3.294 DLA 30.11 RAL 178.04 RAD 6567.4 VEL 11.499 PTH 2.00 VHP 4.937 DPA -2.33 RAP 169.60 ECC 1.1785

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.31	9 47 39	3679.13	-24.06	145.42	37.70	71.33	10 48 58	3079.1	-26.39	137.38
100.69	12 40 33	3121.77	-24.05	104.40	37.70	71.32	13 32 35	2521.8	-26.38	96.36
79.31	9 47 39	3679.13	-24.06	145.42	37.70	71.33	10 48 58	3079.1	-26.39	137.38
100.69	12 40 33	3121.77	-24.05	104.40	37.70	71.32	13 32 35	2521.8	-26.38	96.36
110.00	15 48 49	2531.31	-33.72	62.08	40.11	84.01	16 31 0	1931.3	-34.18	52.87
110.00	11 38 33	3317.59	-15.08	114.72	33.29	58.95	12 33 50	2717.6	-19.08	107.89

DIFFERENTIAL CORRECTIONS
TDE 3.1815 TRA .4348 TC-18.0253 BAU 2.6158
RDE .3196 RRA .1769 RC3 -.6325 FAU 15532
FDE 1.2338 FRA 1.2681 FC-12.3959 BSP 45658
BDE 3.1975 BRA .4694 BC318.0364 FSP 2475

MID-COURSE EXECUTION ACCURACY
SGT13129.4 SGR 780.6 SG3 762.0
RRT .8134 RRF .7993 RTF .9591
SGB13152.6 R23 .0314 R13 .9592
SG113144.8 SG2 453.5 THA 2.77

ORBIT DETERMINATION ACCURACY
ST 5552.2 SR 566.3 SS 977.6
CRT .9890 CRS -.9848 CST -.9562
LSA 5658.4 MSA 290.9 SSA 34.5
EL1 5580.4 EL2 83.2 ALF 5.76

LAUNCH DATE DEC 21 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 780.117 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.179 GAL .87 AZL 87.50 HCA 227.58 SMA 188.83 ECC .22117 INC 2.5038 V1 30.275
RP 207.60 LAP -1.85 LOP 316.72 VP 23.995 GAP -11.45 AZP 91.69 TAL 4.83 TAP 232.41 RCA 147.06 APO 230.59 V2 26.388
RC 321.425 GL 26.28 GP -7.58 ZAL 79.09 ZAP 36.11 ETS 168.48 ZAE 56.48 ETE 174.55 ZAC 78.62 ETC 256.72 CLP 35.41

PLANETOCENTRIC CONIC

C3 10.716 VHL 3.273 DLA 29.11 RAL 179.40 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 4.998 DPA -2.37 RAP 170.29 ECC 1.1764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.93	10 21 11	3586.58	-23.35	138.31	38.61	72.09	11 20 58	2986.6	-25.58	130.28
97.07	12 17 51	3209.32	-23.34	110.63	38.61	72.08	13 11 20	2609.3	-25.57	102.61
100.00	13 38 6	2951.89	-27.31	92.79	39.81	77.35	14 27 18	2351.9	-28.78	84.30
100.00	11 43 37	3319.24	-19.49	117.21	37.06	66.87	12 38 57	2719.2	-22.45	109.66
110.00	16 8 23	2481.23	-34.01	58.20	40.92	86.29	16 49 44	1881.2	-34.15	48.96
110.00	11 29 49	3362.66	-13.48	117.24	33.81	58.29	12 25 52	2762.7	-17.58	110.52

DIFFERENTIAL CORRECTIONS
TDE 3.0827 TRA .5762 TC-18.4164 BAU 2.6396
RDE .3099 RRA .1814 RC3 -.5796 FAU .14886
FDE 1.1008 FRA 1.3199 FC-12.0262 BSP 46104
BDE 3.0983 BRA .6040 BC318.4255 FSP 2384

MID-COURSE EXECUTION ACCURACY
SGT13259.7 SGR 755.2 SG3 736.7
RRT .7911 RRF .7756 RTF .9586
SGB13281.2 R23 .0266 R13 .9587
SG113273.2 SG2 461.5 THA 2.58

ORBIT DETERMINATION ACCURACY
ST 5418.9 SR 553.4 SS 905.6
CRT .9900 CRS -.9774 CST -.9466
LSA 5513.8 MSA 295.7 SSA 35.3
EL1 5446.5 EL2 77.8 ALF 5.77

LAUNCH DATE DEC 21 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 784.512 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.188 GAL .72 AZL 87.54 HCA 228.84 SMA 188.97 ECC .22162 INC 2.4569 V1 30.275
RP 207.48 LAP -1.85 LOP 317.98 VP 24.021 GAP -11.52 AZP 91.62 TAL 3.99 TAP 232.82 RCA 147.09 APO 230.85 V2 26.402
RC 322.286 GL 25.91 GP -7.35 ZAL 80.59 ZAP 35.49 ETS 168.56 ZAE 55.57 ETE 174.55 ZAC 78.99 ETC 256.67 CLP 34.82

PLANETOCENTRIC CONIC

C3 10.600 VHL 3.256 DLA 28.10 RAL 180.79 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 5.060 DPA -2.43 RAP 170.99 ECC 1.1744

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 55 49	3295.89	-24.63	117.38	40.20	75.57	12 50 45	2695.9	-26.37	109.15
90.00	10 54 18	3495.59	-20.60	130.62	38.85	70.13	11 52 33	2895.6	-23.12	122.86
100.00	14 13 8	2853.19	-28.58	85.73	41.12	80.86	15 0 41	2253.2	-29.55	77.06
100.00	11 19 40	3413.51	-16.86	122.98	37.22	64.95	12 16 33	2813.5	-20.10	115.68
110.00	16 26 54	2434.49	-34.15	54.56	41.73	88.44	17 7 29	1834.5	-33.99	45.32
110.00	11 22 23	3404.98	-11.96	119.56	34.45	57.74	12 19 8	2805.0	-16.13	112.95

DIFFERENTIAL CORRECTIONS
TDE 2.9793 TRA .7241 TC-18.7893 BAU 2.6637
RDE .3011 RRA .1854 RC3 -.5286 FAU .14269
FDE .9711 FRA 1.3665 FC-11.6538 BSP 46585
BDE 2.9945 BRA .7475 BC318.7968 FSP 2303

MID-COURSE EXECUTION ACCURACY
SGT13388.9 SGR 732.2 SG3 712.1
RRT .7675 RRF .7500 RTF .9582
SGB13408.9 R23 .0213 R13 .9582
SG113400.7 SG2 469.0 THA 2.41

ORBIT DETERMINATION ACCURACY
ST 5273.8 SR 541.5 SS 834.3
CRT .9911 CRS -.9665 CST -.9339
LSA 5358.2 MSA 300.7 SSA 36.1
EL1 5301.0 EL2 71.9 ALF 5.81

LAUNCH DATE DEC 21 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 788.908 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.196	GAL	.57	AZL	87.59	HCA	230.10	SMA	189.12	ECC	.22211	INC	2.4117	V1	30.275
RP	207.36	LAP	-1.85	LOP	319.24	VP	24.047	GAP	-11.60	AZP	91.55	TAL	3.13	TAP	233.23	RCA	147.12	APO	231.13	V2	26.416
RC	323.141	GL	25.53	GP	-7.13	ZAL	82.14	ZAP	34.88	ETS	168.62	ZAE	54.67	ETE	174.55	ZAC	79.35	ETC	256.63	CLP	34.24

PLANETOCENTRIC CONIC

C3	10.501	VHL	3.240	DLA	27.07	RAL	182.20	RAD	6567.4	VEL	11.484	PTH	2.00	VHP	5.123	DPA	-2.50	RAP	171.69	ECC	1.1728

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 44 29	3152.77	-26.68	107.41	41.83	80.16	13 37 2	2552.8	-27.77	98.91
90.00	10 16 54	3634.90	-17.13	139.38	38.81	67.10	11 17 29	3034.9	-20.09	131.95
100.00	14 40 48	2777.82	-29.28	80.24	42.24	83.67	15 27 5	2177.8	-29.84	71.48
100.00	11 3 17	3485.08	-14.75	127.24	37.67	63.70	12 1 22	2885.1	-18.17	120.11
110.00	16 44 39	2390.27	-34.18	51.10	42.54	90.49	17 24 29	1790.3	-33.73	41.89
110.00	11 15 55	3445.40	-10.48	121.76	35.20	57.27	12 13 20	2845.4	-14.72	115.23

DIFFERENTIAL CORRECTIONS

TDE	2.8729	TRA	.8784	TC	-19.1374	BAU	2.6874
RDE	.2935	RRA	.1891	RC3	-.4780	FAU	.13653
FDE	.8511	FRA	1.4098	FC	-11.2564	BSP	46991
BDE	2.8879	BRA	.8985	BC	319.1433	FSP	2209

MID-COURSE EXECUTION ACCURACY

SGT	13515.8	SGR	711.5	SG3	687.5		
RRT	.7418	RRF	.7228	RTF	.9578		
SGB	13534.5	R23	.0170	R13	.9578		
SG1	13526.1	SG2	476.8	THA	2.24		

ORBIT DETERMINATION ACCURACY

ST	5120.1	SR	531.1	SS	768.9		
CRT	.9923	CRS	-.9511	CST	-.9180		
LSA	5195.5	MSA	306.2	SSA	36.9		
EL1	5147.1	EL2	65.3	ALF	5.88		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 793.305 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.204	GAL	.41	AZL	87.63	HCA	231.36	SMA	189.27	ECC	.22263	INC	2.3682	V1	30.275
RP	207.26	LAP	-1.85	LOP	320.50	VP	24.072	GAP	-11.67	AZP	91.48	TAL	2.26	TAP	233.62	RCA	147.14	APO	231.41	V2	26.428
RC	323.990	GL	25.15	GP	-6.92	ZAL	83.73	ZAP	34.29	ETS	168.69	ZAE	53.79	ETE	174.56	ZAC	79.70	ETC	256.58	CLP	33.67

PLANETOCENTRIC CONIC

C3	10.419	VHL	3.228	DLA	26.01	RAL	183.64	RAD	6567.4	VEL	11.481	PTH	2.00	VHP	5.187	DPA	-2.60	RAP	172.41	ECC	1.1715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 16 30	3063.27	-27.56	101.01	43.08	83.25	14 7 33	2463.3	-28.21	92.41
90.00	9 56 22	3721.24	-14.77	144.61	39.26	65.56	10 58 23	3121.2	-17.95	137.38
100.00	15 5 3	2713.32	-29.67	75.48	43.30	86.14	15 50 16	2113.3	-29.88	66.69
100.00	10 50 30	3546.42	-12.87	130.83	38.31	62.79	11 49 36	2946.4	-16.42	123.83
110.00	17 1 48	2348.01	-34.11	47.81	43.36	92.44	17 40 56	1748.0	-33.39	38.64
110.00	11 10 14	3484.50	-9.03	123.87	36.04	56.89	12 8 18	2884.5	-13.33	117.40

DIFFERENTIAL CORRECTIONS

TDE	2.7623	TRA	1.0403	TC	-19.4615	BAU	2.7115
RDE	.2867	RRA	.1925	RC3	-.4292	FAU	.13062
FDE	.7340	FRA	1.4520	FC	-10.8535	BSP	47454
BDE	2.7772	BRA	1.0580	BC	319.4662	FSP	2126

MID-COURSE EXECUTION ACCURACY

SGT	13642.3	SGR	693.0	SG3	663.7		
RRT	.7147	RRF	.6940	RTF	.9571		
SGB	13659.9	R23	.0128	R13	.9572		
SG1	13651.3	SG2	484.3	THA	2.08		

ORBIT DETERMINATION ACCURACY

ST	4956.2	SR	521.6	SS	706.0		
CRT	.9937	CRS	-.9284	CST	-.8962		
LSA	5023.4	MSA	313.3	SSA	37.7		
EL1	4983.2	EL2	58.3	ALF	5.97		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 797.703 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.213	GAL	.25	AZL	87.67	HCA	232.62	SMA	189.43	ECC	.22318	INC	2.3260	V1	30.275
RP	207.16	LAP	-1.85	LOP	321.77	VP	24.096	GAP	-11.74	AZP	91.41	TAL	1.38	TAP	234.00	RCA	147.15	APO	231.70	V2	26.439
RC	324.833	GL	24.77	GP	-6.72	ZAL	85.37	ZAP	33.71	ETS	168.75	ZAE	52.92	ETE	174.56	ZAC	80.04	ETC	256.53	CLP	33.11

PLANETOCENTRIC CONIC

C3	10.355	VHL	3.218	DLA	24.94	RAL	185.10	RAD	6567.4	VEL	11.478	PTH	2.00	VHP	5.252	DPA	-2.71	RAP	173.13	ECC	1.1704

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 43 18	2990.52	-28.04	95.74	44.22	85.85	14 33 9	2390.5	-28.32	87.09
90.00	9 41 12	3791.50	-12.75	148.78	39.92	64.50	10 44 24	3191.5	-16.08	141.69
100.00	15 27 15	2655.41	-29.85	71.19	44.33	88.40	16 11 30	2055.4	-29.76	62.39
100.00	10 39 57	3601.84	-11.12	134.01	39.09	62.08	11 39 59	3001.8	-14.77	127.12
110.00	17 18 30	2307.35	-33.94	44.64	44.21	94.30	17 56 57	1707.4	-32.98	35.54
110.00	11 5 11	3522.67	-7.61	125.90	36.97	56.57	12 3 54	2922.7	-11.95	119.50

DIFFERENTIAL CORRECTIONS

TDE	2.6471	TRA	1.2077	TC	-19.7537	BAU	2.7351
RDE	.2807	RRA	.1951	RC3	-.3811	FAU	.12478
FDE	.6209	FRA	1.4838	FC	-10.4322	BSP	47897
BDE	2.6619	BRA	1.2233	BC	319.7574	FSP	2049

MID-COURSE EXECUTION ACCURACY

SGT	13764.5	SGR	675.8	SG3	639.5		
RRT	.6861	RRF	.6628	RTF	.9567		
SGB	13781.1	R23	.0076	R13	.9567		
SG1	13772.4	SG2	491.3	THA	1.93		

ORBIT DETERMINATION ACCURACY

ST	4781.9	SR	512.9	SS	645.9		
CRT	.9950	CRS	-.8963	CST	-.8680		
LSA	4841.8	MSA	319.9	SSA	38.4		
EL1	4809.0	EL2	51.1	ALF	6.09		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 802.101 EARTH TO MARS

RL	147.16	LAL	-.00	LOL	89.17	VL	33.221	GAL	.09	AZL	87.71	HCA	233.88	SMA	189.58	ECC	.22377	INC	2.2853	V1	30.275
RP	207.08	LAP	-1.85	LOP	323.03	VP	24.119	GAP	-11.81	AZP	91.35	TAL	.49	TAP	234.37	RCA	147.16	APO	232.00	V2	26.449
RC	325.671	GL	24.37	GP	-6.53	ZAL	87.05	ZAP	33.15	ETS	168.80	ZAE	52.07	ETE	174.56	ZAC	80.38	ETC	256.48	CLP	32.57

PLANETOCENTRIC CONIC

C3	10.309	VHL	3.211	DLA	23.85	RAL	186.58	RAD	6567.4	VEL	11.476	PTH	1.99	VHP	5.317	DPA	-2.83	RAP	173.86	ECC	1.1697

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 7 20	2926.79	-28.26	91.09	45.33	88.17	14 56 6	2326.8	-28.22	82.43
90.00	9 29 0	3853.45	-10.91	152.40	40.74	63.71	10 33 13	3253.5	-14.35	145.42
100.00	15 48 3	2602.02	-29.89	67.22	45.35	90.48	16 31 25	2002.0	-29.50	58.44
100.00	10 30 57	3653.45	-9.46	136.94	39.98	61.51	11 31 51	3053.5	-13.20	130.14
110.00	17 34 48	2268.04	-33.70	41.60	45.10	96.09	18 12 36	1668.0	-32.49	32.57
110.00	11 0 41	3560.20	-6.19	127.89	37.99	56.32	12 0 2	2960.2	-10.58	121.54

DIFFERENTIAL CORRECTIONS

TDE	2.5211	TRA	1.3826	TC	-20.0432	BAU	2.7629
RDE	.2745	RRA	.1974	RC3	-.3405	FAU	.12030
FDE	.4951	FRA	1.5133	FC	-10.1026	BSP	48208
BDE	2.5360	BRA	1.3966	BC	320.0461	FSP	1934

MID-COURSE EXECUTION ACCURACY

SGT	13898.9	SGR	660.3	SG3	620.6		
RRT	.6599	RRF	.6300	RTF	.9561		
SGB	13914.6	R23	-.0023	R13	.9561		
SG1	13905.7	SG2	495.9	THA	1.80		

ORBIT DETERMINATION ACCURACY

ST	4587.4	SR	503.4	SS	581.6		
CRT	.9960	CRS	-.8417	CST	-.8207		
LSA	4639.4	MSA	331.0	SSA	39.1		
EL1	4614.7	EL2	44.5	ALF	6.24		

LAUNCH DATE DEC 21 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 806.498 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.230 GAL -.08 AZL 87.75 HCA 235.15 SMA 189.73 ECC .22439 INC 2.2458 V1 30.275
RP 207.00 LAP -1.84 LOP 324.30 VP 24.141 GAP -11.89 AZP 91.28 TAL 359.58 TAP 234.73 RCA 147.16 APO 232.31 V2 26.459
RC 326.503 GL 23.96 GP -6.35 ZAL 88.76 ZAP 32.60 ETS 168.86 ZAE 51.23 ETE 174.56 ZAC 80.71 ETC 256.43 CLP 32.05

PLANETOCENTRIC CONIC

C3 10.283 VHL 3.207 DLA 22.73 RAL 188.08 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 5.383 DPA -2.98 RAP 174.60 ECC 1.1692

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 29 34	2868.90	-28.32	86.86	46.43	90.29	15 17 23	2268.9	-27.98	78.21
90.00	9 18 43	3910.30	-9.17	155.68	41.67	63.09	10 23 53	3310.3	-12.71	148.79
100.00	16 7 51	2551.98	-29.80	63.50	46.39	92.44	16 50 23	1952.0	-29.15	54.76
100.00	10 23 7	3702.46	-7.86	139.70	40.97	61.07	11 24 49	3102.5	-11.66	132.97
110.00	17 50 48	2229.90	-33.39	38.66	46.01	97.80	18 27 58	1629.9	-31.95	29.73
110.00	10 56 39	3597.30	-4.79	129.84	39.08	56.11	11 56 36	2997.3	-9.21	123.54

DIFFERENTIAL CORRECTIONS
TDE 2.4228 TRA 1.5763 TC-20.1811 BAU 2.7746
RDE .2741 RRA .2018 RC3 -.2803 FAU .11176
FDE .4553 FRA 1.5828 FC3-9.4093 BSP 49099
BDE 2.4382 BRA 1.5892 BC320.1831 FSP 1966

MID-COURSE EXECUTION ACCURACY
SGT13985.0 SGR 652.0 SG3 589.0
RRT .6187 RRF .6035 RTF .9543
SGB14000.2 R23 .0156 R13 .9543
SG113990.9 SG2 512.0 THA 1.65

ORBIT DETERMINATION ACCURACY
ST 4441.8 SR 503.6 SS 577.4
CRT .9967 CRS -.8115 CST -.8044
LSA 4494.3 MSA 341.2 SSA 39.8
EL1 4470.1 EL2 40.6 ALF 6.45

LAUNCH DATE DEC 21 1964 FLIGHT TIME 376.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 810.896 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.238 GAL -.25 AZL 87.79 HCA 236.41 SMA 189.89 ECC .22506 INC 2.2075 V1 30.275
RP 206.93 LAP -1.84 LOP 325.56 VP 24.162 GAP -11.96 AZP 91.22 TAL 358.66 TAP 235.08 RCA 147.15 APO 232.62 V2 26.467
RC 327.330 GL 23.54 GP -6.18 ZAL 90.51 ZAP 32.07 ETS 168.90 ZAE 50.39 ETE 174.56 ZAC 81.04 ETC 256.38 CLP 31.53

PLANETOCENTRIC CONIC

C3 10.276 VHL 3.206 DLA 21.60 RAL 189.59 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 5.451 DPA -3.13 RAP 175.35 ECC 1.1691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 32	2815.20	-28.23	82.93	47.54	92.26	15 37 28	2215.2	-27.62	74.32
90.00	9 9 49	3963.73	-7.51	158.73	42.72	62.62	10 15 53	3363.7	-11.13	151.91
100.00	16 26 53	2504.56	-29.61	59.99	47.45	94.28	17 8 37	1904.6	-28.70	51.31
100.00	10 16 10	3749.60	-6.30	142.33	42.06	60.72	11 18 40	3149.6	-10.15	135.66
110.00	18 6 32	2192.80	-33.01	35.84	46.97	99.43	18 43 5	1592.8	-31.36	27.00
110.00	10 53 1	3634.13	-3.39	131.77	40.25	55.96	11 53 35	3034.1	-7.83	125.51

DIFFERENTIAL CORRECTIONS
TDE 2.2900 TRA 1.7592 TC-20.3917 BAU 2.8016
RDE .2696 RRA .2023 RC3 -.2408 FAU .10722
FDE .3398 FRA 1.5863 FC3-9.0331 BSP 49336
BDE 2.3058 BRA 1.7708 BC320.3931 FSP 1838

MID-COURSE EXECUTION ACCURACY
SGT14110.5 SGR 638.2 SG3 567.9
RRT .5892 RRF .5656 RTF .9543
SGB14124.9 R23 .0032 R13 .9543
SG114115.5 SG2 515.4 THA 1.53

ORBIT DETERMINATION ACCURACY
ST 4235.1 SR 495.9 SS 523.6
CRT .9965 CRS -.7260 CST -.7396
LSA 4281.5 MSA 351.1 SSA 40.3
EL1 4263.9 EL2 41.1 ALF 6.66

LAUNCH DATE DEC 21 1964 FLIGHT TIME 378.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 815.292 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.247 GAL -.42 AZL 87.83 HCA 237.68 SMA 190.04 ECC .22576 INC 2.1703 V1 30.275
RP 206.86 LAP -1.83 LOP 326.83 VP 24.182 GAP -12.03 AZP 91.16 TAL 357.73 TAP 235.41 RCA 147.14 APO 232.95 V2 26.474
RC 328.152 GL 23.11 GP -6.02 ZAL 92.30 ZAP 31.55 ETS 168.95 ZAE 49.58 ETE 174.56 ZAC 81.36 ETC 256.33 CLP 31.02

PLANETOCENTRIC CONIC

C3 10.289 VHL 3.208 DLA 20.45 RAL 191.12 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 5.519 DPA- -3.30 RAP 176.11 ECC 1.1693

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 10 34	2764.70	-28.04	79.25	48.67	94.09	15 56 39	2164.7	-27.18	70.69
90.00	9 1 59	4014.76	-5.91	161.61	43.85	62.26	10 8 54	3414.8	-9.58	154.86
100.00	16 45 17	2459.30	-29.34	56.66	48.54	96.01	17 26 16	1859.3	-28.19	48.04
100.00	10 9 58	3795.39	-4.77	144.87	43.23	60.46	11 13 13	3195.4	-8.67	138.25
110.00	18 22 1	2156.65	-32.57	33.11	47.97	100.99	18 57 58	1556.7	-30.71	24.38
110.00	10 49 43	3670.81	-1.99	133.69	41.50	55.87	11 50 54	3070.8	-6.45	127.45

DIFFERENTIAL CORRECTIONS
TDE 2.1628 TRA 1.9602 TC-20.5453 BAU 2.8263
RDE .2674 RRA .2041 RC3 -.2000 FAU .10224
FDE .2522 FRA 1.6175 FC3-8.6020 BSP 49803
BDE 2.1792 BRA 1.9708 BC320.5463 FSP 1769

MID-COURSE EXECUTION ACCURACY
SGT14234.4 SGR 629.3 SG3 547.6
RRT .5572 RRF .5324 RTF .9533
SGB14248.3 R23 .0007 R13 .9533
SG114238.7 SG2 522.4 THA 1.41

ORBIT DETERMINATION ACCURACY
ST 4041.9 SR 491.7 SS 496.9
CRT .9950 CRS -.6319 CST -.6749
LSA 4085.3 MSA 366.7 SSA 40.8
EL1 4071.4 EL2 48.6 ALF 6.90

LAUNCH DATE DEC 21 1964 FLIGHT TIME 380.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 819.687 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.256 GAL -.59 AZL 87.87 HCA 238.95 SMA 190.20 ECC .22651 INC 2.1340 V1 30.275
RP 206.81 LAP -1.83 LOP 328.10 VP 24.201 GAP -12.11 AZP 91.10 TAL 356.79 TAP 235.74 RCA 147.11 APO 233.28 V2 26.480
RC 328.970 GL 22.67 GP -5.87 ZAL 94.11 ZAP 31.04 ETS 168.98 ZAE 48.77 ETE 174.56 ZAC 81.67 ETC 256.29 CLP 30.53

PLANETOCENTRIC CONIC

C3 10.324 VHL 3.213 DLA 19.29 RAL 192.66 RAD 6567.4 VEL 11.477 PTH 1.99 VHP 5.588 DPA -3.48 RAP 176.87 ECC 1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 51	2716.79	-27.76	75.78	49.82	95.81	16 15 8	2116.8	-26.67	67.28
90.00	8 55 0	4064.04	-4.34	164.38	45.08	61.99	10 2 44	3464.0	-8.05	157.67
100.00	17 3 10	2415.87	-28.98	53.48	49.66	97.65	17 43 26	1815.9	-27.62	44.94
100.00	10 4 22	3840.19	-3.26	147.34	44.48	60.27	11 8 22	3240.2	-7.19	140.76
110.00	18 37 17	2121.40	-32.08	30.47	49.02	102.48	19 12 39	1521.4	-30.03	21.86
110.00	10 46 44	3707.42	-.59	135.60	42.81	55.82	11 48 31	3107.4	-5.07	129.38

DIFFERENTIAL CORRECTIONS
TDE 2.0336 TRA 2.1618 TC-20.6424 BAU 2.8493
RDE .2661 RRA .2047 RC3 -.1589 FAU .09696
FDE .1717 FRA 1.6301 FC3-8.1304 BSP 50219
BDE 2.0509 BRA 2.1714 BC320.6430 FSP 1694

MID-COURSE EXECUTION ACCURACY
SGT14345.8 SGR 620.6 SG3 524.7
RRT .5228 RRF .4962 RTF .9527
SGB14359.2 R23 -.0030 R13 .9527
SG114349.4 SG2 528.9 THA 1.30

ORBIT DETERMINATION ACCURACY
ST 3848.3 SR 488.5 SS 476.0
CRT .9916 CRS -.5253 CST -.6074
LSA 3889.5 MSA 380.4 SSA 41.1
EL1 3878.6 EL2 62.7 ALF 7.18

LAUNCH DATE DEC 21 1964 FLIGHT TIME 382.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 824.080 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.264 GAL -.77 AZL 87.90 HCA 240.21 SMA 190.35 ECC .22730 INC 2.0987 V1 30.275
RP 206.77 LAP -1.82 LOP 329.37 VP 24.218 GAP -12.19 AZP 91.04 TAL 355.83 TAP 236.05 RCA 147.09 APO 233.62 V2 26.486
RC 329.784 GL 22.21 GP -5.73 ZAL 95.95 ZAP 30.54 ETS 169.02 ZAE 47.97 ETE 174.56 ZAC 81.98 ETC 256.24 CLP 30.05

PLANETOCENTRIC CONIC

C3 10.382 VHL 3.222 DLA 18.11 RAL 194.21 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 5.658 DPA -3.68 RAP 177.65 ECC 1.1709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 31	2671.04	-27.40	72.48	51.01	97.43	16 33 2	2071.0	-26.09	64.05
90.00	8 48 41	4112.01	-2.80	167.07	46.38	61.81	9 57 13	3512.0	-6.55	160.40
100.00	17 20 36	2374.06	-28.57	50.44	50.82	99.20	18 0 10	1774.1	-27.00	41.99
100.00	9 59 16	3884.23	-1.77	149.76	45.81	60.16	11 4 1	3284.2	-5.73	143.21
110.00	18 52 21	2087.02	-31.55	27.93	50.11	103.90	19 27 8	1487.0	-29.32	19.44
110.00	10 44 1	3744.03	.81	137.51	44.20	55.83	11 46 25	3144.0	-3.68	131.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.9013 TRA 2.3728 TC-20.6956 BAU 2.8724 SGT14456.8 SGR 613.8 SG3 502.9 ST 3655.8 SR 486.3 SS 464.9
RDE .2657 RRA .2053 RC3 -.1197 FAU .09186 RRT .4882 RRF .4604 RTF .9518 CRT .9853 CRS -.4069 CST -.5384
FDE .0969 FRA 1.6453 FC3-7.6607 BSP 50645 SGB14469.9 R23 -.0055 R13 .9518 LSA 3695.6 MSA 397.9 SSA 41.4
BDE 1.9198 BRA 2.3817 BC320.6959 FSP 1623 SG114459.9 SG2 535.5 THA 1.19 EL1 3687.1 EL2 82.3 ALF 7.47

LAUNCH DATE DEC 21 1964 FLIGHT TIME 384.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 828.471 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.273 GAL -.95 AZL 87.94 HCA 241.48 SMA 190.51 ECC .22814 INC 2.0643 V1 30.275
RP 206.73 LAP -1.81 LOP 330.64 VP 24.235 GAP -12.26 AZP 90.99 TAL 354.87 TAP 236.35 RCA 147.05 APO 233.97 V2 26.490
RC 330.595 GL 21.75 GP -5.59 ZAL 97.82 ZAP 30.05 ETS 169.05 ZAE 47.19 ETE 174.55 ZAC 82.29 ETC 256.20 CLP 29.58

PLANETOCENTRIC CONIC

C3 10.462 VHL 3.235 DLA 16.92 RAL 195.77 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 5.729 DPA -3.88 RAP 178.43 ECC 1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 40	2627.18	-26.98	69.34	52.24	98.95	16 50 27	2027.2	-25.46	61.00
90.00	8 42 57	4158.99	-1.29	169.69	47.76	61.71	9 52 16	3559.0	-5.06	163.04
100.00	17 37 40	2333.70	-28.09	47.53	52.02	100.66	18 16 34	1733.7	-26.33	39.17
100.00	9 54 38	3927.70	-.30	152.14	47.21	60.11	11 0 5	3327.7	-4.27	145.61
110.00	19 7 14	2053.49	-30.98	25.49	51.26	105.24	19 41 27	1453.5	-28.57	17.11
110.00	10 41 33	3780.68	2.21	139.42	45.64	55.88	11 44 34	3180.7	-2.28	133.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7661 TRA 2.5917 TC-20.7044 BAU 2.8959 SGT14567.3 SGR 608.1 SG3 481.6 ST 3467.1 SR 484.8 SS 461.6
RDE .2660 RRA .2056 RC3 -.0825 FAU .08691 RRT .4533 RRF .4244 RTF .9506 CRT .9751 CRS -.2811 CST -.4719
FDE .0260 FRA 1.6579 FC3-7.1918 BSP 51078 SGB14580.0 R23 -.0080 R13 .9506 LSA 3506.0 MSA 418.7 SSA 41.5
BDE 1.7860 BRA 2.5998 BC320.7046 FSP 1551 SG114569.9 SG2 541.9 THA 1.09 EL1 3499.2 EL2 106.5 ALF 7.77

LAUNCH DATE DEC 21 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 832.859 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.282 GAL -1.14 AZL 87.97 HCA 242.75 SMA 190.67 ECC .22902 INC 2.0307 V1 30.275
RP 206.70 LAP -1.81 LOP 331.91 VP 24.250 GAP -12.34 AZP 90.93 TAL 353.89 TAP 236.64 RCA 147.00 APO 234.34 V2 26.493
RC 331.403 GL 21.27 GP -5.46 ZAL 99.70 ZAP 29.58 ETS 169.08 ZAE 46.41 ETE 174.55 ZAC 82.60 ETC 256.16 CLP 29.12

PLANETOCENTRIC CONIC

C3 10.567 VHL 3.251 DLA 15.73 RAL 197.33 RAD 6567.4 VEL 11.487 PTH 2.00 VHP 5.801 DPA -4.10 RAP 179.21 ECC 1.1739

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 22	2585.01	-26.50	66.34	53.50	100.38	17 7 27	1985.0	-24.79	58.09
90.00	8 37 42	4205.20	.21	172.27	49.22	61.68	9 47 47	3605.2	-3.58	165.64
100.00	17 54 23	2294.69	-27.57	44.75	53.27	102.03	18 32 38	1694.7	-25.63	36.48
100.00	9 50 22	3970.74	1.16	154.50	48.68	60.13	10 56 33	3370.7	-2.82	147.98
110.00	19 21 55	2020.80	-30.37	23.14	52.45	106.51	19 55 36	1420.8	-27.81	14.88
110.00	10 39 19	3817.40	3.61	141.34	47.16	55.99	11 42 56	3217.4	-.88	135.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6301 TRA 2.8191 TC-20.6593 BAU 2.9185 SGT14673.1 SGR 603.6 SG3 460.1 ST 3288.7 SR 484.3 SS 464.8
RDE .2672 RRA .2054 RC3 -.0466 FAU .08192 RRT .4180 RRF .3885 RTF .9492 CRT .9595 CRS -.1594 CST -.4185
FDE -.0384 FRA 1.6669 FC3-6.7119 BSP 51532 SGB14685.5 R23 -.0098 R13 .9492 LSA 3327.1 MSA 441.6 SSA 41.4
BDE 1.6518 BRA 2.8266 BC320.6593 FSP 1488 SG114675.3 SG2 548.2 THA .99 EL1 3321.5 EL2 135.0 ALF 8.06

LAUNCH DATE DEC 21 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 837.243 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.290 GAL -1.33 AZL 88.00 HCA 244.02 SMA 190.83 ECC .22996 INC 1.9978 V1 30.275
RP 206.68 LAP -1.80 LOP 333.17 VP 24.265 GAP -12.43 AZP 90.88 TAL 352.89 TAP 236.91 RCA 146.95 APO 234.71 V2 26.495
RC 332.208 GL 20.78 GP -5.33 ZAL 101.60 ZAP 29.11 ETS 169.10 ZAE 45.65 ETE 174.54 ZAC 82.90 ETC 256.12 CLP 28.66

PLANETOCENTRIC CONIC

C3 10.697 VHL 3.271 DLA 14.52 RAL 198.89 RAD 6567.4 VEL 11.493 PTH 2.00 VHP 5.874 DPA -4.33 RAP 180.01 ECC 1.1760

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 39	2544.39	-25.97	63.49	54.81	101.71	17 24 3	1944.4	-24.09	55.32
90.00	8 32 53	4250.78	1.68	174.81	50.74	61.73	9 43 43	3650.8	-2.11	168.19
100.00	18 10 47	2256.97	-27.01	42.09	54.56	103.33	18 48 23	1657.0	-24.90	33.92
100.00	9 46 26	4013.44	2.61	156.85	50.22	60.21	10 53 20	3413.4	-1.37	150.32
110.00	19 36 25	1988.98	-29.73	20.88	53.70	107.70	20 9 34	1389.0	-27.02	12.74
110.00	10 37 17	3854.20	5.01	143.27	48.73	56.14	11 41 31	3254.2	.53	137.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.4920 TRA 3.0529 TC-20.5711 BAU 2.9418 SGT14778.9 SGR 600.1 SG3 439.4 ST 3121.2 SR 484.7 SS 472.7
RDE .2693 RRA .2049 RC3 -.0133 FAU .07717 RRT .3832 RRF .3527 RTF .9477 CRT .9370 CRS -.0447 CST -.3804
FDE -.0977 FRA 1.6715 FC3-6.2453 BSP 51975 SGB14791.1 R23 -.0119 R13 .9477 LSA 3159.2 MSA 467.0 SSA 41.1
BDE 1.5161 BRA 3.0598 BC320.5711 FSP 1425 SG114780.7 SG2 554.2 THA .89 EL1 3154.2 EL2 167.5 ALF 8.30

LAUNCH DATE DEC 21 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 841.624 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.299 GAL -1.52 AZL 88.03 HCA 245.29 SMA 190.99 ECC .23094 INC 1.9656 V1 30.275
RP 206.67 LAP -1.79 LOP 334.44 VP 24.278 GAP -12.51 AZP 90.82 TAL 351.89 TAP 237.18 RCA 146.88 APO 235.09 V2 26.497
RC 333.009 GL 20.28 GP -5.21 ZAL 103.50 ZAP 28.66 ETS 169.13 ZAE 44.89 ETE 174.53 ZAC 83.19 ETC 256.08 CLP 28.22

PLANETOCENTRIC CONIC

C3 10.853 VHL 3.294 DLA 13.32 RAL 200.45 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 5.947 DPA -4.56 RAP 180.81 ECC 1.1786

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 58 34	2505.23	-25.40	60.76	56.17	102.97	17 40 20	1905.2	-23.36	52.68
90.00	8 28 25	4295.88	3.13	177.33	52.33	4[illegible].84	9 40 1	3695.9	-.66	170.70
100.00	18 26 52	2220.47	-26.41	39.54	55.89	104.54	19 3 53	1620.5	-24.15	31.47
100.00	9 42 49	4055.86	4.04	159.18	51.83	60.36	10 50 24	3455.9	.07	152.65
110.00	19 50 45	1958.02	-29.07	18.71	54.99	108.83	20 23 23	1358.0	-26.22	10.68
110.00	10 35 25	3891.08	6.41	145.22	50.36	56.35	11 40 16	3291.1	1.94	138.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.3528 TRA 3.2942 TC-20.4330 BAU 2.9648 SGT14881.2 SGR 597.5 SG3 418.9 ST 2969.5 SR 485.9 SS 483.5
RDE .2722 RRA .2038 RC3 .0179 FAU .07250 RRT .3486 RRF .3171 RTF .9461 CRT .9057 CRS .0583 CST -.3615
FDE -.1513 FRA 1.6713 FC3-5.7834 BSP 52400 SGB14893.1 R23 -.0141 R13 .9461 LSA 3007.0 MSA 493.9 SSA 40.7
BDE 1.3799 BRA 3.3005 BC320.4330 FSP 1359 SG114882.6 SG2 559.9 THA .80 EL1 3002.1 EL2 203.8 ALF 8.47

LAUNCH DATE DEC 21 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 846.001 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.308 GAL -1.72 AZL 88.07 HCA 246.56 SMA 191.15 ECC .23197 INC 1.9341 V1 30.275
RP 206.67 LAP -1.77 LOP 335.71 VP 24.290 GAP -12.59 AZP 90.77 TAL 350.87 TAP 237.43 RCA 146.81 APO 235.49 V2 26.497
RC 333.807 GL 19.77 GP -5.09 ZAL 105.42 ZAP 28.22 ETS 169.15 ZAE 44.15 ETE 174.52 ZAC 83.49 ETC 256.04 CLP 27.79

PLANETOCENTRIC CONIC

C3 11.038 VHL 3.322 DLA 12.11 RAL 202.01 RAD 6567.4 VEL 11.508 PTH 2.00 VHP 6.022 DPA -4.81 RAP 181.62 ECC 1.1817

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 9	2467.46	-24.79	58.16	57.56	104.14	17 56 17	1867.5	-22.61	50.17
90.00	8 24 17	4340.55	4.56	179.83	53.98	62.02	9 36 38	3740.6	.78	173.19
100.00	18 42 41	2185.19	-25.78	37.11	57.27	105.68	19 19 6	1585.2	-23.38	29.13
100.00	9 39 27	4098.05	5.46	161.51	53.49	60.56	10 47 45	3498.1	1.50	154.97
110.00	20 4 53	1927.97	-28.39	16.63	56.33	109.89	20 37 1	1328.0	-25.42	8.72
110.00	10 33 44	3928.04	7.80	147.18	52.05	56.61	11 39 12	3328.0	3.35	140.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2118 TRA 3.5438 TC-20.2482 BAU 2.9879 SGT14981.6 SGR 595.6 SG3 398.6 ST 2836.7 SR 487.7 SS 496.1
RDE .2759 RRA .2024 RC3 .0472 FAU .06788 RRT .3142 RRF .2816 RTF .9441 CRT .8636 CRS .1515 CST -.3597
FDE -.2008 FRA 1.6669 FC3-5.3240 BSP 52831 SGB14993.4 R23 -.0163 R13 .9441 LSA 2873.4 MSA 522.5 SSA 40.1
BDE 1.2428 BRA 3.5495 BC320.2462 FSP 1296 SG114982.8 SG2 565.4 THA .72 EL1 2868.0 EL2 243.2 ALF 8.51

LAUNCH DATE DEC 21 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 850.372 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.317 GAL -1.91 AZL 88.10 HCA 247.83 SMA 191.31 ECC .23306 INC 1.9032 V1 30.275
RP 206.68 LAP -1.76 LOP 336.98 VP 24.301 GAP -12.68 AZP 90.72 TAL 349.84 TAP 237.67 RCA 146.72 APO 235.90 V2 26.496
RC 334.601 GL 19.25 GP -4.98 ZAL 107.34 ZAP 27.79 ETS 169.16 ZAE 43.41 ETE 174.51 ZAC 83.78 ETC 256.01 CLP 27.37

PLANETOCENTRIC CONIC

C3 11.251 VHL 3.354 DLA 10.90 RAL 203.57 RAD 6567.4 VEL 11.517 PTH 2.01 VHP 6.098 DPA -5.06 RAP 182.44 ECC 1.1852

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 25	2431.04	-24.16	55.68	59.00	105.23	18 11 56	1831.0	-21.84	47.77
90.00	8 20 27	4384.86	5.97	182.33	55.70	62.27	9 33 32	3784.9	2.21	175.66
100.00	18 58 13	2151.09	-25.13	34.78	58.70	106.74	19 34 4	1551.1	-22.60	26.90
100.00	9 36 20	4140.04	6.86	163.84	55.22	60.83	10 45 20	3540.0	2.92	157.27
110.00	20 18 50	1898.84	-27.70	14.65	57.72	110.88	20 50 29	1298.8	-24.61	6.84
110.00	10 32 13	3965.06	9.18	149.15	53.80	56.93	11 38 18	3365.1	4.76	142.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0696 TRA 3.8003 TC-20.0214 BAU 3.0115 SGT15081.1 SGR 594.6 SG3 378.8 ST 2726.5 SR 490.3 SS 509.5
RDE .2804 RRA .2006 RC3 .0741 FAU .06339 RRT .2803 RRF .2471 RTF .9419 CRT .8095 CRS .2321 CST -.3763
FDE -.2452 FRA 1.6597 FC3-4.8776 BSP 53262 SGB15092.8 R23 -.0181 R13 .9419 LSA 2761.9 MSA 551.4 SSA 39.4
BDE 1.1058 BRA 3.8055 BC320.0215 FSP 1237 SG115082.0 SG2 570.8 THA .63 EL1 2755.5 EL2 284.8 ALF 8.37

LAUNCH DATE DEC 21 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 854.739 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.325 GAL -2.12 AZL 88.13 HCA 249.10 SMA 191.47 ECC .23421 INC 1.8728 V1 30.275
RP 206.69 LAP -1.75 LOP 338.25 VP 24.311 GAP -12.77 AZP 90.67 TAL 348.80 TAP 237.90 RCA 146.~~63~~ APO 236.31 V2 26.494
RC 335.390 GL 18.72 GP -4.88 ZAL 109.26 ZAP 27.37 ETS 169.18 ZAE 42.69 ETE 174.50 ZAC 84.07 ETC 255.97 CLP 26.96

PLANETOCENTRIC CONIC

C3 11.495 VHL 3.390 DLA 9.70 RAL 205.12 RAD 6567.4 VEL 11.527 PTH 2.01 VHP 6.175 DPA -5.33 RAP 183.26 ECC 1.1892

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 22	2395.94	-23.52	53.31	60.49	106.25	18 27 18	1795.9	-21.06	45.49
90.00	8 16 52	4428.85	7.36	184.82	57.47	62.58	9 30 41	3828.9	3.63	178.12
100.00	19 13 29	2118.19	-24.47	32.56	60.17	107.73	19 48 47	1518.2	-21.82	24.77
100.00	9 33 26	4181.83	8.24	166.18	57.00	61.16	10 43 8	3581.8	4.33	159.57
110.00	20 32 35	1870.67	-27.00	12.76	59.16	111.80	21 3 46	1270.7	-23.80	5.06
110.00	10 30 49	4002.12	10.55	151.15	55.60	57.30	11 37 31	3402.1	6.16	144.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9268 TRA 4.0646 TC-19.7531 BAU 3.0356 SGT15179.5 SGR 594.2 SG3 359.4 ST 2642.9 SR 493.4 SS 523.0
RDE .2856 RRA .1983 RC3 .0987 FAU .05900 RRT .2471 RRF .2128 RTF .9391 CRT .7427 CRS .3040 CST -.4060
FDE -.2861 FRA 1.6486 FC3-4.4433 BSP 53670 SGB15191.1 R23 -.0202 R13 .9391 LSA 2676.6 MSA 579.6 SSA 38.6
BDE .9698 BRA 4.0694 BC319.7534 FSP 1176 SG115180.2 SG2 575.8 THA .56 EL1 2668.~~6~~ EL2 327.2 ALF 8.01

LAUNCH DATE DEC 21 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 859.099 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.334 GAL -2.33 AZL 88.16 HCA 250.36 SMA 191.63 ECC .23542 INC 1.8430 V1 30.275
RP 206.72 LAP -1.74 LOP 339.52 VP 24.320 GAP -12.86 AZP 90.62 TAL 347.75 TAP 238.12 RCA 146.52 APO 236.75 V2 26.491
RC 336.176 GL 18.19 GP -4.78 ZAL 111.17 ZAP 26.96 ETS 169.19 ZAE 41.97 ETE 174.48 ZAC 84.36 ETC 255.95 CLP 26.56

PLANETOCENTRIC CONIC

C3 11.770 VHL 3.431 DLA 8.50 RAL 206.66 RAD 6567.4 VEL 11.539 PTH 2.01 VHP 6.253 DPA -5.60 RAP 184.09 ECC 1.1937

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 1	2362.15	-22.85	51.05	62.01	107.19	18 42 23	1762.1	-20.29	43.32
90.00	8 13 31	4472.54	8.72	187.31	59.31	62.95	9 28 4	3872.5	5.02	180.58
100.00	19 28 29	2086.49	-23.80	30.45	61.68	108.64	20 3 16	1486.5	-21.03	22.74
100.00	9 30 44	4223.43	9.59	168.52	58.84	61.55	10 41 7	3623.4	5.72	161.88
110.00	20 46 8	1843.48	-26.30	10.95	60.64	112.66	21 16 52	1243.5	-23.00	3.35
110.00	10 29 34	4039.20	11.90	153.16	57.46	57.72	11 36 53	3439.2	7.56	146.77

DIFFERENTIAL CORRECTIONS
TDE .7838 TRA 4.3366 TC-19.4435 BAU 3.0597
RDE .2917 RRA .1956 RC3 .1208 FAU .05475
FDE -.3215 FRA 1.6324 FC3-4.0270 BSP 54073
BDE .8363 BRA 4.3410 BC319.4439 FSP 1118

MID-COURSE EXECUTION ACCURACY
SGT15275.1 SGR 594.4 SG3 340.4
RRT .2148 RRF .1793 RTF .9363
SGB15286.7 R23 -.0226 R13 .9363
SG115275.6 SG2 580.5 THA .48

ORBIT DETERMINATION ACCURACY
ST 2588.4 SR 497.1 SS 534.5
CRT .6640 CRS .3655 CST -.4479
LSA 2620.3 MSA 604.3 SSA 37.6
EL1 2609.8 EL2 368.7 ALF 7.42

LAUNCH DATE DEC 21 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 863.452 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.343 GAL -2.54 AZL 88.19 HCA 251.63 SMA 191.80 ECC .23668 INC 1.8136 V1 30.275
RP 206.75 LAP -1.72 LOP 340.79 VP 24.328 GAP -12.95 AZP 90.57 TAL 346.69 TAP 238.32 RCA 146.40 APO 237.19 V2 26.488
RC 336.957 GL 17.66 GP -4.68 ZAL 113.07 ZAP 26.55 ETS 169.20 ZAE 41.26 ETE 174.47 ZAC 84.65 ETC 255.92 CLP 26.17

PLANETOCENTRIC CONIC

C3 12.080 VHL 3.476 DLA 7.32 RAL 208.19 RAD 6567.5 VEL 11.553 PTH 2.02 VHP 6.332 DPA -5.88 RAP 184.93 ECC 1.1988

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 23	2329.65	-22.18	48.91	63.58	108.06	18 57 13	1729.7	-19.51	41.25
90.00	8 10 23	4515.94	10.05	189.80	61.19	63.39	9 25 39	3915.9	6.40	183.02
100.00	19 43 14	2055.98	-23.12	28.43	63.24	109.50	20 17 30	1456.0	-20.25	20.81
100.00	9 28 13	4264.85	10.93	170.87	60.73	62.00	10 39 18	3664.8	7.10	164.18
110.00	20 59 30	1817.31	-25.60	9.24	62.17	113.46	21 29 47	1217.3	-22.21	1.73
110.00	10 28 27	4076.27	13.24	155.20	59.37	58.20	11 36 23	3476.3	8.94	148.74

DIFFERENTIAL CORRECTIONS
TDE .6421 TRA 4.6173 TC-19.0946 BAU 3.0837
RDE .2985 RRA .1926 RC3 .1410 FAU .05051
FDE -.3522 FRA 1.6138 FC3-3.6198 BSP 54487
BDE .7081 BRA 4.6213 BC319.0952 FSP 1057

MID-COURSE EXECUTION ACCURACY
SGT15368.3 SGR 595.2 SG3 321.7
RRT .1832 RRF .1471 RTF .9327
SGB15379.8 R23 -.0244 R13 .9327
SG115368.7 SG2 585.1 THA .41

ORBIT DETERMINATION ACCURACY
ST 2565.0 SR 501.4 SS 544.4
CRT .5760 CRS .4182 CST -.4968
LSA 2595.4 MSA 624.4 SSA 36.6
EL1 2581.7 EL2 407.3 ALF 6.59

LAUNCH DATE DEC 21 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 867.799 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.352 GAL -2.75 AZL 88.22 HCA 252.90 SMA 191.96 ECC .23801 INC 1.7847 V1 30.275
RP 206.79 LAP -1.71 LOP 342.06 VP 24.335 GAP -13.05 AZP 90.53 TAL 345.61 TAP 238.51 RCA 146.27 APO 237.65 V2 26.483
RC 337.733 GL 17.12 GP -4.59 ZAL 114.96 ZAP 26.16 ETS 169.20 ZAE 40.56 ETE 174.45 ZAC 84.93 ETC 255.89 CLP 25.78

PLANETOCENTRIC CONIC

C3 12.424 VHL 3.525 DLA 6.15 RAL 209.71 RAD 6567.5 VEL 11.568 PTH 2.02 VHP 6.412 DPA -6.16 RAP 185.77 ECC 1.2045

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 27	2298.45	-21.51	46.87	65.19	108.87	19 11 46	1698.5	-18.74	39.29
90.00	8 7 27	4559.05	11.36	192.29	63.13	63.89	9 23 26	3959.0	7.75	185.46
100.00	19 57 43	2026.68	-22.44	26.52	64.84	110.28	20 31 30	1426.7	-19.48	18.98
100.00	9 25 52	4306.06	12.23	173.24	62.68	62.51	10 37 38	3706.1	8.46	166.48
110.00	21 12 39	1792.19	-24.91	7.61	63.73	114.20	21 42 31	1192.2	-21.43	.19
110.00	10 27 26	4113.31	14.56	157.26	61.33	58.73	11 35 59	3513.3	10.32	150.73

DIFFERENTIAL CORRECTIONS
TDE .4994 TRA 4.9056 TC-18.7165 BAU 3.1088
RDE .3061 RRA .1890 RC3 .1586 FAU .04644
FDE -.3787 FRA 1.5905 FC3-3.2361 BSP 54891
BDE .5858 BRA 4.9092 BC318.7172 FSP 1002

MID-COURSE EXECUTION ACCURACY
SGT15461.9 SGR 596.4 SG3 303.6
RRT .1526 RRF .1156 RTF .9287
SGB15473.4 R23 -.0267 R13 .9287
SG115462.2 SG2 589.4 THA .34

ORBIT DETERMINATION ACCURACY
ST 2570.1 SR 506.2 SS 551.9
CRT .4810 CRS .4646 CST -.5486
LSA 2599.3 MSA 639.1 SSA 35.5
EL1 2581.9 EL2 441.8 ALF 5.58

LAUNCH DATE DEC 21 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 872.137 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.361 GAL -2.97 AZL 88.24 HCA 254.17 SMA 192.12 ECC .23941 INC 1.7561 V1 30.275
RP 206.84 LAP -1.69 LOP 343.33 VP 24.341 GAP -13.15 AZP 90.48 TAL 344.53 TAP 238.69 RCA 146.13 APO 238.12 V2 26.477
RC 338.506 GL 16.58 GP -4.50 ZAL 116.84 ZAP 25.78 ETS 169.21 ZAE 39.87 ETE 174.42 ZAC 85.21 ETC 255.87 CLP 25.41

PLANETOCENTRIC CONIC

C3 12.805 VHL 3.578 DLA 4.99 RAL 211.22 RAD 6567.5 VEL 11.584 PTH 2.03 VHP 6.494 DPA -6.45 RAP 186.62 ECC 1.2107

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 48 15	2268.55	-20.84	44.93	66.84	109.62	19 26 3	1668.5	-17.98	37.42
90.00	8 4 41	4601.86	12.63	194.79	65.12	64.44	9 21 23	4001.9	9.08	187.91
100.00	20 11 57	1998.59	-21.77	24.71	66.47	111.01	20 45 15	1398.6	-18.71	17.24
100.00	9 23 40	4347.05	13.51	175.61	64.67	63.08	10 36 8	3747.1	9.79	168.79
110.00	21 25 35	1768.14	-24.23	6.08	65.34	114.88	21 55 3	1168.1	-20.67	358.74
110.00	10 26 32	4150.27	15.86	159.34	63.34	59.31	11 35 42	3550.3	11.67	152.74

DIFFERENTIAL CORRECTIONS
TDE .3567 TRA 5.2004 TC-18.3107 BAU 3.1347
RDE .3144 RRA .1850 RC3 .1742 FAU .04244
FDE -.4026 FRA 1.5623 FC3-2.8695 BSP 55243
BDE .4754 BRA 5.2037 BC318.3115 FSP 945

MID-COURSE EXECUTION ACCURACY
SGT15553.7 SGR 597.8 SG3 285.8
RRT .1226 RRF .0841 RTF .9240
SGB15565.2 R23 -.0295 R13 .9240
SG115553.9 SG2 593.3 THA .27

ORBIT DETERMINATION ACCURACY
ST 2601.6 SR 511.3 SS 557.4
CRT .3832 CRS .5070 CST -.5979
LSA 2630.3 MSA 648.8 SSA 34.4
EL1 2609.2 EL2 470.9 ALF 4.45

LAUNCH DATE DEC 21 1964 FLIGHT TIME 406.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 876.467 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.370 GAL -3.19 AZL 88.27 HCA 255.43 SMA 192.29 ECC .24087 INC 1.7280 V1 30.275
RP 206.90 LAP -1.67 LOP 344.60 VP 24.346 GAP -13.25 AZP 90.43 TAL 343.43 TAP 238.86 RCA 145.97 APO 238.60 V2 26.470
RC 339.274 GL 16.04 GP -4.42 ZAL 118.69 ZAP 25.41 ETS 169.21 ZAE 39.19 ETE 174.40 ZAC 85.49 ETC 255.85 CLP 25.04

PLANETOCENTRIC CONIC

C3 13.224 VHL 3.637 DLA 3.86 RAL 212.72 RAD 6567.5 VEL 11.602 PTH 2.03 VHP 6.577 DPA -6.75 RAP 187.48 ECC 1.2176

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 46	2239.93	-20.18	43.09	68.52	110.30	19 40 6	1639.9	-17.23	35.66
90.00	8 2 5	4644.38	13.86	197.31	67.16	65.06	9 19 30	4044.4	10.38	190.35
100.00	20 25 55	1971.74	-21.10	22.99	68.14	111.68	20 58 46	1371.7	-17.97	15.59
100.00	9 21 38	4387.81	14.75	178.00	66.72	63.70	10 34 45	3787.8	11.10	171.11
110.00	21 38 18	1745.18	-23.57	4.63	66.98	115.51	22 7 23	1145.2	-19.94	357.37
110.00	10 25 44	4187.13	17.13	161.45	65.40	59.95	11 35 31	3587.1	13.00	154.76

DIFFERENTIAL CORRECTIONS
TDE .2171 TRA 5.5057 TC-17.8734 BAU 3.1602
RDE .3234 RRA .1807 RC3 .1876 FAU .03851
FDE -.4211 FRA 1.5316 FC3-2.5209 BSP 55661
BDE .3895 BRA 5.5086 BC317.8744 FSP 891

MID-COURSE EXECUTION ACCURACY
SGT15642.6 SGR 599.8 SG3 268.4
RRT .0939 RRF .0546 RTF .9185
SGB15654.1 R23 -.0319 R13 .9185
SG115642.7 SG2 597.1 THA .21

ORBIT DETERMINATION ACCURACY
ST 2659.3 SR 516.8 SS 559.6
CRT .2881 CRS .5428 CST -.6442
LSA 2688.0 MSA 652.7 SSA 33.3
EL1 2663.6 EL2 494.0 ALF 3.32

LAUNCH DATE DEC 21 1964 FLIGHT TIME 408.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 880.787 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.378 GAL -3.42 AZL 88.30 HCA 256.70 SMA 192.45 ECC .24240 INC 1.7001 V1 30.275
RP 206.97 LAP -1.65 LOP 345.86 VP 24.349 GAP -13.36 AZP 90.39 TAL 342.32 TAP 239.02 RCA 145.80 APO 239.10 V2 26.462
RC 340.039 GL 15.50 GP -4.34 ZAL 120.53 ZAP 25.04 ETS 169.21 ZAE 38.52 ETE 174.37 ZAC 85.77 ETC 255.84 CLP 24.69

PLANETOCENTRIC CONIC

C3 13.685 VHL 3.699 DLA 2.74 RAL 214.19 RAD 6567.5 VEL 11.622 PTH 2.04 VHP 6.661 DPA -7.06 RAP 188.34 ECC 1.2252

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 0	2212.61	-19.52	41.36	70.24	110.93	19 53 52	1612.6	-16.50	33.98
90.00	7 59 39	4686.59	15.06	199.83	69.25	65.73	9 17 45	4086.6	11.66	192.80
100.00	20 39 37	1946.12	-20.45	21.37	69.85	112.29	21 12 3	1346.1	-17.25	14.04
100.00	9 19 43	4428.32	15.96	180.40	68.81	64.39	10 33 31	3828.3	12.38	173.44
110.00	21 50 48	1723.34	-22.92	3.26	68.65	116.08	22 19 31	1123.3	-19.23	356.07
110.00	10 25 1	4223.86	18.37	163.57	67.50	60.65	11 35 25	3623.9	14.32	156.80

DIFFERENTIAL CORRECTIONS
TDE .0760 TRA 5.8171 TC-17.4181 BAU 3.1869
RDE .3332 RRA .1758 RC3 .1990 FAU .03465
FDE -.4369 FRA 1.4962 FC3-2.1924 BSP 55996
BDE .3417 BRA 5.8198 BC317.4192 FSP 836

MID-COURSE EXECUTION ACCURACY
SGT15730.5 SGR 601.9 SG3 251.5
RRT .0658 RRF .0255 RTF .9119
SGB15742.0 R23 -.0347 R13 .9119
SG115730.5 SG2 600.6 THA .14

ORBIT DETERMINATION ACCURACY
ST 2736.0 SR 522.5 SS 559.3
CRT .1961 CRS .5759 CST -.6854
LSA 2764.9 MSA 652.6 SSA 32.3
EL1 2738.0 EL2 512.0 ALF 2.22

LAUNCH DATE DEC 21 1964 FLIGHT TIME 410.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 885.098 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.387 GAL -3.65 AZL 88.33 HCA 257.96 SMA 192.62 ECC .24400 INC 1.6726 V1 30.275
RP 207.04 LAP -1.64 LOP 347.13 VP 24.352 GAP -13.47 AZP 90.35 TAL 341.20 TAP 239.17 RCA 145.62 APO 239.62 V2 26.453
RC 340.800 GL 14.96 GP -4.26 ZAL 122.33 ZAP 24.69 ETS 169.21 ZAE 37.86 ETE 174.35 ZAC 86.05 ETC 255.83 CLP 24.34

PLANETOCENTRIC CONIC

C3 14.187 VHL 3.767 DLA 1.65 RAL 215.66 RAD 6567.6 VEL 11.644 PTH 2.04 VHP 6.746 DPA -7.37 RAP 189.21 ECC 1.2335

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 57	2186.58	-18.88	39.72	71.99	111.50	20 7 24	1586.6	-15.79	32.40
90.00	7 57 21	4728.47	16.21	202.36	71.38	66.46	9 16 9	4128.5	12.89	195.26
100.00	20 53 4	1921.73	-19.81	19.84	71.59	112.85	21 25 6	1321.7	-16.54	12.57
100.00	9 17 55	4468.55	17.13	182.82	70.95	65.12	10 32 24	3868.5	13.63	175.77
110.00	22 3 4	1702.62	-22.29	1.98	70.36	116.61	22 31 27	1102.6	-18.54	354.85
110.00	10 24 24	4260.43	19.57	165.72	69.65	61.40	11 35 25	3660.4	15.60	158.85

DIFFERENTIAL CORRECTIONS
TDE -.0627 TRA 6.1369 TC-16.9468 BAU 3.2146
RDE .3436 RRA .1706 RC3 .2084 FAU .03090
FDE -.4491 FRA 1.4568 FC3-1.8853 BSP 56340
BDE .3492 BRA 6.1393 BC316.9481 FSP 782

MID-COURSE EXECUTION ACCURACY
SGT15818.0 SGR 604.3 SG3 235.0
RRT .0387 RRF -.0028 RTF .9041
SGB15829.5 R23 -.0378 R13 .9041
SG115818.0 SG2 603.8 THA .08

ORBIT DETERMINATION ACCURACY
ST 2829.4 SR 528.4 SS 556.2
CRT .1114 CRS .6057 CST -.7202
LSA 2858.5 MSA 649.4 SSA 31.2
EL1 2830.0 EL2 525.0 ALF 1.23

LAUNCH DATE DEC 21 1964 FLIGHT TIME 412.00 ARRIVAL DATE FEB 6 1966

HELIOCENTRIC CONIC DISTANCE 889.397 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.396 GAL -3.89 AZL 88.35 HCA 259.23 SMA 192.78 ECC .24568 INC 1.6454 V1 30.275
RP 207.13 LAP -1.62 LOP 348.39 VP 24.353 GAP -13.58 AZP 90.31 TAL 340.07 TAP 239.30 RCA 145.42 APO 240.15 V2 26.444
RC 341.558 GL 14.43 GP -4.19 ZAL 124.12 ZAP 24.34 ETS 169.21 ZAE 37.20 ETE 174.31 ZAC 86.32 ETC 255.82 CLP 24.00

PLANETOCENTRIC CONIC

C3 14.735 VHL 3.839 DLA .58 RAL 217.10 RAD 6567.6 VEL 11.667 PTH 2.05 VHP 6.832 DPA -7.69 RAP 190.09 ECC 1.2425

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 39	2161.83	-18.25	38.17	73.77	112.03	20 20 40	1561.8	-15.11	30.91
90.00	7 55 11	4770.01	17.32	204.90	73.55	67.25	9 14 41	4170.0	14.09	197.72
100.00	21 6 15	1898.58	-19.19	18.40	73.36	113.37	21 37 54	1298.6	-15.87	11.18
100.00	9 16 15	4508.49	18.26	185.25	73.12	65.91	10 31 24	3908.5	14.85	178.11
110.00	22 15 7	1683.04	-21.69	.78	72.10	117.09	22 43 10	1083.0	-17.89	353.71
110.00	10 23 53	4296.80	20.74	167.90	71.84	62.20	11 35 30	3696.8	16.86	160.92

DIFFERENTIAL CORRECTIONS
TDE -.2002 TRA 6.4652 TC-16.4584 BAU 3.2425
RDE .3546 RRA .1649 RC3 .2160 FAU .02723
FDE -.4582 FRA 1.4130 FC3-1.5997 BSP 56663
BDE .4072 BRA 6.4673 BC316.4598 FSP 729

MID-COURSE EXECUTION ACCURACY
SGT15902.2 SGR 606.8 SG3 219.0
RRT .0126 RRF -.0303 RTF .8951
SGB15913.7 R23 -.0416 R13 .8951
SG115902.2 SG2 606.8 THA .03

ORBIT DETERMINATION ACCURACY
ST 2935.1 SR 534.4 SS 550.4
CRT .0342 CRS .6330 CST -.7491
LSA 2964.4 MSA 644.2 SSA 30.2
EL1 2935.2 EL2 534.1 ALF .37

LAUNCH DATE DEC 21 1964 FLIGHT TIME 414.00 ARRIVAL DATE FEB 8 1966

HELIOCENTRIC CONIC DISTANCE 893.685 EARTH TO MARS

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RL  147.16 LAL   -.00 LOL  89.17 VL  33.405 GAL  -4.13 AZL  88.38 HCA 260.49 SMA 192.95 ECC .24744 INC 1.6184 V1  30.275
RP  207.22 LAP  -1.60 LOP 349.66 VP  24.354 GAP -13.70 AZP  90.27 TAL 338.93 TAP 239.42 RCA 145.21 APO 240.69 V2  26.433
RC 342.314 GL   13.91 GP   -4.11 ZAL 125.87 ZAP  24.00 ETS 169.21 ZAE  36.56 ETE 174.28 ZAC  86.60 ETC 255.81 CLP  23.67
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PLANETOCENTRIC CONIC

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C3  15.330 VHL  3.915 DLA   -.47 RAL 218.52 RAD 6567.6 VEL 11.692 PTH   2.06 VHP  6.920 DPA  -8.01 RAP 190.97 ECC 1.2523
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 3	2138.35	-17.65	36.71	75.58	112.51	20 33 42	1538.4	-14.45	29.50
90.00	7 53 8	4811.19	18.39	207.45	75.76	68.08	9 13 19	4211.2	15.26	200.18
100.00	21 19 11	1876.66	-18.59	17.04	75.15	113.84	21 50 28	1276.7	-15.21	9.88
100.00	9 14 41	4548.11	19.34	187.69	75.34	66.75	10 30 30	3948.1	16.03	180.46
110.00	22 26 56	1664.60	-21.12	359.66	73.86	117.53	22 54 41	1064.6	-17.26	352.65
110.00	10 23 26	4332.94	21.87	170.09	74.08	63.05	11 35 39	3732.9	18.08	163.01

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE -.3362 TRA 6.8017 TC-15.9622 BAU 3.2716   SGT15986 1 SGR  609.5 SG3  203.4     ST  3049.6 SR   540.6 SS   541.7
 RDE  .3663 RRA  .1587 RC3  .2218 FAU .02362   RRT -.0126 RRF -.0567 RTF  .8842     CRT -.0350 CRS  .6579 CST -.7729
 FDE -.4638 FRA 1.3652 FC3-1.3341 BSP  56988   SGB15997.7 R23  .0455 R13 -.8842     LSA 3078.6 MSA  637.6 SSA   29.2
 BDE  .4972 BRA 6.8036 BC315.9638 FSP    677   SG115986.1 SG2  609.5 THA 179.97     EL1 3049.6 EL2  540.3 ALF 179.63
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LAUNCH DATE DEC 21 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 10 1966

HELIOCENTRIC CONIC DISTANCE 897.961 EARTH TO MARS

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RL  147.16 LAL   -.00 LOL  89.17 VL  33.414 GAL  -4.38 AZL  88.41 HCA 261.75 SMA 193.12 ECC .24928 INC 1.5916 V1  30.275
RP  207.32 LAP  -1.58 LOP 350.92 VP  24.353 GAP -13.82 AZP  90.23 TAL 337.78 TAP 239.54 RCA 144.98 APO 241.26 V2  26.421
RC 343.066 GL   13.39 GP   -4.05 ZAL 127.59 ZAP  23.67 ETS 169.20 ZAE  35.92 ETE 174.25 ZAC  86.87 ETC 255.81 CLP  23.35
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PLANETOCENTRIC CONIC

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C3  15.974 VHL  3.997 DLA  -1.48 RAL 219.93 RAD 6567.6 VEL 11.720 PTH   2.06 VHP  7.010 DPA  -8.33 RAP 191.86 ECC 1.2629
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 11 12	2116.14	-17.06	35.34	77.41	112.95	20 46 28	1516.1	-13.81	28.18
90.00	7 51 12	4852.00	19.41	210.02	78.01	68.97	9 12 4	4252.0	16.38	202.65
100.00	21 31 51	1855.97	-18.02	15.77	76.97	114.26	22 2 47	1256.0	-14.59	8.66
100.00	9 13 14	4587.40	20.38	190.15	77.60	67.64	10 29 42	3987.4	17.17	182.82
110.00	22 38 31	1647.30	-20.57	358.61	75.65	117.92	23 5 58	1047.3	-16.67	351.66
110.00	10 23 4	4368.84	22.96	172.31	76.35	63.95	11 35 53	3768.8	19.27	165.11

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE -.4705 TRA 7.1458 TC-15.4623 BAU 3.3023   SGT16069.4 SGR  612.3 SG3  188.4     ST  3169.1 SR   546.8 SS   530.6
 RDE  .3787 RRA  .1521 RC3  .2262 FAU .02010   RRT -.0371 RRF -.0820 RTF  .8710     CRT -.0963 CRS  .6810 CST -.7918
 FDE -.4665 FRA 1.3136 FC3-1.0896 BSP  57256   SGB16081.1 R23  .0497 R13 -.8710     LSA 3197.7 MSA  630.6 SSA   28.3
 BDE  .6039 BRA 7.1474 BC315.4640 FSP    625   SG116069.4 SG2  611.9 THA 179.92     EL1 3169.6 EL2  544.2 ALF 179.02
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LAUNCH DATE DEC 21 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 12 1966

HELIOCENTRIC CONIC DISTANCE 902.223 EARTH TO MARS

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RL  147.16 LAL   -.00 LOL  89.17 VL  33.423 GAL  -4.63 AZL  88.43 HCA 263.01 SMA 193.28 ECC -.25120 INC 1.5650 V1  30.275
RP  207.43 LAP  -1.55 LOP 352.18 VP  24.352 GAP -13.94 AZP  90.19 TAL 336.62 TAP 239.64 RCA 144.73 APO 241.84 V2  26.408
RC 343.815 GL   12.88 GP   -3.98 ZAL 129.28 ZAP  23.35 ETS 169.19 ZAE  35.29 ETE 174.21 ZAC  87.14 ETC 255.81 CLP  23.03
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PLANETOCENTRIC CONIC

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C3  16.669 VHL  4.083 DLA  -2.47 RAL 221.32 RAD 6567.7 VEL 11.750 PTH   2.07 VHP  7.101 DPA  -8.66 RAP 192.76 ECC 1.2743
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 24 5	2095.18	-16.50	34.06	79.27	113.34	20 59 0	1495.2	-13.21	26.94
90.00	7 49 23	4892.43	20.37	212.59	80.29	69.90	9 10 56	4292.4	17.45	205.13
100.00	21 44 16	1836.50	-17.47	14.59	78.82	114.65	22 14 53	1236.5	-14.00	7.52
100.00	9 11 53	4626.34	21.36	192.62	79.89	68.58	10 28 59	4026.3	18.27	185.20
110.00	22 49 52	1631.14	-20.05	357.65	77.46	118.28	23 17 3	1031.1	-16.11	350.73
110.00	10 22 46	4404.47	24.01	174.54	78.66	64.91	11 36 10	3804.5	20.43	167.23

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE -.6012 TRA 7.4998 TC-14.9541 BAU 3.3330   SGT16149.1 SGR  615.2 SG3  173.8     ST  3291.5 SR   552.9 SS   517.0
 RDE  .3916 RRA  .1451 RC3  .2290 FAU .01665   RRT -.0604 RRF -.1064 RTF  .8551     CRT -.1497 CRS  .7029 CST -.8059
 FDE -.4666 FRA 1.2578 FC3 -.8646 BSP  57533   SGB16160.9 R23  .0548 R13 -.8551     LSA 3319.2 MSA  623.7 SSA   27.4
 BDE  .7174 BRA 7.5012 BC314.9558 FSP    574   SG116149.2 SG2  614.1 THA 179.87     EL1 3292.5 EL2  546.5 ALF 178.52
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LAUNCH DATE DEC 21 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 14 1966

HELIOCENTRIC CONIC DISTANCE 906.471 EARTH TO MARS

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RL  147.16 LAL   -.00 LOL  89.17 VL  33.432 GAL  -4.89 AZL  88.46 HCA 264.27 SMA 193.45 ECC .25320 INC 1.5386 V1  30.275
RP  207.54 LAP  -1.53 LOP 353.44 VP  24.349 GAP -14.07 AZP  90.15 TAL 335.45 TAP 239.72 RCA 144.47 APO 242.43 V2  26.395
RC 344.561 GL   12.38 GP   -3.92 ZAL 130.94 ZAP  23.04 ETS 169.19 ZAE  34.67 ETE 174.16 ZAC  87.41 ETC 255.82 CLP  22.72
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PLANETOCENTRIC CONIC

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C3  17.420 VHL  4.174 DLA  -3.43 RAL 222.68 RAD 6567.7 VEL 11.781 PTH   2.08 VHP  7.193 DPA  -9.00 RAP 193.66 ECC 1.2867
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 36 41	2075.45	-15.97	32.86	81.15	113.70	21 11 17	1475.5	-12.63	25.77
90.00	7 47 40	4932.46	21.29	215.17	82.61	70.88	9 9 53	4332.5	18.49	207.62
100.00	21 56 25	1818.23	-16.95	13.48	80.68	115.00	22 26 44	1218.2	-13.44	6.45
100.00	9 10 37	4664.92	22.30	195.10	82.22	69.56	10 28 22	4064.9	19.32	187.57
110.00	23 0 59	1616.11	-19.56	356.75	79.29	118.61	23 27 56	1016.1	-15.59	349.88
110.00	10 22 32	4439.81	25.01	176.80	81.01	65.90	11 36 32	3839.8	21.54	169.37

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE -.7304 TRA 7.8613 TC-14.4488 BAU 3.3654   SGT16228.3 SGR  618.2 SG3  159.8     ST  3414.0 SR   559.0 SS   500.9
 RDE  .4051 RRA  .1377 RC3  .2306 FAU .01324   RRT -.0830 RRF -.1292 RTF  .8354     CRT -.1967 CRS  .7234 CST -.8166
 FDE -.4636 FRA 1.1979 FC3 -.6581 BSP  57785   SGB16240.0 R23  .0600 R13 -.8354     LSA 3440.6 MSA  616.8 SSA   26.6
 BDE  .8352 BRA 7.8625 BC314.4507 FSP    524   SG116228.3 SG2  616.0 THA 179.82     EL1 3415.9 EL2  547.8 ALF 178.11
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LAUNCH DATE DEC 21 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 16 1966

HELIOCENTRIC CONIC DISTANCE 910.704 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.441 GAL -5.15 AZL 88.49 HCA 265.53 SMA 193.62 ECC .25530 INC 1.5125 V1 30.275
RP 207.67 LAP -1.51 LOP 354.70 VP 24.345 GAP -14.21 AZP 90.12 TAL 334.27 TAP 239.80 RCA 144.19 APO 243.05 V2 26.380
RC 345.302 GL 11.88 GP -3.86 ZAL 132.56 ZAP 22.74 ETS 169.18 ZAE 34.05 ETE 174.12 ZAC 87.68 ETC 255.83 CLP 22.43

PLANETOCENTRIC CONIC

C3 18.228 VHL 4.269 DLA -4.36 RAL 224.03 RAD 6567.7 VEL 11.816 PTH 2.09 VHP 7.287 DPA -9.33 RAP 194.57 ECC 1.3000

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 49 2	2056.93	-15.46	31.74	83.04	114.02	21 23 19	1456.9	-12.08	24.69
90.00	7 46 3	4972.08	22.15	217.75	84.96	71.90	9 8 55	4372.1	19.47	210.11
100.00	22 8 20	1801.14	-16.45	12.45	82.57	115.31	22 38 21	1201.1	-12.91	5.46
100.00	9 9 27	4703.11	23.19	197.59	84.58	70.59	10 27 50	4103.1	20.33	189.96
110.00	23 11 53	1602.18	-19.11	355.93	81.14	118.90	23 38 35	1002.2	-15.10	349.10
110.00	10 22 23	4474.83	25.97	179.07	83.39	66.95	11 36 58	3874.8	22.62	171.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.8557 TRA 8.2335 TC-13.9423 BAU 3.3981 SGT16304.9 SGR 621.1 SG3 146.3 ST 3535.3 SR 564.9 SS 482.8
RDE .4191 RRA .1298 RC3 .2310 FAU .00989 RRT -.1045 RRF -.1507 RTF .8110 CRT -.2373 CRS .7433 CST -.8236
FDE -.4582 FRA 1.1339 FC3 -.4699 BSP 58041 SGB16316.8 R23 .0661 R13 -.8110 LSA 3560.5 MSA 610.6 SSA 25.8
BDE .9528 BRA 8.2345 BC313.9442 FSP 475 SG116305.1 SG2 617.7 THA 179.77 EL1 3537.9 EL2 548.4 ALF 177.78

LAUNCH DATE DEC 21 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 18 1966

HELIOCENTRIC CONIC DISTANCE 914.921 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.450 GAL -5.42 AZL 88.51 HCA 266.79 SMA 193.79 ECC .25748 INC 1.4863 V1 30.275
RP 207.80 LAP -1.48 LOP 355.95 VP 24.341 GAP -14.35 AZP 90.08 TAL 333.08 TAP 239.87 RCA 143.89 APO 243.69 V2 26.364
RC 346.039 GL 11.40 GP -3.80 ZAL 134.15 ZAP 22.44 ETS 169.17 ZAE 33.45 ETE 174.07 ZAC 87.95 ETC 255.84 CLP 22.14

PLANETOCENTRIC CONIC

C3 19.096 VHL 4.370 DLA -5.26 RAL 225.35 RAD 6567.8 VEL 11.852 PTH 2.10 VHP 7.383 DPA -9.68 RAP 195.49 ECC 1.3143

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 1 7	2039.60	-14.97	30.70	84.96	114.32	21 35 7	1439.6	-11.57	23.68
90.00	7 44 32	5011.28	22.96	220.35	87.33	72.95	9 8 3	4411.3	20.41	212.60
100.00	22 19 59	1785.21	-15.99	11.50	84.47	115.60	22 49 44	1185.2	-12.41	4.54
100.00	9 8 21	4740.91	24.02	200.09	86.96	71.65	10 27 22	4140.9	21.29	192.36
110.00	23 22 32	1589.36	-18.68	355.18	83.01	119.16	23 49 1	989.4	-14.65	348.38
110.00	10 22 17	4509.52	26.87	181.36	85.80	68.03	11 37 27	3909.5	23.65	173.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.9798 TRA 8.6118 TC-13.4445 BAU 3.4329 SGT16379.8 SGR 624.1 SG3 133.5 ST 3653.3 SR 570.7 SS 462.8
RDE .4337 RRA .1214 RC3 .2303 FAU .00664 RRT -.1255 RRF -.1706 RTF .7807 CRT -.2731 CRS .7628 CST -.8277
FDE -.4507 FRA 1.0658 FC3 -.3008 BSP 58237 SGB16391.7 R23 .0731 R13 -.7808 LSA 3677.0 MSA 604.7 SSA 25.1
BDE 1.0715 BRA 8.6127 BC313.4465 FSP 427 SG116380.0 SG2 619.1 THA 179.73 EL1 3656.7 EL2 548.5 ALF 177.50

LAUNCH DATE DEC 21 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 20 1966

HELIOCENTRIC CONIC DISTANCE 919.120 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.459 GAL -5.69 AZL 88.54 HCA 268.04 SMA 193.96 ECC .25976 INC 1.4603 V1 30.275
RP 207.94 LAP -1.46 LOP 357.21 VP 24.335 GAP -14.49 AZP 90.05 TAL 331.88 TAP 239.92 RCA 143.58 APO 244.34 V2 26.348
RC 346.771 GL 10.93 GP -3.74 ZAL 135.70 ZAP 22.16 ETS 169.16 ZAE 32.85 ETE 174.02 ZAC 88.21 ETC 255.86 CLP 21.85

PLANETOCENTRIC CONIC

C3 20.028 VHL 4.475 DLA -6.14 RAL 226.65 RAD 6567.8 VEL 11.892 PTH 2.11 VHP 7.480 DPA -10.02 RAP 196.41 ECC 1.3296

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 12 57	2023.42	-14.52	29.73	86.89	114.58	21 46 40	1423.4	-11.08	22.74
90.00	7 43 5	5050.05	23.71	222.94	89.73	74.04	9 7 16	4450.1	21.29	215.10
100.00	22 31 23	1770.41	-15.55	10.62	86.38	115.85	23 0 53	1170.4	-11.95	3.68
100.00	9 7 21	4778.30	24.80	202.60	89.37	72.75	10 26 59	4178.5	22.20	194.76
110.00	23 32 58	1577.62	-18.29	354.49	84.89	119.39	23 59 15	977.6	-14.24	347.72
110.00	10 22.15	4543.86	27.72	183.67	88.24	69.15	11 37 59	3943.9	24.64	175.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.1015 TRA 9.0004 TC-12.9529 BAU 3.4688 SGT16453.4 SGR 627.0 SG3 121.4 ST 3768.0 SR 576.2 SS 441.3
RDE .4488 RRA .1127 RC3 .2287 FAU .00341 RRT -.1456 RRF -.1884 RTF .7422 CRT -.3044 CRS .7823 CST -.8286
FDE -.4412 FRA .9935 FC3 -.1475 BSP 58415 SGB16465.3 R23 .0811 R13 -.7422 LSA 3790.1 MSA 599.4 SSA 24.4
BDE 1.1894 BRA 9.0011 BC312.9549 FSP 379 SG116453.6 SG2 620.3 THA 179.68 EL1 3772.1 EL2 548.3 ALF 177.28

LAUNCH DATE DEC 21 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 22 1966

HELIOCENTRIC CONIC DISTANCE 923.302 EARTH TO MARS

RL 147.16 LAL -.00 LOL 89.17 VL 33.468 GAL -5.97 AZL 88.57 HCA 269.29 SMA 194.13 ECC .26214 INC 1.4343 V1 30.275
RP 208.09 LAP -1.43 LOP 358.46 VP 24.329 GAP -14.64 AZP 90.02 TAL 330.67 TAP 239.96 RCA 143.24 APO 245.02 V2 26.331
RC 347.497 GL 10.47 GP -3.69 ZAL 137.22 ZAP 21.88 ETS 169.15 ZAE 32.26 ETE 173.97 ZAC 88.48 ETC 255.88 CLP 21.58

PLANETOCENTRIC CONIC

C3 21.027 VHL 4.586 DLA -6.98 RAL 227.94 RAD 6567.9 VEL 11.933 PTH 2.12 VHP 7.579 DPA -10.37 RAP 197.34 ECC 1.3461

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 24 32	2008.37	-14.09	28.83	88.83	114.82	21 58 0	1408.4	-10.63	21.86
90.00	7 41 44	5088.38	24.40	225.53	92.14	75.17	9 6 33	4488.4	22.13	217.60
100.00	22 42 32	1756.72	-15.14	9.81	88.31	116.08	23 11 49	1156.7	-11.51	2.90
100.00	9 6 25	4815.27	25.52	205.10	91.80	73.89	10 26 40	4215.3	23.07	197.17
110.00	23 43 9	1566.92	-17.93	353.87	86.78	119.60	24 9 16	966.9	-13.86	347.13
110.00	10 22 17	4577.83	28.53	185.99	90.71	70.31	11 38 35	3977.8	25.58	178.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.2194 TRA 9.3981 TC-12.4699 BAU 3.5061 SGT16524.8 SGR 629.8 SG3 110.0 ST 3877.6 SR 581.5 SS 418.2
RDE .4644 RRA .1035 RC3 .2263 FAU .00023 RRT -.1649 RRF -.2031 RTF .6929 CRT -.3315 CRS .8019 CST -.8265
FDE -.4295 FRA .9170 FC3 -.0097 BSP 58584 SGB16536.8 R23 .0899 R13 -.6929 LSA 3898.0 MSA 594.6 SSA 23.8
BDE 1.3049 BRA 9.3987 BC312.4720 FSP 331 SG116525.1 SG2 621.2 THA 179.64 EL1 3882.4 EL2 548.0 ALF 177.10

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LAUNCH DATE  DEC 21 1964                          FLIGHT TIME 430.00                                  ARRIVAL DATE  FEB 24 1966

  HELIOCENTRIC CONIC                                      DISTANCE 927.464                                    EARTH  TO  MARS
   RL  147.16 LAL   -.00 LOL  89.17 VL  33.476 GAL  -6.25 AZL  88.59 HCA 270.54 SMA 194.30 ECC .26462 INC 1.4084 V1  30.275
   RP  208.25 LAP  -1.41 LOP 359.71 VP  24.321 GAP -14.79 AZP  89.99 TAL 329.45 TAP 240.00 RCA 142.88 APO 245.72 V2  26.312
   RC 348.218 GL   10.02 GP   -3.63 ZAL 138.70 ZAP  21.61 ETS 169.14 ZAE  31.68 ETE 173.91 ZAC  88.74 ETC 255.90 CLP  21.31
  PLANETOCENTRIC CONIC
   C3  22.097 VHL  4.701 DLA  -7.79 RAL 229.20 RAD 6567.9 VEL 11.978 PTH   2.13 VHP  7.680 DPA -10.72 RAP 198.28 ECC 1.3637
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    21 35 52   1994.42     -13.69     28.00      90.78      115.03   22  9  6    1394.4     -10.20      21.06
      90.00     7 40 28   5126.26      25.04    228.13      94.57       76.32    9  5 54    4526.3      22.91     220.10
     100.00    22 53 27   1744.11     -14.76      9.06      90.25      116.29   23 22 31    1144.1     -11.11       2.18
     100.00     9  5 34   4851.81      26.19    207.62      94.25       75.05   10 26 26    4251.8      23.88     199.58
     110.00    23 53  8   1557.25     -17.61    353.31      88.67      119.78   24 19  5     957.2     -13.51     346.59
     110.00    10 22 22   4611.43      29.27    188.32      93.20       71.51   11 39 14    4011.4      26.47     180.26
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE-1.3358 TRA 9.8039 TC-12.0001 BAU 3.5457      SGT16595.2 SGR  632.6 SG3   99.5            ST  3982.2 SR   586.6 SS   393.8
   RDE  .4804 RRA  .0939 RC3  .2232 FAU-.00289      RRT -.1837 RRF -.2137 RTF  .6295            CRT -.3554 CRS  .8219 CST -.8212
   FDE -.4159 FRA  .8361 FC3  .1132 BSP  58699      SGB16607.2 R23  .0996 R13 -.6295            LSA 4001.0 MSA  590.2 SSA   23.2
   BDE 1.4196 BRA 9.8043 BC312.0022 FSP    285      SG116595.6 SG2  621.9 THA 179.60            EL1 3987.7 EL2  547.5 ALF 176.95

LAUNCH DATE  DEC 21 1964                          FLIGHT TIME 432.00                                  ARRIVAL DATE  FEB 26 1966

  HELIOCENTRIC CONIC                                      DISTANCE 931.605                                    EARTH  TO  MARS
   RL  147.16 LAL   -.00 LOL  89.17 VL  33.485 GAL  -6.54 AZL  88.62 HCA 271.79 SMA 194.47 ECC .26721 INC 1.3826 V1  30.275
   RP  208.42 LAP  -1.38 LOP    .96 VP  24.313 GAP -14.96 AZP  89.96 TAL 328.22 TAP 240.02 RCA 142.51 APO 246.43 V2  26.293
   RC 348.934 GL    9.58 GP   -3.58 ZAL 140.15 ZAP  21.34 ETS 169.13 ZAE  31.10 ETE 173.85 ZAC  89.00 ETC 255.93 CLP  21.06
  PLANETOCENTRIC CONIC
   C3  23.241 VHL  4.821 DLA  -8.57 RAL 230.44 RAD 6567.9 VEL 12.026 PTH   2.15 VHP  7.783 DPA -11.07 RAP 199.22 ECC 1.3825
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    21 46 57   1981.53     -13.32     27.24      92.74      115.22   22 19 58    1381.5      -9.81      20.31
      90.00     7 39 17   5163.69      25.61    230.72      97.02       77.49    9  5 20    4563.7      23.63     222.61
     100.00    23  4  7   1732.54     -14.41      8.38      92.20      116.47   23 33  0    1132.5     -10.74       1.52
     100.00     9  4 47   4887.91      26.80    210.12      96.71       76.23   10 26 15    4287.9      24.64     201.99
     110.00     0  6 49   1548.57     -17.31    352.81      90.58      119.95    0 32 37     948.6     -13.20     346.11
     110.00    10 22 31   4644.64      29.97    190.65      95.71       72.73   11 39 56    4044.6      27.31     182.47
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE-1.4458 TRA10.2222 TC-11.5367 BAU 3.5852      SGT16662.4 SGR  635.3 SG3   90.1            ST  4080.4 SR   591.3 SS   368.4
   RDE  .4968 RRA  .0838 RC3  .2195 FAU-.00598      RRT -.2013 RRF -.2185 RTF  .5479            CRT -.3752 CRS  .8426 CST -.8116
   FDE -.4006 FRA  .7511 FC3  .2227 BSP  58856      SGB16674.5 R23  .1103 R13 -.5479            LSA 4097.6 MSA  586.6 SSA   22.6
   BDE 1.5287 BRA10.2225 BC311.5388 FSP    239      SG116662.9 SG2  622.3 THA 179.56            EL1 4086.5 EL2  547.3 ALF 176.83

LAUNCH DATE  DEC 21 1964                          FLIGHT TIME 434.00                                  ARRIVAL DATE  FEB 28 1966

  HELIOCENTRIC CONIC                                      DISTANCE 935.725                                    EARTH  TO  MARS
   RL  147.16 LAL   -.00 LOL  89.17 VL  33.494 GAL  -6.84 AZL  88.64 HCA 273.04 SMA 194.64 ECC .26990 INC 1.3567 V1  30.275
   RP  208.59 LAP  -1.35 LOP   2.21 VP  24.304 GAP -15.12 AZP  89.93 TAL 326.99 TAP 240.03 RCA 142.11 APO 247.18 V2  26.273
   RC 349.644 GL    9.16 GP   -3.53 ZAL 141.57 ZAP  21.09 ETS 169.12 ZAE  30.53 ETE 173.79 ZAC  89.27 ETC 255.96 CLP  20.81
  PLANETOCENTRIC CONIC
   C3  24.463 VHL  4.946 DLA  -9.33 RAL 231.66 RAD 6568.0 VEL 12.076 PTH   2.16 VHP  7.888 DPA -11.43 RAP 200.17 ECC 1.4026
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    21 57 47   1969.66     -12.97     26.54      94.71      115.39   22 30 37    1369.7      -9.45      19.63
      90.00     7 38  9   5200.65      26.13    233.30      99.48       78.69    9  4 50    4600.7      24.31     225.10
     100.00    23 14 34   1721.98     -14.09      7.76      94.15      116.64   23 43 16    1122.0     -10.40        .92
     100.00     9  4  4   4923.56      27.35    212.63      99.19       77.44   10 26  8    4323.6      25.35     204.40
     110.00     0 16 20   1540.85     -17.05    352.36      92.49      120.09    0 42  1     940.8     -12.92     345.68
     110.00    10 22 43   4677.46      30.61    193.00      98.24       73.98   11 40 40    4077.5      28.11     184.69
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE-1.5547 TRA10.6469 TC-11.0895 BAU 3.6275      SGT16727.3 SGR  637.9 SG3   82.0            ST  4172.8 SR   595.7 SS   342.3
   RDE  .5137 RRA  .0734 RC3  .2153 FAU-.00902      RRT -.2185 RRF -.2154 RTF  .4438            CRT -.3931 CRS  .8643 CST -.7979
   FDE -.3839 FRA  .6620 FC3  .3193 BSP  58917      SGB16739.5 R23  .1212 R13 -.4439            LSA 4188.5 MSA  583.2 SSA   22.0
   BDE 1.6374 BRA10.6472 BC311.0916 FSP    195      SG116727.9 SG2  622.5 THA 179.52            EL1 4179.5 EL2  546.9 ALF 176.73
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LAUNCH DATE DEC 22 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 346.712 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	35.067	GAL	3.30	AZL	88.96	HCA	106.49	SMA	231.17	ECC	.36740	INC	1.0399	V1	30.277
RP	243.00	LAP	1.00	LOP	196.68	VP	22.764	GAP	21.36	AZP	90.30	TAL	12.33	TAP	118.82	RCA	146.24	APO	316.10	V2	22.585
RC	143.499	GL	6.99	GP	2.71	ZAL	65.98	ZAP	171.74	ETS	159.56	ZAE	152.22	ETE	3.80	ZAC	92.28	ETC	255.90	CLP	172.20

PLANETOCENTRIC CONIC

C3	27.262	VHL	5.221	DLA	15.81	RAL	160.43	RAD	6568.1	VEL	12.192	PTH	2.19	VHP	9.887	DPA	.05	RAP	189.75	ECC	1.4487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 52 29	2804.78	-28.20	82.17	33.16	92.64	14 39 14	2204.8	-27.54	73.57
90.00	6 7 20	4419.09	7.05	184.26	25.40	62.50	7 20 59	3819.1	3.31	177.58
100.00	15 22 34	2514.26	-29.66	60.71	33.07	93.90	16 4 28	1914.3	-28.80	52.01
100.00	7 19 56	4184.84	8.34	166.35	24.70	61.19	8 29 41	3584.8	4.43	159.74
110.00	16 50 14	2239.96	-33.48	39.44	32.63	97.35	17 27 34	1640.0	-32.10	30.48
110.00	8 8 46	4031.91	11.64	152.77	22.72	57.63	9 15 57	3431.9	7.28	146.38

DIFFERENTIAL CORRECTIONS

TDE	.2126	TRA	-.8476	TC3	1.2790	BAU	.4662
RDE	-.5705	RRA	-.2116	RC3	.0221	FAU	.06800
FDE	.2097	FRA	-.0331	FC3	-2.1593	BSP	5276
BDE	.6088	BRA	.8736	BC3	1.2792	FSP	535

MID-COURSE EXECUTION ACCURACY

SGT	1665.1	SGR	671.3	SG3	195.9		
RRT	.1056	RRF	-.1228	RTF	-.7739		
SGB	1795.4	R23	-.0257	R13	-.7746		
SG1	1666.9	SG2	666.8	THA	2.90		

ORBIT DETERMINATION ACCURACY

ST	374.3	SR	630.2	SS	205.1		
CRT	-.5300	CRS	.9469	CST	-.6037		
LSA	697.5	MSA	299.1	SSA	58.7		
EL1	669.3	EL2	298.9	ALF	112.11		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 349.247 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	34.954	GAL	3.42	AZL	88.98	HCA	107.41	SMA	228.01	ECC	.35901	INC	1.0187	V1	30.277
RP	242.74	LAP	.97	LOP	197.60	VP	22.615	GAP	20.73	AZP	90.30	TAL	13.00	TAP	120.41	RCA	146.15	APO	309.86	V2	22.611
RC	145.763	GL	6.93	GP	2.79	ZAL	64.75	ZAP	171.11	ETS	160.45	ZAE	152.40	ETE	4.12	ZAC	92.41	ETC	255.89	CLP	171.55

PLANETOCENTRIC CONIC

C3	26.438	VHL	5.142	DLA	16.21	RAL	159.22	RAD	6568.1	VEL	12.158	PTH	2.18	VHP	9.638	DPA	.00	RAP	190.04	ECC	1.4351

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 43 51	2811.95	-28.23	82.70	31.55	92.37	14 30 43	2211.9	-27.60	74.09
90.00	6 6 22	4396.67	6.34	182.99	23.79	62.35	7 19 39	3796.7	2.59	176.32
100.00	15 14 16	2520.39	-29.69	61.16	31.47	93.67	15 56 16	1920.4	-28.86	52.46
100.00	7 18 39	4163.46	7.63	165.15	23.09	61.01	8 28 2	3563.5	3.71	158.56
110.00	16 42 36	2244.00	-33.51	39.75	31.04	97.17	17 20 0	1644.0	-32.16	30.78
110.00	8 6 48	4012.62	10.93	151.72	21.10	57.41	9 13 40	3412.6	6.56	145.36

DIFFERENTIAL CORRECTIONS

TDE	.1941	TRA	-.8165	TC3	1.3497	BAU	.4771
RDE	-.5623	RRA	-.2039	RC3	.0285	FAU	.07062
FDE	.2318	FRA	-.0722	FC3	-2.3125	BSP	5400
BDE	.5948	BRA	.8416	BC3	1.3500	FSP	569

MID-COURSE EXECUTION ACCURACY

SGT	1694.4	SGR	670.4	SG3	206.8		
RRT	.1140	RRF	-.1320	RTF	-.7805		
SGB	1822.2	R23	-.0270	R13	-.7812		
SG1	1696.4	SG2	665.2	THA	3.05		

ORBIT DETERMINATION ACCURACY

ST	359.6	SR	630.6	SS	224.2		
CRT	-.5085	CRS	.9435	CST	-.6203		
LSA	697.7	MSA	294.3	SSA	61.5		
EL1	663.6	EL2	294.2	ALF	110.34		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 351.879 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	34.845	GAL	3.54	AZL	89.00	HCA	108.33	SMA	225.09	ECC	.35108	INC	.9972	V1	30.277
RP	242.47	LAP	.95	LOP	198.52	VP	22.474	GAP	20.09	AZP	90.31	TAL	13.68	TAP	122.01	RCA	146.06	APO	304.11	V2	22.638
RC	148.041	GL	6.86	GP	2.87	ZAL	63.54	ZAP	170.47	ETS	161.23	ZAE	152.61	ETE	4.46	ZAC	92.55	ETC	255.89	CLP	170.90

PLANETOCENTRIC CONIC

C3	25.690	VHL	5.069	DLA	16.60	RAL	158.02	RAD	6568.0	VEL	12.127	PTH	2.17	VHP	9.395	DPA	-.04	RAP	190.32	ECC	1.4228

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 35 19	2819.20	-28.24	83.23	29.98	92.11	14 22 18	2219.2	-27.65	74.61
90.00	6 5 18	4375.21	5.66	181.78	22.22	62.21	7 18 13	3775.2	1.90	175.13
100.00	15 6 3	2526.61	-29.71	61.62	29.89	93.43	15 48 10	1926.6	-28.92	52.91
100.00	7 17 15	4143.04	6.96	164.01	21.52	60.86	8 26 18	3543.0	3.02	157.44
110.00	16 35 3	2248.16	-33.55	40.07	29.48	96.98	17 12 31	1648.2	-32.22	31.09
110.00	8 4 45	3994.25	10.26	150.72	19.51	57.21	9 11 19	3394.3	5.87	144.39

DIFFERENTIAL CORRECTIONS

TDE	.1769	TRA	-.7849	TC3	1.4201	BAU	.4879
RDE	-.5546	RRA	-.1963	RC3	.0356	FAU	.07337
FDE	.2543	FRA	-.1142	FC3	-2.4724	BSP	5519
BDE	.5821	BRA	.8091	BC3	1.4206	FSP	606

MID-COURSE EXECUTION ACCURACY

SGT	1723.3	SGR	669.3	SG3	218.3		
RRT	.1222	RRF	-.1416	RTF	-.7869		
SGB	1848.7	R23	-.0289	R13	-.7877		
SG1	1725.6	SG2	663.4	THA	3.19		

ORBIT DETERMINATION ACCURACY

ST	345.0	SR	630.8	SS	243.4		
CRT	-.4872	CRS	.9384	CST	-.6328		
LSA	698.9	MSA	288.9	SSA	64.4		
EL1	658.5	EL2	288.6	ALF	108.62		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 354.599 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	34.742	GAL	3.66	AZL	89.02	HCA	109.25	SMA	222.38	ECC	.34358	INC	.9754	V1	30.277
RP	242.20	LAP	.92	LOP	199.44	VP	22.341	GAP	19.46	AZP	90.32	TAL	14.37	TAP	123.62	RCA	145.97	APO	298.78	V2	22.664
RC	150.330	GL	6.78	GP	2.95	ZAL	62.33	ZAP	169.81	ETS	161.91	ZAE	152.87	ETE	4.82	ZAC	92.69	ETC	255.88	CLP	170.24

PLANETOCENTRIC CONIC

C3	25.012	VHL	5.001	DLA	16.97	RAL	156.82	RAD	6568.0	VEL	12.099	PTH	2.17	VHP	9.159	DPA	-.07	RAP	190.59	ECC	1.4116

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 26 55	2826.47	-28.26	83.76	28.43	91.84	14 14 1	2226.5	-27.71	75.14
90.00	6 4 7	4354.75	5.01	180.63	20.69	62.09	7 16 42	3754.8	1.24	173.98
100.00	14 57 58	2532.86	-29.74	62.09	28.36	93.18	15 40 10	1932.9	-28.98	53.36
100.00	7 15 45	4123.60	6.31	162.93	19.98	60.72	8 24 29	3523.6	2.36	156.37
110.00	16 27 36	2252.39	-33.58	40.39	27.96	96.79	17 5 9	1652.4	-32.28	31.40
110.00	8 2 36	3976.83	9.61	149.79	17.97	57.04	9 8 53	3376.8	5.21	143.47

DIFFERENTIAL CORRECTIONS

TDE	.1597	TRA	-.7536	TC3	1.4898	BAU	.4984
RDE	-.5474	RRA	-.1887	RC3	.0433	FAU	.07627
FDE	.2778	FRA	-.1597	FC3	-2.6398	BSP	5637
BDE	.5702	BRA	.7769	BC3	1.4904	FSP	645

MID-COURSE EXECUTION ACCURACY

SGT	1751.8	SGR	668.1	SG3	230.4		
RRT	.1315	RRF	-.1520	RTF	-.7929		
SGB	1874.8	R23	-.0307	R13	-.7938		
SG1	1754.3	SG2	661.3	THA	3.35		

ORBIT DETERMINATION ACCURACY

ST	329.8	SR	630.8	SS	263.5		
CRT	-.4628	CRS	.9323	CST	-.6394		
LSA	700.8	MSA	283.6	SSA	67.3		
EL1	653.5	EL2	282.2	ALF	106.83		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 357.399 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	34.644	GAL	3.77	AZL	89.05	HCA	110.18	SMA	219.86	ECC	.33650	INC	.9533	V1	30.277
RP	241.93	LAP	.89	LOP	200.37	VP	22.215	GAP	18.83	AZP	90.33	TAL	15.05	TAP	125.23	RCA	145.88	APO	293.85	V2	22.692
RC	152.629	GL	6.69	GP	3.04	ZAL	61.13	ZAP	169.14	ETS	162.50	ZAE	153.16	ETE	5.19	ZAC	92.83	ETC	255.87	CLP	169.57

PLANETOCENTRIC CONIC

C3	24.398	VHL	4.939	DLA	17.32	RAL	155.62	RAD	6568.0	VEL	12.074	PTH	2.16	VHP	8.930	DPA	-.09	RAP	190.85	ECC	1.4015

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 18 40	2833.67	-28.28	84.28	26.92	91.58	14 5 53	2233.7	-27.76	75.66
90.00	6 2 50	4335.33	4.39	179.54	19.20	62.00	7 15 6	3735.3	.61	172.90
100.00	14 50 1	2539.06	-29.76	62.55	26.85	92.94	15 32 20	1939.1	-29.04	53.82
100.00	7 14 10	4105.18	5.70	161.91	18.48	60.61	8 22 35	3505.2	1.74	155.36
110.00	16 20 17	2256.62	-33.62	40.72	26.47	96.60	16 57 54	1656.6	-32.34	31.72
110.00	8 0 23	3960.38	9.00	148.90	16.46	56.88	9 6 23	3360.4	4.58	142.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1431	TRA	-.7221	TC3	1.5584	BAU	.5086	SGT	1779.8	SGR	666.7	SG3	243.1	ST	314.6	SR	630.7	SS	284.2
RDE	-.5407	RRA	-.1812	RC3	.0518	FAU	.07932	RRT	.1414	RRF	-.1633	RTF	-.7987	CRT	-.4368	CRS	.9256	CST	-.6417
FDE	.3023	FRA	-.2086	FC3	-2.8145	BSP	5748	SGB	1900.6	R23	-.0328	R13	-.7997	LSA	703.7	MSA	278.2	SSA	70.3
BDE	.5593	BRA	.7445	BC3	1.5593	FSP	685	SG1	1782.7	SG2	658.9	THA	3.51	EL1	648.9	EL2	275.1	ALF	105.06

LAUNCH DATE DEC 22 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 360.273 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	34.550	GAL	3.88	AZL	89.07	HCA	111.11	SMA	217.52	ECC	.32981	INC	.9309	V1	30.277
RP	241.65	LAP	.87	LOP	201.30	VP	22.098	GAP	18.21	AZP	90.34	TAL	15.73	TAP	126.84	RCA	145.78	APO	289.27	V2	22.720
RC	154.936	GL	6.59	GP	3.13	ZAL	59.95	ZAP	168.45	ETS	163.03	ZAE	153.49	ETE	5.60	ZAC	92.98	ETC	255.86	CLP	168.88

PLANETOCENTRIC CONIC

C3	23.843	VHL	4.883	DLA	17.66	RAL	154.44	RAD	6568.0	VEL	12.051	PTH	2.15	VHP	8.706	DPA	-.11	RAP	191.11	ECC	1.3924

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 10 35	2840.74	-28.29	84.80	25.44	91.32	13 57 56	2240.7	-27.81	76.17
90.00	6 1 27	4316.98	3.81	178.51	17.74	61.92	7 13 24	3717.0	.02	171.88
100.00	14 42 15	2545.15	-29.78	63.00	25.38	92.71	15 24 40	1945.2	-29.09	54.26
100.00	7 12 28	4087.80	5.12	160.95	17.02	60.51	8 20 36	3487.8	1.15	154.40
110.00	16 13 8	2260.81	-33.65	41.04	25.02	96.42	16 50 48	1660.8	-32.39	32.03
110.00	7 58 5	3944.91	8.43	148.08	14.99	56.75	9 3 49	3344.9	3.99	141.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1269	TRA	-.6907	TC3	1.6253	BAU	.5185	SGT	1806.9	SGR	665.2	SG3	256.5	ST	299.2	SR	630.4	SS	305.3
RDE	-.5345	RRA	-.1736	RC3	.0609	FAU	.08253	RRT	.1521	RRF	-.1754	RTF	-.8043	CRT	-.4077	CRS	.9186	CST	-.6391
FDE	.3276	FRA	-.2608	FC3	-2.9965	BSP	5863	SGB	1925.5	R23	-.0349	R13	-.8053	LSA	707.3	MSA	273.1	SSA	73.2
BDE	.5493	BRA	.7121	BC3	1.6265	FSP	730	SG1	1810.2	SG2	656.3	THA	3.69	EL1	644.6	EL2	267.2	ALF	103.27

LAUNCH DATE DEC 22 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 363.214 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	34.461	GAL	3.99	AZL	89.09	HCA	112.03	SMA	215.35	ECC	.32350	INC	.9082	V1	30.277
RP	241.36	LAP	.84	LOP	202.22	VP	21.987	GAP	17.60	AZP	90.34	TAL	16.42	TAP	128.45	RCA	145.68	APO	285.01	V2	22.748
RC	157.250	GL	6.48	GP	3.23	ZAL	58.79	ZAP	167.76	ETS	163.49	ZAE	153.85	ETE	6.02	ZAC	93.12	ETC	255.86	CLP	168.18

PLANETOCENTRIC CONIC

C3	23.342	VHL	4.831	DLA	17.97	RAL	153.26	RAD	6567.9	VEL	12.030	PTH	2.15	VHP	8.489	DPA	-.12	RAP	191.36	ECC	1.3842

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 2 43	2847.62	-28.30	85.30	24.00	91.07	13 50 10	2247.6	-27.85	76.67
90.00	5 59 56	4299.71	3.25	177.55	16.33	61.86	7 11 36	3699.7	-.54	170.92
100.00	14 34 40	2551.09	-29.80	63.44	23.94	92.47	15 17 11	1951.1	-29.14	54.70
100.00	7 10 40	4071.49	4.57	160.04	15.60	60.43	8 18 32	3471.5	.60	153.51
110.00	16 6 8	2264.90	-33.68	41.36	23.60	96.23	16 43 53	1664.9	-32.45	32.34
110.00	7 55 41	3930.43	7.89	147.30	13.56	56.63	9 1 12	3330.4	3.44	141.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1114	TRA	-.6597	TC3	1.6904	BAU	.5280	SGT	1833.6	SGR	663.7	SG3	270.6	ST	284.1	SR	629.9	SS	326.5
RDE	-.5286	RRA	-.1660	RC3	.0708	FAU	.08591	RRT	.1636	RRF	-.1884	RTF	-.8094	CRT	-.3767	CRS	.9111	CST	-.6332
FDE	.3534	FRA	-.3170	FC3	-3.1864	BSP	5970	SGB	1950.0	R23	-.0372	R13	-.8106	LSA	711.6	MSA	268.5	SSA	75.9
BDE	.5402	BRA	.6802	BC3	1.6919	FSP	775	SG1	1837.2	SG2	653.4	THA	3.88	EL1	640.8	EL2	258.8	ALF	101.55

LAUNCH DATE DEC 22 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 366.218 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	34.376	GAL	4.10	AZL	89.11	HCA	112.97	SMA	213.32	ECC	.31753	INC	.8851	V1	30.277
RP	241.08	LAP	.82	LOP	203.16	VP	21.883	GAP	16.99	AZP	90.35	TAL	17.10	TAP	130.06	RCA	145.58	APO	281.05	V2	22.777
RC	159.568	GL	6.36	GP	3.33	ZAL	57.65	ZAP	167.05	ETS	163.91	ZAE	154.25	ETE	6.48	ZAC	93.27	ETC	255.85	CLP	167.47

PLANETOCENTRIC CONIC

C3	22.891	VHL	4.784	DLA	18.26	RAL	152.10	RAD	6567.9	VEL	12.011	PTH	2.14	VHP	8.277	DPA	-.12	RAP	191.61	ECC	1.3767

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 55 3	2854.27	-28.31	85.79	22.59	90.83	13 42 37	2254.3	-27.89	77.15
90.00	5 58 19	4283.54	2.73	176.64	14.95	61.80	7 9 43	3683.5	-1.06	170.01
100.00	14 27 17	2556.82	-29.82	63.86	22.55	92.25	15 9 54	1956.8	-29.18	55.12
100.00	7 8 46	4056.23	4.05	159.20	14.22	60.36	8 16 22	3456.2	.08	152.67
110.00	15 59 19	2268.88	-33.71	41.66	22.21	96.05	16 37 8	1668.9	-32.50	32.64
110.00	7 53 13	3916.93	7.38	146.59	12.16	56.53	8 58 30	3316.9	2.93	140.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1053	TRA	-.6198	TC3	1.7689	BAU	.5419	SGT	1868.7	SGR	662.2	SG3	285.3	ST	271.1	SR	629.4	SS	348.8
RDE	-.5232	RRA	-.1584	RC3	.0813	FAU	.08942	RRT	.1687	RRF	-.2026	RTF	-.8182	CRT	-.3801	CRS	.9043	CST	-.6504
FDE	.3810	FRA	-.3761	FC3	-3.3818	BSP	5874	SGB	1982.5	R23	-.0461	R13	-.8195	LSA	719.0	MSA	260.9	SSA	78.9
BDE	.5337	BRA	.6397	BC3	1.7708	FSP	827	SG1	1872.4	SG2	651.4	THA	3.89	EL1	639.3	EL2	246.8	ALF	100.95

LAUNCH DATE DEC 22 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 369.278 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	34.294	GAL	4.20	AZL	89.14	HCA	113.90	SMA	211.42	ECC	.31190	INC	.8617	V1	30.277
RP	240.79	LAP	.79	LOP	204.09	VP	21.786	GAP	16.38	AZP	90.35	TAL	17.77	TAP	131.67	RCA	145.48	APO	277.37	V2	22.806
RC	161.890	GL	6.23	GP	3.43	ZAL	56.53	ZAP	166.32	ETS	164.28	ZAE	154.69	ETE	6.98	ZAC	93.41	ETC	255.84	CLP	166.75

PLANETOCENTRIC CONIC

C3	22.483	VHL	4.742	DLA	18.53	RAL	150.96	RAD	6567.9	VEL	11.994	PTH	2.14	VHP	8.072	DPA	-.11	RAP	191.84	ECC	1.3700		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 47 40	2860.56	-28.31	86.25	21.22	90.60	13 35 20	2260.6	-27.93	77.81
90.00	5 56 35	4268.53	2.25	175.80	13.61	61.77	7 7 44	3668.5	-1.54	169.18
100.00	14 20 10	2562.23	-29.83	64.26	21.18	92.04	15 2 53	1962.2	-29.23	55.51
100.00	7 6 45	4042.09	3.58	158.42	12.87	60.30	8 14 8	3442.1	-.40	151.90
110.00	15 52 44	2272.63	-33.73	41.95	20.87	95.88	16 30 37	1672.6	-32.55	32.92
110.00	7 50 41	3904.46	6.91	145.93	10.81	56.44	8 55 45	3304.5	2.45	139.68

DIFFERENTIAL CORRECTIONS

TDE	.0866	TRA	-.5935	TC3	1.8215	BAU	.5482
RDE	-.5180	RRA	-.1505	RC3	.0929	FAU	.09320
FDE	.4075	FRA	-.4416	FC3	-3.5886	BSP	6089
BDE	.5251	BRA	.6123	BC3	1.8239	FSP	876

MID-COURSE EXECUTION ACCURACY

SGT	1888.6	SGR	660.5	SG3	301.1		
RRT	.1858	RRF	-.2172	RTF	-.8208		
SGB	2000.8	R23	-.0452	R13	-.8222		
SG1	1893.1	SG2	647.5	THA	4.21		

ORBIT DETERMINATION ACCURACY

ST	255.2	SR	628.5	SS	369.9
CRT	-.3261	CRS	.8960	CST	-.6246
LSA	723.3	MSA	259.4	SSA	81.1
EL1	634.9	EL2	238.8	ALF	98.80

LAUNCH DATE DEC 22 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 372.391 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	34.217	GAL	4.30	AZL	89.16	HCA	114.84	SMA	209.65	ECC	.30659	INC	.8378	V1	30.277
RP	240.49	LAP	.76	LOP	205.03	VP	21.695	GAP	15.78	AZP	90.35	TAL	18.44	TAP	133.27	RCA	145.38	APO	273.93	V2	22.836
RC	164.213	GL	6.09	GP	3.54	ZAL	55.44	ZAP	165.58	ETS	164.61	ZAE	155.16	ETE	7.51	ZAC	93.57	ETC	255.84	CLP	166.01

PLANETOCENTRIC CONIC

C3	22.117	VHL	4.703	DLA	18.78	RAL	149.83	RAD	6567.9	VEL	11.979	PTH	2.13	VHP	7.871	DPA	-.09	RAP	192.07	ECC	1.3640		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 40 32	2866.48	-28.31	86.68	19.90	90.38	13 28 18	2266.5	-27.96	78.04
90.00	5 54 44	4254.65	1.80	175.03	12.31	61.74	7 5 38	3654.7	-1.99	168.40
100.00	14 13 18	2567.32	-29.84	64.64	19.86	91.84	14 56 5	1967.3	-29.27	55.89
100.00	7 4 39	4029.03	3.14	157.70	11.57	60.26	8 11 48	3429.0	-.84	151.18
110.00	15 46 22	2276.15	-33.76	42.22	19.56	95.72	16 24 18	1676.2	-32.60	33.18
110.00	7 48 4	3892.97	6.48	145.32	9.50	56.36	8 52 57	3293.0	2.01	139.08

DIFFERENTIAL CORRECTIONS

TDE	.0711	TRA	-.5652	TC3	1.8753	BAU	.5554
RDE	-.5131	RRA	-.1426	RC3	.1052	FAU	.09715
FDE	.4351	FRA	-.5109	FC3	-3.8028	BSP	6240
BDE	.5180	BRA	.5829	BC3	1.8782	FSP	929

MID-COURSE EXECUTION ACCURACY

SGT	1909.9	SGR	658.9	SG3	317.5		
RRT	.2017	RRF	-.2331	RTF	-.8242		
SGB	2020.4	R23	-.0465	R13	-.8257		
SG1	1915.1	SG2	643.6	THA	4.49		

ORBIT DETERMINATION ACCURACY

ST	240.7	SR	627.5	SS	391.5
CRT	-.2781	CRS	.8881	CST	-.6012
LSA	729.1	MSA	257.9	SSA	82.9
EL1	631.6	EL2	229.7	ALF	97.02

LAUNCH DATE DEC 22 1964 FLIGHT TIME 160.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 375.553 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	34.143	GAL	4.39	AZL	89.19	HCA	115.77	SMA	208.00	ECC	.30157	INC	.8136	V1	30.277
RP	240.19	LAP	.73	LOP	205.96	VP	21.611	GAP	15.19	AZP	90.35	TAL	19.10	TAP	134.87	RCA	145.27	APO	270.73	V2	22.866
RC	166.536	GL	5.94	GP	3.66	ZAL	54.37	ZAP	164.83	ETS	164.91	ZAE	155.66	ETE	8.08	ZAC	93.72	ETC	255.83	CLP	165.26

PLANETOCENTRIC CONIC

C3	21.788	VHL	4.668	DLA	19.01	RAL	148.72	RAD	6567.9	VEL	11.965	PTH	2.13	VHP	7.676	DPA	-.07	RAP	192.28	ECC	1.3586		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 33 41	2871.97	-28.32	87.08	18.60	90.18	13 21 33	2272.0	-27.99	78.43
90.00	5 52 45	4241.90	1.39	174.32	11.05	61.71	7 3 27	3641.9	-2.40	167.69
100.00	14 6 42	2572.05	-29.85	64.99	18.58	91.66	14 49 34	1972.0	-29.30	56.23
100.00	7 2 26	4017.06	2.73	157.05	10.31	60.22	8 9 23	3417.1	-1.25	150.52
110.00	15 40 14	2279.41	-33.78	42.48	18.28	95.58	16 18 13	1679.4	-32.64	33.43
110.00	7 45 23	3882.46	6.08	144.76	8.23	56.30	8 50 6	3282.5	1.61	138.53

DIFFERENTIAL CORRECTIONS

TDE	.0576	TRA	-.5363	TC3	1.9284	BAU	.5628
RDE	-.5085	RRA	-.1346	RC3	.1183	FAU	.10130
FDE	.4634	FRA	-.5841	FC3	-4.0250	BSP	6364
BDE	.5117	BRA	.5529	BC3	1.9321	FSP	987

MID-COURSE EXECUTION ACCURACY

SGT	1931.5	SGR	657.5	SG3	334.8		
RRT	.2177	RRF	-.2502	RTF	-.8278		
SGB	2040.4	R23	-.0489	R13	-.8295		
SG1	1937.5	SG2	639.8	THA	4.76		

ORBIT DETERMINATION ACCURACY

ST	227.0	SR	626.3	SS	413.1
CRT	-.2318	CRS	.8803	CST	-.5771
LSA	735.8	MSA	256.9	SSA	84.4
EL1	628.9	EL2	219.9	ALF	95.47

LAUNCH DATE DEC 22 1964 FLIGHT TIME 162.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 378.760 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	34.073	GAL	4.48	AZL	89.21	HCA	116.72	SMA	206.45	ECC	.29684	INC	.7888	V1	30.277
RP	239.88	LAP	.70	LOP	206.90	VP	21.532	GAP	14.60	AZP	90.35	TAL	19.76	TAP	136.47	RCA	145.17	APO	267.73	V2	22.897
RC	168.857	GL	5.79	GP	3.78	ZAL	53.33	ZAP	164.05	ETS	165.18	ZAE	156.20	ETE	8.71	ZAC	93.87	ETC	255.83	CLP	164.50

PLANETOCENTRIC CONIC

C3	21.493	VHL	4.636	DLA	19.22	RAL	147.64	RAD	6567.9	VEL	11.953	PTH	2.13	VHP	7.487	DPA	-.03	RAP	192.49	ECC	1.3537		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 27 8	2877.00	-28.32	87.45	17.35	89.99	13 15 5	2277.0	-28.02	78.80
90.00	5 50 40	4230.30	1.02	173.67	9.83	61.70	7 1 10	3630.3	-2.77	167.04
100.00	14 0 23	2576.35	-29.86	65.31	17.33	91.49	14 43 19	1976.4	-29.33	56.55
100.00	7 0 7	4006.18	2.36	156.45	9.08	60.19	8 6 53	3406.2	-1.62	149.93
110.00	15 34 20	2282.37	-33.80	42.71	17.05	95.44	16 12 23	1682.4	-32.68	33.65
110.00	7 42 38	3872.93	5.72	144.26	7.00	56.24	8 47 11	3272.9	1.25	138.03

DIFFERENTIAL CORRECTIONS

TDE	.0453	TRA	-.5069	TC3	1.9797	BAU	.5701
RDE	-.5041	RRA	-.1265	RC3	.1324	FAU	.10567
FDE	.4925	FRA	-.6626	FC3	-4.2564	BSP	6464
BDE	.5061	BRA	.5225	BC3	1.9842	FSP	1047

MID-COURSE EXECUTION ACCURACY

SGT	1952.7	SGR	656.2	SG3	353.1		
RRT	.2343	RRF	-.2685	RTF	-.8316		
SGB	2060.0	R23	-.0520	R13	-.8334		
SG1	1959.4	SG2	635.7	THA	5.03		

ORBIT DETERMINATION ACCURACY

ST	214.0	SR	625.0	SS	435.0
CRT	-.1852	CRS	.8726	CST	-.5512
LSA	743.2	MSA	256.8	SSA	85.4
EL1	626.4	EL2	209.8	ALF	94.09

LAUNCH DATE DEC 22 1964 FLIGHT TIME 164.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 382.010 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 34.006 GAL 4.57 AZL 89.24 HCA 117.66 SMA 205.00 ECC .29238 INC .7636 V1 30.277
RP 239.58 LAP .68 LOP 207.85 VP 21.460 GAP 14.02 AZP 90.35 TAL 20.40 TAP 138.06 RCA 145.06 APO 264.93 V2 22.928
RC 171.174 GL 5.63 GP 3.90 ZAL 52.32 ZAP 163.26 ETS 165.42 ZAE 156.77 ETE 9.39 ZAC 94.03 ETC 255.82 CLP 163.71

PLANETOCENTRIC CONIC

C3 21.229 VHL 4.608 DLA 19.40 RAL 146.58 RAD 6567.9 VEL 11.942 PTH 2.13 VHP 7.302 DPA .02 RAP 192.69 ECC 1.3494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 20 55	2881.51	-28.32	87.78	16.14	89.83	13 8 56	2281.5	-28.04	79.13
90.00	5 48 27	4219.84	.68	173.09	8.65	61.69	6 58 47	3619.8	-3.11	166.46
100.00	13 54 21	2580.20	-29.87	65.60	16.12	91.34	14 37 21	1980.2	-29.36	56.83
100.00	6 57 42	3996.38	2.03	155.91	7.90	60.17	8 4 18	3396.4	-1.95	149.39
110.00	15 28 42	2285.00	-33.82	42.91	15.85	95.32	16 6 47	1685.0	-32.71	33.85
110.00	7 39 50	3864.35	5.40	143.81	5.81	56.19	8 44 14	3264.3	.92	137.58

DIFFERENTIAL CORRECTIONS
TDE .0342 TRA -.4779 TC3 2.0276 BAU .5770
RDE -.5000 RRA -.1181 RC3 .1473 FAU .11024
FDE .5222 FRA -.7460 FC3-4.4955 BSP 6556
BDE .5011 BRA .4922 BC3 2.0330 FSP 1110

MID-COURSE EXECUTION ACCURACY
SGT 1972.3 SGR 655.2 SG3 372.1
RRT .2517 RRF -.2881 RTF -.8350
SGB 2078.3 R23 -.0556 R13 -.8370
SG1 1980.0 SG2 631.6 THA 5.32

ORBIT DETERMINATION ACCURACY
ST 201.7 SR 623.5 SS 456.7
CRT -.1384 CRS .8650 CST -.5235
LSA 751.2 MSA 257.5 SSA 86.0
EL1 624.2 EL2 199.5 ALF 92.86

LAUNCH DATE DEC 22 1964 FLIGHT TIME 166.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 385.298 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.943 GAL 4.66 AZL 89.26 HCA 118.60 SMA 203.64 ECC .28817 INC .7379 V1 30.277
RP 239.26 LAP .65 LOP 208.79 VP 21.392 GAP 13.45 AZP 90.35 TAL 21.04 TAP 139.64 RCA 144.95 APO 262.32 V2 22.959
RC 173.485 GL 5.46 GP 4.03 ZAL 51.33 ZAP 162.46 ETS 165.64 ZAE 157.37 ETE 10.13 ZAC 94.19 ETC 255.82 CLP 162.91

PLANETOCENTRIC CONIC

C3 20.993 VHL 4.582 DLA 19.56 RAL 145.55 RAD 6567.9 VEL 11.932 PTH 2.12 VHP 7.122 DPA .08 RAP 192.88 ECC 1.3455

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 15 0	2885.46	-28.32	88.07	14.96	89.68	13 3 6	2285.5	-28.06	79.42
90.00	5 46 7	4210.52	.38	172.57	7.51	61.69	6 56 17	3610.5	-3.41	165.93
100.00	13 48 37	2583.56	-29.87	65.85	14.95	91.21	14 31 41	1983.6	-29.38	57.08
100.00	6 55 11	3987.65	1.74	155.43	6.75	60.15	8 1 38	3387.6	-2.25	148.91
110.00	15 23 20	2287.27	-33.83	43.08	14.69	95.22	16 1 27	1687.3	-32.74	34.02
110.00	7 36 58	3856.71	5.11	143.41	4.65	56.15	8 41 14	3256.7	.63	137.19

DIFFERENTIAL CORRECTIONS
TDE .0247 TRA -.4491 TC3 2.0729 BAU .5836
RDE -.4960 RRA -.1096 RC3 .1632 FAU .11505
FDE .5517 FRA -.8350 FC3-4.7447 BSP 6642
BDE .4966 BRA .4623 BC3 2.0793 FSP 1178

MID-COURSE EXECUTION ACCURACY
SGT 1991.1 SGR 654.4 SG3 392.2
RRT .2699 RRF -.3087 RTF -.8383
SGB 2095.8 R23 -.0597 R13 -.8406
SG1 1999.7 SG2 627.4 THA 5.62

ORBIT DETERMINATION ACCURACY
ST 190.2 SR 621.8 SS 478.0
CRT -.0936 CRS .8571 CST -.4960
LSA 759.4 MSA 259.2 SSA 86.3
EL1 622.1 EL2 189.3 ALF 91.81

LAUNCH DATE DEC 22 1964 FLIGHT TIME 168.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 388.624 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.882 GAL 4.74 AZL 89.29 HCA 119.55 SMA 202.36 ECC .28420 INC .7117 V1 30.277
RP 238.95 LAP .62 LOP 209.74 VP 21.330 GAP 12.88 AZP 90.35 TAL 21.66 TAP 141.21 RCA 144.85 APO 259.87 V2 22.991
RC 175.790 GL 5.28 GP 4.17 ZAL 50.38 ZAP 161.63 ETS 165.84 ZAE 158.00 ETE 10.95 ZAC 94.35 ETC 255.81 CLP 162.09

PLANETOCENTRIC CONIC

C3 20.783 VHL 4.559 DLA 19.70 RAL 144.54 RAD 6567.8 VEL 11.923 PTH 2.12 VHP 6.947 DPA .15 RAP 193.05 ECC 1.3420

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 9 26	2888.83	-28.31	88.32	13.83	89.56	12 57 35	2288.8	-28.08	79.66
90.00	5 43 40	4202.31	.11	172.11	6.40	61.68	6 53 42	3602.3	-3.67	165.48
100.00	13 43 13	2586.41	-29.87	66.06	13.82	91.10	14 26 19	1986.4	-29.40	57.29
100.00	6 52 34	3979.96	1.48	155.01	5.64	60.14	7 58 54	3380.0	-2.51	148.49
110.00	15 18 13	2289.15	-33.84	43.23	13.56	95.13	15 56 23	1689.2	-32.76	34.16
110.00	7 34 2	3849.98	4.85	143.05	3.54	56.12	8 38 12	3250.0	.37	136.83

DIFFERENTIAL CORRECTIONS
TDE .0156 TRA -.4212 TC3 2.1143 BAU .5896
RDE -.4922 RRA -.1007 RC3 .1801 FAU .12012
FDE .5822 FRA -.9292 FC3-5.0039 BSP 6720
BDE .4924 BRA .4331 BC3 2.1220 FSP 1249

MID-COURSE EXECUTION ACCURACY
SGT 2008.2 SGR 654.0 SG3 413.4
RRT .2894 RRF -.3308 RTF -.8413
SGB 2112.0 R23 -.0641 R13 -.8438
SG1 2018.0 SG2 623.0 THA 5.95

ORBIT DETERMINATION ACCURACY
ST 179.4 SR 619.9 SS 499.5
CRT -.0451 CRS .8495 CST -.4634
LSA 768.1 MSA 261.9 SSA 86.1
EL1 620.0 EL2 179.2 ALF 90.82

LAUNCH DATE DEC 22 1964 FLIGHT TIME 170.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 391.984 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.824 GAL 4.82 AZL 89.32 HCA 120.50 SMA 201.16 ECC .28045 INC .6849 V1 30.277
RP 238.63 LAP .59 LOP 210.69 VP 21.273 GAP 12.32 AZP 90.35 TAL 22.28 TAP 142.78 RCA 144.74 APO 257.57 V2 23.024
RC 178.086 GL 5.09 GP 4.31 ZAL 49.46 ZAP 160.79 ETS 166.02 ZAE 158.65 ETE 11.85 ZAC 94.52 ETC 255.81 CLP 161.26

PLANETOCENTRIC CONIC

C3 20.595 VHL 4.538 DLA 19.82 RAL 143.56 RAD 6567.8 VEL 11.915 PTH 2.12 VHP 6.777 DPA .24 RAP 193.22 ECC 1.3389

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 4 12	2891.59	-28.31	88.52	12.73	89.46	12 52 23	2291.6	-28.09	79.86
90.00	5 41 5	4195.21	-.12	171.71	5.33	61.68	6 51 0	3595.2	-3.90	165.08
100.00	13 38 7	2588.72	-29.88	66.23	12.72	91.01	14 21 16	1988.7	-29.42	57.46
100.00	6 49 51	3973.31	1.25	154.64	4.57	60.13	7 56 4	3373.3	-2.73	148.12
110.00	15 13 24	2290.64	-33.85	43.35	12.47	95.07	15 51 34	1690.6	-32.78	34.27
110.00	7 31 4	3844.16	4.63	142.75	2.46	56.09	8 35 8	3244.2	.15	136.53

DIFFERENTIAL CORRECTIONS
TDE .0103 TRA -.3912 TC3 2.1570 BAU .5964
RDE -.4885 RRA -.0916 RC3 .1981 FAU .12545
FDE .6123 FRA-1.0301 FC3-5.2732 BSP 6724
BDE .4886 BRA .4018 BC3 2.1661 FSP 1322

MID-COURSE EXECUTION ACCURACY
SGT 2027.0 SGR 654.1 SG3 435.6
RRT .3082 RRF -.3540 RTF -.8449
SGB 2129.9 R23 -.0703 R13 -.8478
SG1 2038.0 SG2 618.9 THA 6.26

ORBIT DETERMINATION ACCURACY
ST 168.6 SR 617.9 SS 520.5
CRT -.0179 CRS .8416 CST -.4464
LSA 777.0 MSA 264.5 SSA 85.7
EL1 617.9 EL2 168.6 ALF 90.30

LAUNCH DATE DEC 22 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 395.376 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.769 GAL 4.90 AZL 89.34 HCA 121.46 SMA 200.03 ECC .27692 INC .6575 V1 30.277
RP 238.31 LAP .56 LOP 211.64 VP 21.222 GAP 11.77 AZP 90.34 TAL 22.88 TAP 144.33 RCA 144.64 APO 255.43 V2 23.056
RC 180.373 GL 4.90 GP 4.47 ZAL 48.57 ZAP 159.92 ETS 166.18 ZAE 159.34 ETE 12.85 ZAC 94.69 ETC 255.80 CLP 160.41

PLANETOCENTRIC CONIC

C3 20.428 VHL 4.520 DLA 19.92 RAL 142.62 RAD 6567.8 VEL 11.908 PTH 2.12 VHP 6.611 DPA .33 RAP 193.37 ECC 1.3362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 59 19	2893.70	-28.31	88.67	11.67	89.38	12 47 32	2293.7	-28.10	80.02
90.00	5 38 24	4189.21	-.31	171.38	4.30	61.68	6 48 13	3589.2	-4.09	164.74
100.00	13 33 21	2590.45	-29.88	66.36	11.66	90.94	14 16 32	1990.5	-29.43	57.59
100.00	6 47 2	3967.68	1.06	154.33	3.53	60.12	7 53 10	3367.7	-2.92	147.81
110.00	15 8 51	2291.69	-33.86	43.43	11.42	95.02	15 47 2	1691.7	-32.79	34.35
110.00	7 28 2	3839.21	4.44	142.49	1.43	56.07	8 32 1	3239.2	-.04	136.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0012 TRA -.3671 TC3 2.1860 BAU .6000 SGT 2037.1 SGR 654.8 SG3 458.8 ST 159.9 SR 615.6 SS 541.4
RDE -.4849 RRA -.0822 RC3 .2172 FAU .13102 RRT .3313 RRF -.3787 RTF -.8466 CRT .0446 CRS .8340 CST -.3993
FDE .6430 FRA-1.1363 FC3-5.5525 BSP 6846 SGB 2139.7 R23 -.0743 R13 -.8497 LSA 786.1 MSA 269.3 SSA 84.7
BDE .4849 BRA .3762 BC3 2.1968 FSP 1401 SG1 2049.8 SG2 614.0 THA 6.68 EL1 615.7 EL2 159.7 ALF 89.29

LAUNCH DATE DEC 22 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 398.798 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.717 GAL 4.98 AZL 89.37 HCA 122.41 SMA 198.97 ECC .27360 INC .6293 V1 30.277
RP 237.98 LAP .53 LOP 212.60 VP 21.174 GAP 11.22 AZP 90.34 TAL 23.46 TAP 145.88 RCA 144.53 APO 253.41 V2 23.089
RC 182.651 GL 4.70 GP 4.62 ZAL 47.71 ZAP 159.04 ETS 166.33 ZAE 160.05 ETE 13.97 ZAC 94.86 ETC 255.80 CLP 159.53

PLANETOCENTRIC CONIC

C3 20.280 VHL 4.503 DLA 19.99 RAL 141.70 RAD 6567.8 VEL 11.902 PTH 2.11 VHP 6.450 DPA .44 RAP 193.51 ECC 1.3338

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 54 47	2895.15	-28.31	88.78	10.64	89.33	12 43 2	2295.2	-28.10	80.12
90.00	5 35 35	4184.27	-.47	171.10	3.30	61.69	6 45 20	3584.3	-4.25	164.46
100.00	13 28 55	2591.61	-29.88	66.45	10.64	90.89	14 12 6	1991.6	-29.44	57.67
100.00	6 44 9	3963.04	.90	154.08	2.53	60.12	7 50 12	3363.0	-3.08	147.56
110.00	15 4 35	2292.31	-33.86	43.48	10.40	94.99	15 42 47	1692.3	-32.80	34.40
110.00	7 24 58	3835.11	4.29	142.27	.42	56.05	8 28 53	3235.1	-.20	136.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0050 TRA -.3417 TC3 2.2154 BAU .6041 SGT 2048.2 SGR 656.2 SG3 483.3 ST 151.3 SR 613.3 SS 562.2
RDE -.4814 RRA -.0724 RC3 .2375 FAU .13686 RRT .3542 RRF -.4047 RTF -.8487 CRT .0904 CRS .8267 CST -.3633
FDE .6742 FRA-1.2488 FC3-5.8424 BSP 6910 SGB 2150.8 R23 -.0800 R13 -.8522 LSA 795.7 MSA 273.9 SSA 83.6
BDE .4815 BRA .3493 BC3 2.2280 FSP 1485 SG1 2062.6 SG2 609.3 THA 7.10 EL1 613.4 EL2 150.6 ALF 88.64

LAUNCH DATE DEC 22 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 402.249 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.667 GAL 5.05 AZL 89.40 HCA 123.37 SMA 197.98 ECC .27046 INC .6006 V1 30.277
RP 237.65 LAP .50 LOP 213.56 VP 21.132 GAP 10.68 AZP 90.33 TAL 24.04 TAP 147.41 RCA 144.43 APO 251.52 V2 23.123
RC 184.919 GL 4.49 GP 4.79 ZAL 46.89 ZAP 158.13 ETS 166.46 ZAE 160.79 ETE 15.21 ZAC 95.04 ETC 255.79 CLP 158.64

PLANETOCENTRIC CONIC

C3 20.148 VHL 4.489 DLA 20.05 RAL 140.80 RAD 6567.8 VEL 11.897 PTH 2.11 VHP 6.293 DPA .57 RAP 193.64 ECC 1.3316

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 50 35	2895.94	-28.31	88.84	9.65	89.30	12 38 51	2295.9	-28.11	80.18
90.00	5 32 40	4180.38	-.60	170.89	2.33	61.69	6 42 21	3580.4	-4.38	164.25
100.00	13 24 47	2592.18	-29.88	66.49	9.65	90.87	14 8 0	1992.2	-29.44	57.71
100.00	6 41 9	3959.37	.78	153.88	1.57	60.12	7 47 9	3359.4	-3.20	147.35
110.00	15 0 35	2292.48	-33.86	43.49	9.41	94.98	15 38 48	1692.5	-32.80	34.41
110.00	7 21 51	3831.83	4.16	142.10	359.46	56.04	8 25 43	3231.8	-.32	135.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0080 TRA -.3153 TC3 2.2454 BAU .6088 SGT 2060.9 SGR 658.4 SG3 509.0 ST 142.4 SR 610.7 SS 582.4
RDE -.4780 RRA -.0622 RC3 .2591 FAU .14304 RRT .3767 RRF -.4318 RTF -.8512 CRT .1135 CRS .8189 CST -.3446
FDE .7046 FRA-1.3687 FC3-6.1461 BSP 6909 SGB 2163.5 R23 -.0872 R13 -.8551 LSA 805.0 MSA 278.4 SSA 82.6
BDE .4781 BRA .3214 BC3 2.2603 FSP 1570 SG1 2077.1 SG2 605.1 THA 7.50 EL1 610.9 EL2 141.4 ALF 88.40

LAUNCH DATE DEC 22 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 405.727 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.620 GAL 5.12 AZL 89.43 HCA 124.33 SMA 197.04 ECC .26751 INC .5711 V1 30.277
RP 237.31 LAP .47 LOP 214.52 VP 21.094 GAP 10.15 AZP 90.32 TAL 24.60 TAP 148.93 RCA 144.33 APO 249.75 V2 23.157
RC 187.176 GL 4.28 GP 4.97 ZAL 46.10 ZAP 157.20 ETS 166.59 ZAE 161.54 ETE 16.61 ZAC 95.22 ETC 255.79 CLP 157.72

PLANETOCENTRIC CONIC

C3 20.031 VHL 4.476 DLA 20.08 RAL 139.95 RAD 6567.8 VEL 11.892 PTH 2.11 VHP 6.140 DPA .71 RAP 193.75 ECC 1.3297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 46 46	2896.03	-28.31	88.84	8.70	89.29	12 35 2	2296.0	-28.11	80.19
90.00	5 29 39	4177.51	-.69	170.73	1.40	61.69	6 39 16	3577.5	-4.47	164.09
100.00	13 21 0	2592.13	-29.88	66.49	8.70	90.87	14 4 12	1992.1	-29.44	57.71
100.00	6 38 5	3956.65	.69	153.73	.64	60.11	7 44 2	3356.6	-3.30	147.20
110.00	14 56 53	2292.18	-33.86	43.47	8.46	95.00	15 35 5	1692.2	-32.80	34.39
110.00	7 18 42	3829.36	4.07	141.97	358.53	56.03	8 22 31	3229.4	-.42	135.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0138 TRA -.2941 TC3 2.2631 BAU .6107 SGT 2065.1 SGR 661.6 SG3 535.8 ST 135.9 SR 608.0 SS 602.8
RDE -.4746 RRA -.0516 RC3 .2818 FAU .14944 RRT .4025 RRF -.4601 RTF -.8521 CRT .1660 CRS .8120 CST -.2998
FDE .7361 FRA-1.4938 FC3-6.4588 BSP 7002 SGB 2168.5 R23 -.0933 R13 -.8566 LSA 815.0 MSA 284.1 SSA 81.2
BDE .4748 BRA .2985 BC3 2.2806 FSP 1664 SG1 2083.8 SG2 600.2 THA 8.02 EL1 608.4 EL2 133.9 ALF 87.77

LAUNCH DATE DEC 22 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 409.230 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.575	GAL	5.18	AZL	89.46	HCA	125.29	SMA	196.16	ECC	.26472	INC	.5408	V1	30.277
RP	236.98	LAP	.44	LOP	215.48	VP	21.060	GAP	9.63	AZP	90.31	TAL	25.14	TAP	150.43	RCA	144.23	APO	248.09	V2	23.191
RC	189.421	GL	4.06	GP	5.15	ZAL	45.33	ZAP	156.25	ETS	166.70	ZAE	162.32	ETE	18.19	ZAC	95.40	ETC	255.78	CLP	156.78

PLANETOCENTRIC CONIC

C3	19.928	VHL	4.464	DLA	20.10	RAL	139.12	RAD	6567.8	VEL	11.887	PTH	2.11	VHP	5.992	DPA	.86	RAP	193.85	ECC	1.3280

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 43 17	2895.43	-28.31	88.80	7.78	89.32	12 31 32	2295.4	-28.10	80.14
90.00	5 26 30	4175.65	-.75	170.62	.50	61.69	6 36 6	3575.6	-4.53	163.98
100.00	13 17 33	2591.47	-29.88	66.44	7.78	90.90	14 0 44	1991.5	-29.44	57.66
100.00	6 34 56	3954.84	.62	153.63	359.74	60.11	7 40 51	3354.8	-3.36	147.10
110.00	14 53 27	2291.41	-33.86	43.41	7.54	95.03	15 31 38	1691.4	-32.79	34.33
110.00	7 15 31	3827.66	4.00	141.88	357.63	56.02	8 19 18	3227.7	-.48	135.67

DIFFERENTIAL CORRECTIONS

TDE	-.0166	TRA	-.2719	TC3	2.2804	BAU	.6130
RDE	-.4713	RRA	-.0404	RC3	.3061	FAU	.15619
FDE	.7668	FRA	-1.6272	FC3	-6.7854	BSP	7030
BDE	.4715	BRA	.2749	BC3	2.3009	FSP	1759

MID-COURSE EXECUTION ACCURACY

SGT	2069.7	SGR	666.0	SG3	564.0		
RRT	.4279	RRF	-.4895	RTF	-.8533		
SGB	2174.3	R23	-.1010	R13	-.8584		
SG1	2091.0	SG2	595.8	THA	8.54		

ORBIT DETERMINATION ACCURACY

ST	128.9	SR	605.1	SS	622.6
CRT	.1957	CRS	.8047	CST	-.2726
LSA	824.8	MSA	289.4	SSA	79.8
EL1	605.7	EL2	126.3	ALF	87.50

LAUNCH DATE DEC 22 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 412.757 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.532	GAL	5.25	AZL	89.49	HCA	126.26	SMA	195.33	ECC	.26210	INC	.5099	V1	30.277
RP	236.64	LAP	.41	LOP	216.45	VP	21.030	GAP	9.12	AZP	90.30	TAL	25.66	TAP	151.92	RCA	144.13	APO	246.53	V2	23.226
RC	191.655	GL	3.83	GP	5.34	ZAL	44.61	ZAP	155.27	ETS	166.80	ZAE	163.11	ETE	19.99	ZAC	95.59	ETC	255.78	CLP	155.82

PLANETOCENTRIC CONIC

C3	19.836	VHL	4.454	DLA	20.09	RAL	138.32	RAD	6567.8	VEL	11.883	PTH	2.11	VHP	5.847	DPA	1.04	RAP	193.93	ECC	1.3264

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 40 9	2894.13	-28.31	88.71	6.90	89.36	12 28 23	2294.1	-28.10	80.05
90.00	5 23 16	4174.76	-.78	170.57	359.64	61.69	6 32 50	3574.8	-4.55	163.93
100.00	13 14 24	2590.19	-29.88	66.34	6.89	90.95	13 57 35	1990.2	-29.43	57.57
100.00	6 31 41	3953.93	.59	153.58	358.87	60.11	7 37 35	3353.9	-3.39	147.05
110.00	14 50 18	2290.16	-33.85	43.31	6.65	95.09	15 28 28	1690.2	-32.77	34.24
110.00	7 12 17	3826.71	3.97	141.83	356.77	56.02	8 16 4	3226.7	-.52	135.62

DIFFERENTIAL CORRECTIONS

TDE	-.0182	TRA	-.2511	TC3	2.2934	BAU	.6145
RDE	-.4679	RRA	-.0288	RC3	.3518	FAU	.16323
FDE	.7972	FRA	-1.7674	FC3	-7.1243	BSP	7047
BDE	.4682	BRA	.2528	BC3	2.3173	FSP	1860

MID-COURSE EXECUTION ACCURACY

SGT	2071.8	SGR	671.7	SG3	593.5		
RRT	.4538	RRF	-.5196	RTF	-.8541		
SGB	2177.9	R23	-.1094	R13	-.8600		
SG1	2096.0	SG2	591.7	THA	9.10		

ORBIT DETERMINATION ACCURACY

ST	122.3	SR	602.1	SS	642.2
CRT	.2157	CRS	.7976	CST	-.2523
LSA	834.8	MSA	294.7	SSA	78.5
EL1	602.7	EL2	119.3	ALF	87.39

LAUNCH DATE DEC 22 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 416.308 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.491	GAL	5.31	AZL	89.52	HCA	127.23	SMA	194.55	ECC	.25963	INC	.4780	V1	30.277
RP	236.29	LAP	.38	LOP	217.42	VP	21.004	GAP	8.61	AZP	90.29	TAL	26.17	TAP	153.40	RCA	144.04	APO	245.06	V2	23.261
RC	193.877	GL	3.59	GP	5.54	ZAL	43.91	ZAP	154.27	ETS	166.90	ZAE	163.92	ETE	22.04	ZAC	95.78	ETC	255.77	CLP	154.84

PLANETOCENTRIC CONIC

C3	19.755	VHL	4.445	DLA	20.07	RAL	137.55	RAD	6567.8	VEL	11.880	PTH	2.11	VHP	5.707	DPA	1.23	RAP	194.00	ECC	1.3251

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 37 22	2892.11	-28.31	88.56	6.04	89.44	12 25 34	2292.1	-28.09	79.90
90.00	5 19 55	4174.81	-.77	170.58	358.80	61.69	6 29 30	3574.8	-4.55	163.93
100.00	13 11 35	2588.27	-29.88	66.20	6.04	91.02	13 54 44	1988.3	-29.41	57.43
100.00	6 28 22	3953.89	.59	153.58	358.04	60.11	7 34 16	3353.9	-3.39	147.05
110.00	14 47 26	2288.43	-33.84	43.17	5.78	95.17	15 25 34	1688.4	-32.75	34.11
110.00	7 9 1	3826.50	3.96	141.82	355.94	56.02	8 12 48	3226.5	-.53	135.61

DIFFERENTIAL CORRECTIONS

TDE	-.0184	TRA	-.2314	TC3	2.3028	BAU	.6155
RDE	-.4645	RRA	-.0165	RC3	.3592	FAU	.17062
FDE	.8271	FRA	-1.9152	FC3	-7.4774	BSP	7054
BDE	.4649	BRA	.2320	BC3	2.3307	FSP	1967

MID-COURSE EXECUTION ACCURACY

SGT	2071.7	SGR	679.0	SG3	624.4		
RRT	.4799	RRF	-.5505	RTF	-.8547		
SGB	2180.1	R23	-.1188	R13	-.8614		
SG1	2099.3	SG2	587.9	THA	9.71		

ORBIT DETERMINATION ACCURACY

ST	115.8	SR	598.9	SS	661.3
CRT	.2227	CRS	.7906	CST	-.2420
LSA	844.7	MSA	299.8	SSA	77.2
EL1	599.5	EL2	112.8	ALF	87.44

LAUNCH DATE DEC 22 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 419.880 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.453	GAL	5.36	AZL	89.55	HCA	128.20	SMA	193.81	ECC	.25730	INC	.4450	V1	30.277
RP	235.94	LAP	.35	LOP	218.39	VP	20.981	GAP	8.11	AZP	90.28	TAL	26.67	TAP	154.87	RCA	143.95	APO	243.68	V2	23.297
RC	196.086	GL	3.34	GP	5.76	ZAL	43.24	ZAP	153.24	ETS	166.98	ZAE	164.73	ETE	24.40	ZAC	95.98	ETC	255.77	CLP	153.82

PLANETOCENTRIC CONIC

C3	19.682	VHL	4.436	DLA	20.03	RAL	136.81	RAD	6567.8	VEL	11.877	PTH	2.11	VHP	5.571	DPA	1.44	RAP	194.05	ECC	1.3239

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 34 55	2889.40	-28.31	88.36	5.22	89.54	12 23 4	2289.4	-28.08	79.70
90.00	5 16 28	4175.79	-.74	170.63	357.99	61.69	6 26 4	3575.8	-4.52	163.99
100.00	13 9 5	2585.73	-29.87	66.01	5.21	91.12	13 52 11	1985.7	-29.40	57.24
100.00	6 24 59	3954.69	.62	153.62	357.24	60.11	7 30 53	3354.7	-3.36	147.10
110.00	14 44 50	2286.20	-33.82	43.00	4.95	95.27	15 22 56	1686.2	-32.73	33.94
110.00	7 5 44	3826.99	3.98	141.85	355.14	56.02	8 9 31	3227.0	-.51	135.64

DIFFERENTIAL CORRECTIONS

TDE	-.0154	TRA	-.2108	TC3	2.3120	BAU	.6169
RDE	-.4610	RRA	-.0035	RC3	.3884	FAU	.17840
FDE	.8545	FRA	-2.0732	FC3	-7.8471	BSP	6989
BDE	.4613	BRA	.2109	BC3	2.3444	FSP	2074

MID-COURSE EXECUTION ACCURACY

SGT	2071.9	SGR	687.9	SG3	657.0		
RRT	.5053	RRF	-.5817	RTF	-.8556		
SGB	2183.1	R23	-.1296	R13	-.8633		
SG1	2103.3	SG2	584.8	THA	10.33		

ORBIT DETERMINATION ACCURACY

ST	108.4	SR	595.5	SS	679.5
CRT	.1952	CRS	.7828	CST	-.2585
LSA	854.1	MSA	304.7	SSA	76.0
EL1	595.9	EL2	106.2	ALF	87.90

LAUNCH DATE DEC 22 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 423.475 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.416	GAL	5.42	AZL	89.59	HCA	129.18	SMA	193.12	ECC	.25511	INC	.4111
RP	235.59	LAP	.32	LOP	219.37	VP	20.963	GAP	7.62	AZP	90.26	TAL	27.14	TAP	156.32	RCA	143.86	APO	242.39
RC	198.280	GL	3.09	GP	5.98	ZAL	42.61	ZAP	152.19	ETS	167.06	ZAE	165.54	ETE	27.13	ZAC	96.19	ETC	255.76

V1	30.277	V2	23.333	CLP	152.79														

PLANETOCENTRIC CONIC

C3	19.619	VHL	4.429	DLA	19.96	RAL	136.10	RAD	6567.8	VEL	11.874	PTH	2.11	VHP	5.439	DPA	1.67	RAP	194.09

ECC	1.3229	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	11 32 48	2885.99	-28.32	88.11	4.42	89.66	12 20 54	2286.0	-28.06	79.45							
		90.00	5 12 55	4177.66	-.68	170.74	357.22	61.69	6 22 33	3577.7	-4.46	164.09							
		100.00	13 6 53	2582.57	-29.87	65.78	4.41	91.25	13 49 56	1982.6	-29.38	57.01							
		100.00	6 21 30	3956.32	.67	153.71	356.46	60.11	7 27 27	3356.3	-3.31	147.19							
		110.00	14 42 29	2283.48	-33.81	42.79	4.14	95.39	15 20 33	1683.5	-32.69	33.73							
		110.00	7 2 24	3828.17	4.02	141.91	354.37	56.03	8 6 12	3228.2	-.46	135.70							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0031	TRA	-.1839	TC3	2.3328	BAU	.6217	SGT	2082.0	SGR	698.8	SG3	692.1	ST	98.1	SR	591.4	SS	695.0
RDE	-.4571	RRA	.0106	RC3	.4201	FAU	.18682	RRT	.5277	RRF	-.6131	RTF	-.8583	CRT	.0473	CRS	.7721	CST	-.3600
FDE	.8744	FRA	-2.2456	FC3	-8.2440	BSP	6724	SGB	2196.2	R23	-.1428	R13	-.8671	LSA	860.9	MSA	309.3	SSA	75.0
BDE	.4571	BRA	.1842	BC3	2.3704	FSP	2172	SG1	2117.2	SG2	583.8	THA	10.88	EL1	591.5	EL2	98.0	ALF	89.54

LAUNCH DATE DEC 22 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 427.086 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.381	GAL	5.47	AZL	89.62	HCA	130.16	SMA	192.47	ECC	.25304	INC	.3761
RP	235.24	LAP	.29	LOP	220.34	VP	20.948	GAP	7.13	AZP	90.24	TAL	27.59	TAP	157.75	RCA	143.77	APO	241.18
RC	200.460	GL	2.83	GP	6.21	ZAL	42.01	ZAP	151.11	ETS	167.14	ZAE	166.34	ETE	30.29	ZAC	96.40	ETC	255.76

V1	30.277	V2	23.369	CLP	151.73														

PLANETOCENTRIC CONIC

C3	19.560	VHL	4.423	DLA	19.88	RAL	135.42	RAD	6567.8	VEL	11.872	PTH	2.11	VHP	5.311	DPA	1.91	RAP	194.11

ECC	1.3219	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	11 31 2	2881.80	-28.32	87.80	3.66	89.82	12 19 4	2281.8	-28.04	79.15							
		90.00	5 9 16	4180.43	-.59	170.89	356.47	61.69	6 18 57	3580.4	-4.37	164.25							
		100.00	13 5 2	2578.70	-29.86	65.49	3.64	91.40	13 48 1	1978.7	-29.35	56.72							
		100.00	6 17 58	3958.77	.76	153.84	355.72	60.12	7 23 57	3358.8	-3.22	147.32							
		110.00	14 40 26	2280.20	-33.79	42.54	3.36	95.54	15 18 27	1680.2	-32.65	33.49							
		110.00	6 59 3	3830.03	4.09	142.00	353.64	56.03	8 2 53	3230.0	-.39	135.79							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0155	TRA	-.1847	TC3	2.2968	BAU	.6121	SGT	2047.6	SGR	712.0	SG3	725.4	ST	99.7	SR	588.6	SS	716.7
RDE	-.4542	RRA	.0244	RC3	.4517	FAU	.19471	RRT	.5591	RRF	-.6445	RTF	-.8532	CRT	.2011	CRS	.7707	CST	-.2451
FDE	.9127	FRA	-2.4062	FC3	-8.6179	BSP	7057	SGB	2167.8	R23	-.1519	R13	-.8635	LSA	875.1	MSA	314.4	SSA	73.3
BDE	.4544	BRA	.1863	BC3	2.3408	FSP	2316	SG1	2089.2	SG2	578.6	THA	11.93	EL1	588.9	EL2	97.6	ALF	87.99

LAUNCH DATE DEC 22 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 430.718 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.348	GAL	5.52	AZL	89.66	HCA	131.14	SMA	191.86	ECC	.25110	INC	.3403
RP	234.89	LAP	.26	LOP	221.32	VP	20.936	GAP	6.65	AZP	90.22	TAL	28.03	TAP	159.17	RCA	143.68	APO	240.03
RC	202.623	GL	2.56	GP	6.46	ZAL	41.44	ZAP	150.00	ETS	167.21	ZAE	167.13	ETE	33.97	ZAC	96.62	ETC	255.75

V1	30.277	V2	23.405	CLP	150.64														

PLANETOCENTRIC CONIC

C3	19.508	VHL	4.417	DLA	19.78	RAL	134.77	RAD	6567.8	VEL	11.870	PTH	2.11	VHP	5.187	DPA	2.18	RAP	194.11

ECC	1.3211	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	11 29 35	2876.93	-28.32	87.45	2.92	90.00	12 17 32	2276.9	-28.02	78.79							
		90.00	5 5 32	4184.05	-.48	171.09	355.75	61.69	6 15 16	3584.0	-4.26	164.45							
		100.00	13 3 28	2574.22	-29.85	65.15	2.89	91.57	13 46 22	1974.2	-29.32	56.39							
		100.00	6 14 21	3961.99	.87	154.02	355.00	60.12	7 20 22	3362.0	-3.11	147.50							
		110.00	14 38 38	2276.43	-33.76	42.25	2.60	95.71	15 16 35	1676.4	-32.60	33.20							
		110.00	6 55 39	3832.54	4.19	142.14	352.93	56.04	7 59 32	3232.5	-.30	135.93							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0120	TRA	-.1723	TC3	2.2863	BAU	.6096	SGT	2033.6	SGR	727.6	SG3	762.1	ST	94.8	SR	584.9	SS	734.5
RDE	-.4506	RRA	.0396	RC3	.4866	FAU	.20343	RRT	.5841	RRF	-.6755	RTF	-.8518	CRT	.1570	CRS	.7646	CST	-.2750
FDE	.9395	FRA	-2.5862	FC3	-9.0279	BSP	7027	SGB	2159.8	R23	-.1652	R13	-.8639	LSA	885.4	MSA	318.6	SSA	72.1
BDE	.4507	BRA	.1768	BC3	2.3375	FSP	2445	SG1	2081.3	SG2	577.0	THA	12.80	EL1	585.1	EL2	93.6	ALF	88.50

LAUNCH DATE DEC 22 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 434.368 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.317	GAL	5.56	AZL	89.70	HCA	132.12	SMA	191.28	ECC	.24926	INC	.3031
RP	234.53	LAP	.22	LOP	222.31	VP	20.927	GAP	6.19	AZP	90.20	TAL	28.45	TAP	160.57	RCA	143.60	APO	238.96
RC	204.770	GL	2.28	GP	6.72	ZAL	40.89	ZAP	148.85	ETS	167.28	ZAE	167.87	ETE	38.27	ZAC	96.84	ETC	255.75

V1	30.277	V2	23.442	CLP	149.52														

PLANETOCENTRIC CONIC

C3	19.461	VHL	4.411	DLA	19.66	RAL	134.15	RAD	6567.8	VEL	11.868	PTH	2.11	VHP	5.067	DPA	2.48	RAP	194.10

ECC	1.3203	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	11 28 27	2871.34	-28.32	87.04	2.20	90.20	12 16 19	2271.3	-27.99	78.39							
		90.00	5 1 42	4188.50	-.33	171.34	355.05	61.68	6 11 30	3588.5	-4.12	164.70							
		100.00	13 2 11	2569.08	-29.84	64.77	2.17	91.77	13 45 0	1969.1	-29.28	56.01							
		100.00	6 10 39	3965.98	1.00	154.24	354.31	60.12	7 16 45	3366.0	-2.98	147.72							
		110.00	14 37 6	2272.13	-33.73	41.91	1.87	95.90	15 14 58	1672.1	-32.55	32.88							
		110.00	6 52 13	3835.70	4.31	142.30	352.25	56.06	7 56 9	3235.7	-.18	136.09							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0073	TRA	-.1620	TC3	2.2702	BAU	.6062	SGT	2015.4	SGR	745.8	SG3	800.1	ST	90.5	SR	581.0	SS	751.6
RDE	-.4469	RRA	.0558	RC3	.5236	FAU	.21247	RRT	.6078	RRF	-.7056	RTF	-.8498	CRT	.0913	CRS	.7584	CST	-.3219
FDE	.9639	FRA	-2.7748	FC3	-9.4517	BSP	6982	SGB	2149.0	R23	-.1797	R13	-.8640	LSA	895.3	MSA	322.5	SSA	70.9
BDE	.4469	BRA	.1713	BC3	2.3298	FSP	2577	SG1	2070.2	SG2	576.5	THA	13.76	EL1	581.1	EL2	90.1	ALF	89.17

LAUNCH DATE DEC 22 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 438.036 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.287	GAL	5.61	AZL	89.74	HCA	133.11	SMA	190.74	ECC	.24754	INC	.2646	V1	30.277
RP	234.17	LAP	.19	LOP	223.29	VP	20.922	GAP	5.73	AZP	90.18	TAL	28.85	TAP	161.96	RCA	143.52	APO	237.95	V2	23.479
RC	206.900	GL	1.99	GP	6.99	ZAL	40.38	ZAP	147.68	ETS	167.34	ZAE	168.56	ETE	43.29	ZAC	97.07	ETC	255.74	CLP	148.37

PLANETOCENTRIC CONIC

C3	19.419	VHL	4.407	DLA	19.52	RAL	133.55	RAD	6567.8	VEL	11.866	PTH	2.10	VHP	4.950	DPA	2.79	RAP	194.07	ECC	1.3196

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 27 38	2865.04	-28.31	86.58	1.51	90.43	12 15 23	2265.0	-27.95	77.93
90.00	4 57 46	4193.77	-.16	171.63	354.38	61.68	6 7 39	3593.8	-3.95	165.00
100.00	13 1 13	2563.30	-29.83	64.34	1.47	92.00	13 43 56	1963.3	-29.24	55.59
100.00	6 6 52	3970.73	1.16	154.50	353.64	60.13	7 13 3	3370.7	-2.82	147.98
110.00	14 35 49	2267.31	-33.70	41.54	1.15	96.12	15 13 36	1667.3	-32.48	32.52
110.00	6 48 45	3839.49	4.45	142.50	351.59	56.07	7 52 45	3239.5	-.03	136.29

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0033	TRA	-.1493	TC3	2.2592	BAU	.6045	SGT	2001.8	SGR	767.0	SG3	840.6	ST	86.0	SR	576.6	SS	766.6
RDE	-.4427	RRA	.0732	RC3	.5636	FAU	.22213	RRT	.6290	RRF	-.7349	RTF	-.8486	CRT	-.0699	CRS	.7502	CST	-.4279
FDE	.9809	FRA	-2.9768	FC3	-9.9031	BSP	6805	SGB	2143.7	R23	-.1956	R13	-.8653	LSA	903.4	MSA	326.3	SSA	70.0
BDE	.4427	BRA	.1663	BC3	2.3285	FSP	2703	SG1	2064.2	SG2	578.2	THA	14.73	EL1	576.6	EL2	85.8	ALF	90.61

LAUNCH DATE DEC 22 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 441.720 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.259	GAL	5.65	AZL	89.78	HCA	134.10	SMA	190.23	ECC	.24591	INC	.2248	V1	30.277
RP	233.80	LAP	.16	LOP	224.28	VP	20.919	GAP	5.27	AZP	90.16	TAL	29.23	TAP	163.33	RCA	143.45	APO	237.01	V2	23.517
RC	209.011	GL	1.69	GP	7.28	ZAL	39.90	ZAP	146.48	ETS	167.40	ZAE	169.17	ETE	49.10	ZAC	97.31	ETC	255.74	CLP	147.19

PLANETOCENTRIC CONIC

C3	19.379	VHL	4.402	DLA	19.36	RAL	132.99	RAD	6567.8	VEL	11.864	PTH	2.10	VHP	4.838	DPA	3.13	RAP	194.02	ECC	1.3189

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 27 9	2857.98	-28.31	86.06	.84	90.69	12 14 47	2258.0	-27.91	77.42
90.00	4 53 44	4199.85	.03	171.97	353.74	61.68	6 3 44	3599.8	-3.75	165.34
100.00	13 0 32	2556.83	-29.82	63.86	.80	92.25	13 43 9	1956.8	-29.18	55.12
100.00	6 3 2	3976.23	1.35	154.80	353.00	60.14	7 9 18	3376.2	-2.63	148.28
110.00	14 34 48	2261.92	-33.66	41.13	.46	96.37	15 12 30	1661.9	-32.41	32.11
110.00	6 45 15	3843.91	4.62	142.73	350.97	56.09	7 49 19	3243.9	.14	136.52

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0040	TRA	-.1498	TC3	2.2203	BAU	.5962	SGT	1965.7	SGR	791.1	SG3	880.6	ST	85.5	SR	573.0	SS	784.4
RDE	-.4391	RRA	.0909	RC3	.6047	FAU	.23157	RRT	.6507	RRF	-.7626	RTF	-.8432	CRT	-.0900	CRS	.7471	CST	-.4510
FDE	1.0077	FRA	-3.1756	FC	-10.3451	BSP	6884	SGB	2118.9	R23	-.2123	R13	-.8633	LSA	915.4	MSA	329.1	SSA	68.8
BDE	.4391	BRA	.1752	BC3	2.3011	FSP	2862	SG1	2038.2	SG2	579.4	THA	16.00	EL1	573.0	EL2	85.1	ALF	90.79

LAUNCH DATE DEC 22 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 445.421 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.233	GAL	5.68	AZL	89.82	HCA	135.09	SMA	189.75	ECC	.24437	INC	.1831	V1	30.277
RP	233.44	LAP	.13	LOP	225.28	VP	20.920	GAP	4.83	AZP	90.13	TAL	29.59	TAP	164.68	RCA	143.38	APO	236.12	V2	23.555
RC	211.104	GL	1.38	GP	7.58	ZAL	39.45	ZAP	145.24	ETS	167.46	ZAE	169.66	ETE	55.76	ZAC	97.56	ETC	255.73	CLP	145.98

PLANETOCENTRIC CONIC

C3	19.343	VHL	4.398	DLA	19.18	RAL	132.44	RAD	6567.8	VEL	11.863	PTH	2.10	VHP	4.729	DPA	3.50	RAP	193.94	ECC	1.3183

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 26 56	2850.22	-28.30	85.49	.19	90.97	12 14 27	2250.2	-27.87	76.86
90.00	4 49 36	4206.72	.26	172.36	353.11	61.68	5 59 43	3606.7	-3.53	165.72
100.00	13 0 8	2549.71	-29.80	63.34	.14	92.53	13 42 38	1949.7	-29.13	54.60
100.00	5 59 6	3982.46	1.56	155.14	352.39	60.14	7 5 29	3382.5	-2.42	148.62
110.00	14 34 1	2256.00	-33.61	40.67	359.78	96.63	15 11 37	1656.0	-32.33	31.67
110.00	6 41 43	3848.95	4.81	143.00	350.36	56.12	7 45 52	3248.9	.33	136.78

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0177	TRA	-.1405	TC3	2.2011	BAU	.5935	SGT	1945.9	SGR	819.2	SG3	924.8	ST	85.3	SR	568.1	SS	797.9
RDE	-.4344	RRA	.1108	RC3	.6505	FAU	.24208	RRT	.6683	RRF	-.7892	RTF	-.8409	CRT	-.3030	CRS	.7383	CST	-.5737
FDE	1.0168	FRA	-3.3987	FC	-10.8350	BSP	6661	SGB	2111.3	R23	-.2296	R13	-.8647	LSA	922.6	MSA	332.8	SSA	67.9
BDE	.4348	BRA	.1789	BC3	2.2952	FSP	2993	SG1	2028.8	SG2	584.5	THA	17.18	EL1	568.7	EL2	81.2	ALF	92.66

LAUNCH DATE DEC 22 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 449.137 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.207	GAL	5.72	AZL	89.86	HCA	136.09	SMA	189.30	ECC	.24293	INC	.1401	V1	30.277
RP	233.07	LAP	.10	LOP	226.27	VP	20.923	GAP	4.39	AZP	90.10	TAL	29.93	TAP	166.02	RCA	143.31	APO	235.28	V2	23.593
RC	213.179	GL	1.05	GP	7.90	ZAL	39.02	ZAP	143.97	ETS	167.53	ZAE	170.01	ETE	63.21	ZAC	97.81	ETC	255.73	CLP	144.74

PLANETOCENTRIC CONIC

C3	19.308	VHL	4.394	DLA	18.98	RAL	131.93	RAD	6567.8	VEL	11.861	PTH	2.10	VHP	4.624	DPA	3.89	RAP	193.86	ECC	1.3178

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 27 3	2841.69	-28.29	84.87	359.56	91.29	12 14 25	2241.7	-27.81	76.24
90.00	4 45 23	4214.39	.50	172.78	352.52	61.69	5 55 37	3614.4	-3.29	166.15
100.00	13 0 2	2541.88	-29.77	62.75	359.50	92.83	13 42 24	1941.9	-29.06	54.02
100.00	5 55 6	3989.44	1.80	155.53	351.80	60.16	7 1 35	3389.4	-2.19	149.01
110.00	14 33 29	2249.47	-33.56	40.17	359.12	96.92	15 10 59	1649.5	-32.24	31.18
110.00	6 38 7	3854.61	5.03	143.30	349.79	56.14	7 42 22	3254.6	.55	137.08

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0200	TRA	-.1463	TC3	2.1499	BAU	.5834	SGT	1900.3	SGR	850.3	SG3	967.3	ST	86.9	SR	564.3	SS	814.7
RDE	-.4305	RRA	.1308	RC3	.6970	FAU	.25211	RRT	.6847	RRF	-.8136	RTF	-.8333	CRT	-.3435	CRS	.7362	CST	-.6141
FDE	1.0394	FRA	-3.6129	FC	-11.3043	BSP	6714	SGB	2081.8	R23	-.2487	R13	-.8624	LSA	934.6	MSA	334.4	SSA	66.9
BDE	.4310	BRA	.1963	BC3	2.2601	FSP	3164	SG1	1996.5	SG2	589.8	THA	18.73	EL1	565.1	EL2	81.5	ALF	93.09

LAUNCH DATE DEC 22 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 452.868 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.184	GAL	5.75	AZL	89.90	HCA	137.09	SMA	188.87	ECC	.24157	INC	.0951
RP	232.70	LAP	.07	LOP	227.27	VP	20.928	GAP	3.96	AZP	90.07	TAL	30.26	TAP	167.34	RCA	143.25	APO	234.50
RC	215.236	GL	.72	GP	8.24	ZAL	38.63	ZAP	142.67	ETS	167.59	ZAE	170.17	ETE	71.32	ZAC	98.08	ETC	255.72

V1 30.277 V2 23.631 CLP 143.46

PLANETOCENTRIC CONIC

C3	19.275	VHL	4.390	DLA	18.75	RAL	131.44	RAD	6567.8	VEL	11.860	PTH	2.10	VHP	4.523	DPA	4.30	RAP	193.75

ECC 1.3172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 27 28	2832.43	-28.27	84.19	358.95	91.63	12 14 40	2232.4	-27.75	75.57
90.00	4 41 3	4222.85	.78	173.25	351.94	61.69	5 51 26	3622.9	-3.01	166.62
100.00	13 0 12	2533.37	-29.74	62.12	358.88	93.16	13 42 25	1933.4	-28.98	53.40
100.00	5 51 0	3997.14	2.06	155.95	351.22	60.17	6 57 37	3397.1	-1.93	149.43
110.00	14 33 13	2242.38	-33.50	39.62	358.47	97.24	15 10 35	1642.4	-32.13	30.66
110.00	6 34 29	3860.90	5.27	143.63	349.23	56.18	7 38 50	3260.9	.79	137.40

DIFFERENTIAL CORRECTIONS

TDE	.0289	TRA	-.1496	TC3	2.1047	BAU	.5756	SGT	1860.0	SGR	885.5
RDE	-.4260	RRA	.1526	RC3	.7475	FAU	.26279	RRT	.6975	RRF	-.8363
FDE	1.0512	FRA	-3.8416	FC	-11.8031	BSP	6624	SGB	2060.0	R23	-.2682
BDE	.4270	BRA	.2137	BC3	2.2336	FSP	3325	SG1	1971.0	SG2	598.8

MID-COURSE EXECUTION ACCURACY

SG3 1012.5 RTF -.8263 R13 -.8617 THA 20.33

ORBIT DETERMINATION ACCURACY

ST	91.2	SR	559.8	SS	829.1
CRT	-.4656	CRS	.7316	CST	-.6859
LSA	944.3	MSA	336.3	SSA	66.0
EL1	561.5	EL2	80.5	ALF	94.43

LAUNCH DATE DEC 22 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 456.614 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.161	GAL	5.78	AZL	89.95	HCA	138.09	SMA	188.48	ECC	.24028	INC	.0485
RP	232.32	LAP	.03	LOP	228.27	VP	20.937	GAP	3.54	AZP	90.04	TAL	30.56	TAP	168.65	RCA	143.19	APO	233.76
RC	217.275	GL	.37	GP	8.59	ZAL	38.26	ZAP	141.33	ETS	167.65	ZAE	170.13	ETE	79.80	ZAC	98.36	ETC	255.72

V1 30.277 V2 23.670 CLP 142.15

PLANETOCENTRIC CONIC

C3	19.243	VHL	4.387	DLA	18.51	RAL	130.97	RAD	6567.8	VEL	11.859	PTH	2.10	VHP	4.425	DPA	4.75	RAP	193.62

ECC 1.3167

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 28 10	2822.40	-28.25	83.46	358.35	91.99	12 15 12	2222.4	-27.68	74.84
90.00	4 36 38	4232.10	1.08	173.77	351.38	61.70	5 47 10	3632.1	-2.72	167.14
100.00	13 0 39	2524.14	-29.70	61.44	358.27	93.52	13 42 43	1924.1	-28.90	52.73
100.00	5 46 49	4005.59	2.34	156.41	350.68	60.19	6 53 35	3405.6	-1.64	149.89
110.00	14 33 10	2234.67	-33.43	39.03	357.84	97.59	15 10 25	1634.7	-32.02	30.08
110.00	6 30 47	3867.82	5.53	143.99	348.70	56.21	7 35 15	3267.8	1.05	137.76

DIFFERENTIAL CORRECTIONS

TDE	.0387	TRA	-.1557	TC3	2.0531	BAU	.5670	SGT	1814.7	SGR	924.9
RDE	-.4211	RRA	.1758	RC3	.8013	FAU	.27376	RRT	.7070	RRF	-.8572
FDE	1.0582	FRA	-4.0796	FC	-12.3164	BSP	6531	SGB	2036.8	R23	-.2878
BDE	.4229	BRA	.2348	BC3	2.2040	FSP	3492	SG1	1943.1	SG2	610.9

MID-COURSE EXECUTION ACCURACY

SG3 1059.1 RTF -.8177 R13 -.8611 THA 22.12

ORBIT DETERMINATION ACCURACY

ST	98.1	SR	555.2	SS	842.6
CRT	-.5760	CRS	.7270	CST	-.7442
LSA	953.6	MSA	338.0	SSA	65.1
EL1	558.1	EL2	79.8	ALF	95.93

LAUNCH DATE DEC 22 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 460.375 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.140	GAL	5.81	AZL	90.00	HCA	139.09	SMA	188.10	ECC	.23907	INC	.0000
RP	231.95	LAP	.00	LOP	229.28	VP	20.947	GAP	3.13	AZP	90.00	TAL	30.84	TAP	169.94	RCA	143.13	APO	233.07
RC	219.295	GL	.00	GP	8.97	ZAL	37.92	ZAP	139.96	ETS	167.72	ZAE	169.86	ETE	88.27	ZAC	98.65	ETC	255.72

V1 30.277 V2 23.709 CLP 140.81

PLANETOCENTRIC CONIC

C3	19.212	VHL	4.383	DLA	18.25	RAL	130.52	RAD	6567.8	VEL	11.857	PTH	2.10	VHP	4.332	DPA	5.23	RAP	193.47

ECC 1.3162

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 29 9	2811.59	-28.22	82.67	357.76	92.39	12 16 1	2211.6	-27.59	74.06
90.00	4 32 5	4242.15	1.40	174.33	350.85	61.71	5 42 47	3642.2	-2.39	167.70
100.00	13 1 23	2514.18	-29.66	60.70	357.67	93.91	13 43 17	1914.2	-28.80	52.00
100.00	5 42 33	4014.78	2.66	156.92	350.15	60.21	6 49 27	3414.8	-1.33	150.40
110.00	14 33 23	2226.34	-33.35	38.39	357.22	97.96	15 10 29	1626.3	-31.90	29.47
110.00	6 27 2	3875.39	5.81	144.39	348.19	56.26	7 31 37	3275.4	1.34	138.16

DIFFERENTIAL CORRECTIONS

TDE	.0495	TRA	-.1651	TC3	1.9952	BAU	.5579	SGT	1764.9	SGR	968.6
RDE	-.4159	RRA	.2004	RC3	.8586	FAU	.28500	RRT	.7129	RRF	-.8760
FDE	1.0602	FRA	-4.3241	FC	-12.8427	BSP	6426	SGB	2013.3	R23	-.3070
BDE	.4188	BRA	.2597	BC3	2.1721	FSP	3663	SG1	1913.3	SG2	626.6

MID-COURSE EXECUTION ACCURACY

SG3 1106.8 RTF -.8072 R13 -.8608 THA 24.12

ORBIT DETERMINATION ACCURACY

ST	107.6	SR	550.4	SS	855.3
CRT	-.6689	CRS	.7226	CST	-.7872
LSA	962.6	MSA	339.4	SSA	64.3
EL1	555.1	EL2	79.3	ALF	97.61

LAUNCH DATE DEC 22 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 464.149 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.120	GAL	5.83	AZL	90.05	HCA	140.10	SMA	187.75	ECC	.23792	INC	.0504
RP	231.57	LAP	-.03	LOP	230.29	VP	20.960	GAP	2.72	AZP	89.96	TAL	31.11	TAP	171.21	RCA	143.08	APO	232.42
RC	221.297	GL	-.38	GP	9.36	ZAL	37.60	ZAP	138.55	ETS	167.79	ZAE	169.37	ETE	96.37	ZAC	98.95	ETC	255.71

V1 30.277 V2 23.748 CLP 139.43

PLANETOCENTRIC CONIC

C3	19.182	VHL	4.380	DLA	17.96	RAL	130.10	RAD	6567.8	VEL	11.856	PTH	2.10	VHP	4.242	DPA	5.74	RAP	193.30

ECC 1.3157

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 30 27	2799.98	-28.19	81.82	357.19	92.81	12 17 7	2200.0	-27.50	73.22
90.00	4 27 25	4252.90	1.75	174.94	350.33	61.73	5 38 18	3652.9	-2.04	168.31
100.00	13 2 23	2503.47	-29.61	59.91	357.09	94.32	13 44 7	1903.5	-28.69	51.23
100.00	5 38 10	4024.74	2.99	157.47	349.64	60.24	6 45 15	3424.7	-.99	150.94
110.00	14 33 50	2217.36	-33.27	37.71	356.61	98.35	15 10 47	1617.4	-31.76	28.80
110.00	6 23 12	3883.62	6.13	144.82	347.70	56.30	7 27 56	3283.6	1.66	138.59

DIFFERENTIAL CORRECTIONS

TDE	.0609	TRA	-.1774	TC3	1.9306	BAU	.5484	SGT	1710.5	SGR	1017.0
RDE	-.4103	RRA	.2268	RC3	.9196	FAU	.29646	RRT	.7148	RRF	-.8930
FDE	1.0574	FRA	-4.5765	FC	-13.3803	BSP	6315	SGB	1990.0	R23	-.3250
BDE	.4148	BRA	.2879	BC3	2.1384	FSP	3838	SG1	1882.0	SG2	646.4

MID-COURSE EXECUTION ACCURACY

SG3 1155.6 RTF -.7944 R13 -.8612 THA 26.37

ORBIT DETERMINATION ACCURACY

ST	119.5	SR	545.4	SS	867.5
CRT	-.7424	CRS	.7186	CST	-.8152
LSA	971.7	MSA	340.5	SSA	63.4
EL1	552.7	EL2	79.0	ALF	99.43

LAUNCH DATE DEC 22 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 467.936 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.102	GAL	5.85	AZL	90.10	HCA	141.11	SMA	187.42	ECC	.23684	INC	.1028
RP	231.20	LAP	-.06	LOP	231.30	VP	20.976	GAP	2.32	AZP	89.92	TAL	31.35	TAP	172.47	RCA	143.03	APO	231.81
RC	223.281	GL	-.78	GP	9.78	ZAL	37.32	ZAP	137.10	ETS	167.87	ZAE	168.65	ETE	103.81	ZAC	99.27	ETC	255.71

PLANETOCENTRIC CONIC

C3	19.151	VHL	4.376	DLA	17.65	RAL	129.70	RAD	6567.8	VEL	11.855	PTH	2.10	VHP	4.156	DPA	6.28	RAP	193.12

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 32 1	2787.54	-28.14	80.92	356.62	93.26	12 18 29	2187.5	-27.39	72.33
90.00	4 22 38	4264.70	2.13	175.59	349.83	61.76	5 33 43	3664.7	-1.67	168.96
100.00	13 3 40	2491.99	-29.55	59.06	356.51	94.76	13 45 12	1892.0	-28.57	50.39
100.00	5 33 40	4035.48	3.36	158.06	349.15	60.28	6 40 56	3435.5	-.63	151.53
110.00	14 34 32	2207.71	-33.17	36.97	356.01	98.78	15 11 20	1607.7	-31.60	28.09
110.00	6 19 18	3892.52	6.46	145.29	347.23	56.36	7 24 11	3292.5	2.00	139.05

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0729	TRA	-.1936	TC3	1.8590	BAU	.5386	SGT	1651.4	SGR	1070.1	SG3	1205.3	ST	133.7	SR	540.2	SS	878.5
RDE	-.4042	RRA	.2548	RC3	.9845	FAU	.30810	RRT	.7121	RRF	-.9080	RTF	-.7786	CRT	-.7985	CRS	.7148	CST	-.8321
FDE	1.0477	FRA	-4.8342	FC	-13.9279	BSP	6202	SGB	1967.8	R23	-.3409	R13	-.8624	LSA	980.3	MSA	341.5	SSA	62.6
BDE	.4108	BRA	.3200	BC3	2.1036	FSP	4016	SG1	1850.0	SG2	670.7	THA	28.92	EL1	550.9	EL2	78.9	ALF	101.42

LAUNCH DATE DEC 22 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 471.737 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.084	GAL	5.87	AZL	90.16	HCA	142.13	SMA	187.12	ECC	.23582	INC	.1587
RP	230.82	LAP	-.10	LOP	232.32	VP	20.993	GAP	1.93	AZP	89.87	TAL	31.58	TAP	173.71	RCA	142.99	APO	231.24
RC	225.247	GL	-1.20	GP	10.21	ZAL	37.06	ZAP	135.62	ETS	167.95	ZAE	167.74	ETE	110.44	ZAC	99.60	ETC	255.70

PLANETOCENTRIC CONIC

C3	19.121	VHL	4.373	DLA	17.31	RAL	129.32	RAD	6567.8	VEL	11.853	PTH	2.10	VHP	4.074	DPA	6.86	RAP	192.91

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 33 54	2774.25	-28.09	79.95	356.07	93.75	12 20 8	2174.3	-27.27	71.38
90.00	4 17 43	4277.24	2.53	176.29	349.35	61.79	5 29 1	3677.2	-1.26	169.66
100.00	13 5 14	2479.69	-29.47	58.16	355.95	95.24	13 46 34	1879.7	-28.43	49.51
100.00	5 29 4	4047.03	3.74	158.69	348.68	60.32	6 36 31	3447.0	-.23	152.17
110.00	14 35 28	2197.35	-33.06	36.18	355.41	99.23	15 12 6	1597.3	-31.43	27.33
110.00	6 15 19	3902.14	6.82	145.80	346.77	56.42	7 20 21	3302.1	2.36	139.56

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0856	TRA	-.2131	TC3	1.7801	BAU	.5288	SGT	1588.0	SGR	1128.4	SG3	1255.8	ST	149.9	SR	534.8	SS	889.1
RDE	-.3977	RRA	.2847	RC3	1.0536	FAU	.31990	RRT	.7041	RRF	-.9213	RTF	-.7591	CRT	-.8415	CRS	.7114	CST	-.8402
FDE	1.0316	FRA	-5.0994	FC	-14.4842	BSP	6097	SGB	1948.1	R23	-.3534	R13	-.8650	LSA	988.9	MSA	342.3	SSA	61.7
BDE	.4068	BRA	.3556	BC3	2.0685	FSP	4197	SG1	1818.0	SG2	699.8	THA	31.84	EL1	549.8	EL2	78.8	ALF	103.56

LAUNCH DATE DEC 22 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 475.550 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.068	GAL	5.89	AZL	90.22	HCA	143.15	SMA	186.83	ECC	.23486	INC	.2177
RP	230.43	LAP	-.13	LOP	233.34	VP	21.012	GAP	1.55	AZP	89.83	TAL	31.79	TAP	174.94	RCA	142.95	APO	230.71
RC	227.193	GL	-1.64	GP	10.67	ZAL	36.83	ZAP	134.10	ETS	168.04	ZAE	166.65	ETE	116.23	ZAC	99.95	ETC	255.70

PLANETOCENTRIC CONIC

C3	19.091	VHL	4.369	DLA	16.94	RAL	128.95	RAD	6567.8	VEL	11.852	PTH	2.10	VHP	3.996	DPA	7.47	RAP	192.69

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 36 3	2760.08	-28.02	78.92	355.52	94.26	12 22 3	2160.1	-27.14	70.36
90.00	4 12 40	4290.67	2.96	177.04	348.89	61.83	5 24 10	3690.7	-.83	170.41
100.00	13 7 5	2466.55	-29.39	57.19	355.38	95.74	13 48 11	1866.6	-28.28	48.56
100.00	5 24 20	4059.42	4.16	159.38	348.22	60.37	6 31 59	3459.4	.19	152.85
110.00	14 36 40	2186.25	-32.93	35.34	354.82	99.72	15 13 6	1586.3	-31.24	26.52
110.00	6 11 14	3912.49	7.21	146.35	346.34	56.50	7 16 26	3312.5	2.76	140.10

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0989	TRA	-.2364	TC3	1.6935	BAU	.5192	SGT	1520.4	SGR	1191.7	SG3	1306.6	ST	168.0	SR	529.1	SS	898.6
RDE	-.3905	RRA	.3165	RC3	1.1269	FAU	.33174	RRT	.6900	RRF	-.9330	RTF	-.7349	CRT	-.8742	CRS	.7082	CST	-.8424
FDE	1.0073	FRA	-5.3678	FC	-15.0438	BSP	5998	SGB	1931.8	R23	-.3608	R13	-.8696	LSA	997.1	MSA	343.1	SSA	60.7
BDE	.4028	BRA	.3950	BC3	2.0341	FSP	4381	SG1	1787.0	SG2	733.9	THA	35.19	EL1	549.6	EL2	78.5	ALF	105.84

LAUNCH DATE DEC 22 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 479.376 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.052	GAL	5.90	AZL	90.28	HCA	144.17	SMA	186.56	ECC	.23395	INC	.2792
RP	230.05	LAP	-.16	LOP	234.36	VP	21.034	GAP	1.18	AZP	89.77	TAL	31.98	TAP	176.15	RCA	142.92	APO	230.21
RC	229.120	GL	-2.10	GP	11.16	ZAL	36.63	ZAP	132.55	ETS	168.14	ZAE	165.41	ETE	121.22	ZAC	100.32	ETC	255.70

PLANETOCENTRIC CONIC

C3	19.060	VHL	4.366	DLA	16.55	RAL	128.61	RAD	6567.8	VEL	11.851	PTH	2.10	VHP	3.922	DPA	8.12	RAP	192.45

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 38 31	2744.98	-27.94	77.82	354.98	94.80	12 24 16	2145.0	-26.98	69.28
90.00	4 7 27	4305.02	3.42	177.84	348.44	61.87	5 19 12	3705.0	-.36	171.21
100.00	13 9 12	2452.53	-29.29	56.16	354.83	96.27	13 50 5	1852.5	-28.11	47.55
100.00	5 19 27	4072.69	4.61	160.11	347.79	60.43	6 27 20	3472.7	.64	153.57
110.00	14 38 6	2174.37	-32.79	34.44	354.24	100.23	15 14 21	1574.4	-31.04	25.66
110.00	6 7 2	3923.62	7.63	146.94	345.93	56.58	7 12 26	3323.6	3.18	140.68

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1126	TRA	-.2637	TC3	1.5996	BAU	.5103	SGT	1450.2	SGR	1260.6	SG3	1357.9	ST	187.9	SR	523.1	SS	907.2
RDE	-.3825	RRA	.3504	RC3	1.2050	FAU	.34365	RRT	.6685	RRF	-.9431	RTF	-.7046	CRT	-.8994	CRS	.7052	CST	-.8400
FDE	.9735	FRA	-5.6403	FC	-15.6086	BSP	5910	SGB	1921.5	R23	-.3613	R13	-.8768	LSA	1005.0	MSA	344.1	SSA	59.8
BDE	.3987	BRA	.4386	BC3	2.0027	FSP	4564	SG1	1759.2	SG2	772.8	THA	39.06	EL1	550.3	EL2	78.1	ALF	108.29

LAUNCH DATE DEC 22 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 483.214 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.038	GAL	5.91	AZL	90.34	HCA	145.20	SMA	186.31	ECC	.23309	INC	.3443	V1	30.277
RP	229.67	LAP	-.20	LOP	235.38	VP	21.057	GAP	.81	AZP	89.72	TAL	32.14	TAP	177.34	RCA	142.88	APO	229.74	V2	23.948
RC	231.027	GL	-2.60	GP	11.68	ZAL	36.46	ZAP	130.95	ETS	168.26	ZAE	164.04	ETE	125.50	ZAC	100.70	ETC	255.70	CLP	132.01

PLANETOCENTRIC CONIC

C3	19.030	VHL	4.362	DLA	16.12	RAL	128.28	RAD	6567.8	VEL	11.850	PTH	2.10	VHP	3.853	DPA	8.80	RAP	192.19	ECC	1.3132

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 41 17	2728.91	-27.84	76.65	354.44	95.38	12 26 46	2128.9	-26.81	68.14
90.00	4 2 4	4320.34	3.91	178.70	348.02	61.93	5 14 4	3720.3	.13	172.07
100.00	13 11 37	2437.59	-29.17	55.06	354.28	96.84	13 52 15	1837.6	-27.92	46.48
100.00	5 14 25	4086.89	5.08	160.89	347.37	60.50	6 22 31	3486.9	1.12	154.35
110.00	14 39 48	2161.67	-32.64	33.48	353.65	100.78	15 15 50	1561.7	-30.81	24.74
110.00	6 2 43	3935.57	8.08	147.58	345.53	56.67	7 8 18	3335.6	3.64	141.30

DIFFERENTIAL CORRECTIONS

TDE	.1264	TRA	-.2951	TC3	1.4980	BAU	.5026
RDE	-.3737	RRA	.3066	RC3	1.2881	FAU	.35555
FDE	.9311	FRA	-5.9163	FC	-16.1751	BSP	5851
BDE	.3945	BRA	.4864	BC3	1.9757	FSP	4749

MID-COURSE EXECUTION ACCURACY

SGT	1377.8	SGR	1335.4	SG3	1409.4		
RRT	.6381	RRF	-.9519	RTF	-.6664		
SGB	1918.8	R23	-.3523	R13	-.8876		
SG1	1736.8	SG2	815.7	THA	43.60		

ORBIT DETERMINATION ACCURACY

ST	209.1	SR	516.9	SS	915.4
CRT	-.9190	CRS	.7030	CST	-.8347
LSA	1013.1	MSA	345.1	SSA	58.7
EL1	552.3	EL2	77.2	ALF	110.82

LAUNCH DATE DEC 22 1964 FLIGHT TIME 222.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 487.064 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.024	GAL	5.92	AZL	90.41	HCA	146.22	SMA	186.08	ECC	.23228	INC	.4125	V1	30.277
RP	229.28	LAP	-.23	LOP	236.41	VP	21.082	GAP	.45	AZP	89.66	TAL	32.29	TAP	178.52	RCA	142.86	APO	229.30	V2	23.988
RC	232.913	GL	-3.11	GP	12.22	ZAL	36.32	ZAP	129.32	ETS	168.38	ZAE	162.55	ETE	129.17	ZAC	101.11	ETC	255.70	CLP	130.42

PLANETOCENTRIC CONIC

C3	19.000	VHL	4.359	DLA	15.66	RAL	127.97	RAD	6567.8	VEL	11.848	PTH	2.10	VHP	3.787	DPA	9.52	RAP	191.92	ECC	1.3127

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 44 21	2711.82	-27.73	75.42	353.90	95.99	12 29 33	2111.8	-26.61	66.93
90.00	3 56 29	4336.69	4.44	179.62	347.60	62.00	5 8 46	3736.7	.66	172.98
100.00	13 14 20	2421.66	-29.04	53.90	353.72	97.44	13 54 41	1821.7	-27.70	45.35
100.00	5 9 12	4102.08	5.59	161.74	346.97	60.59	6 17 34	3502.1	1.63	155.19
110.00	14 41 46	2148.10	-32.46	32.46	353.07	101.36	15 17 34	1548.1	-30.55	23.76
110.00	5 58 16	3948.40	8.56	148.26	345.15	56.78	7 4 4	3348.4	4.13	141.98

DIFFERENTIAL CORRECTIONS

TDE	.1404	TRA	-.3309	TC3	1.3874	BAU	.4964
RDE	-.3638	RRA	.4251	RC3	1.3761	FAU	.36725
FDE	.8759	FRA	-6.1917	FC	-16.7336	BSP	5828
BDE	.3899	BRA	.5387	BC3	1.9541	FSP	4933

MID-COURSE EXECUTION ACCURACY

SGT	1304.2	SGR	1415.8	SG3	1460.1		
RRT	.5961	RRF	-.9594	RTF	-.6177		
SGB	1925.0	R23	-.3312	R13	-.9023		
SG1	1721.6	SG2	861.2	THA	48.93		

ORBIT DETERMINATION ACCURACY

ST	231.8	SR	510.2	SS	922.4
CRT	-.9346	CRS	.7007	CST	-.8267
LSA	1020.4	MSA	346.6	SSA	57.6
EL1	555.2	EL2	75.7	ALF	113.47

LAUNCH DATE DEC 22 1964 FLIGHT TIME 224.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 490.925 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.012	GAL	5.93	AZL	90.49	HCA	147.26	SMA	185.86	ECC	.23151	INC	.4856	V1	30.277
RP	228.89	LAP	-.26	LOP	237.45	VP	21.109	GAP	.10	AZP	89.59	TAL	32.43	TAP	179.68	RCA	142.84	APO	228.89	V2	24.029
RC	234.778	GL	-3.66	GP	12.79	ZAL	36.20	ZAP	127.66	ETS	168.51	ZAE	160.96	ETE	132.31	ZAC	101.54	ETC	255.70	CLP	128.79

PLANETOCENTRIC CONIC

C3	18.971	VHL	4.356	DLA	15.17	RAL	127.67	RAD	6567.8	VEL	11.847	PTH	2.10	VHP	3.725	DPA	10.29	RAP	191.63	ECC	1.3122

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 47 45	2693.64	-27.59	74.10	353.36	96.64	12 32 38	2093.6	-26.38	65.64
90.00	3 50 43	4354.14	4.99	180.60	347.21	62.09	5 3 17	3754.1	1.22	173.95
100.00	13 17 21	2404.70	-28.88	52.66	353.17	98.07	13 57 25	1804.7	-27.46	44.14
100.00	5 3 48	4118.31	6.14	162.64	346.58	60.69	6 12 27	3518.3	2.18	156.08
110.00	14 43 59	2133.60	-32.26	31.38	352.48	101.97	15 19 33	1533.6	-30.28	22.73
110.00	5 53 39	3962.18	9.07	149.00	344.79	56.90	6 59 41	3362.2	4.65	142.70

DIFFERENTIAL CORRECTIONS

TDE	.1542	TRA	-.3709	TC3	1.2689	BAU	.4924
RDE	-.3529	RRA	.4660	RC3	1.4692	FAU	.37871
FDE	.8117	FRA	-6.4658	FC	-17.2821	BSP	5848
BDE	.3851	BRA	.5956	BC3	1.9413	FSP	5117

MID-COURSE EXECUTION ACCURACY

SGT	1232.3	SGR	1502.3	SG3	1510.0		
RRT	.5399	RRF	-.9659	RTF	-.5557		
SGB	1943.1	R23	-.2950	R13	-.9206		
SG1	1718.5	SG2	906.8	THA	55.14		

ORBIT DETERMINATION ACCURACY

ST	255.4	SR	503.3	SS	929.2
CRT	-.9474	CRS	.6998	CST	-.8172
LSA	1028.3	MSA	348.3	SSA	56.3
EL1	559.6	EL2	73.6	ALF	116.17

LAUNCH DATE DEC 22 1964 FLIGHT TIME 226.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 494.798 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.000	GAL	5.93	AZL	90.56	HCA	148.29	SMA	185.67	ECC	.23078	INC	.5627	V1	30.277
RP	228.51	LAP	-.30	LOP	238.48	VP	21.137	GAP	-.25	AZP	89.52	TAL	32.54	TAP	180.83	RCA	142.82	APO	228.51	V2	24.070
RC	236.623	GL	-4.25	GP	13.40	ZAL	36.12	ZAP	125.96	ETS	168.66	ZAE	159.28	ETE	135.02	ZAC	101.99	ETC	255.70	CLP	127.13

PLANETOCENTRIC CONIC

C3	18.943	VHL	4.352	DLA	14.64	RAL	127.38	RAD	6567.8	VEL	11.846	PTH	2.10	VHP	3.668	DPA	11.10	RAP	191.33	ECC	1.3118

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 51 28	2674.31	-27.43	72.71	352.82	97.32	12 36 2	2074.3	-26.13	64.28
90.00	3 44 43	4372.76	5.59	181.65	346.83	62.19	4 57 36	3772.8	1.82	174.99
100.00	13 20 40	2386.63	-28.70	51.35	352.62	98.74	14 0 27	1786.6	-27.19	42.87
100.00	4 58 12	4135.68	6.71	163.60	346.22	60.80	6 7 7	3535.7	2.77	157.03
110.00	14 46 29	2118.11	-32.04	30.23	351.89	102.62	15 21 47	1518.1	-29.97	21.63
110.00	5 48 52	3976.97	9.62	149.79	344.45	57.04	6 55 9	3377.0	5.21	143.48

DIFFERENTIAL CORRECTIONS

TDE	.1680	TRA	-.4152	TC3	1.1425	BAU	.4914
RDE	-.3406	RRA	.5096	RC3	1.5682	FAU	.38989
FDE	.7329	FRA	-6.7391	FC	-17.8191	BSP	5918
BDE	.3797	BRA	.6574	BC3	1.9402	FSP	5294

MID-COURSE EXECUTION ACCURACY

SGT	1165.0	SGR	1595.3	SG3	1559.0		
RRT	.4663	RRF	-.9714	RTF	-.4773		
SGB	1975.4	R23	-.2430	R13	-.9409		
SG1	1732.6	SG2	948.9	THA	62.21		

ORBIT DETERMINATION ACCURACY

ST	280.2	SR	495.9	SS	935.6
CRT	-.9583	CRS	.6993	CST	-.8048
LSA	1036.2	MSA	350.9	SSA	54.9
EL1	565.3	EL2	70.2	ALF	118.92

LAUNCH DATE DEC 22 1964 FLIGHT TIME 228.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 498.682 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.989	GAL	5.93	AZL	90.64	HCA	149.33	SMA	185.48	ECC	.23009	INC	.6444	V1	30.277
RP	228.12	LAP	-.33	LOP	239.52	VP	21.167	GAP	-.59	AZP	89.45	TAL	32.64	TAP	181.97	RCA	142.80	APO	228.16	V2	24.111
RC	238.446	GL	-4.87	GP	14.04	ZAL	36.07	ZAP	124.23	ETS	168.83	ZAE	157.52	ETE	137.37	ZAC	102.48	ETC	255.70	CLP	125.44

PLANETOCENTRIC CONIC

C3	18.916	VHL	4.349	DLA	14.06	RAL	127.11	RAD	6567.8	VEL	11.845	PTH	2.10	VHP	3.616	DPA	11.95	RAP	191.02	ECC	1.3113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 55 31	2653.75	-27.24	71.24	352.28	98.03	12 39 45	2053.8	-25.85	62.84
90.00	3 38 28	4392.66	6.22	182.77	346.47	62.32	4 51 41	3792.7	2.46	176.10
100.00	13 24 19	2367.38	-28.49	49.95	352.06	99.44	14 3 47	1767.4	-26.89	41.52
100.00	4 52 21	4154.27	7.33	164.64	345.87	60.94	6 1 36	3554.3	3.40	158.06
110.00	14 49 17	2101.55	-31.78	29.00	351.29	103.30	15 24 18	1501.5	-29.63	20.46
110.00	5 43 53	3992.86	10.21	150.65	344.12	57.20	6 50 26	3392.9	5.81	144.31

DIFFERENTIAL CORRECTIONS

TDE	.1807	TRA	-.4644	TC3	1.0066	BAU	.4938
RDE	-.3266	RRA	.5562	RC3	1.6730	FAU	.40068
FDE	.6400	FRA	-7.0087	FC	-18.3376	BSP	6054
BDE	.3733	BRA	.7246	BC3	1.9524	FSP	5465

MID-COURSE EXECUTION ACCURACY

SGT	1105.0	SGR	1695.1	SG3	1606.5		
RRT	.3713	RRF	-.9761	RTF	-.3778		
SGB	2023.5	R23	-.1778	R13	-.9599		
SG1	1768.4	SG2	983.6	THA	69.96		

ORBIT DETERMINATION ACCURACY

ST	305.2	SR	488.2	SS	942.0
CRT	-.9674	CRS	.7001	CST	-.7914
LSA	1044.4	MSA	354.0	SSA	53.3
EL1	572.0	EL2	66.0	ALF	121.64

LAUNCH DATE DEC 22 1964 FLIGHT TIME 230.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 502.580 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.979	GAL	5.93	AZL	90.73	HCA	150.38	SMA	185.31	ECC	.22944	INC	.7319	V1	30.277
RP	227.73	LAP	-.36	LOP	240.56	VP	21.199	GAP	-.92	AZP	89.36	TAL	32.71	TAP	183.09	RCA	142.79	APO	227.83	V2	24.152
RC	240.248	GL	-5.53	GP	14.72	ZAL	36.05	ZAP	122.46	ETS	169.02	ZAE	155.68	ETE	139.42	ZAC	102.99	ETC	255.70	CLP	123.71

PLANETOCENTRIC CONIC

C3	18.894	VHL	4.347	DLA	13.44	RAL	126.84	RAD	6567.8	VEL	11.844	PTH	2.10	VHP	3.567	DPA	12.84	RAP	190.71	ECC	1.3109

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 59 55	2631.91	-27.03	69.67	351.73	98.79	12 43 47	2031.9	-25.53	61.32
90.00	3 31 56	4413.94	6.89	183.97	346.13	62.47	4 45 30	3813.9	3.15	177.29
100.00	13 28 18	2346.89	-28.26	48.48	351.49	100.19	14 7 25	1746.9	-26.56	40.09
100.00	4 46 15	4174.19	7.99	165.75	345.53	61.10	5 55 49	3574.2	4.07	159.15
110.00	14 52 21	2083.88	-31.50	27.70	350.69	104.02	15 27 5	1483.9	-29.25	19.22
110.00	5 38 41	4009.97	10.84	151.57	343.81	57.38	6 45 31	3410.0	6.46	145.22

DIFFERENTIAL CORRECTIONS

TDE	.2034	TRA	-.5074	TC3	.8854	BAU	.5051
RDE	-.3061	RRA	.6103	RC3	1.7929	FAU	.41308
FDE	.4819	FRA	-7.3206	FC	-18.9282	BSP	6090
BDE	.3675	BRA	.7937	BC3	1.9996	FSP	5523

MID-COURSE EXECUTION ACCURACY

SGT	1066.4	SGR	1810.0	SG3	1661.0		
RRT	.2708	RRF	-.9802	RTF	-.2767		
SGB	2100.8	R23	-.1114	R13	-.9739		
SG1	1843.1	SG2	1008.1	THA	76.98		

ORBIT DETERMINATION ACCURACY

ST	339.1	SR	476.0	SS	950.3
CRT	-.9807	CRS	.6936	CST	-.7394
LSA	1051.4	MSA	369.7	SSA	50.4
EL1	581.9	EL2	54.2	ALF	125.29

LAUNCH DATE DEC 22 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 506.486 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.970	GAL	5.93	AZL	90.83	HCA	151.42	SMA	185.15	ECC	.22882	INC	.8256	V1	30.277
RP	227.34	LAP	-.39	LOP	241.61	VP	21.231	GAP	-1.24	AZP	89.27	TAL	32.77	TAP	184.20	RCA	142.79	APO	227.52	V2	24.193
RC	242.030	GL	-6.25	GP	15.44	ZAL	36.07	ZAP	120.67	ETS	169.23	ZAE	153.78	ETE	141.20	ZAC	103.53	ETC	255.70	CLP	121.95

PLANETOCENTRIC CONIC

C3	18.873	VHL	4.344	DLA	12.77	RAL	126.58	RAD	6567.8	VEL	11.843	PTH	2.10	VHP	3.524	DPA	13.79	RAP	190.39	ECC	1.3106

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 4 42	2608.59	-26.77	68.01	351.17	99.58	12 48 11	2008.6	-25.18	59.71
90.00	3 25 6	4436.74	7.60	185.26	345.80	62.64	4 39 3	3836.7	3.88	178.57
100.00	13 32 39	2324.98	-27.98	46.91	350.92	100.97	14 11 24	1725.0	-26.18	38.57
100.00	4 39 51	4195.58	8.69	166.95	345.22	61.29	5 49 47	3595.6	4.79	160.33
110.00	14 55 45	2064.93	-31.18	26.32	350.08	104.78	15 30 10	1464.9	-28.83	17.90
110.00	5 33 14	4028.40	11.51	152.58	343.53	57.59	6 40 22	3428.4	7.15	146.19

DIFFERENTIAL CORRECTIONS

TDE	.2109	TRA	-.5697	TC3	.7245	BAU	.5146
RDE	-.2893	RRA	.6619	RC3	1.9067	FAU	.42187
FDE	.3719	FRA	-7.5598	FC	-19.3521	BSP	6436
BDE	.3580	BRA	.8733	BC3	2.0398	FSP	5706

MID-COURSE EXECUTION ACCURACY

SGT	1033.1	SGR	1921.3	SG3	1700.7		
RRT	.1245	RRF	-.9835	RTF	-.1265		
SGB	2181.4	R23	-.0446	R13	-.9825		
SG1	1927.3	SG2	1021.9	THA	84.67		

ORBIT DETERMINATION ACCURACY

ST	362.1	SR	469.2	SS	958.0
CRT	-.9843	CRS	.7016	CST	-.7335
LSA	1062.3	MSA	371.9	SSA	48.7
EL1	590.5	EL2	50.8	ALF	127.55

LAUNCH DATE DEC 22 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 510.402 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.962	GAL	5.93	AZL	90.93	HCA	152.47	SMA	185.01	ECC	.22823	INC	.9258	V1	30.277
RP	226.95	LAP	-.43	LOP	242.66	VP	21.266	GAP	-1.56	AZP	89.18	TAL	32.82	TAP	185.29	RCA	142.78	APO	227.23	V2	24.235
RC	243.792	GL	-7.01	GP	16.20	ZAL	36.13	ZAP	118.85	ETS	169.46	ZAE	151.81	ETE	142.78	ZAC	104.12	ETC	255.70	CLP	120.16

PLANETOCENTRIC CONIC

C3	18.857	VHL	4.342	DLA	12.04	RAL	126.33	RAD	6567.8	VEL	11.842	PTH	2.10	VHP	3.485	DPA	14.78	RAP	190.06	ECC	1.3103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 9 54	2583.72	-26.48	66.25	350.60	100.42	12 52 57	1983.7	-24.77	58.00
90.00	3 17 55	4461.21	8.37	186.66	345.50	62.85	4 32 16	3861.2	4.66	179.94
100.00	13 37 22	2301.58	-27.67	45.24	350.34	101.79	14 15 44	1701.6	-25.76	36.96
100.00	4 33 7	4218.58	9.44	168.25	344.92	61.50	5 43 26	3618.6	5.56	161.61
110.00	14 59 29	2044.63	-30.82	24.85	349.46	105.58	15 33 34	1444.6	-28.37	16.50
110.00	5 27 30	4048.29	12.23	153.66	343.26	57.83	6 34 58	3448.3	7.90	147.25

DIFFERENTIAL CORRECTIONS

TDE	.2175	TRA	-.6361	TC3	.5575	BAU	.5302
RDE	-.2696	RRA	.7172	RC3	2.0279	FAU	.43011
FDE	.2420	FRA	-7.7921	FC	-19.7471	BSP	6843
BDE	.3464	BRA	.9587	BC3	2.1031	FSP	5870

MID-COURSE EXECUTION ACCURACY

SGT	1026.3	SGR	2040.8	SG3	1738.2		
RRT	-.0381	RRF	-.9862	RTF	.0392		
SGB	2284.3	R23	.0110	R13	-.9862		
SG1	2041.3	SG2	1025.3	THA	91.47		

ORBIT DETERMINATION ACCURACY

ST	385.8	SR	462.2	SS	967.1
CRT	-.9873	CRS	.7116	CST	-.7233
LSA	1074.4	MSA	375.7	SSA	46.8
EL1	600.2	EL2	47.1	ALF	129.79

LAUNCH DATE DEC 22 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 514.329 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.954	GAL	5.92	AZL	91.03	HCA	153.52	SMA	184.88	ECC	.22767	INC	1.0343
RP	226.56	LAP	-.46	LOP	243.72	VP	21.301	GAP	-1.87	AZP	89.07	TAL	32.84	TAP	186.37	RCA	142.79	APO	226.97
RC	245.534	GL	-7.83	GP	17.00	ZAL	36.23	ZAP	117.00	ETS	169.71	ZAE	149.79	ETE	144.17	ZAC	104.74	ETC	255.70

V1	30.277	V2	24.277	CLP	118.35														

PLANETOCENTRIC CONIC

C3	18.847	VHL	4.341	DLA	11.25	RAL	126.09	RAD	6567.8	VEL	11.842	PTH	2.10	VHP	3.452	DPA	15.82	RAP	189.74
ECC	1.3102																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 15 30	2557.16	-26.14	64.38	350.03	101.30	12 58 7	1957.2	-24.32	56.19
90.00	3 10 21	4487.54	9.18	188.16	345.21	63.10	4 25 8	3887.5	5.50	181.42
100.00	13 42 30	2276.55	-27.31	43.47	349.75	102.66	14 20 27	1676.6	-25.29	35.25
100.00	4 26 2	4243.37	10.24	169.65	344.65	61.76	5 36 45	3643.4	6.39	162.98
110.00	15 3 34	2022.87	-30.41	23.29	348.83	106.43	15 37 17	1422.9	-27.86	15.02
110.00	5 21 27	4069.82	13.01	154.85	343.01	58.11	6 29 17	3469.8	8.70	148.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2232	TRA	-.7066	TC3	.3835	BAU	.5512	SGT	1049.6	SGR	2166.5	SG3	1770.7	ST	410.2	SR	455.8	SS	977.5
RDE	-.2472	RRA	.7761	RC3	2.1537	FAU	.43708	RRT	-.2051	RRF	-.9885	RTF	.2082	CRT	-.9891	CRS	.7251	CST	-.7096
FDE	.0952	FRA	-8.0085	FC	-20.0769	BSP	7329	SGB	2407.4	R23	.0535	R13	-.9871	LSA	1088.2	MSA	381.2	SSA	44.6
BDE	.3331	BRA	1.0496	BC3	2.1875	FSP	6027	SG1	2180.3	SG2	1020.8	THA	97.28	EL1	611.6	EL2	45.0	ALF	131.95

LAUNCH DATE DEC 22 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 518.267 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.947	GAL	5.91	AZL	91.15	HCA	154.58	SMA	184.76	ECC	.22714	INC	1.1512
RP	226.17	LAP	-.49	LOP	244.77	VP	21.338	GAP	-2.17	AZP	88.96	TAL	32.85	TAP	187.43	RCA	142.79	APO	226.72
RC	247.256	GL	-8.72	GP	17.86	ZAL	36.37	ZAP	115.14	ETS	169.99	ZAE	147.71	ETE	145.42	ZAC	105.41	ETC	255.70

V1	30.277	V2	24.318	CLP	116.51														

PLANETOCENTRIC CONIC

C3	18.847	VHL	4.341	DLA	10.40	RAL	125.84	RAD	6567.8	VEL	11.842	PTH	2.10	VHP	3.424	DPA	16.92	RAP	189.43
ECC	1.3102																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 21 33	2528.76	-25.74	62.40	349.44	102.22	13 3 42	1928.8	-23.80	54.26
90.00	3 2 20	4515.92	10.05	189.79	344.95	63.39	4 17 36	3915.9	6.40	183.02
100.00	13 48 4	2249.76	-26.89	41.58	349.15	103.57	14 25 33	1649.8	-24.76	33.43
100.00	4 18 30	4270.16	11.10	171.18	344.40	62.07	5 29 41	3670.2	7.28	164.47
110.00	15 8 2	1999.51	-29.95	21.62	348.19	107.31	15 41 21	1399.5	-27.29	13.44
110.00	5 15 1	4093.17	13.85	156.14	342.79	58.43	6 23 15	3493.2	9.57	149.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2282	TRA	-.7804	TC3	.2051	BAU	.5788	SGT	1104.1	SGR	2302.5	SG3	1800.8	ST	435.2	SR	450.0	SS	991.7
RDE	-.2203	RRA	.8401	RC3	2.2879	FAU	.44342	RRT	-.3597	RRF	-.9905	RTF	.3636	CRT	-.9880	CRS	.7421	CST	-.6885
FDE	-.0808	FRA	-8.2188	FC	-20.3686	BSP	7868	SGB	2553.5	R23	.0831	R13	-.9870	LSA	1105.1	MSA	390.2	SSA	41.9
BDE	.3172	BRA	1.1466	BC3	2.2971	FSP	6144	SG1	2344.5	SG2	1011.7	THA	102.06	EL1	624.1	EL2	48.4	ALF	134.03

LAUNCH DATE DEC 22 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 522.216 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.941	GAL	5.89	AZL	91.28	HCA	155.64	SMA	184.65	ECC	.22663	INC	1.2781
RP	225.78	LAP	-.53	LOP	245.83	VP	21.375	GAP	-2.47	AZP	88.84	TAL	32.84	TAP	188.48	RCA	142.80	APO	226.50
RC	248.959	GL	-9.69	GP	18.77	ZAL	36.57	ZAP	113.25	ETS	170.31	ZAE	145.58	ETE	146.53	ZAC	106.12	ETC	255.70

V1	30.277	V2	24.360	CLP	114.64														

PLANETOCENTRIC CONIC

C3	18.858	VHL	4.343	DLA	9.46	RAL	125.59	RAD	6567.8	VEL	11.842	PTH	2.10	VHP	3.401	DPA	18.07	RAP	189.13
ECC	1.3103																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 28 6	2498.32	-25.29	60.28	348.84	103.18	13 9 44	1898.3	-23.22	52.22
90.00	2 53 49	4546.63	10.98	191.57	344.72	63.74	4 9 35	3946.6	7.37	184.76
100.00	13 54 5	2221.00	-26.42	39.58	348.53	104.52	14 31 6	1621.0	-24.16	31.50
100.00	4 10 31	4299.19	12.02	172.84	344.18	62.42	5 22 10	3699.2	8.23	166.10
110.00	15 12 54	1974.38	-29.42	19.85	347.53	108.24	15 45 48	1374.4	-26.65	11.76
110.00	5 8 11	4118.57	14.75	157.56	342.60	58.81	6 16 50	3518.6	10.51	151.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2301	TRA	-.8597	TC3	.0189	BAU	.6120	SGT	1189.4	SGR	2446.0	SG3	1825.0	ST	459.5	SR	446.6	SS	1009.4
RDE	-.1897	RRA	.9082	RC3	2.4275	FAU	.44833	RRT	-.4944	RRF	-.9921	RTF	.4987	CRT	-.9827	CRS	.7648	CST	-.6679
FDE	-.2732	FRA	-8.4072	FC	-20.5825	BSP	8487	SGB	2719.9	R23	.1030	R13	-.9868	LSA	1126.1	MSA	399.9	SSA	39.2
BDE	.2982	BRA	1.2506	BC3	2.4275	FSP	6244	SG1	2529.5	SG2	999.8	THA	106.10	EL1	638.0	EL2	59.6	ALF	135.83

LAUNCH DATE DEC 22 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 526.174 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.935	GAL	5.88	AZL	91.42	HCA	156.71	SMA	184.55	ECC	.22615	INC	1.4161
RP	225.38	LAP	-.56	LOP	246.90	VP	21.414	GAP	-2.76	AZP	88.70	TAL	32.82	TAP	189.52	RCA	142.82	APO	226.29
RC	250.643	GL	-10.74	GP	19.74	ZAL	36.82	ZAP	111.35	ETS	170.65	ZAE	143.41	ETE	147.53	ZAC	106.89	ETC	255.69

V1	30.277	V2	24.402	CLP	112.76														

PLANETOCENTRIC CONIC

C3	18.883	VHL	4.346	DLA	8.44	RAL	125.34	RAD	6567.8	VEL	11.843	PTH	2.10	VHP	3.385	DPA	19.28	RAP	188.85
ECC	1.3108																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 35 11	2465.63	-24.76	58.03	348.23	104.19	13 16 16	1865.6	-22.57	50.05
90.00	2 44 43	4579.96	11.98	193.51	344.52	64.15	4 1 °3	3980.0	8.41	186.66
100.00	14 0 37	2190.08	-25.87	37.44	347.90	105.52	14 37 7	1590.1	-23.49	29.45
100.00	4 1 58	4330.75	13.01	174.66	344.00	62.85	5 14 9	3730.8	9.26	167.87
110.00	15 18 12	1947.30	-28.83	17.97	346.86	109.21	15 50 39	1347.3	-25.94	9.98
110.00	5 0 52	4146.29	15.72	159.12	342.45	59.25	6 9 59	3546.3	11.52	152.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2293	TRA	-.9433	TC3	-.1723	BAU	.6514	SGT	1301.9	SGR	2600.0	SG3	1844.4	ST	483.5	SR	446.7	SS	1033.4
RDE	-.1533	RRA	.9820	RC3	2.5744	FAU	.45208	RRT	-.6033	RRF	-.9935	RTF	.6074	CRT	-.9702	CRS	.7933	CST	-.6439
FDE	-.4933	FRA	-8.5800	FC	-20.7264	BSP	9170	SGB	2907.8	R23	.1155	R13	-.9868	LSA	1153.3	MSA	412.1	SSA	36.2
BDE	.2758	BRA	1.3617	BC3	2.5801	FSP	6311	SG1	2735.1	SG2	987.0	THA	109.44	EL1	653.4	EL2	80.1	ALF	137.33

LAUNCH DATE DEC 22 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 530.143 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 32.930 GAL 5.86 AZL 91.57 HCA 157.77 SMA 184.47 ECC .22569 INC 1.5672 V1 30.277
RP 224.99 LAP -.59 LOP 247.97 VP 21.454 GAP -3.04 AZP 88.55 TAL 32.77 TAP 190.55 RCA 142.84 APO 226.10 V2 24.444
RC 252.307 GL -11.88 GP 20.78 ZAL 37.13 ZAP 109.44 ETS 171.03 ZAE 141.19 ETE 148.44 ZAC 107.73 ETC 255.69 CLP 110.86

PLANETOCENTRIC CONIC

C3 18.928 VHL 4.351 DLA 7.33 RAL 125.08 RAD 6567.8 VEL 11.845 PTH 2.10 VHP 3.375 DPA 20.56 RAP 188.59 ECC 1.3115

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 42 51	2430.44	-24.15	55.63	347.61	105.25	13 23 22	1830.4	-21.83	47.74
90.00	2 34 58	4616.28	13.05	195.64	344.36	64.64	3 51 54	4016.3	9.53	188.73
100.00	14 7 43	2156.75	-25.24	35.16	347.27	106.56	14 43 39	1556.7	-22.73	27.27
100.00	3 52 48	4365.20	14.07	176.67	343.85	63.35	5 5 33	3765.2	10.38	169.82
110.00	15 23 59	1918.06	-28.16	15.96	346.18	110.23	15 55 57	1318.1	-25.14	8.08
110.00	4 53 1	4176.65	16.77	160.84	342.33	59.77	6 2 37	3576.7	12.63	154.18

DIFFERENTIAL CORRECTIONS
TDE .2243 TRA-1.0326 TC3 -.3697 BAU .6960
RDE -.1113 RRA 1.0613 RC3 2.7253 FAU .45396
FDE -.7323 FRA-8.7261 FC-20.7632 BSP 9931
BDE .2504 BRA 1.4807 BC3 2.7503 FSP 6359

MID-COURSE EXECUTION ACCURACY
SGT 1438.9 SGR 2762.4 SG3 1856.3
RRT -.6889 RRF -.9946 RTF .6926
SGB 3114.7 R23 .1228 R13 -.9871
SG1 2958.5 SG2 973.9 THA 112.28

ORBIT DETERMINATION ACCURACY
ST 506.5 SR 453.0 SS 1063.5
CRT -.9494 CRS .8270 CST -.6225
LSA 1188.0 MSA 424.7 SSA 33.2
EL1 671.0 EL2 107.4 ALF 138.36

LAUNCH DATE DEC 22 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 534.121 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 32.925 GAL 5.84 AZL 91.73 HCA 158.84 SMA 184.39 ECC .22526 INC 1.7334 V1 30.277
RP 224.60 LAP -.63 LOP 249.04 VP 21.495 GAP -3.32 AZP 88.38 TAL 32.72 TAP 191.56 RCA 142.86 APO 225.93 V2 24.485
RC 253.951 GL -13.14 GP 21.89 ZAL 37.52 ZAP 107.53 ETS 171.45 ZAE 138.94 ETE 149.27 ZAC 108.63 ETC 255.67 CLP 108.94

PLANETOCENTRIC CONIC

C3 18.998 VHL 4.359 DLA 6.10 RAL 124.81 RAD 6567.8 VEL 11.848 PTH 2.10 VHP 3.371 DPA 21.90 RAP 188.37 ECC 1.3127

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 51 11	2392.42	-23.45	53.07	346.98	106.34	13 31 4	1792.4	-20.99	45.27
90.00	2 24 27	4656.03	14.19	198.00	344.25	65.24	3 42 3	4056.0	10.74	191.03
100.00	14 15 26	2120.72	-24.52	32.73	346.62	107.65	14 50 46	1520.7	-21.88	24.93
100.00	3 42 54	4402.96	15.21	178.89	343.75	63.95	4 56 17	3803.0	11.58	171.98
110.00	15 30 18	1886.40	-27.40	13.81	345.49	111.29	16 1 44	1286.4	-24.25	6.05
110.00	4 44 31	4210.04	17.90	162.77	342.26	60.38	5 54 41	3610.0	13.83	156.03

DIFFERENTIAL CORRECTIONS
TDE .2139 TRA-1.1279 TC3 -.5731 BAU .7456
RDE -.0630 RRA 1.1459 RC3 2.8790 FAU .45372
FDE -.9873 FRA-8.8373 FC-20.6758 BSP 10763
BDE .2230 BRA 1.6079 BC3 2.9355 FSP 6383

MID-COURSE EXECUTION ACCURACY
SGT 1597.5 SGR 2932.7 SG3 1859.2
RRT -.7547 RRF -.9956 RTF .7581
SGB 3339.6 R23 .1264 R13 -.9876
SG1 3198.3 SG2 961.0 THA 114.73

ORBIT DETERMINATION ACCURACY
ST 528.6 SR 468.0 SS 1100.0
CRT -.9204 CRS .8635 CST -.6067
LSA 1231.7 MSA 436.4 SSA 30.2
EL1 692.1 EL2 139.8 ALF 138.77

LAUNCH DATE DEC 22 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 538.109 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 32.922 GAL 5.82 AZL 91.92 HCA 159.92 SMA 184.33 ECC .22484 INC 1.9166 V1 30.277
RP 224.21 LAP -.66 LOP 250.12 VP 21.537 GAP -3.58 AZP 88.20 TAL 32.64 TAP 192.56 RCA 142.88 APO 225.77 V2 24.527
RC 255.576 GL -14.52 GP 23.08 ZAL 37.99 ZAP 105.62 ETS 171.91 ZAE 136.65 ETE 150.03 ZAC 109.61 ETC 255.65 CLP 107.01

PLANETOCENTRIC CONIC

C3 19.100 VHL 4.370 DLA 4.75 RAL 124.52 RAD 6567.8 VEL 11.853 PTH 2.10 VHP 3.376 DPA 23.32 RAP 188.19 ECC 1.3143

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 0 16	2351.25	-22.63	50.33	346.34	107.49	13 39 27	1751.2	-20.03	42.62
90.00	2 13 3	4699.74	15.42	200.62	344.19	65.96	3 31 22	4099.7	12.05	193.57
100.00	14 23 50	2081.67	-23.69	30.13	345.96	108.78	14 58 32	1481.7	-20.91	22.44
100.00	3 32 9	4444.55	16.44	181.37	343.71	64.68	4 46 14	3844.5	12.89	174.37
110.00	15 37 13	1852.05	-26.52	11.52	344.78	112.40	16 8 5	1252.0	-23.25	3.89
110.00	4 35 16	4246.93	19.13	164.93	342.26	61.12	5 46 3	3646.9	15.13	158.09

DIFFERENTIAL CORRECTIONS
TDE .1982 TRA-1.2286 TC3 -.7779 BAU .8015
RDE -.0042 RRA 1.2400 RC3 3.0406 FAU .45216
FDE-1.2784 FRA-8.9333 FC-20.4945 BSP 11615
BDE .1982 BRA 1.7455 BC3 3.1386 FSP 6344

MID-COURSE EXECUTION ACCURACY
SGT 1772.5 SGR 3118.4 SG3 1856.7
RRT -.8042 RRF -.9964 RTF .8070
SGB 3587.0 R23 .1270 R13 -.9883
SG1 3458.9 SG2 949.9 THA 116.74

ORBIT DETERMINATION ACCURACY
ST 550.4 SR 495.8 SS 1149.3
CRT -.8805 CRS .9002 CST -.5924
LSA 1291.2 MSA 449.4 SSA 27.0
EL1 718.6 EL2 180.0 ALF 138.39

LAUNCH DATE DEC 22 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 542.104 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 32.918 GAL 5.80 AZL 92.12 HCA 161.00 SMA 184.27 ECC .22444 INC 2.1211 V1 30.277
RP 223.82 LAP -.69 LOP 251.20 VP 21.579 GAP -3.85 AZP 87.99 TAL 32.55 TAP 193.55 RCA 142.91 APO 225.63 V2 24.569
RC 257.180 GL -16.04 GP 24.36 ZAL 38.55 ZAP 103.71 ETS 172.42 ZAE 134.32 ETE 150.72 ZAC 110.68 ETC 255.62 CLP 105.08

PLANETOCENTRIC CONIC

C3 19.244 VHL 4.387 DLA 3.26 RAL 124.20 RAD 6567.8 VEL 11.859 PTH 2.10 VHP 3.389 DPA 24.81 RAP 188.07 ECC 1.3167

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 10 12	2306.43	-21.69	47.39	345.69	108.67	13 48 38	1706.4	-18.94	39.79
90.00	2 0 36	4748.08	16.74	203.56	344.21	66.82	3 19 44	4148.1	13.46	196.41
100.00	14 33 4	2039.15	-22.73	27.33	345.30	109.95	15 7 3	1439.2	-19.81	19.76
100.00	3 20 25	4490.59	17.76	184.15	343.74	65.55	4 35 16	3890.6	14.31	177.06
110.00	15 44 48	1814.62	-25.53	9.06	344.08	113.54	16 15 3	1214.6	-22.13	1.57
110.00	4 25 10	4287.89	20.46	167.36	342.33	62.00	5 36 38	3687.9	16.55	160.41

DIFFERENTIAL CORRECTIONS
TDE .1719 TRA-1.3395 TC3 -.9934 BAU .8574
RDE .0536 RRA 1.3316 RC3 3.1813 FAU .44501
FDE-1.5163 FRA-8.9236 FC-20.0204 BSP 12738
BDE .1800 BRA 1.8888 BC3 3.3327 FSP 6422

MID-COURSE EXECUTION ACCURACY
SGT 1970.0 SGR 3290.9 SG3 1830.2
RRT -.8437 RRF -.9970 RTF .8464
SGB 3835.5 R23 .1268 R13 -.9889
SG1 3719.6 SG2 935.7 THA 118.79

ORBIT DETERMINATION ACCURACY
ST 572.2 SR 533.9 SS 1188.1
CRT -.8550 CRS .9292 CST -.6074
LSA 1349.0 MSA 451.2 SSA 24.6
EL1 753.9 EL2 210.2 ALF 137.32

LAUNCH DATE DEC 22 1964 FLIGHT TIME 252.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 546.113 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.915	GAL	5.77	AZL	92.35	HCA	162.08	SMA	184.22	ECC	.22407	INC	2.3498
RP	223.44	LAP	-.72	LOP	252.28	VP	21.623	GAP	-4.11	AZP	87.76	TAL	32.45	TAP	194.53	RCA	142.94	APO	225.50
RC	258.763	GL	-17.73	GP	25.74	ZAL	39.23	ZAP	101.82	ETS	172.98	ZAE	131.96	ETE	151.37	ZAC	111.85	ETC	255.57

V1	30.277	V2	24.611	CLP	103.14														

PLANETOCENTRIC CONIC

C3	19.444	VHL	4.410	DLA	1.61	RAL	123.85	RAD	6567.8	VEL	11.867	PTH	2.11	VHP	3.411	DPA	26.40	RAP	188.01

ECC	1.3200																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 21 5	2257.58	-20.59	44.22	345.06	109.88	13 58 43	1657.6	-17.69	36.74
90.00	1 46 55	4801.83	18.15	206.87	344.32	67.89	3 6 56	4201.8	14.99	199.62
100.00	14 43 11	1992.79	-21.62	24.34	344.64	111.16	15 16 23	1392.8	-18.56	16.88
100.00	3 7 30	4541.86	19.17	187.30	343.87	66.62	4 23 12	3941.9	15.84	180.09
110.00	15 53 8	1773.80	-24.39	6.44	343.37	114.72	16 22 42	1173.8	-20.85	359.08
110.00	4 14 2	4333.61	21.89	170.13	342.50	63.07	5 26 15	3733.6	18.11	163.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1449	TRA	-1.4489	TC3	-1.1897	BAU	.9252	SGT	2164.2	SGR	3511.7	SG3	1814.5	ST	596.4	SR	600.0	SS	1267.1
RDE	.1395	RRA	1.4490	RC3	3.3544	FAU	.44026	RRT	-.8707	RRF	-.9975	RTF	.8727	CRT	-.8047	CRS	.9563	CST	-.5990
FDE	-1.8773	FRA	-8.9796	FC	-19.6025	BSP	13624	SGB	4125.0	R23	.1238	R13	-.9899	LSA	1449.9	MSA	467.6	SSA	21.4
BDE	.2011	BRA	2.0492	BC3	3.5592	FSP	6237	SG1	4018.8	SG2	930.1	THA	119.99	EL1	803.6	EL2	264.4	ALF	134.78

LAUNCH DATE DEC 22 1964 FLIGHT TIME 254.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 550.130 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.913	GAL	5.75	AZL	92.61	HCA	163.16	SMA	184.18	ECC	.22371	INC	2.6076
RP	223.05	LAP	-.75	LOP	253.37	VP	21.667	GAP	-4.36	AZP	87.50	TAL	32.33	TAP	195.49	RCA	142.98	APO	225.38
RC	260.326	GL	-19.61	GP	27.24	ZAL	40.04	ZAP	99.95	ETS	173.60	ZAE	129.58	ETE	151.96	ZAC	113.14	ETC	255.51

V1	30.277	V2	24.653	CLP	101.21														

PLANETOCENTRIC CONIC

C3	19.717	VHL	4.440	DLA	-.23	RAL	123.46	RAD	6567.8	VEL	11.878	PTH	2.11	VHP	3.445	DPA	28.07	RAP	188.04

ECC	1.3245																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 33 8	2203.96	-19.31	40.81	344.44	111.12	14 9 52	1604.0	-16.27	33.46
90.00	1 31 44	4862.06	19.65	210.65	344.55	69.19	2 52 46	4262.1	16.65	203.27
100.00	14 54 22	1941.92	-20.34	21.10	344.00	112.39	15 26 44	1341.9	-17.13	13.78
100.00	2 53 11	4599.34	20.68	190.90	344.12	67.92	4 9 50	3999.3	17.51	183.55
110.00	16 2 22	1729.06	-23.09	3.62	342.68	115.94	16 31 11	1129.1	-19.41	356.41
110.00	4 1 40	4384.97	23.44	173.31	342.80	64.38	5 14 45	3785.0	19.80	166.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1051	TRA	-1.5692	TC3	-1.3887	BAU	.9965	SGT	2374.7	SGR	3737.8	SG3	1782.0	ST	623.5	SR	688.3	SS	1350.1
RDE	.2369	RRA	1.5744	RC3	3.5161	FAU	.43160	RRT	-.8926	RRF	-.9980	RTF	.8941	CRT	-.7742	CRS	.9744	CST	-.6143
FDE	-2.2290	FRA	-8.9667	FC	-18.9509	BSP	14607	SGB	4428.3	R23	.1203	R13	-.9908	LSA	1567.8	MSA	476.3	SSA	18.6
BDE	.2592	BRA	2.2229	BC3	3.7804	FSP	6062	SG1	4330.9	SG2	923.9	THA	121.13	EL1	875.3	EL2	310.3	ALF	131.36

LAUNCH DATE DEC 22 1964 FLIGHT TIME 256.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 554.155 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.911	GAL	5.72	AZL	92.90	HCA	164.25	SMA	184.15	ECC	.22336	INC	2.9015
RP	222.66	LAP	-.79	LOP	254.46	VP	21.711	GAP	-4.60	AZP	87.21	TAL	32.19	TAP	196.45	RCA	143.02	APO	225.28
RC	261.869	GL	-21.71	GP	28.86	ZAL	41.00	ZAP	98.12	ETS	174.28	ZAE	127.16	ETE	152.52	ZAC	114.55	ETC	255.43

V1	30.277	V2	24.695	CLP	99.28														

PLANETOCENTRIC CONIC

C3	20.087	VHL	4.482	DLA	-2.28	RAL	123.01	RAD	6567.8	VEL	11.894	PTH	2.11	VHP	3.492	DPA	29.86	RAP	188.17

ECC	1.3306																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 46 34	2144.79	-17.82	37.11	343.86	112.38	14 22 19	1544.8	-14.63	29.88
90.00	1 14 44	4930.09	21.24	215.01	344.93	70.82	2 36 54	4330.1	18.43	207.47
100.00	15 6 51	1885.82	-18.84	17.61	343.40	113.64	15 38 17	1285.8	-15.49	10.42
100.00	2 37 8	4664.29	22.29	195.06	344.52	69.55	3 54 53	4064.3	19.30	187.54
110.00	16 12 39	1679.81	-21.59	.58	342.01	117.17	16 40 39	1079.8	-17.78	353.53
110.00	3 47 49	4443.07	25.10	177.01	343.27	66.00	5 1 52	3843.1	21.64	169.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0551	TRA	-1.6971	TC3	-1.5777	BAU	1.0692	SGT	2592.2	SGR	3962.8	SG3	1729.2	ST	656.6	SR	796.5	SS	1430.4
RDE	.3457	RRA	1.7072	RC3	3.6556	FAU	.41830	RRT	-.9098	RRF	-.9984	RTF	.9110	CRT	-.7647	CRS	.9854	CST	-.6451
FDE	-2.5537	FRA	-8.8694	FC	-18.0283	BSP	15793	SGB	4735.3	R23	.1166	R13	-.9915	LSA	1697.2	MSA	480.6	SSA	16.2
BDE	.3501	BRA	2.4073	BC3	3.9816	FSP	5917	SG1	4645.5	SG2	917.9	THA	122.16	EL1	972.3	EL2	346.6	ALF	127.87

LAUNCH DATE DEC 22 1964 FLIGHT TIME 258.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 558.189 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.910	GAL	5.68	AZL	93.24	HCA	165.34	SMA	184.13	ECC	.22303	INC	3.2384
RP	222.28	LAP	-.82	LOP	255.55	VP	21.757	GAP	-4.84	AZP	86.87	TAL	32.05	TAP	197.39	RCA	143.06	APO	225.19
RC	263.392	GL	-24.06	GP	30.64	ZAL	42.15	ZAP	96.33	ETS	175.02	ZAE	124.73	ETE	153.04	ZAC	116.11	ETC	255.31

V1	30.277	V2	24.737	CLP	97.36														

PLANETOCENTRIC CONIC

C3	20.591	VHL	4.538	DLA	-4.58	RAL	122.49	RAD	6567.8	VEL	11.915	PTH	2.12	VHP	3.554	DPA	31.76	RAP	188.43

ECC	1.3389																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 1 41	2079.06	-16.07	33.08	343.35	113.63	14 36 20	1479.1	-12.73	25.99
90.00	0 55 29	5007.63	22.88	220.10	345.52	72.85	2 18 56	4407.6	20.32	212.37
100.00	15 20 53	1823.60	-17.10	13.81	342.86	114.90	15 51 16	1223.6	-13.60	6.76
100.00	2 18 58	4738.32	23.97	199.92	345.14	71.58	3 37 57	4138.3	21.23	192.19
110.00	16 24 12	1625.39	-19.86	357.30	341.40	118.41	16 51 17	1025.4	-15.91	350.41
110.00	3 32 9	4509.30	26.87	181.35	343.96	68.02	4 47 18	3909.3	23.64	173.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0101	TRA	-1.8361	TC3	-1.7559	BAU	1.1500	SGT	2819.4	SGR	4214.9	SG3	1667.9	ST	699.5	SR	939.0	SS	1527.5
RDE	.4822	RRA	1.8614	RC3	3.7906	FAU	.40306	RRT	-.9235	RRF	-.9987	RTF	.9244	CRT	-.7707	CRS	.9921	CST	-.6859
FDE	-2.9096	FRA	-8.7416	FC	-16.9467	BSP	16902	SGB	5070.9	R23	.1123	R13	-.9923	LSA	1862.9	MSA	483.5	SSA	13.9
BDE	.4823	BRA	2.6146	BC3	4.1776	FSP	5669	SG1	4987.8	SG2	914.1	THA	122.95	EL1	1108.4	EL2	377.6	ALF	124.41

LAUNCH DATE DEC 22 1964 FLIGHT TIME 260.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 562.232 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.909	GAL	5.65	AZL	93.63	HCA	166.44	SMA	184.11	ECC	.22272	INC	3.6302
RP	221.89	LAP	-.85	LOP	256.65	VP	21.803	GAP	-5.07	AZP	86.47	TAL	31.88	TAP	198.32	RCA	143.10	APO	225.12
RC	264.895	GL	-26.71	GP	32.58	ZAL	43.52	ZAP	94.60	ETS	175.84	ZAE	122.27	ETE	153.53	ZAC	117.84	ETC	255.17

V1 30.277 V2 24.779 CLP 95.46

PLANETOCENTRIC CONIC

C3	21.277	VHL	4.613	DLA	-7.16	RAL	121.88	RAD	6567.9	VEL	11.944	PTH	2.13	VHP	3.636	DPA	33.79	RAP	188.85

ECC 1.3502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 18 57	2005.43	-14.01	28.65	342.94	114.86	14 52 22	1405.4	-10.54	21.69
90.00	0 33 21	5097.00	24.55	226.12	346.36	75.42	1 58 18	4497.0	22.31	218.17
100.00	15 36 52	1754.07	-15.06	9.65	342.42	116.13	16 6 6	1154.1	-11.43	2.75
100.00	1 58 7	4823.58	25.68	205.67	346.02	74.15	3 18 31	4223.6	23.26	197.71
110.00	16 37 16	1564.92	-17.87	353.75	340.87	119.64	17 3 21	964.9	-13.79	347.02
110.00	3 14 12	4585.50	28.70	186.52	344.94	70.58	4 30 38	3985.5	25.78	178.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0887	TRA	-1.9845	TC3	-1.9093	BAU	1.2341	SGT	3047.5	SGR	4476.6	SG3	1588.4	ST	755.3	SR	1110.8	SS	1623.8
RDE	.6434	RRA	2.0340	RC3	3.8958	FAU	.38367	RRT	-.9342	RRF	-.9989	RTF	.9348	CRT	-.7904	CRS	.9958	CST	-.7320
FDE	-3.2447	FRA	-8.5403	FC	-15.6110	BSP	18128	SGB	5415.4	R23	.1078	R13	-.9931	LSA	2050.8	MSA	484.9	SSA	11.9
BDE	.6495	BRA	2.8417	BC3	4.3386	FSP	5392	SG1	5338.1	SG2	911.6	THA	123.56	EL1	1282.1	EL2	400.9	ALF	121.71

LAUNCH DATE DEC 22 1964 FLIGHT TIME 262.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 566.283 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.908	GAL	5.61	AZL	94.09	HCA	167.54	SMA	184.10	ECC	.22242	INC	4.0909
RP	221.51	LAP	-.88	LOP	257.76	VP	21.849	GAP	-5.30	AZP	86.00	TAL	31.71	TAP	199.24	RCA	143.15	APO	225.05
RC	266.379	GL	-29.71	GP	34.71	ZAL	45.16	ZAP	92.94	ETS	176.74	ZAE	119.79	ETE	154.00	ZAC	119.75	ETC	254.97

V1 30.277 V2 24.820 CLP 93.57

PLANETOCENTRIC CONIC

C3	22.221	VHL	4.714	DLA	-10.07	RAL	121.15	RAD	6567.9	VEL	11.983	PTH	2.14	VHP	3.742	DPA	35.96	RAP	189.46

ECC 1.3657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 39 1	1921.94	-11.56	23.74	342.71	116.03	15 11 3	1321.9	-7.97	16.90
90.00	0 7 27	5201.45	26.14	233.35	347.54	78.71	1 34 9	4601.5	24.32	225.16
100.00	15 55 23	1675.59	-12.66	5.06	342.15	117.31	16 23 19	1075.6	-8.90	358.29
100.00	1 33 47	4923.04	27.34	212.59	347.25	77.43	2 55 50	4323.0	25.34	204.37
110.00	16 52 19	1497.33	-15.55	349.88	340.49	120.83	17 17 16	897.3	-11.34	343.30
110.00	2 53 20	4674.07	30.54	192.75	346.32	73.85	4 11 14	4074.1	28.03	184.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1865	TRA	-2.1477	TC3	-2.0353	BAU	1.3246	SGT	3280.7	SGR	4757.3	SG3	1492.8	ST	829.1	SR	1319.2	SS	1720.4
RDE	.8405	RRA	2.2332	RC3	3.9670	FAU	.36068	RRT	-.9430	RRF	-.9991	RTF	.9434	CRT	-.8191	CRS	.9978	CST	-.7802
FDE	-3.5646	FRA	-8.2714	FC	-14.0519	BSP	19376	SGB	5778.8	R23	.1032	R13	-.9938	LSA	2269.9	MSA	484.9	SSA	10.0
BDE	.8610	BRA	3.0983	BC3	4.4587	FSP	5054	SG1	5706.7	SG2	910.2	THA	124.02	EL1	1501.0	EL2	418.0	ALF	119.78

LAUNCH DATE DEC 22 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 570.342 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.908	GAL	5.58	AZL	94.64	HCA	168.64	SMA	184.10	ECC	.22214	INC	4.6416
RP	221.13	LAP	-.91	LOP	258.86	VP	21.896	GAP	-5.52	AZP	85.45	TAL	31.52	TAP	200.15	RCA	143.20	APO	225.00
RC	267.844	GL	-33.11	GP	37.06	ZAL	47.10	ZAP	91.38	ETS	177.73	ZAE	117.29	ETE	154.45	ZAC	121.89	ETC	254.70

V1 30.277 V2 24.862 CLP 91.72

PLANETOCENTRIC CONIC

C3	23.539	VHL	4.852	DLA	-13.36	RAL	120.26	RAD	6568.0	VEL	12.038	PTH	2.15	VHP	3.881	DPA	38.28	RAP	190.32

ECC 1.3874

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 3 0	1825.61	-8.63	18.19	342.76	117.07	15 33 26	1225.6	-4.93	11.46
90.00	23 32 27	5325.82	27.50	242.20	349.12	82.95	25 1 13	4725.8	26.23	233.76
100.00	16 17 22	1585.69	-9.80	359.92	342.14	118.38	16 43 48	985.7	-5.93	353.27
100.00	1 4 42	5040.98	28.81	221.05	348.91	81.64	2 28 43	4441.0	27.35	212.55
110.00	17 9 55	1421.08	-12.84	345.63	340.34	121.95	17 33 36	821.1	-8.53	339.19
110.00	2 28 38	4778.35	32.27	200.39	348.19	78.06	3 48 16	4178.3	30.29	191.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3019	TRA	-2.3244	TC3	-2.1156	BAU	1.4190	SGT	3507.3	SGR	5048.1	SG3	1377.2	ST	920.5	SR	1562.1	SS	1803.7
RDE	1.0787	RRA	2.4623	RC3	3.9819	FAU	.33317	RRT	-.9499	RRF	-.9993	RTF	.9500	CRT	-.8486	CRS	.9989	CST	-.8229
FDE	-3.8357	FRA	-7.9101	FC	-12.2537	BSP	20775	SGB	6146.9	R23	.0988	R13	-.9944	LSA	2511.0	MSA	485.5	SSA	8.4
BDE	1.1202	BRA	3.3861	BC3	4.5090	FSP	4674	SG1	6079.1	SG2	910.5	THA	124.30	EL1	1760.9	EL2	432.0	ALF	118.43

LAUNCH DATE DEC 22 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 574.408 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.908	GAL	5.54	AZL	95.31	HCA	169.74	SMA	184.10	ECC	.22187	INC	5.3110
RP	220.75	LAP	-.94	LOP	259.97	VP	21.944	GAP	-5.74	AZP	84.77	TAL	31.31	TAP	201.06	RCA	143.26	APO	224.95
RC	269.292	GL	-36.97	GP	39.65	ZAL	49.41	ZAP	89.93	ETS	178.80	ZAE	114.79	ETE	154.88	ZAC	124.26	ETC	254.35

V1 30.277 V2 24.903 CLP 89.91

PLANETOCENTRIC CONIC

C3	25.413	VHL	5.041	DLA	-17.07	RAL	119.16	RAD	6568.0	VEL	12.116	PTH	2.17	VHP	4.062	DPA	40.77	RAP	191.50

ECC 1.4182

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 32 53	1711.02	-5.02	11.70	343.29	117.90	16 1 24	1111.0	-1.25	5.05
90.00	22 53 47	5478.04	28.28	253.26	351.12	88.43	24 25 5	4878.0	27.76	244.63
100.00	16 44 26	1480.14	-6.33	354.01	342.57	119.28	17 9 6	880.1	-2.38	347.45
100.00	0 28 50	5184.16	29.76	231.58	351.05	87.10	1 55 14	4584.2	29.04	222.85
110.00	17 31 7	1333.91	-9.66	340.89	340.54	122.95	17 53 21	733.9	-5.25	334.57
110.00	1 58 39	4903.15	33.63	209.86	350.68	83.51	3 20 22	4303.2	32.37	200.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4424	TRA	-2.5238	TC3	-2.1462	BAU	1.5215	SGT	3733.5	SGR	5359.1	SG3	1243.7	ST	1033.1	SR	1845.0	SS	1867.3
RDE	1.3737	RRA	2.7356	RC3	3.9305	FAU	.30172	RRT	-.9556	RRF	-.9994	RTF	.9555	CRT	-.8767	CRS	.9994	CST	-.8599
FDE	-4.0452	FRA	-7.4594	FC	-10.2787	BSP	22196	SGB	6531.4	R23	.0944	R13	-.9949	LSA	2778.8	MSA	486.1	SSA	7.0
BDE	1.4432	BRA	3.7220	BC3	4.4782	FSP	4225	SG1	6467.4	SG2	911.8	THA	124.43	EL1	2067.5	EL2	443.5	ALF	117.52

LAUNCH DATE DEC 22 1964 FLIGHT TIME 268.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 578.480 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 32.909 GAL 5.50 AZL 96.14 HCA 170.85 SMA 184.12 ECC .22162 INC 6.1423 V1 30.277
RP 220.37 LAP -.97 LOP 261.09 VP 21.992 GAP -5.95 AZP 83.93 TAL 31.10 TAP 201.95 RCA 143.31 APO 224.92 V2 24.945
RC 270.721 GL -41.35 GP 42.51 ZAL 52.14 ZAP 88.65 ETS 179.96 ZAE 112.28 ETE 155.29 ZAC 126.91 ETC 253.89 CLP 88.16

PLANETOCENTRIC CONIC

C3 28.149 VHL 5.306 DLA -21.25 RAL 117.77 RAD 6568.1 VEL 12.228 PTH 2.20 VHP 4.302 DPA 43.42 RAP 193.06 ECC 1.4633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 13 5	1565.84	-.36	3.58	344.64	118.31	16 39 11	965.8	3.43	356.94
90.00	22 2 27	5673.97	27.81	267.56	353.37	95.57	23 37 1	5074.0	28.29	258.92
100.00	17 19 57	1350.03	-1.95	346.83	343.75	119.83	17 42 27	750.0	2.03	340.31
100.00	23 38 16	5365.01	29.63	245.00	353.54	94.15	25 7 41	4765.0	29.89	236.21
110.00	17 57 43	1231.67	-5.83	335.45	341.35	123.74	18 18 14	631.7	-1.35	329.22
110.00	1 20 56	5056.13	34.18	221.76	353.76	90.52	2 45 12	4456.1	33.87	212.53

DIFFERENTIAL CORRECTIONS
TDE -.6171 TRA-2.7584 TC3-2.1227 BAU 1.6404
RDE 1.7515 RRA 3.0784 RC3 3.8073 FAU .26727
FDE-4.1791 FRA-6.9257 FC3-8.2202 BSP 23339
BDE 1.8570 BRA 4.1335 BC3 4.3591 FSP 3661

MID-COURSE EXECUTION ACCURACY
SGT 3966.6 SGR 5711.6 SG3 1095.8
RRT -.9605 RRF -.9995 RTF .9602
SGB 6953.9 R23 .0898 R13 -.9954
SG1 6893.6 SG2 914.2 THA 124.40

ORBIT DETERMINATION ACCURACY
ST 1169.7 SR 2176.6 SS 1903.8
CRT -.9014 CRS .9997 CST -.8903
LSA 3081.0 MSA 487.3 SSA 5.8
EL1 2428.9 EL2 453.9 ALF 116.86

LAUNCH DATE DEC 22 1964 FLIGHT TIME 270.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 582.558 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 32.910 GAL 5.45 AZL 97.20 HCA 171.96 SMA 184.13 ECC .22138 INC 7.2046 V1 30.277
RP 220.00 LAP -1.01 LOP 262.21 VP 22.040 GAP -6.16 AZP 82.87 TAL 30.87 TAP 202.83 RCA 143.37 APO 224.90 V2 24.986
RC 272.134 GL -46.31 GP 45.64 ZAL 55.33 ZAP 87.55 ETS 181.17 ZAE 109.80 ETE 155.69 ZAC 129.83 ETC 253.27 CLP 86.49

PLANETOCENTRIC CONIC

C3 32.283 VHL 5.682 DLA -25.95 RAL 115.96 RAD 6568.3 VEL 12.396 PTH 2.24 VHP 4.629 DPA 46.23 RAP 195.13 ECC 1.5313

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 19 12	1343.59	6.76	351.13	347.83	117.56	17 41 36	743.6	10.40	344.34
90.00	20 41 55	676.90	24.19	310.14	354.87	105.18	20 53 12	76.9	26.04	301.96
100.00	18 13 39	1167.74	4.22	336.82	346.44	119.62	18 33 7	567.7	8.13	330.21
100.00	22 30 9	5616.02	27.00	263.16	355.67	103.33	24 3 45	5016.0	28.57	254.71
110.00	18 33 44	1104.74	-.99	328.80	343.20	124.17	18 52 9	504.7	3.50	322.60
110.00	0 30 29	5251.78	33.02	236.89	357.06	99.38	1 58 1	4651.8	33.96	227.78

DIFFERENTIAL CORRECTIONS
TDE -.8100 TRA-3.0237 TC3-2.0114 BAU 1.7653
RDE 2.2104 RRA 3.4927 RC3 3.5614 FAU .22753
FDE-4.1366 FRA-6.2378 FC3-6.1016 BSP 24865
BDE 2.3542 BRA 4.6197 BC3 4.0901 FSP 3091

MID-COURSE EXECUTION ACCURACY
SGT 4170.3 SGR 6057.3 SG3 924.2
RRT -.9641 RRF -.9995 RTF .9635
SGB 7354.0 R23 .0859 R13 -.9958
SG1 7296.4 SG2 919.0 THA 124.19

ORBIT DETERMINATION ACCURACY
ST 1306.5 SR 2522.7 SS 1869.5
CRT -.9177 CRS .9998 CST -.9099
LSA 3365.0 MSA 492.8 SSA 4.8
EL1 2802.2 EL2 467.3 ALF 116.20

LAUNCH DATE DEC 22 1964 FLIGHT TIME 272.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 586.638 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 32.911 GAL 5.41 AZL 98.61 HCA 173.06 SMA 184.16 ECC .22116 INC 8.6077 V1 30.277
RP 219.62 LAP -1.04 LOP 263.33 VP 22.088 GAP -6.36 AZP 81.45 TAL 30.64 TAP 203.70 RCA 143.43 APO 224.89 V2 25.027
RC 273.529 GL -51.91 GP 49.06 ZAL 59.02 ZAP 86.69 ETS 182.41 ZAE 107.38 ETE 156.05 ZAC 133.04 ETC 252.45 CLP 84.94

PLANETOCENTRIC CONIC

C3 38.828 VHL 6.231 DLA -31.18 RAL 113.54 RAD 6568.5 VEL 12.657 PTH 2.30 VHP 5.086 DPA 49.13 RAP 197.83 ECC 1.6390

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.37	17 2 52	1403.97	16.77	.78	353.65	116.67	17 26 16	804.0	20.22	353.58
103.63	20 38 58	709.73	16.79	309.52	353.65	116.66	20 50 48	109.7	20.23	302.32
76.37	17 2 52	1403.97	16.77	.78	353.65	116.67	17 26 16	804.0	20.22	353.58
103.63	20 38 58	709.73	16.79	309.52	353.65	116.66	20 50 48	109.7	20.23	302.32
110.00	19 32 46	916.68	6.17	318.96	347.37	123.69	19 48 3	316.7	10.56	312.62
110.00	23 8 15	5533.06	28.03	257.23	358.04	110.42	24 40 28	4933.1	30.54	248.93

DIFFERENTIAL CORRECTIONS
TDE-1.0328 TRA-3.3529 TC3-1.8294 BAU 1.9178
RDE 2.7945 RRA 4.0305 RC3 3.2097 FAU .18499
FDE-3.8997 FRA-5.4213 FC3-4.1246 BSP 26074
BDE 2.9702 BRA 5.2497 BC3 3.6945 FSP 2437

MID-COURSE EXECUTION ACCURACY
SGT 4368.5 SGR 6438.2 SG3 739.3
RRT -.9672 RRF -.9996 RTF .9662
SGB 7780.4 R23 .0823 R13 -.9962
SG1 7725.3 SG2 924.6 THA 123.83

ORBIT DETERMINATION ACCURACY
ST 1440.6 SR 2883.2 SS 1754.3
CRT -.9285 CRS .9999 CST -.9226
LSA 3635.0 MSA 502.5 SSA 3.9
EL1 3186.5 EL2 484.1 ALF 115.52

LAUNCH DATE DEC 22 1964 FLIGHT TIME 300.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 645.357 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 32.961 GAL 4.46 AZL 81.23 HCA 189.35 SMA 185.00 ECC .21830 INC 8.7748 V1 30.277
RP 214.72 LAP -1.42 LOP 279.43 VP 22.776 GAP -8.61 AZP 98.66 TAL 25.34 TAP 214.69 RCA 144.61 APO 225.38 V2 25.572
RC 291.272 GL 55.40 GP -39.72 ZAL 64.01 ZAP 70.45 ETS 161.87 ZAE 93.20 ETE 181.17 ZAC 45.59 ETC 253.12 CLP 64.21

PLANETOCENTRIC CONIC

C3 37.093 VHL 6.090 DLA 68.28 RAL 168.54 RAD 6568.4 VEL 12.588 PTH 2.28 VHP 4.584 DPA -28.28 RAP 148.82 ECC 1.6105

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
11.17	9 10 52	4302.69	-53.00	242.85	129.50	16.46	10 22 35	3702.7	-60.60	238.66
11.17	0 38 21	4874.56	-14.99	251.08	11.64	10.17	1 59 35	4274.6	-22.86	249.97
21.17	7 25 2	4401.20	-43.18	232.32	92.85	25.85	8 38 23	3801.2	-50.26	227.29
21.17	3 4 32	4739.52	-21.90	241.50	38.14	20.04	4 23 31	4139.5	-29.39	238.78
24.85	5 22 44	4560.28	-31.92	233.65	64.19	25.84	6 38 44	3960.3	-39.04	229.58
155.15	15 41 49	2818.36	-31.91	85.71	64.17	25.84	16 28 47	2218.4	-39.04	81.65

DIFFERENTIAL CORRECTIONS
TDE 7.3669 TRA -.2656 TC3-3.5875 BAU 2.1563
RDE 3.8269 RRA .1992 RC3-2.4572 FAU .23857
FDE 7.6709 FRA .4682 FC3-5.5681 BSP 32087
BDE 8.3015 BRA .3320 BC3 4.3483 FSP 3144

MID-COURSE EXECUTION ACCURACY
SGT 8220.8 SGR 4709.1 SG3 861.8
RRT .9735 RRF .9981 RTF .9615
SGB 9474.0 R23 .2169 R13 .9753
SG1 9427.4 SG2 938.7 THA 29.47

ORBIT DETERMINATION ACCURACY
ST 6934.6 SR 3604.4 SS 2862.8
CRT .9974 CRS-1.0000 CST -.9969
LSA 8318.3 MSA 286.3 SSA 5.7
EL1 7812.1 EL2 229.0 ALF 27.43

LAUNCH DATE DEC 22 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 649.577 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.966	GAL	4.38	AZL	82.06	HCA	190.52	SMA	185.09	ECC	.21821	INC	7.9355
RP	214.40	LAP	-1.44	LOP	280.61	VP	22.825	GAP	-8.74	AZP	97.80	TAL	24.90	TAP	215.42	RCA	144.70	APO	225.47
RC	292.426	GL	52.55	GP	-36.51	ZAL	62.66	ZAP	68.33	ETS	161.98	ZAE	91.83	ETE	179.98	ZAC	48.60	ETC	254.00

PLANETOCENTRIC CONIC

C3	32.678	VHL	5.716	DLA	65.58	RAL	165.38	RAD	6568.3	VEL	12.412	PTH	2.24	VHP	4.389	DPA	-25.27	RAP	150.11

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
28.01	5 17 12	4518.08	-33.11	229.19	58.17	29.58	6 32 30	3918.1	-39.97	224.47
151.99	15 22 10	2796.57	-33.10	84.71	58.15	29.58	16 8 46	2196.6	-39.96	79.99
28.01	5 17 12	4518.08	-33.11	229.19	58.17	29.58	6 32 30	3918.1	-39.97	224.47
151.99	15 22 10	2796.57	-33.10	84.71	58.15	29.58	16 8 46	2196.6	-39.96	79.99
28.01	5 17 12	4518.08	-33.11	229.19	58.17	29.58	6 32 30	3918.1	-39.97	224.47
151.99	15 22 10	2796.57	-33.10	84.71	58.15	29.58	16 8 46	2196.6	-39.96	79.99

DIFFERENTIAL CORRECTIONS

TDE	6.8707	TRA	-.4597	TC3	-4.1299	BAU	2.1126
RDE	3.2469	RRA	.0998	RC3	-2.5155	FAU	.26012
FDE	7.8509	FRA	.2952	FC3	-6.8914	BSP	31917
BDE	7.5993	BRA	.4704	BC3	4.8357	FSP	3465

MID-COURSE EXECUTION ACCURACY

SGT	8423.8	SGR	4349.8	SG3	964.1		
RRT	.9749	RRF	.9980	RTF	.9638		
SGB	9480.5	R23	.2172	R13	.9750		
SG1	9441.0	SG2	864.5	THA	26.97		

ORBIT DETERMINATION ACCURACY

ST	6896.0	SR	3256.3	SS	2986.6		
CRT	.9975	CRS	-1.0000	CST	-.9971		
LSA	8185.6	MSA	273.4	SSA	6.6		
EL1	7623.3	EL2	209.1	ALF	25.24		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 653.804 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.972	GAL	4.31	AZL	82.74	HCA	191.69	SMA	185.18	ECC	.21812	INC	7.2609
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.873	GAP	-8.87	AZP	97.11	TAL	24.44	TAP	216.13	RCA	144.79	APO	225.57
RC	293.566	GL	50.04	GP	-33.64	ZAL	61.58	ZAP	66.36	ETS	162.19	ZAE	90.42	ETE	179.00	ZAC	51.32	ETC	254.68

PLANETOCENTRIC CONIC

C3	29.394	VHL	5.422	DLA	63.12	RAL	163.24	RAD	6568.2	VEL	12.279	PTH	2.21	VHP	4.254	DPA	-22.59	RAP	151.24

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.90	5 15 23	4480.72	-33.88	224.99	53.36	32.99	6 30 4	3880.7	-40.46	219.69
149.10	15 6 52	2780.72	-33.87	83.80	53.34	32.99	15 53 12	2180.7	-40.45	78.50
30.90	5 15 23	4480.72	-33.88	224.99	53.36	32.99	6 30 4	3880.7	-40.46	219.69
149.10	15 6 52	2780.72	-33.87	83.80	53.34	32.99	15 53 12	2180.7	-40.45	78.50
30.90	5 15 23	4480.72	-33.88	224.99	53.36	32.99	6 30 4	3880.7	-40.46	219.69
149.10	15 6 52	2780.72	-33.87	83.80	53.34	32.99	15 53 12	2180.7	-40.45	78.50

DIFFERENTIAL CORRECTIONS

TDE	6.4917	TRA	-.5913	TC3	-4.6367	BAU	2.0716
RDE	2.7921	RRA	.0524	RC3	-2.5084	FAU	.27391
FDE	7.8756	FRA	.1903	FC3	-8.0674	BSP	32551
BDE	7.0667	BRA	.5936	BC3	5.2717	FSP	3812

MID-COURSE EXECUTION ACCURACY

SGT	8617.1	SGR	4014.9	SG3	1043.9		
RRT	.9755	RRF	.9978	RTF	.9649		
SGB	9506.5	R23	.2193	R13	.9742		
SG1	9472.5	SG2	803.7	THA	24.63		

ORBIT DETERMINATION ACCURACY

ST	6874.7	SR	2952.1	SS	3060.9		
CRT	.9973	CRS	-1.0000	CST	-.9970		
LSA	8079.1	MSA	271.4	SSA	7.4		
EL1	7479.1	EL2	198.0	ALF	23.20		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 658.046 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.977	GAL	4.22	AZL	83.29	HCA	192.87	SMA	185.28	ECC	.21804	INC	6.7064
RP	213.77	LAP	-1.49	LOP	282.97	VP	22.920	GAP	-9.00	AZP	96.54	TAL	23.96	TAP	216.84	RCA	144.88	APO	225.67
RC	294.693	GL	47.82	GP	-31.08	ZAL	60.74	ZAP	64.50	ETS	162.44	ZAE	88.98	ETE	178.18	ZAC	53.77	ETC	255.21

PLANETOCENTRIC CONIC

C3	26.864	VHL	5.183	DLA	60.89	RAL	161.76	RAD	6568.1	VEL	12.175	PTH	2.19	VHP	4.160	DPA	-20.19	RAP	152.24

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
33.54	5 15 53	4447.22	-34.33	221.07	49.42	36.09	6 30 0	3847.2	-40.65	215.28
146.46	14 54 34	2769.34	-34.33	83.00	49.41	36.09	15 40 43	2169.3	-40.64	77.22
33.54	5 15 53	4447.22	-34.33	221.07	49.42	36.09	6 30 0	3847.2	-40.65	215.28
146.46	14 54 34	2769.34	-34.33	83.00	49.41	36.09	15 40 43	2169.3	-40.64	77.22
33.54	5 15 53	4447.22	-34.33	221.07	49.42	36.09	6 30 0	3847.2	-40.65	215.28
146.46	14 54 34	2769.34	-34.33	83.00	49.41	36.09	15 40 43	2169.3	-40.64	77.22

DIFFERENTIAL CORRECTIONS

TDE	6.1572	TRA	-.7190	TC3	-5.1663	BAU	2.0610
RDE	2.4062	RRA	.0070	RC3	-2.4983	FAU	.28621
FDE	7.7126	FRA	.0447	FC3	-9.2235	BSP	32505
BDE	6.6107	BRA	.7191	BC3	5.7386	FSP	3965

MID-COURSE EXECUTION ACCURACY

SGT	8813.5	SGR	3712.5	SG3	1106.9		
RRT	.9764	RRF	.9975	RTF	.9660		
SGB	9563.5	R23	.2203	R13	.9736		
SG1	9534.7	SG2	741.0	THA	22.50		

ORBIT DETERMINATION ACCURACY

ST	6825.9	SR	2661.1	SS	3066.4		
CRT	.9973	CRS	-1.0000	CST	-.9971		
LSA	7937.8	MSA	262.1	SSA	8.5		
EL1	7324.0	EL2	183.1	ALF	21.26		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 662.296 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	32.983	GAL	4.14	AZL	83.76	HCA	194.06	SMA	185.37	ECC	.21797	INC	6.2424
RP	213.46	LAP	-1.51	LOP	284.16	VP	22.968	GAP	-9.12	AZP	96.06	TAL	23.48	TAP	217.53	RCA	144.97	APO	225.78
RC	295.805	GL	45.85	GP	-28.79	ZAL	60.10	ZAP	62.76	ETS	162.74	ZAE	87.53	ETE	177.51	ZAC	55.96	ETC	255.63

PLANETOCENTRIC CONIC

C3	24.857	VHL	4.986	DLA	58.87	RAL	160.75	RAD	6568.0	VEL	12.093	PTH	2.16	VHP	4.098	DPA	-18.07	RAP	153.14

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.97	5 18 0	4416.64	-34.57	217.42	46.17	38.89	6 31 36	3816.6	-40.62	211.22
144.03	14 44 23	2761.51	-34.56	82.33	46.15	38.89	15 30 24	2161.5	-40.61	76.14
35.97	5 18 0	4416.64	-34.57	217.42	46.17	38.89	6 31 36	3816.6	-40.62	211.22
144.03	14 44 23	2761.51	-34.56	82.33	46.15	38.89	15 30 24	2161.5	-40.61	76.14
35.97	5 18 0	4416.64	-34.57	217.42	46.17	38.89	6 31 36	3816.6	-40.62	211.22
144.03	14 44 23	2761.51	-34.56	82.33	46.15	38.89	15 30 24	2161.5	-40.61	76.14

DIFFERENTIAL CORRECTIONS

TDE	5.8893	TRA	-.8127	TC3	-5.6740	BAU	2.0545
RDE	2.0963	RRA	-.0152	RC3	-2.4548	FAU	.29361
FDE	7.4850	FRA	-.0513	FC-1	0.2262	BSP	32816
BDE	6.2512	BRA	.8129	BC3	6.1823	FSP	4102

MID-COURSE EXECUTION ACCURACY

SGT	9004.4	SGR	3434.6	SG3	1152.7		
RRT	.9770	RRF	.9971	RTF	.9666		
SGB	9637.2	R23	.2212	R13	.9729		
SG1	9612.8	SG2	686.4	THA	20.55		

ORBIT DETERMINATION ACCURACY

ST	6791.8	SR	2410.2	SS	3047.2		
CRT	.9971	CRS	-1.0000	CST	-.9971		
LSA	7820.3	MSA	257.2	SSA	9.5		
EL1	7204.7	EL2	172.2	ALF	19.50		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 666.555 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 32.989 GAL 4.05 AZL 84.15 HCA 195.24 SMA 185.48 ECC .21791 INC 5.8479 V1 30.277
RP 213.16 LAP -1.53 LOP 285.35 VP 23.014 GAP -9.24 AZP 95.64 TAL 22.98 TAP 218.22 RCA 145.06 APO 225.89 V2 25.748
RC 296.904 GL 44.09 GP -26.75 ZAL 59.63 ZAP 61.11 ETS 163.05 ZAE 86.09 ETE 176.95 ZAC 57.94 ETC 255.96 CLP 57.25

PLANETOCENTRIC CONIC

C3 23.223 VHL 4.819 DLA 57.01 RAL 160.08 RAD 6567.9 VEL 12.025 PTH 2.15 VHP 4.057 DPA -16.18 RAP 153.96 ECC 1.3822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.20	5 21 15	4388.44	-34.63	214.01	43.46	41.43	6 34 23	3788.4	-40.44	207.48
141.80	14 35 50	2756.39	-34.62	81.79	43.45	41.42	15 21 46	2156.4	-40.43	75.26
38.20	5 21 15	4388.44	-34.63	214.01	43.46	41.43	6 34 23	3788.4	-40.44	207.48
141.80	14 35 50	2756.39	-34.62	81.79	43.45	41.42	15 21 46	2156.4	-40.43	75.26
38.20	5 21 15	4388.44	-34.63	214.01	43.46	41.43	6 34 23	3788.4	-40.44	207.48
141.80	14 35 50	2756.39	-34.62	81.79	43.45	41.42	15 21 46	2156.4	-40.43	75.26

DIFFERENTIAL CORRECTIONS
TDE 5.6597 TRA -.8918 TC3-6.1809 BAU 2.0584
RDE 1.8393 RRA -.0280 RC3-2.3981 FAU .29823
FDE 7.1985 FRA -.1284 FC-11.1179 BSP 33076
BDE 5.9511 BRA .8922 BC3 6.6298 FSP 4177

MID-COURSE EXECUTION ACCURACY
SGT 9195.8 SGR 3182.5 SG3 1185.1
RRT .9774 RRF .9965 RTF .9670
SGB 9730.9 R23 .2213 R13 .9722
SG1 9710.0 SG2 637.2 THA 18.77

ORBIT DETERMINATION ACCURACY
ST 6756.8 SR 2188.1 SS 3002.5
CRT .9969 CRS-1.0000 CST -.9970
LSA 7706.7 MSA 253.0 SSA 10.6
EL1 7100.4 EL2 163.0 ALF 17.90

LAUNCH DATE DEC 22 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 670.822 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 32.995 GAL 3.96 AZL 84.49 HCA 196.43 SMA 185.58 ECC .21786 INC 5.5085 V1 30.277
RP 212.87 LAP -1.56 LOP 286.55 VP 23.061 GAP -9.35 AZP 95.28 TAL 22.46 TAP 218.90 RCA 145.15 APO 226.01 V2 25.782
RC 297.989 GL 42.51 GP -24.92 ZAL 59.33 ZAP 59.56 ETS 163.36 ZAE 84.66 ETE 176.48 ZAC 59.72 ETC 256.22 CLP 56.04

PLANETOCENTRIC CONIC

C3 21.864 VHL 4.676 DLA 55.31 RAL 159.68 RAD 6567.9 VEL 11.968 PTH 2.13 VHP 4.034 DPA -14.50 RAP 154.72 ECC 1.3598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.28	5 25 20	4362.14	-34.58	210.84	41.20	43.73	6 38 2	3762.1	-40.15	204.02
139.72	14 28 33	2753.42	-34.57	81.37	41.19	43.72	15 14 26	2153.4	-40.14	74.56
40.28	5 25 20	4362.14	-34.58	210.84	41.20	43.73	6 38 2	3762.1	-40.15	204.02
139.72	14 28 33	2753.42	-34.57	81.37	41.19	43.72	15 14 26	2153.4	-40.14	74.56
40.28	5 25 20	4362.14	-34.58	210.84	41.20	43.73	6 38 2	3762.1	-40.15	204.02
139.72	14 28 33	2753.42	-34.57	81.37	41.19	43.72	15 14 26	2153.4	-40.14	74.56

DIFFERENTIAL CORRECTIONS
TDE 5.4686 TRA -.9483 TC3-6.6731 BAU 2.0657
RDE 1.6272 RRA -.0311 RC3-2.3269 FAU .29990
FDE 6.8872 FRA -.1718 FC-11.8750 BSP 33504
BDE 5.7055 BRA .9498 BC3 7.0671 FSP 4226

MID-COURSE EXECUTION ACCURACY
SGT 9382.0 SGR 2952.2 SG3 1205.5
RRT .9776 RRF .9958 RTF .9672
SGB 9835.5 R23 .2208 R13 .9715
SG1 9817.6 SG2 593.5 THA 17.16

ORBIT DETERMINATION ACCURACY
ST 6731.5 SR 1995.0 SS 2944.2
CRT .9967 CRS-1.0000 CST -.9969
LSA 7609.1 MSA 250.2 SSA 11.7
EL1 7019.2 EL2 155.3 ALF 16.47

LAUNCH DATE DEC 22 1964 FLIGHT TIME 314.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 675.097 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.002 GAL 3.87 AZL 84.79 HCA 197.63 SMA 185.69 ECC .21782 INC 5.2130 V1 30.277
RP 212.57 LAP -1.58 LOP 287.75 VP 23.107 GAP -9.47 AZP 94.97 TAL 21.93 TAP 219.56 RCA 145.24 APO 226.14 V2 25.815
RC 299.061 GL 41.10 GP -23.28 ZAL 59.15 ZAP 58.09 ETS 163.68 ZAE 83.24 ETE 176.10 ZAC 61.32 ETC 256.44 CLP 54.87

PLANETOCENTRIC CONIC

C3 20.713 VHL 4.551 DLA 53.74 RAL 159.49 RAD 6567.8 VEL 11.920 PTH 2.12 VHP 4.025 DPA -13.01 RAP 155.43 ECC 1.3409

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.21	5 30 4	4337.35	-34.44	207.86	39.31	45.82	6 42 22	3737.4	-39.79	200.81
137.79	14 22 16	2752.17	-34.43	81.06	39.30	45.81	15 8 9	2152.2	-39.78	74.01
42.21	5 30 4	4337.35	-34.44	207.86	39.31	45.82	6 42 22	3737.4	-39.79	200.81
137.79	14 22 16	2752.17	-34.43	81.06	39.30	45.81	15 8 9	2152.2	-39.78	74.01
42.21	5 30 4	4337.35	-34.44	207.86	39.31	45.82	6 42 22	3737.4	-39.79	200.81
137.79	14 22 16	2752.17	-34.43	81.06	39.30	45.81	15 8 9	2152.2	-39.78	74.01

DIFFERENTIAL CORRECTIONS
TDE 5.3027 TRA -.9938 TC3-7.1610 BAU 2.0784
RDE 1.4496 RRA -.0292 RC3-2.2489 FAU .29954
FDE 6.5615 FRA -.1933 FC-12.5200 BSP 33938
BDE 5.4973 BRA .9942 BC3 7.5059 FSP 4242

MID-COURSE EXECUTION ACCURACY
SGT 9567.0 SGR 2743.1 SG3 1216.6
RRT .9777 RRF .9949 RTF .9672
SGB 9952.5 R23 .2193 R13 .9708
SG1 9937.0 SG2 555.0 THA 15.71

ORBIT DETERMINATION ACCURACY
ST 6708.8 SR 1826.1 SS 2875.4
CRT .9964 CRS-1.0000 CST -.9967
LSA 7519.9 MSA 248.3 SSA 12.7
EL1 6951.3 EL2 149.0 ALF 15.18

LAUNCH DATE DEC 22 1964 FLIGHT TIME 316.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 679.379 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.008 GAL 3.78 AZL 85.05 HCA 198.83 SMA 185.80 ECC .21778 INC 4.9532 V1 30.277
RP 212.29 LAP -1.60 LOP 288.95 VP 23.152 GAP -9.57 AZP 94.69 TAL 21.39 TAP 220.22 RCA 145.34 APO 226.26 V2 25.847
RC 300.120 GL 39.82 GP -21.80 ZAL 59.11 ZAP 56.70 ETS 163.98 ZAE 81.85 ETE 175.78 ZAC 62.78 ETC 256.61 CLP 53.75

PLANETOCENTRIC CONIC

C3 19.721 VHL 4.441 DLA 52.28 RAL 159.47 RAD 6567.8 VEL 11.879 PTH 2.11 VHP 4.026 DPA -11.68 RAP 156.10 ECC 1.3246

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.02	5 35 21	4313.72	-34.23	205.05	37.73	47.73	6 47 15	3713.7	-39.38	197.82
135.98	14 16 48	2752.39	-34.22	80.85	37.72	47.72	15 2 40	2152.4	-39.37	73.61
44.02	5 35 21	4313.72	-34.23	205.05	37.73	47.73	6 47 15	3713.7	-39.38	197.82
135.98	14 16 48	2752.39	-34.22	80.85	37.72	47.72	15 2 40	2152.4	-39.37	73.61
44.02	5 35 21	4313.72	-34.23	205.05	37.73	47.73	6 47 15	3713.7	-39.38	197.82
135.98	14 16 48	2752.39	-34.22	80.85	37.72	47.72	15 2 40	2152.4	-39.37	73.61

DIFFERENTIAL CORRECTIONS
TDE 5.1583 TRA-1.0255 TC3-7.6430 BAU 2.0944
RDE 1.3000 RRA -.0234 RC3-2.1655 FAU .29736
FDE 6.2316 FRA -.1937 FC-13.0541 BSP 34404
BDE 5.3196 BRA 1.0258 BC3 7.9439 FSP 4233

MID-COURSE EXECUTION ACCURACY
SGT 9749.4 SGR 2552.4 SG3 1219.5
RRT .9775 RRF .9938 RTF .9672
SGB10078.0 R23 .2166 R13 .9701
SG110064.5 SG2 521.3 THA 14.39

ORBIT DETERMINATION ACCURACY
ST 6689.9 SR 1678.3 SS 2799.6
CRT .9961 CRS -.9999 CST -.9966
LSA 7439.6 MSA 247.1 SSA 13.8
EL1 6895.7 EL2 143.8 ALF 14.04

LAUNCH DATE DEC 22 1964 FLIGHT TIME 318.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 683.669 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.015	GAL	3.68	AZL	85.28	HCA	200.03	SMA	185.91	ECC	.21776	INC	4.7229	V1	30.277
RP	212.01	LAP	-1.62	LOP	290.16	VP	23.197	GAP	-9.68	AZP	94.44	TAL	20.84	TAP	220.87	RCA	145.43	APO	226.40	V2	25.879
RC	301.167	GL	38.66	GP	-20.47	ZAL	59.17	ZAP	55.37	ETS	164.28	ZAE	80.48	ETE	175.51	ZAC	64.11	ETC	256.74	CLP	52.66

PLANETOCENTRIC CONIC

C3	18.854	VHL	4.342	DLA	50.92	RAL	159.58	RAD	6567.8	VEL	11.842	PTH	2.10	VHP	4.035	DPA	-10.51	RAP	156.74	ECC	1.3103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.73	5 41 5	4291.07	-33.98	202.40	36.41	49.48	6 52 36	3691.1	-38.94	195.00
134.27	14 12 1	2753.80	-33.97	80.73	36.40	49.47	14 57 54	2153.8	-38.93	73.33
45.73	5 41 5	4291.07	-33.98	202.40	36.41	49.48	6 52 36	3691.1	-38.94	195.00
134.27	14 12 1	2753.80	-33.97	80.73	36.40	49.47	14 57 54	2153.8	-38.93	73.33
45.73	5 41 5	4291.07	-33.98	202.40	36.41	49.48	6 52 36	3691.1	-38.94	195.00
134.27	14 12 1	2753.80	-33.97	80.73	36.40	49.47	14 57 54	2153.8	-38.93	73.33

DIFFERENTIAL CORRECTIONS

TDE	5.0301	TRA	-1.0459	TC3	-8.1220
RDE	1.1728	RRA	-.0153	RC3	-2.0809
FDE	5.9029	FRA	-.1781	FC	-13.4989
BDE	5.1651	BRA	1.0460	BC3	8.3843

BAU 2.1134
FAU .29398
BSP 34899
FSP 4204

MID-COURSE EXECUTION ACCURACY

SGT	9929.7	SGR	2379.4	SG3	1216.5		
RRT	.9772	RRF	.9925	RTF	.9671		
SGB	10210.8	R23	.2128	R13	.9695		
SG1	10198.9	SG2	491.9	THA	13.21		

ORBIT DETERMINATION ACCURACY

ST	6673.2	SR	1548.5	SS	2718.8		
CRT	.9957	CRS	-.9999	CST	-.9964		
LSA	7366.2	MSA	246.2	SSA	14.8		
EL1	6849.1	EL2	139.3	ALF	13.02		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 320.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 687.967 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.021	GAL	3.58	AZL	85.48	HCA	201.24	SMA	186.03	ECC	.21776	INC	4.5171	V1	30.277
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.242	GAP	-9.78	AZP	94.21	TAL	20.27	TAP	221.51	RCA	145.52	APO	226.54	V2	25.911
RC	302.203	GL	37.61	GP	-19.26	ZAL	59.33	ZAP	54.10	ETS	164.57	ZAE	79.13	ETE	175.29	ZAC	65.32	ETC	256.85	CLP	51.61

PLANETOCENTRIC CONIC

C3	18.088	VHL	4.253	DLA	49.65	RAL	159.82	RAD	6567.7	VEL	11.810	PTH	2.09	VHP	4.052	DPA	-9.45	RAP	157.36	ECC	1.2977

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.35	5 47 13	4269.12	-33.69	199.86	35.33	51.10	6 58 22	3669.1	-38.47	192.33
132.65	14 7 46	2756.29	-33.68	80.70	35.31	51.09	14 53 42	2156.3	-38.46	73.16
47.35	5 47 13	4269.12	-33.69	199.86	35.33	51.10	6 58 22	3669.1	-38.47	192.33
132.65	14 7 46	2756.29	-33.68	80.70	35.31	51.09	14 53 42	2156.3	-38.46	73.16
47.35	5 47 13	4269.12	-33.69	199.86	35.33	51.10	6 58 22	3669.1	-38.47	192.33
132.65	14 7 46	2756.29	-33.68	80.70	35.31	51.09	14 53 42	2156.3	-38.46	73.16

DIFFERENTIAL CORRECTIONS

TDE	4.9158	TRA	-1.0556	TC3	-8.5966
RDE	1.0640	RRA	-.0053	RC3	-1.9950
FDE	5.5805	FRA	-.1460	FC	-13.8538
BDE	5.0297	BRA	1.0556	BC3	8.8251

BAU 2.1341
FAU .28945
BSP 35425
FSP 4163

MID-COURSE EXECUTION ACCURACY

SGT	10107.0	SGR	2221.3	SG3	1208.0		
RRT	.9766	RRF	.9910	RTF	.9668		
SGB	10348.2	R23	.2079	R13	.9689		
SG1	10337.7	SG2	467.1	THA	12.14		

ORBIT DETERMINATION ACCURACY

ST	6658.9	SR	1434.3	SS	2635.1		
CRT	.9953	CRS	-.9999	CST	-.9961		
LSA	7299.4	MSA	246.0	SSA	15.9		
EL1	6810.3	EL2	135.6	ALF	12.11		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 322.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 692.271 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.028	GAL	3.48	AZL	85.67	HCA	202.45	SMA	186.15	ECC	.21776	INC	4.3321	V1	30.277
RP	211.47	LAP	-1.65	LOP	292.57	VP	23.286	GAP	-9.88	AZP	94.01	TAL	19.69	TAP	222.13	RCA	145.61	APO	226.68	V2	25.941
RC	303.228	GL	36.65	GP	-18.16	ZAL	59.58	ZAP	52.89	ETS	164.85	ZAE	77.81	ETE	175.11	ZAC	66.43	ETC	256.94	CLP	50.58

PLANETOCENTRIC CONIC

C3	17.403	VHL	4.172	DLA	48.44	RAL	160.16	RAD	6567.7	VEL	11.781	PTH	2.08	VHP	4.074	DPA	-8.52	RAP	157.97	ECC	1.2864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.90	5 53 43	4247.72	-33.38	197.43	34.44	52.60	7 4 31	3647.7	-37.98	189.79
131.10	14 3 58	2759.73	-33.37	80.74	34.42	52.59	14 49 58	2159.7	-37.97	73.10
48.90	5 53 43	4247.72	-33.38	197.43	34.44	52.60	7 4 31	3647.7	-37.98	189.79
131.10	14 3 58	2759.73	-33.37	80.74	34.42	52.59	14 49 58	2159.7	-37.97	73.10
48.90	5 53 43	4247.72	-33.38	197.43	34.44	52.60	7 4 31	3647.7	-37.98	189.79
131.10	14 3 58	2759.73	-33.37	80.74	34.42	52.59	14 49 58	2159.7	-37.97	73.10

DIFFERENTIAL CORRECTIONS

TDE	4.8130	TRA	-1.0548	TC3	-9.0672
RDE	.9704	RRA	.0056	RC3	-1.9091
FDE	5.2670	FRA	-.1025	FC	-14.1300
BDE	4.9098	BRA	1.0549	BC3	9.2660

BAU 2.1558
FAU .28403
BSP 35977
FSP 4106

MID-COURSE EXECUTION ACCURACY

SGT	10280.9	SGR	2076.9	SG3	1195.2		
RRT	.9758	RRF	.9891	RTF	.9666		
SGB	10488.6	R23	.2017	R13	.9683		
SG1	10479.1	SG2	445.9	THA	11.17		

ORBIT DETERMINATION ACCURACY

ST	6646.7	SR	1333.6	SS	2549.6		
CRT	.9949	CRS	-.9999	CST	-.9959		
LSA	7238.6	MSA	245.9	SSA	16.9		
EL1	6777.9	EL2	132.3	ALF	11.29		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 696.583 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.035	GAL	3.38	AZL	85.84	HCA	203.66	SMA	186.26	ECC	.21778	INC	4.1646	V1	30.277
RP	211.20	LAP	-1.67	LOP	293.79	VP	23.329	GAP	-9.98	AZP	93.82	TAL	19.10	TAP	222.75	RCA	145.70	APO	226.83	V2	25.971
RC	304.242	GL	35.77	GP	-17.16	ZAL	59.92	ZAP	51.73	ETS	165.12	ZAE	76.51	ETE	174.95	ZAC	67.45	ETC	257.00	CLP	49.59

PLANETOCENTRIC CONIC

C3	16.784	VHL	4.097	DLA	47.30	RAL	160.59	RAD	6567.7	VEL	11.754	PTH	2.07	VHP	4.101	DPA	-7.69	RAP	158.57	ECC	1.2762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.39	6 0 34	4226.72	-33.04	195.09	33.72	54.00	7 11 0	3626.7	-37.48	187.35
129.61	14 0 34	2764.04	-33.03	80.86	33.71	53.99	14 46 38	2164.0	-37.47	73.12
50.39	6 0 34	4226.72	-33.04	195.09	33.72	54.00	7 11 0	3626.7	-37.48	187.35
129.61	14 0 34	2764.04	-33.03	80.86	33.71	53.99	14 46 38	2164.0	-37.47	73.12
50.39	6 0 34	4226.72	-33.04	195.09	33.72	54.00	7 11 0	3626.7	-37.48	187.35
129.61	14 0 34	2764.04	-33.03	80.86	33.71	53.99	14 46 38	2164.0	-37.47	73.12

DIFFERENTIAL CORRECTIONS

TDE	4.7172	TRA	-1.0465	TC3	-9.5403
RDE	.8891	RRA	.0166	RC3	-1.8260
FDE	4.9626	FRA	-.0518	FC	-14.3506
BDE	4.8003	BRA	1.0466	BC3	9.7135

BAU 2.1796
FAU .27822
BSP 36495
FSP 4034

MID-COURSE EXECUTION ACCURACY

SGT	10454.0	SGR	1945.7	SG3	1179.7		
RRT	.9746	RRF	.9869	RTF	.9663		
SGB	10633.5	R23	.1943	R13	.9678		
SG1	10624.9	SG2	428.4	THA	10.30		

ORBIT DETERMINATION ACCURACY

ST	6633.1	SR	1244.3	SS	2462.4		
CRT	.9944	CRS	-.9998	CST	-.9955		
LSA	7179.7	MSA	246.0	SSA	18.0		
EL1	6747.5	EL2	129.4	ALF	10.57		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 700.901 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.042	GAL	3.28	AZL	85.99	HCA	204.87	SMA	186.39	ECC	.21781	INC	4.0122
RP	210.95	LAP	-1.69	LOP	295.01	VP	23.372	GAP	-10.08	AZP	93.64	TAL	18.49	TAP	223.36	RCA	145.79	APO	226.98
RC	305.247	GL	34.97	GP	-16.25	ZAL	60.33	ZAP	50.62	ETS	165.37	ZAE	75.24	ETE	174.83	ZAC	68.39	ETC	257.05

V1	30.277	V2	26.001	CLP	48.63														

PLANETOCENTRIC CONIC

C3	16.221	VHL	4.028	DLA	46.21	RAL	161.10	RAD	6567.7	VEL	11.731	PTH	2.07	VHP	4.132	DPA	-6.95	RAP	159.16

ECC	1.2670																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.83	6 7 44	4205.97	-32.69	192.81	33.16	55.31	7 17 50	3606.0	-36.97	185.00
128.17	13 57 29	2769.18	-32.67	81.05	33.15	55.30	14 43 38	2169.2	-36.96	73.23
51.83	6 7 44	4205.97	-32.69	192.81	33.16	55.31	7 17 50	3606.0	-36.97	185.00
128.17	13 57 29	2769.18	-32.67	81.05	33.15	55.30	14 43 38	2169.2	-36.96	73.23
51.83	6 7 44	4205.97	-32.69	192.81	33.16	55.31	7 17 50	3606.0	-36.97	185.00
128.17	13 57 29	2769.18	-32.67	81.05	33.15	55.30	14 43 38	2169.2	-36.96	73.23

DIFFERENTIAL CORRECTIONS

TDE	4.6285	TRA	-1.0292	TC	-10.0119	BAU	2.2039
RDE	.8183	RRA	.0282	RC3	-1.7436	FAU	.27176
FDE	4.6693	FRA	.0086	FC	-14.5041	BSP	37043
BDE	4.7003	BRA	1.0296	BC3	10.1626	FSP	3959

MID-COURSE EXECUTION ACCURACY

SGT	10624.1	SGR	1825.1	SG3	1161.2		
RRT	.9731	RRF	.9843	RTF	.9660		
SGB	10779.7	R23	.1860	R13	.9672		
SG1	10771.8	SG2	414.5	THA	9.50		

ORBIT DETERMINATION ACCURACY

ST	6619.5	SR	1164.9	SS	2374.8		
CRT	.9938	CRS	-.9998	CST	-.9952		
LSA	7124.1	MSA	246.6	SSA	19.0		
EL1	6720.0	EL2	127.1	ALF	9.92		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 705.225 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.049	GAL	3.17	AZL	86.13	HCA	206.09	SMA	186.51	ECC	.21785	INC	3.8729
RP	210.70	LAP	-1.70	LOP	296.23	VP	23.414	GAP	-10.17	AZP	93.48	TAL	17.87	TAP	223.96	RCA	145.88	APO	227.14
RC	306.243	GL	34.22	GP	-15.41	ZAL	60.82	ZAP	49.55	ETS	165.61	ZAE	74.00	ETE	174.72	ZAC	69.27	ETC	257.09

V1	30.277	V2	26.029	CLP	47.70														

PLANETOCENTRIC CONIC

C3	15.706	VHL	3.963	DLA	45.16	RAL	161.69	RAD	6567.6	VEL	11.709	PTH	2.06	VHP	4.167	DPA	-6.29	RAP	159.75

ECC	1.2585																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.23	6 15 15	4185.32	-32.31	190.59	32.73	56.55	7 25 0	3585.3	-36.46	182.71
126.77	13 54 39	2775.16	-32.30	81.31	32.72	56.54	14 40 54	2175.2	-36.44	73.43
53.23	6 15 15	4185.32	-32.31	190.59	32.73	56.55	7 25 0	3585.3	-36.46	182.71
126.77	13 54 39	2775.16	-32.30	81.31	32.72	56.54	14 40 54	2175.2	-36.44	73.43
53.23	6 15 15	4185.32	-32.31	190.59	32.73	56.55	7 25 0	3585.3	-36.46	182.71
126.77	13 54 39	2775.16	-32.30	81.31	32.72	56.54	14 40 54	2175.2	-36.44	73.43

DIFFERENTIAL CORRECTIONS

TDE	4.5451	TRA	-1.0033	TC	-10.4816	BAU	2.2283
RDE	.7563	RRA	.0400	RC3	-1.6629	FAU	.26489
FDE	4.3881	FRA	.0765	FC	-14.6014	BSP	37581
BDE	4.6076	BRA	1.0041	BC3	10.6127	FSP	3876

MID-COURSE EXECUTION ACCURACY

SGT	10790.3	SGR	1714.5	SG3	1140.4		
RRT	.9712	RRF	.9812	RTF	.9655		
SGB	10925.7	R23	.1768	R13	.9666		
SG1	10918.2	SG2	404.0	THA	8.78		

ORBIT DETERMINATION ACCURACY

ST	6604.8	SR	1094.4	SS	2287.4		
CRT	.9933	CRS	-.9997	CST	-.9948		
LSA	7070.4	MSA	247.7	SSA	20.0		
EL1	6693.6	EL2	125.0	ALF	9.35		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 709.556 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.057	GAL	3.06	AZL	86.26	HCA	207.31	SMA	186.64	ECC	.21791	INC	3.7447
RP	210.46	LAP	-1.72	LOP	297.45	VP	23.455	GAP	-10.26	AZP	93.33	TAL	17.24	TAP	224.55	RCA	145.97	APO	227.31
RC	307.229	GL	33.53	GP	-14.65	ZAL	61.38	ZAP	48.52	ETS	165.84	ZAE	72.78	ETE	174.64	ZAC	70.08	ETC	257.11

V1	30.277	V2	26.057	CLP	46.79														

PLANETOCENTRIC CONIC

C3	15.230	VHL	3.903	DLA	44.15	RAL	162.34	RAD	6567.6	VEL	11.688	PTH	2.06	VHP	4.204	DPA	-5.71	RAP	160.34

ECC	1.2507																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.60	6 23 7	4164.62	-31.93	188.40	32.42	57.72	7 32 31	3564.6	-35.93	180.46
125.40	13 52 0	2782.00	-31.92	81.64	32.41	57.71	14 38 22	2182.0	-35.92	73.70
54.60	6 23 7	4164.62	-31.93	188.40	32.42	57.72	7 32 31	3564.6	-35.93	180.46
125.40	13 52 0	2782.00	-31.92	81.64	32.41	57.71	14 38 22	2182.0	-35.92	73.70
54.60	6 23 7	4164.62	-31.93	188.40	32.42	57.72	7 32 31	3564.6	-35.93	180.46
125.40	13 52 0	2782.00	-31.92	81.64	32.41	57.71	14 38 22	2182.0	-35.92	73.70

DIFFERENTIAL CORRECTIONS

TDE	4.4631	TRA	-.9727	TC	-10.9597	BAU	2.2548
RDE	.7014	RRA	.0509	RC3	-1.5860	FAU	.25800
FDE	4.1154	FRA	.1433	FC	-14.6654	BSP	38084
BDE	4.5179	BRA	.9740	BC3	11.0738	FSP	3786

MID-COURSE EXECUTION ACCURACY

SGT	10957.7	SGR	1613.6	SG3	1118.6		
RRT	.9688	RRF	.9776	RTF	.9652		
SGB	11075.9	R23	.1667	R13	.9660		
SG1	11068.8	SG2	395.9	THA	8.13		

ORBIT DETERMINATION ACCURACY

ST	6584.7	SR	1030.8	SS	2198.4		
CRT	.9927	CRS	-.9997	CST	-.9943		
LSA	7013.7	MSA	248.4	SSA	21.0		
EL1	6663.7	EL2	123.1	ALF	8.84		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 713.892 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.064	GAL	2.95	AZL	86.37	HCA	208.54	SMA	186.76	ECC	.21799	INC	3.6266
RP	210.22	LAP	-1.73	LOP	298.68	VP	23.495	GAP	-10.35	AZP	93.19	TAL	16.59	TAP	225.13	RCA	146.05	APO	227.48
RC	308.206	GL	32.90	GP	-13.94	ZAL	62.00	ZAP	47.52	ETS	166.05	ZAE	71.58	ETE	174.57	ZAC	70.84	ETC	257.13

V1	30.277	V2	26.085	CLP	45.91														

PLANETOCENTRIC CONIC

C3	14.790	VHL	3.846	DLA	43.17	RAL	163.06	RAD	6567.6	VEL	11.669	PTH	2.05	VHP	4.244	DPA	-5.19	RAP	160.93

ECC	1.2434																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.95	6 31 20	4143.77	-31.53	186.24	32.23	58.83	7 40 23	3543.8	-35.40	178.25
124.05	13 49 30	2789.72	-31.52	82.04	32.22	58.82	14 36 0	2189.7	-35.38	74.06
55.95	6 31 20	4143.77	-31.53	186.24	32.23	58.83	7 40 23	3543.8	-35.40	178.25
124.05	13 49 30	2789.72	-31.52	82.04	32.22	58.82	14 36 0	2189.7	-35.38	74.06
55.95	6 31 20	4143.77	-31.53	186.24	32.23	58.83	7 40 23	3543.8	-35.40	178.25
124.05	13 49 30	2789.72	-31.52	82.04	32.22	58.82	14 36 0	2189.7	-35.38	74.06

DIFFERENTIAL CORRECTIONS

TDE	4.3880	TRA	-.9300	TC	-11.4276	BAU	2.2792
RDE	.6533	RRA	.0624	RC3	-1.5093	FAU	.25062
FDE	3.8585	FRA	.2205	FC	-14.6699	BSP	38675
BDE	4.4364	BRA	.9321	BC3	11.5268	FSP	3700

MID-COURSE EXECUTION ACCURACY

SGT	11117.7	SGR	1520.3	SG3	1094.8		
RRT	.9658	RRF	.9734	RTF	.9647		
SGB	11221.2	R23	.1563	R13	.9654		
SG1	11214.4	SG2	390.7	THA	7.53		

ORBIT DETERMINATION ACCURACY

ST	6567.5	SR	974.7	SS	2112.2		
CRT	.9920	CRS	-.9996	CST	-.9937		
LSA	6962.8	MSA	249.9	SSA	22.0		
EL1	6638.4	EL2	121.4	ALF	8.38		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 718.235 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.071	GAL	2.83	AZL	86.48	HCA	209.76	SMA	186.89	ECC	.21808	INC	3.5171
RP	209.99	LAP	-1.75	LOP	299.90	VP	23.535	GAP	-10.43	AZP	93.05	TAL	15.94	TAP	225.70	RCA	146.14	APO	227.65
RC	309.174	GL	32.30	GP	-13.29	ZAL	62.69	ZAP	46.57	ETS	166.26	ZAE	70.41	ETE	174.51	ZAC	71.55	ETC	257.13

V1	30.277	V2	26.111	CLP	45.05														

PLANETOCENTRIC CONIC

C3	14.380	VHL	3.792	DLA	42.21	RAL	163.84	RAD	6567.6	VEL	11.652	PTH	2.05	VHP	4.287	DPA	-4.74	RAP	161.52
ECC	1.2367																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.28	6 39 55	4122.64	-31.11	184.08	32.14	59.90	7 48 38	3522.6	-34.85	176.06
122.72	13 47 5	2798.37	-31.10	82.52	32.13	59.89	14 33 44	2198.4	-34.84	74.50
57.28	6 39 55	4122.64	-31.11	184.08	32.14	59.90	7 48 38	3522.6	-34.85	176.06
122.72	13 47 5	2798.37	-31.10	82.52	32.13	59.89	14 33 44	2198.4	-34.84	74.50
57.28	6 39 55	4122.64	-31.11	184.08	32.14	59.90	7 48 38	3522.6	-34.85	176.06
122.72	13 47 5	2798.37	-31.10	82.52	32.13	59.89	14 33 44	2198.4	-34.84	74.50

DIFFERENTIAL CORRECTIONS

TDE	4.3118	TRA	-.8833	TC-11.9039	BAU	2.3051	
RDE	.6103	RRA	.0732	RC3-1.4360	FAU	.24330	
FDE	3.6100	FRA	.2967	FC-14.6471	BSP	39186	
BDE	4.3548	BRA	.8863	BC311.9902	FSP	3605	

MID-COURSE EXECUTION ACCURACY

SGT11278.2	SGR	1434.9	SG3	1070.5			
RRT	.9622	RRF	.9685	RTF	.9642		
SGB11369.1	R23	.1457	R13	.9648			
SG111362.5	SG2	387.8	THA	6.99			

ORBIT DETERMINATION ACCURACY

ST	6542.7	SR	923.8	SS	2024.9		
CRT	.9914	CRS	-.9996	CST	-.9931		
LSA	6906.3	MSA	251.6	SSA	22.9		
EL1	6606.5	EL2	119.9	ALF	7.97		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 722.580 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.079	GAL	2.72	AZL	86.58	HCA	210.99	SMA	187.02	ECC	.21819	INC	3.4154
RP	209.77	LAP	-1.76	LOP	301.14	VP	23.574	GAP	-10.52	AZP	92.93	TAL	15.27	TAP	226.26	RCA	146.22	APO	227.83
RC	310.132	GL	31.74	GP	-12.69	ZAL	63.44	ZAP	45.64	ETS	166.45	ZAE	69.26	ETE	174.47	ZAC	72.22	ETC	257.13

V1	30.277	V2	26.137	CLP	44.22														

PLANETOCENTRIC CONIC

C3	13.998	VHL	3.741	DLA	41.27	RAL	164.67	RAD	6567.6	VEL	11.635	PTH	2.04	VHP	4.331	DPA	-4.34	RAP	162.12
ECC	1.2304																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.62	6 48 57	4100.98	-30.68	181.91	32.15	60.92	7 57 18	3501.0	-34.30	173.86
121.38	13 44 41	2808.13	-30.67	83.08	32.14	60.91	14 31 30	2208.1	-34.29	75.04
58.62	6 48 57	4100.98	-30.68	181.91	32.15	60.92	7 57 18	3501.0	-34.30	173.86
121.38	13 44 41	2808.13	-30.67	83.08	32.14	60.91	14 31 30	2208.1	-34.29	75.04
58.62	6 48 57	4100.98	-30.68	181.91	32.15	60.92	7 57 18	3501.0	-34.30	173.86
121.38	13 44 41	2808.13	-30.67	83.08	32.14	60.91	14 31 30	2208.1	-34.29	75.04

DIFFERENTIAL CORRECTIONS

TDE	4.2601	TRA	-.8070	TC-12.3196	BAU	2.3193	
RDE	.5758	RRA	.0874	RC3-1.3530	FAU	.23405	
FDE	3.4073	FRA	.4100	FC-14.4757	BSP	40264	
BDE	4.2988	BRA	.8117	BC312.3937	FSP	3586	

MID-COURSE EXECUTION ACCURACY

SGT11412.5	SGR	1354.4	SG3	1041.3			
RRT	.9571	RRF	.9629	RTF	.9635		
SGB11492.6	R23	.1369	R13	.9640			
SG111485.9	SG2	390.1	THA	6.49			

ORBIT DETERMINATION ACCURACY

ST	6548.4	SR	883.9	SS	1958.6		
CRT	.9907	CRS	-.9995	CST	-.9922		
LSA	6887.1	MSA	257.5	SSA	23.4		
EL1	6606.7	EL2	118.9	ALF	7.62		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 726.934 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.087	GAL	2.60	AZL	86.68	HCA	212.23	SMA	187.16	ECC	.21831	INC	3.3205
RP	209.55	LAP	-1.77	LOP	302.37	VP	23.613	GAP	-10.60	AZP	92.81	TAL	14.58	TAP	226.81	RCA	146.30	APO	228.02
RC	311.080	GL	31.22	GP	-12.13	ZAL	64.25	ZAP	44.74	ETS	166.64	ZAE	68.13	ETE	174.43	ZAC	72.85	ETC	257.12

V1	30.277	V2	26.162	CLP	43.41														

PLANETOCENTRIC CONIC

C3	13.641	VHL	3.693	DLA	40.35	RAL	165.55	RAD	6567.5	VEL	11.620	PTH	2.04	VHP	4.377	DPA	-3.99	RAP	162.72
ECC	1.2245																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.96	6 58 24	4078.79	-30.24	179.73	32.24	61.90	8 6 23	3478.8	-33.73	171.65
120.04	13 42 16	2819.00	-30.23	83.74	32.23	61.89	14 29 15	2219.0	-33.73	75.67
59.96	6 58 24	4078.79	-30.24	179.73	32.24	61.90	8 6 23	3478.8	-33.73	171.65
120.04	13 42 16	2819.00	-30.23	83.74	32.23	61.89	14 29 15	2219.0	-33.73	75.67
59.96	6 58 24	4078.79	-30.24	179.73	32.24	61.90	8 6 23	3478.8	-33.73	171.65
120.04	13 42 16	2819.00	-30.23	83.74	32.23	61.89	14 29 15	2219.0	-33.73	75.67

DIFFERENTIAL CORRECTIONS

TDE	4.1778	TRA	-.7540	TC-12.8210	BAU	2.3499	
RDE	.5399	RRA	.0957	RC3-1.2893	FAU	.22746	
FDE	3.1655	FRA	.4725	FC-14.4366	BSP	40564	
BDE	4.2125	BRA	.7601	BC312.8857	FSP	3455	

MID-COURSE EXECUTION ACCURACY

SGT11578.0	SGR	1283.1	SG3	1017.7			
RRT	.9523	RRF	.9564	RTF	.9630		
SGB11648.9	R23	.1254	R13	.9635			
SG111642.4	SG2	389.2	THA	6.03			

ORBIT DETERMINATION ACCURACY

ST	6503.7	SR	840.0	SS	1864.4		
CRT	.9901	CRS	-.9995	CST	-.9914		
LSA	6812.7	MSA	257.5	SSA	24.5		
EL1	6556.7	EL2	117.0	ALF	7.29		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 731.293 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.094	GAL	2.48	AZL	86.77	HCA	213.46	SMA	187.29	ECC	.21846	INC	3.2316
RP	209.34	LAP	-1.78	LOP	303.61	VP	23.650	GAP	-10.68	AZP	92.70	TAL	13.89	TAP	227.35	RCA	146.38	APO	228.21
RC	312.019	GL	30.73	GP	-11.61	ZAL	65.11	ZAP	43.88	ETS	166.81	ZAE	67.02	ETE	174.41	ZAC	73.45	ETC	257.10

V1	30.277	V2	26.186	CLP	42.62		

PLANETOCENTRIC CONIC

C3	13.306	VHL	3.648	DLA	39.44	RAL	166.48	RAD	6567.5	VEL	11.606	PTH	2.03	VHP	4.425	DPA	-3.69	RAP	163.33
ECC	1.2190																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.32	7 8 21	4055.75	-29.78	177.50	32.41	62.85	8 15 57	3455.7	-33.16	169.41
118.68	13 39 45	2831.23	-29.77	84.49	32.40	62.84	14 26 56	2231.2	-33.15	76.41
61.32	7 8 21	4055.75	-29.78	177.50	32.41	62.85	8 15 57	3455.7	-33.16	169.41
118.68	13 39 45	2831.23	-29.77	84.49	32.40	62.84	14 26 56	2231.2	-33.15	76.41
61.32	7 8 21	4055.75	-29.78	177.50	32.41	62.85	8 15 57	3455.7	-33.16	169.41
118.68	13 39 45	2831.23	-29.77	84.49	32.40	62.84	14 26 56	2231.2	-33.15	76.41

DIFFERENTIAL CORRECTIONS

TDE	4.0987	TRA	-.6904	TC-13.3095	BAU	2.3776	
RDE	.5082	RRA	.1043	RC3-1.2244	FAU	.22042	
FDE	2.9400	FRA	.5407	FC-14.3416	BSP	40978	
BDE	4.1301	BRA	.6982	BC313.3657	FSP	3342	

MID-COURSE EXECUTION ACCURACY

SGT11734.6	SGR	1216.6	SG3	992.7			
RRT	.9466	RRF	.9490	RTF	.9626		
SGB11797.5	R23	.1142	R13	.9630			
SG111791.0	SG2	390.2	THA	5.61			

ORBIT DETERMINATION ACCURACY

ST	6458.3	SR	801.2	SS	1774.2		
CRT	.9895	CRS	-.9994	CST	-.9905		
LSA	6740.3	MSA	258.2	SSA	25.5		
EL1	6506.8	EL2	115.1	ALF	7.00		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 735.657 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.102 GAL 2.35 AZL 86.85 HCA 214.70 SMA 187.43 ECC .21862 INC 3.1482 V1 30.277
RP 209.14 LAP -1.79 LOP 304.65 VP 23.687 GAP -10.76 AZP 92.59 TAL 13.18 TAP 227.88 RCA 146.45 APO 228.41 V2 26.209
RC 312.950 GL 30.26 GP -11.13 ZAL 66.04 ZAP 43.04 ETS 166.97 ZAE 65.94 ETE 174.39 ZAC 74.02 ETC 257.08 CLP 41.85

PLANETOCENTRIC CONIC

C3 12.992 VHL 3.604 DLA 38.53 RAL 167.46 RAD 6567.5 VEL 11.592 PTH 2.03 VHP 4.475 DPA -3.44 RAP 163.94 ECC 1.2138

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.70	7 18 53	4031.62	-29.31	175.21	32.66	63.78	8 26 4	3431.6	-32.57	167.11
117.30	13 37 2	2845.03	-29.29	85.37	32.65	63.76	14 24 27	2245.0	-32.56	77.27
62.70	7 18 53	4031.62	-29.31	175.21	32.66	63.78	8 26 4	3431.6	-32.57	167.11
117.30	13 37 2	2845.03	-29.29	85.37	32.65	63.76	14 24 27	2245.0	-32.56	77.27
62.70	7 18 53	4031.62	-29.31	175.21	32.66	63.78	8 26 4	3431.6	-32.57	167.11
117.30	13 37 2	2845.03	-29.29	85.37	32.65	63.76	14 24 27	2245.0	-32.56	77.27

DIFFERENTIAL CORRECTIONS
TDE 4.0201 TRA -.6186 TC-13.8020 BAU 2.4057
RDE .4800 RRA .1131 RC3-1.1616 FAU .21345
FDE 2.7276 FRA .6144 FC-14.2232 BSP 41393
BDE 4.0487 BRA .6288 BC313.8508 FSP 3234

MID-COURSE EXECUTION ACCURACY
SGT11891.7 SGR 1156.0 SG3 967.9
RRT .9398 RRF .9407 RTF .9620
SGB11947.7 R23 .1041 R13 .9624
SG111941.3 SG2 393.3 THA 5.23

ORBIT DETERMINATION ACCURACY
ST 6408.4 SR 766.5 SS 1686.8
CRT .9888 CRS -.9993 CST -.9892
LSA 6665.7 MSA 260.2 SSA 26.5
EL1 6453.1 EL2 113.4 ALF 6.75

LAUNCH DATE DEC 22 1964 FLIGHT TIME 344.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 740.025 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.110 GAL 2.23 AZL 86.93 HCA 215.94 SMA 187.57 ECC .21881 INC 3.0697 V1 30.277
RP 208.94 LAP -1.80 LOP 306.09 VP 23.723 GAP -10.84 AZP 92.49 TAL 12.46 TAP 228.40 RCA 146.53 APO 228.61 V2 26.232
RC 313.871 GL 29.82 GP -10.68 ZAL 67.01 ZAP 42.22 ETS 167.13 ZAE 64.87 ETE 174.37 ZAC 74.56 ETC 257.05 CLP 41.10

PLANETOCENTRIC CONIC

C3 12.697 VHL 3.563 DLA 37.63 RAL 168.48 RAD 6567.5 VEL 11.579 PTH 2.03 VHP 4.526 DPA -3.22 RAP 164.56 ECC 1.2090

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.11	7 29 59	4006.33	-28.81	172.86	32.98	64.67	8 36 46	3406.3	-31.96	164.75
115.89	13 34 5	2860.48	-28.80	86.37	32.98	64.66	14 21 46	2260.5	-31.95	78.26
64.11	7 29 59	4006.33	-28.81	172.86	32.98	64.67	8 36 46	3406.3	-31.96	164.75
115.89	13 34 5	2860.48	-28.80	86.37	32.98	64.66	14 21 46	2260.5	-31.95	78.26
64.11	7 29 59	4006.33	-28.81	172.86	32.98	64.67	8 36 46	3406.3	-31.96	164.75
115.89	13 34 5	2860.48	-28.80	86.37	32.98	64.66	14 21 46	2260.5	-31.95	78.26

DIFFERENTIAL CORRECTIONS
TDE 3.9429 TRA -.5309 TC-14.2839 BAU 2.4319
RDE .4548 RRA .1214 RC3-1.0990 FAU .20630
FDE 2.5267 FRA .6859 FC-14.0658 BSP 41861
BDE 3.9690 BRA .5524 BC314.3262 FSP 3131

MID-COURSE EXECUTION ACCURACY
SGT12042.3 SGR 1099.5 SG3 942.2
RRT .9320 RRF .9312 RTF .9615
SGB12092.4 R23 .0940 R13 .9618
SG112085.9 SG2 397.2 THA 4.87

ORBIT DETERMINATION ACCURACY
ST 6355.7 SR 735.4 SS 1601.4
CRT .9883 CRS -.9991 CST -.9879
LSA 6590.2 MSA 261.9 SSA 27.5
EL1 6397.1 EL2 111.5 ALF 6.53

LAUNCH DATE DEC 22 1964 FLIGHT TIME 346.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 744.398 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.118 GAL 2.10 AZL 87.00 HCA 217.18 SMA 187.71 ECC .21901 INC 2.9957 V1 30.277
RP 208.76 LAP -1.81 LOP 307.33 VP 23.758 GAP -10.91 AZP 92.39 TAL 11.72 TAP 228.90 RCA 146.60 APO 228.82 V2 26.254
RC 314.784 GL 29.39 GP -10.27 ZAL 68.05 ZAP 41.43 ETS 167.27 ZAE 63.82 ETE 174.36 ZAC 75.07 ETC 257.02 CLP 40.37

PLANETOCENTRIC CONIC

C3 12.421 VHL 3.524 DLA 36.72 RAL 169.55 RAD 6567.5 VEL 11.568 PTH 2.02 VHP 4.578 DPA -3.04 RAP 165.19 ECC 1.2044

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.57	7 41 50	3979.38	-28.30	170.40	33.38	65.55	8 48 9	3379.4	-31.34	162.28
114.43	13 30 46	2870.04	-28.28	87.52	33.37	65.53	14 18 44	2278.0	-31.33	79.41
65.57	7 41 50	3979.38	-28.30	170.40	33.38	65.55	8 48 9	3379.4	-31.34	162.28
114.43	13 30 46	2870.04	-28.28	87.52	33.37	65.53	14 18 44	2278.0	-31.33	79.41
65.57	7 41 50	3979.38	-28.30	170.40	33.38	65.55	8 48 9	3379.4	-31.34	162.28
114.43	13 30 46	2870.04	-28.28	87.52	33.37	65.53	14 18 44	2278.0	-31.33	79.41

DIFFERENTIAL CORRECTIONS
TDE 3.8654 TRA -.4501 TC-14.7605 BAU 2.4572
RDE .4321 RRA .1296 RC3-1.0373 FAU .19910
FDE 2.3855 FRA .7599 FC-13.8770 BSP 42372
BDE 3.8895 BRA .4684 BC314.7969 FSP 3037

MID-COURSE EXECUTION ACCURACY
SGT12189.0 SGR 1047.4 SG3 916.3
RRT .9228 RRF .9204 RTF .9610
SGB12234.0 R23 .0847 R13 .9612
SG112227.3 SG2 402.2 THA 4.54

ORBIT DETERMINATION ACCURACY
ST 6297.6 SR 707.1 SS 1517.3
CRT .9878 CRS -.9989 CST -.9862
LSA 6510.9 MSA 264.3 SSA 28.3
EL1 6336.3 EL2 109.4 ALF 6.33

LAUNCH DATE DEC 22 1964 FLIGHT TIME 348.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 748.774 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.126 GAL 1.97 AZL 87.07 HCA 218.43 SMA 187.85 ECC .21924 INC 2.9256 V1 30.277
RP 208.58 LAP -1.82 LOP 308.58 VP 23.792 GAP -10.99 AZP 92.29 TAL 10.98 TAP 229.40 RCA 146.66 APO 229.03 V2 26.274
RC 315.690 GL 28.98 GP -9.87 ZAL 69.14 ZAP 40.67 ETS 167.41 ZAE 62.79 ETE 174.35 ZAC 75.56 ETC 256.99 CLP 39.65

PLANETOCENTRIC CONIC

C3 12.163 VHL 3.488 DLA 35.81 RAL 170.66 RAD 6567.5 VEL 11.556 PTH 2.02 VHP 4.632 DPA -2.89 RAP 165.83 ECC 1.2002

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.09	7 54 29	3950.50	-27.76	167.81	33.84	66.40	9 0 20	3350.5	-30.70	159.70
112.91	13 26 58	2898.00	-27.75	88.85	33.84	66.39	14 15 16	2298.0	-30.69	80.74
67.09	7 54 29	3950.50	-27.76	167.81	33.84	66.40	9 0 20	3350.5	-30.70	159.70
112.91	13 26 58	2898.00	-27.75	88.85	33.84	66.39	14 15 16	2298.0	-30.69	80.74
67.09	7 54 29	3950.50	-27.76	167.81	33.84	66.40	9 0 20	3350.5	-30.70	159.70
112.91	13 26 58	2898.00	-27.75	88.85	33.84	66.39	14 15 16	2298.0	-30.69	80.74

DIFFERENTIAL CORRECTIONS
TDE 3.7853 TRA -.3562 TC-15.2372 BAU 2.4828
RDE .4115 RRA .1372 RC3 -.9773 FAU .19205
FDE 2.1534 FRA .8309 FC-13.6698 BSP 42841
BDE 3.8076 BRA .3817 BC315.2685 FSP 2937

MID-COURSE EXECUTION ACCURACY
SGT12334.9 SGR 999.5 SG3 890.6
RRT .9124 RRF .9084 RTF .9604
SGB12375.4 R23 .0761 R13 .9606
SG112368.6 SG2 408.1 THA 4.23

ORBIT DETERMINATION ACCURACY
ST 6230.8 SR 681.5 SS 1434.6
CRT .9874 CRS -.9986 CST -.9841
LSA 6424.4 MSA 266.8 SSA 29.2
EL1 6267.0 EL2 107.2 ALF 6.17

LAUNCH DATE DEC 22 1964 FLIGHT TIME 350.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 753.154 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.134	GAL	1.83	AZL	87.14	HCA	219.67	SMA	187.99	ECC	.21949	INC	2.8591	V1	30.277
RP	208.40	LAP	-1.82	LOP	309.82	VP	23.826	GAP	-11.06	AZP	92.20	TAL	10.22	TAP	229.89	RCA	146.73	APO	229.25	V2	26.294
RC	316.588	GL	28.58	GP	-9.51	ZAL	70.28	ZAP	39.92	ETS	167.53	ZAE	61.78	ETE	174.35	ZAC	76.03	ETC	256.95	CLP	38.96

PLANETOCENTRIC CONIC

C3	11.921	VHL	3.453	DLA	34.90	RAL	171.81	RAD	6567.5	VEL	11.546	PTH	2.02	VHP	4.686	DPA	-2.78	RAP	166.48	ECC	1.1962

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.69	8 8 6	3919.17	-27.20	165.06	34.37	67.24	9 13 25	3319.2	-30.04	156.95
111.31	13 22 32	2920.87	-27.19	90.40	34.37	67.23	14 11 13	2320.9	-30.03	82.29
68.69	8 8 6	3919.17	-27.20	165.06	34.37	67.24	9 13 25	3319.2	-30.04	156.95
111.31	13 22 32	2920.87	-27.19	90.40	34.37	67.23	14 11 13	2320.9	-30.03	82.29
68.69	8 8 6	3919.17	-27.20	165.06	34.37	67.24	9 13 25	3319.2	-30.04	156.95
111.31	13 22 32	2920.87	-27.19	90.40	34.37	67.23	14 11 13	2320.9	-30.03	82.29

DIFFERENTIAL CORRECTIONS

TDE	3.7036	TRA	-.2546	TC-15.7060	BAU	2.5075	
RDE	.3930	RRA	.1444	RC3 -.9182	FAU	.18503	
FDE	1.9801	FRA	.8995	FC-13.4366	BSP	43336	
BDE	3.7244	BRA	.2927	BC315.7328	FSP	2843	

MID-COURSE EXECUTION ACCURACY

SGT12476.7	SGR	955.4	SG3	864.9			
RRT	.9005	RRF	.8949	RTF	.9599		
SGB12513.2	R23	.0677	R13	.9601			
SG112506.3	SG2	414.4	THA	3.95			

ORBIT DETERMINATION ACCURACY

ST	6156.4	SR	658.3	SS	1353.3		
CRT	.9872	CRS	-.9980	CST	-.9817		
LSA	6331.9	MSA	269.3	SSA	30.1		
EL1	6190.6	EL2	104.6	ALF	6.03		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 352.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 757.538 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.142	GAL	1.70	AZL	87.20	HCA	220.92	SMA	188.13	ECC	.21976	INC	2.7960	V1	30.277
RP	208.24	LAP	-1.83	LOP	311.07	VP	23.858	GAP	-11.14	AZP	92.11	TAL	9.45	TAP	230.37	RCA	146.79	APO	229.48	V2	26.314
RC	317.480	GL	28.20	GP	-9.17	ZAL	71.47	ZAP	39.20	ETS	167.66	ZAE	60.79	ETE	174.35	ZAC	76.49	ETC	256.91	CLP	38.28

PLANETOCENTRIC CONIC

C3	11.697	VHL	3.420	DLA	33.98	RAL	173.00	RAD	6567.4	VEL	11.536	PTH	2.01	VHP	4.742	DPA	-2.69	RAP	167.14	ECC	1.1925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.39	8 22 53	3884.69	-26.62	162.08	34.96	68.06	9 27 37	3284.7	-29.35	153.98
109.61	13 17 14	2947.36	-26.61	92.21	34.96	68.05	14 6 22	2347.4	-29.35	84.11
70.39	8 22 53	3884.69	-26.62	162.08	34.96	68.06	9 27 37	3284.7	-29.35	153.98
109.61	13 17 14	2947.36	-26.61	92.21	34.96	68.05	14 6 22	2347.4	-29.35	84.11
110.00	13 48 9	2853.07	-28.86	85.80	35.91	70.83	14 35 42	2253.1	-31.20	77.38
110.00	12 51 9	3026.98	-24.42	97.37	33.91	65.30	13 41 36	2427.0	-27.54	89.59

DIFFERENTIAL CORRECTIONS

TDE	3.6196	TRA	-.1464	TC-16.1693	BAU	2.5320	
RDE	.3761	RRA	.1514	RC3 -.8606	FAU	.17816	
FDE	1.8137	FRA	.9674	FC-13.1865	BSP	43836	
BDE	3.6391	BRA	.2106	BC316.1922	FSP	2751	

MID-COURSE EXECUTION ACCURACY

SGT12616.6	SGR	914.9	SG3	839.5			
RRT	.8872	RRF	.8799	RTF	.9594		
SGB12649.8	R23	.0603	R13	.9595			
SG112642.7	SG2	421.2	THA	3.69			

ORBIT DETERMINATION ACCURACY

ST	6073.6	SR	637.0	SS	1272.7		
CRT	.9870	CRS	-.9972	CST	-.9786		
LSA	6232.1	MSA	272.5	SSA	30.9		
EL1	6106.1	EL2	101.8	ALF	5.91		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 761.925 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.150	GAL	1.56	AZL	87.26	HCA	222.17	SMA	188.28	ECC	.22006	INC	2.7359	V1	30.277
RP	208.08	LAP	-1.84	LOP	312.33	VP	23.890	GAP	-11.21	AZP	92.03	TAL	8.66	TAP	230.83	RCA	146.85	APO	229.71	V2	26.332
RC	318.367	GL	27.82	GP	-8.84	ZAL	72.72	ZAP	38.50	ETS	167.77	ZAE	59.81	ETE	174.35	ZAC	76.93	ETC	256.87	CLP	37.62

PLANETOCENTRIC CONIC

C3	11.488	VHL	3.389	DLA	33.04	RAL	174.23	RAD	6567.4	VEL	11.527	PTH	2.01	VHP	4.799	DPA	-2.64	RAP	167.80	ECC	1.1891

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.22	8 39 9	3845.98	-26.02	158.82	35.62	68.88	9 43 15	3246.0	-28.65	150.73
107.78	13 10 45	2978.56	-26.01	94.35	35.61	68.86	14 0 24	2378.6	-28.64	86.27
72.22	8 39 9	3845.98	-26.02	158.82	35.62	68.88	9 43 15	3246.0	-28.65	150.73
107.78	13 10 45	2978.56	-26.01	94.35	35.61	68.86	14 0 24	2378.6	-28.64	86.27
110.00	14 31 17	2731.13	-31.27	77.13	37.54	75.44	15 16 48	2131.1	-32.95	68.31
110.00	12 17 48	3141.41	-20.98	104.47	33.13	62.37	13 10 9	2541.4	-24.50	97.10

DIFFERENTIAL CORRECTIONS

TDE	3.5320	TRA	-.0316	TC-16.6259	BAU	2.5565	
RDE	.3607	RRA	.1579	RC3 -.8040	FAU	.17135	
FDE	1.6535	FRA	1.0329	FC-12.9126	BSP	44318	
BDE	3.5504	BRA	.1610	BC316.6454	FSP	2662	

MID-COURSE EXECUTION ACCURACY

SGT12754.4	SGR	877.6	SG3	814.0			
RRT	.8722	RRF	.8633	RTF	.9587		
SGB12784.5	R23	.0534	R13	.9588			
SG112777.3	SG2	428.5	THA	3.44			

ORBIT DETERMINATION ACCURACY

ST	5980.2	SR	617.4	SS	1192.4		
CRT	.9870	CRS	-.9958	CST	-.9747		
LSA	6122.8	MSA	275.9	SSA	31.8		
EL1	6011.2	EL2	98.6	ALF	5.82		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 766.314 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.159	GAL	1.42	AZL	87.32	HCA	223.42	SMA	188.43	ECC	.22039	INC	2.6785	V1	30.277
RP	207.93	LAP	-1.84	LOP	313.58	VP	23.920	GAP	-11.28	AZP	91.95	TAL	7.86	TAP	231.29	RCA	146.90	APO	229.95	V2	26.349
RC	319.247	GL	27.45	GP	-8.54	ZAL	74.02	ZAP	37.81	ETS	167.87	ZAE	58.85	ETE	174.35	ZAC	77.35	ETC	256.83	CLP	36.98

PLANETOCENTRIC CONIC

C3	11.296	VHL	3.361	DLA	32.09	RAL	175.49	RAD	6567.4	VEL	11.519	PTH	2.01	VHP	4.856	DPA	-2.61	RAP	168.47	ECC	1.1859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.23	8 57 20	3801.70	-25.39	155.16	36.33	69.68	10 0 41	3201.7	-27.92	147.09
105.77	13 2 39	3015.83	-25.38	96.94	36.33	69.66	13 52 55	2415.8	-27.91	88.87
74.23	8 57 20	3801.70	-25.39	155.16	36.33	69.68	10 0 41	3201.7	-27.92	147.09
105.77	13 2 39	3015.83	-25.38	96.94	36.33	69.66	13 52 55	2415.8	-27.91	88.87
110.00	14 59 40	2653.89	-32.45	71.42	38.62	78.63	15 43 53	2053.9	-33.68	62.40
110.00	11 59 30	3211.65	-18.70	108.64	33.01	60.85	12 53 1	2611.6	-22.44	101.50

DIFFERENTIAL CORRECTIONS

TDE	3.4485	TRA	.0962	TC-17.0528	BAU	2.5776	
RDE	.3475	RRA	.1644	RC3 -.7466	FAU	.16435	
FDE	1.5098	FRA	1.1011	FC-12.5968	BSP	44934	
BDE	3.4659	BRA	.1905	BC317.0691	FSP	2585	

MID-COURSE EXECUTION ACCURACY

SGT12883.6	SGR	843.9	SG3	788.2			
RRT	.8553	RRF	.8452	RTF	.9581		
SGB12911.2	R23	.0478	R13	.9582			
SG112903.8	SG2	436.6	THA	3.21			

ORBIT DETERMINATION ACCURACY

ST	5889.2	SR	600.8	SS	1120.5		
CRT	.9873	CRS	-.9938	CST	-.9702		
LSA	6018.3	MSA	280.2	SSA	32.5		
EL1	5919.0	EL2	94.9	ALF	5.75		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 770.707 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.167	GAL	1.27	AZL	87.38	HCA	224.68	SMA	188.57	ECC	.22074	INC	2.6236
RP	207.79	LAP	-1.84	LOP	314.83	VP	23.950	GAP	-11.35	AZP	91.87	TAL	7.05	TAP	231.73	RCA	146.95	APO	230.20
RC	320.122	GL	27.08	GP	-8.26	ZAL	75.37	ZAP	37.15	ETS	167.97	ZAE	57.91	ETE	174.36	ZAC	77.76	ETC	256.78

V1	30.277	V2	26.366	CLP	36.35														

PLANETOCENTRIC CONIC

C3	11.119	VHL	3.335	DLA	31.13	RAL	176.79	RAD	6567.4	VEL	11.511	PTH	2.01	VHP	4.915	DPA	-2.60	RAP	169.15

ECC	1.1830																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.50	9 18 9	3749.34	-24.73	150.94	37.10	70.47	10 20 39	3149.3	-27.16	142.88
103.50	12 52 10	3061.70	-24.72	100.16	37.10	70.45	13 43 12	2461.7	-27.15	92.10
76.50	9 18 9	3749.34	-24.73	150.94	37.10	70.47	10 20 39	3149.3	-27.16	142.88
103.50	12 52 10	3061.70	-24.72	100.16	37.10	70.45	13 43 12	2461.7	-27.15	92.10
110.00	15 23 22	2590.80	-33.20	66.65	39.53	81.36	16 6 33	1990.8	-34.04	57.51
110.00	11 46 7	3268.24	-16.79	111.92	33.17	59.78	12 40 36	2668.2	-20.68	104.95

DIFFERENTIAL CORRECTIONS

TDE	3.3491	TRA	.2190	TC	-17.5094	BAU	2.6049												
RDE	.3344	RRA	.1696	RC3	-.6947	FAU	.15824												
FDE	1.3580	FRA	1.1550	FC	-12.3204	BSP	45255												
BDE	3.3658	BRA	.2770	BC	317.5232	FSP	2481												

MID-COURSE EXECUTION ACCURACY

SGT	13025.6	SGR	812.8	SG3	764.7														
RRT	.8374	RRF	.8253	RTF	.9576														
SGB	13051.0	R23	.0410	R13	.9577														
SG1	13043.4	SG2	443.6	THA	2.99														

ORBIT DETERMINATION ACCURACY

ST	5766.8	SR	583.7	SS	1039.3														
CRT	.9877	CRS	-.9906	CST	-.9641														
LSA	5881.7	MSA	283.5	SSA	33.5														
EL1	5795.5	EL2	91.0	ALF	5.71														

LAUNCH DATE DEC 22 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 775.102 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.175	GAL	1.13	AZL	87.43	HCA	225.93	SMA	188.72	ECC	.22112	INC	2.5710
RP	207.66	LAP	-1.85	LOP	316.09	VP	23.978	GAP	-11.42	AZP	91.79	TAL	6.23	TAP	232.16	RCA	146.99	APO	230.45
RC	320.992	GL	26.71	GP	-7.99	ZAL	76.78	ZAP	36.50	ETS	168.07	ZAE	56.98	ETE	174.36	ZAC	78.15	ETC	256.73

V1	30.277	V2	26.381	CLP	35.73														

PLANETOCENTRIC CONIC

C3	10.959	VHL	3.311	DLA	30.15	RAL	178.11	RAD	6567.4	VEL	11.504	PTH	2.00	VHP	4.975	DPA	-2.62	RAP	169.84

ECC	1.1804																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.20	9 43 9	3683.96	-24.05	145.78	37.94	71.25	10 44 33	3084.0	-26.38	137.73
100.80	12 37 46	3121.13	-24.03	104.35	37.93	71.23	13 29 48	2521.1	-26.37	96.31
79.20	9 43 9	3683.96	-24.05	145.78	37.94	71.25	10 44 33	3084.0	-26.38	137.73
100.80	12 37 46	3121.13	-24.03	104.35	37.93	71.23	13 29 48	2521.1	-26.37	96.31
110.00	15 44 37	2535.31	-33.69	62.39	40.37	83.83	16 26 52	1935.3	-34.18	53.18
110.00	11 35 29	3317.77	-15.07	114.73	33.52	58.95	12 30 47	2717.8	-19.08	107.90

DIFFERENTIAL CORRECTIONS

TDE	3.2919	TRA	.3527	TC	-17.9312	BAU	2.6289												
RDE	.3230	RRA	.1746	RC3	-.6414	FAU	.15184												
FDE	1.2190	FRA	1.2091	FC	-11.9947	BSP	45733												
BDE	3.2679	BRA	.3936	BC	317.9427	FSP	2397												

MID-COURSE EXECUTION ACCURACY

SGT	13157.7	SGR	784.3	SG3	740.1														
RRT	.8174	RRF	.8035	RTF	.9570														
SGB	13181.1	R23	.0352	R13	.9571														
SG1	13173.3	SG2	451.2	THA	2.79														

ORBIT DETERMINATION ACCURACY

ST	5643.4	SR	568.9	SS	964.4														
CRT	.9883	CRS	-.9859	CST	-.9565														
LSA	5746.1	MSA	287.5	SSA	34.3														
EL1	5671.3	EL2	86.4	ALF	5.69														

LAUNCH DATE DEC 22 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 779.498 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.184	GAL	.98	AZL	87.48	HCA	227.19	SMA	188.87	ECC	.22153	INC	2.5206
RP	207.54	LAP	-1.85	LOP	317.35	VP	24.006	GAP	-11.49	AZP	91.71	TAL	5.39	TAP	232.58	RCA	147.03	APO	230.71
RC	321.858	GL	26.34	GP	-7.73	ZAL	78.23	ZAP	35.87	ETS	168.15	ZAE	56.06	ETE	174.37	ZAC	78.54	ETC	256.69

V1	30.277	V2	26.396	CLP	35.13														

PLANETOCENTRIC CONIC

C3	10.816	VHL	3.289	DLA	29.15	RAL	179.47	RAD	6567.4	VEL	11.498	PTH	2.00	VHP	5.035	DPA	-2.65	RAP	170.54

ECC	1.1780																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.78	10 16 20	3592.38	-23.33	138.73	38.83	72.02	11 16 13	2992.4	-25.57	130.71
97.22	12 15 26	3207.31	-23.32	110.48	38.82	72.00	13 8 53	2607.3	-25.57	102.46
100.00	13 33 12	2957.90	-27.22	93.22	40.01	77.15	14 22 30	2357.9	-28.72	84.73
100.00	11 41 16	3317.03	-19.55	117.07	37.30	66.92	12 36 33	2717.0	-22.50	109.52
110.00	16 4 18	2484.69	-33.99	58.47	41.17	86.13	16 45 42	1884.7	-34.15	49.23
110.00	11 26 39	3363.00	-13.47	117.26	34.02	58.28	12 22 42	2763.0	-17.57	110.54

DIFFERENTIAL CORRECTIONS

TDE	3.1519	TRA	.4944	TC	-18.3363	BAU	2.6528												
RDE	.3130	RRA	.1794	RC3	-.5892	FAU	.14559												
FDE	1.0891	FRA	1.2616	FC	-11.6532	BSP	46208												
BDE	3.1674	BRA	.5259	BC	318.3458	FSP	2315												

MID-COURSE EXECUTION ACCURACY

SGT	13288.6	SGR	758.7	SG3	716.0														
RRT	.7956	RRF	.7802	RTF	.9565														
SGB	13310.3	R23	.0302	R13	.9566														
SG1	13302.3	SG2	459.2	THA	2.60														

ORBIT DETERMINATION ACCURACY

ST	5511.0	SR	555.9	SS	894.0														
CRT	.9892	CRS	-.9790	CST	-.9470														
LSA	5602.9	MSA	292.0	SSA	35.1														
EL1	5538.4	EL2	81.2	ALF	5.70														

LAUNCH DATE DEC 22 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 783.897 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.192	GAL	.83	AZL	87.53	HCA	228.45	SMA	189.02	ECC	.22197	INC	2.4721
RP	207.42	LAP	-1.85	LOP	318.61	VP	24.033	GAP	-11.56	AZP	91.64	TAL	4.54	TAP	232.99	RCA	147.06	APO	230.98
RC	322.714	GL	25.97	GP	-7.50	ZAL	79.73	ZAP	35.25	ETS	168.23	ZAE	55.16	ETE	174.37	ZAC	78.92	ETC	256.64

V1	30.277	V2	26.409	CLP	34.55														

PLANETOCENTRIC CONIC

C3	10.689	VHL	3.269	DLA	28.13	RAL	180.86	RAD	6567.4	VEL	11.493	PTH	2.00	VHP	5.097	DPA	-2.71	RAP	171.25

ECC	1.1759																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 49 57	3304.88	-24.48	118.00	40.36	75.30	12 45 2	2704.9	-26.26	109.78
90.00	10 52 54	3490.01	-20.73	130.27	39.10	70.26	11 51 4	2890.0	-23.23	122.49
100.00	14 8 46	2857.33	-28.54	86.03	41.33	80.71	14 56 23	2257.3	-29.53	77.37
100.00	11 16 47	3412.79	-16.89	122.93	37.43	64.96	12 13 39	2812.8	-20.12	115.63
110.00	16 22 54	2437.49	-34.15	54.79	41.96	88.30	17 3 32	1837.5	-34.00	45.55
110.00	11 19 8	3405.40	-11.94	119.59	34.65	57.73	12 15 53	2805.4	-16.12	112.97

DIFFERENTIAL CORRECTIONS

TDE	3.0466	TRA	.6414	TC	-18.7230	BAU	2.6767												
RDE	.3038	RRA	.1837	RC3	-.5381	FAU	.13948												
FDE	.9611	FRA	1.3098	FC	-11.2966	BSP	46636												
BDE	3.0617	BRA	.6671	BC	318.7307	FSP	2228												

MID-COURSE EXECUTION ACCURACY

SGT	13416.9	SGR	735.2	SG3	692.1														
RRT	.7720	RRF	.7549	RTF	.9559														
SGB	13437.0	R23	.0252	R13	.9560														
SG1	13428.9	SG2	466.8	THA	2.43														

ORBIT DETERMINATION ACCURACY

ST	5365.3	SR	543.6	SS	823.3														
CRT	.9902	CRS	-.9687	CST	-.9343														
LSA	5447.0	MSA	297.1	SSA	36.0														
EL1	5392.2	EL2	75.6	ALF	5.73														

LAUNCH DATE DEC 22 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 788.297 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.201	GAL	.67	AZL	87.57	HCA	229.71	SMA	189.17	ECC	.22244	INC	2.4254
RP	207.31	LAP	-1.85	LOP	319.87	VP	24.058	GAP	-11.63	AZP	91.57	TAL	3.68	TAP	233.39	RCA	147.09	APO	231.25
RC	323.566	GL	25.59	GP	-7.27	ZAL	81.28	ZAP	34.65	ETS	168.31	ZAE	54.27	ETE	174.38	ZAC	79.28	ETC	256.59

V1	30.277	V2	26.422	CLP	33.97														

PLANETOCENTRIC CONIC

C3	10.580	VHL	3.253	DLA	27.09	RAL	182.28	RAD	6567.4	VEL	11.488	PTH	2.00	VHP	5.159	DPA	-2.78	RAP	171.97

ECC	1.1741	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	12 40 5	3156.90	-26.64	107.71	42.02	80.02	13 32 42	2556.9	-27.74	99.21							
		90.00	10 14 9	3633.80	-17.16	139.31	39.01	67.13	11 14 38	3033.8	-20.11	131.88							
		100.00	14 36 40	2781.06	-29.25	80.48	42.45	83.55	15 23 1	2181.1	-29.84	71.72							
		100.00	11 0 10	3484.87	-14.76	127.23	37.87	63.71	11 58 15	2884.9	-18.17	120.10							
		110.00	16 40 44	2392.84	-34.18	51.31	42.75	90.37	17 20 37	1792.8	-33.75	42.09							
		110.00	11 12 36	3445.85	-10.46	121.79	35.38	57.27	12 10 2	2845.9	-14.70	115.25							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.9407	TRA	.7976	TC	-19.0827	BAU	2.6999	SGT	13543.5	SGR	714.4	SG3	668.7	ST	5215.1	SR	533.1	SS	759.8
RDE	.2959	RRA	.1877	RC3	-.4878	FAU	.13348	RRT	.7468	RRF	.7283	RTF	.9554	CRT	.9915	CRS	-.9540	CST	-.9185
FDE	.8442	FRA	1.3563	FC	-10.9229	BSP	47139	SGB	13562.3	R23	.0209	R13	.9554	LSA	5288.3	MSA	302.8	SSA	36.8
BDE	2.9556	BRA	.8194	BC	319.0889	FSP	2154	SG	113554.0	SG2	474.8	THA	2.26	EL1	5241.8	EL2	69.2	ALF	5.79

LAUNCH DATE DEC 22 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 792.697 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.209	GAL	.51	AZL	87.62	HCA	230.97	SMA	189.33	ECC	.22295	INC	2.3804
RP	207.21	LAP	-1.85	LOP	321.13	VP	24.083	GAP	-11.70	AZP	91.50	TAL	2.81	TAP	233.78	RCA	147.12	APO	231.54
RC	324.413	GL	25.21	GP	-7.06	ZAL	82.87	ZAP	34.07	ETS	168.38	ZAE	53.40	ETE	174.38	ZAC	79.64	ETC	256.54

V1	30.277	V2	26.434	CLP	33.42														

PLANETOCENTRIC CONIC

C3	10.487	VHL	3.238	DLA	26.04	RAL	183.72	RAD	6567.4	VEL	11.484	PTH	2.00	VHP	5.223	DPA	-2.88	RAP	172.69

ECC	1.1726	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	13 12 24	3066.27	-27.54	101.23	43.26	83.14	14 3 30	2466.3	-28.20	92.62							
		90.00	9 53 16	3720.88	-14.78	144.59	39.44	65.57	10 55 17	3120.9	-17.96	137.35							
		100.00	15 1 4	2715.93	-29.65	75.68	43.49	86.04	15 46 20	2115.9	-29.89	66.88							
		100.00	10 47 17	3546.46	-12.87	130.83	38.49	62.79	11 46 23	2946.5	-16.42	123.83							
		110.00	16 57 58	2350.19	-34.11	47.98	43.57	92.34	17 37 8	1750.2	-33.41	38.80							
		110.00	11 6 52	3484.96	-9.01	123.89	36.21	56.89	12 4 57	2885.0	-13.31	117.43							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.8279	TRA	.9584	TC	-19.4206	BAU	2.7236	SGT	13667.9	SGR	695.1	SG3	645.6	ST	5049.3	SR	523.0	SS	694.7
RDE	.2886	RRA	.1911	RC3	-.4392	FAU	.12772	RRT	.7203	RRF	.6993	RTF	.9547	CRT	.9928	CRS	-.9320	CST	-.8964
FDE	.7258	FRA	1.3957	FC	-10.5432	BSP	47579	SGB	13685.5	R23	.0156	R13	.9548	LSA	5114.2	MSA	309.1	SSA	37.6
BDE	2.8426	BRA	.9773	BC	319.4255	FSP	2071	SG	113677.0	SG2	481.9	THA	2.10	EL1	5075.9	EL2	62.3	ALF	5.87

LAUNCH DATE DEC 22 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 797.098 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.218	GAL	.35	AZL	87.66	HCA	232.23	SMA	189.48	ECC	.22349	INC	2.3369
RP	207.12	LAP	-1.85	LOP	322.40	VP	24.106	GAP	-11.77	AZP	91.43	TAL	1.92	TAP	234.16	RCA	147.13	APO	231.83
RC	325.253	GL	24.82	GP	-6.85	ZAL	84.51	ZAP	33.50	ETS	168.45	ZAE	52.54	ETE	174.39	ZAC	79.99	ETC	256.49

V1	30.277	V2	26.444	CLP	32.87														

PLANETOCENTRIC CONIC

C3	10.413	VHL	3.227	DLA	24.96	RAL	185.19	RAD	6567.4	VEL	11.481	PTH	2.00	VHP	5.287	DPA	-2.99	RAP	173.42

ECC	1.1714	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	13 39 23	2992.81	-28.02	95.91	44.40	85.77	14 29 16	2392.8	-28.32	87.26							
		90.00	9 37 58	3791.47	-12.75	148.78	40.09	64.50	10 41 9	3191.5	-16.08	141.69							
		100.00	15 23 24	2657.50	-29.85	71.34	44.51	88.32	16 7 41	2057.5	-29.76	62.54							
		100.00	10 36 39	3602.02	-11.12	134.02	39.25	62.07	11 36 41	3002.0	-14.77	127.14							
		110.00	17 14 44	2309.17	-33.95	44.78	44.40	94.22	17 53 13	1709.2	-33.00	35.68							
		110.00	11 1 48	3523.12	-7.59	125.93	37.13	56.57	12 0 31	2923.1	-11.93	119.53							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.7129	TRA	1.1278	TC	-19.7216	BAU	2.7461	SGT	13787.2	SGR	678.2	SG3	621.7	ST	4877.2	SR	514.6	SS	639.0
RDE	.2825	RRA	.1944	RC3	-.3899	FAU	.12172	RRT	.6909	RRF	.6692	RTF	.9539	CRT	.9942	CRS	-.9014	CST	-.8683
FDE	.6186	FRA	1.4366	FC	-10.1199	BSP	47983	SGB	13803.9	R23	.0128	R13	.9539	LSA	4935.4	MSA	316.9	SSA	38.3
BDE	2.7276	BRA	1.1444	BC	319.7255	FSP	1989	SG	113795.2	SG2	490.0	THA	1.95	EL1	4904.0	EL2	55.1	ALF	5.99

LAUNCH DATE DEC 22 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 801.500 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.226	GAL	.19	AZL	87.71	HCA	233.50	SMA	189.63	ECC	.22406	INC	2.2949
RP	207.04	LAP	-1.84	LOP	323.66	VP	24.129	GAP	-11.85	AZP	91.37	TAL	1.02	TAP	234.52	RCA	147.14	APO	232.12
RC	326.088	GL	24.42	GP	-6.66	ZAL	86.19	ZAP	32.94	ETS	168.51	ZAE	51.69	ETE	174.39	ZAC	80.34	ETC	256.44

V1	30.277	V2	26.454	CLP	32.33														

PLANETOCENTRIC CONIC

C3	10.358	VHL	3.218	DLA	23.86	RAL	186.67	RAD	6567.4	VEL	11.478	PTH	2.00	VHP	5.352	DPA	-3.11	RAP	174.16

ECC	1.1705	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	14 3 33	2928.53	-28.26	91.22	45.50	88.10	14 52 21	2328.5	-28.22	82.56							
		90.00	9 25 40	3853.59	-10.90	152.41	40.90	63.70	10 29 54	3253.6	-14.35	145.43							
		100.00	15 44 19	2603.65	-29.89	67.34	45.53	90.42	16 27 42	2003.6	-29.51	58.56							
		100.00	10 27 35	3653.72	-9.46	136.96	40.14	61.51	11 28 29	3053.7	-13.19	130.16							
		110.00	17 31 7	2269.49	-33.71	41.71	45.27	96.02	18 8 56	1669.5	-32.51	32.68							
		110.00	10 57 16	3560.63	-6.18	127.91	38.14	56.31	11 56 37	2960.6	-10.56	121.57							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.5949	TRA	1.3013	TC	-20.0050	BAU	2.7706	SGT	13912.7	SGR	663.5	SG3	600.6	ST	4697.7	SR	507.2	SS	588.3
RDE	.2775	RRA	.1968	RC3	-.3452	FAU	.11655	RRT	.6623	RRF	.6380	RTF	.9537	CRT	.9955	CRS	-.8601	CST	-.8336
FDE	.5178	FRA	1.4665	FC	-9.7413	BSP	48425	SGB	13928.5	R23	.0074	R13	.9537	LSA	4750.2	MSA	324.1	SSA	39.1
BDE	2.6097	BRA	1.3161	BC	320.0079	FSP	1909	SG	113919.7	SG2	496.8	THA	1.81	EL1	4724.7	EL2	48.0	ALF	6.14

LAUNCH DATE DEC 22 1964 FLIGHT TIME 374.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 805.901 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.235 GAL .02 AZL 87.75 HCA 234.76 SMA 189.79 ECC .22467 INC 2.2541 V1 30.277
RP 206.96 LAP -1.84 LOP 324.93 VP 24.150 GAP -11.92 AZP 91.30 TAL .11 TAP 234.88 RCA 147.15 APO 232.43 V2 26.463
RC 326.917 GL 24.01 GP -6.48 ZAL 87.91 ZAP 32.40 ETS 168.56 ZAE 50.85 ETE 174.39 ZAC 80.67 ETC 256.39 CLP 31.81

PLANETOCENTRIC CONIC

C3 10.321 VHL 3.213 DLA 22.74 RAL 188.18 RAD 6567.4 VEL 11.477 PTH 1.99 VHP 5.418 DPA -3.26 RAP 174.91 ECC 1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 25 54	2870.17	-28.32	86.95	46.59	90.24	15 13 44	2270.2	-27.98	78.30
90.00	9 15 20	3910.54	-9.17	155.69	41.83	63.09	10 20 31	3310.5	-12.71	148.80
100.00	16 4 13	2553.18	-29.81	63.59	46.56	92.39	16 46 46	1953.2	-29.16	54.85
100.00	10 19 42	3702.77	-7.85	139.72	41.12	61.06	11 21 25	3102.8	-11.65	132.99
110.00	17 47 11	2231.00	-33.40	38.75	46.18	97.75	18 24 22	1631.0	-31.97	29.81
110.00	10 53 13	3597.71	-4.77	129.87	39.23	56.11	11 53 11	2997.7	-9.19	123.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.4416 TRA 1.3987 TC-20.3760 BAU 2.8120 SGT14060.1 SGR 634.0 SG3 582.5 ST 4446.7 SR 491.6 SS 461.2
RDE .2689 RRA .1854 RC3 -.3239 FAU .11588 RRT .6488 RRF .5807 RTF .9615 CRT .9965 CRS -.7853 CST -.7747
FDE .3504 FRA 1.2724 FC3-9.7194 BSP 48460 SGB14074.4 R23 -.0576 R13 .9615 LSA 4487.9 MSA 290.8 SSA 39.7
BDE 2.4564 BRA 1.4110 BC320.3786 FSP 1739 SG114066.1 SG2 482.2 THA 1.68 EL1 4473.6 EL2 41.0 ALF 6.29

LAUNCH DATE DEC 22 1964 FLIGHT TIME 376.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 810.302 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.243 GAL -.15 AZL 87.79 HCA 236.03 SMA 189.95 ECC .22533 INC 2.2146 V1 30.277
RP 206.89 LAP -1.84 LOP 326.20 VP 24.171 GAP -11.99 AZP 91.24 TAL 359.19 TAP 235.22 RCA 147.15 APO 232.75 V2 26.471
RC 327.742 GL 23.59 GP -6.31 ZAL 89.67 ZAP 31.87 ETS 168.61 ZAE 50.03 ETE 174.40 ZAC 81.00 ETC 256.35 CLP 31.30

PLANETOCENTRIC CONIC

C3 10.305 VHL 3.210 DLA 21.61 RAL 189.70 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 5.484 DPA -3.41 RAP 175.67 ECC 1.1696

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 46 59	2816.02	-28.24	82.99	47.69	92.23	15 33 55	2216.0	-27.63	74.38
90.00	9 6 24	3964.05	-7.50	158.74	42.86	62.62	10 12 28	3364.0	-11.12	151.93
100.00	16 23 20	2505.36	-29.62	60.05	47.61	94.25	17 5 5	1905.4	-28.71	51.36
100.00	10 12 44	3749.95	-6.29	142.35	42.20	60.72	11 15 14	3149.9	-10.14	135.68
110.00	18 3 0	2193.54	-33.02	35.89	47.13	99.40	18 39 33	1593.5	-31.37	27.06
110.00	10 49 34	3634.52	-3.37	131.80	40.40	55.96	11 50 8	3034.5	-7.82	125.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.3490 TRA 1.6757 TC-20.4101 BAU 2.8121 SGT14129.3 SGR 638.2 SG3 551.4 ST 4320.2 SR 495.7 SS 509.4
RDE .2700 RRA .2015 RC3 -.2491 FAU .10443 RRT .5943 RRF .5703 RTF .9510 CRT .9966 CRS -.7279 CST -.7309
FDE .3310 FRA 1.5317 FC3-8.7733 BSP 49436 SGB14143.7 R23 .0053 R13 .9510 LSA 4364.4 MSA 346.4 SSA 40.4
BDE 2.3645 BRA 1.6877 BC320.4116 FSP 1796 SG114134.4 SG2 513.1 THA 1.54 EL1 4348.4 EL2 40.4 ALF 6.52

LAUNCH DATE DEC 22 1964 FLIGHT TIME 378.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 814.701 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.252 GAL -.32 AZL 87.82 HCA 237.30 SMA 190.10 ECC .22602 INC 2.1763 V1 30.277
RP 206.84 LAP -1.83 LOP 327.46 VP 24.190 GAP -12.06 AZP 91.18 TAL 358.25 TAP 235.55 RCA 147.14 APO 233.07 V2 26.477
RC 328.562 GL 23.16 GP -6.14 ZAL 91.46 ZAP 31.35 ETS 168.66 ZAE 49.21 ETE 174.40 ZAC 81.33 ETC 256.30 CLP 30.80

PLANETOCENTRIC CONIC

C3 10.309 VHL 3.211 DLA 20.45 RAL 191.24 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 5.552 DPA -3.58 RAP 176.43 ECC 1.1697

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 7 7	2765.10	-28.05	79.28	48.82	94.08	15 53 12	2165.1	-27.19	70.72
90.00	8 58 32	4015.14	-5.89	161.63	44.00	62.25	10 5 27	3415.1	-9.56	154.88
100.00	16 41 49	2459.70	-29.34	56.68	48.69	96.00	17 22 49	1859.7	-28.20	48.07
100.00	10 6 31	3795.77	-4.76	144.89	43.37	60.45	11 9 47	3195.8	-8.66	138.27
110.00	18 18 34	2157.05	-32.58	33.14	48.12	100.98	18 54 31	1557.0	-30.72	24.41
110.00	10 46 16	3671.19	-1.97	133.71	41.64	55.87	11 47 27	3071.2	-6.44	127.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.2244 TRA 1.8741 TC-20.5833 BAU 2.8370 SGT14255.0 SGR 629.8 SG3 531.8 ST 4130.3 SR 492.5 SS 486.3
RDE .2682 RRA .2031 RC3 -.2085 FAU .09964 RRT .5626 RRF .5383 RTF .9509 CRT .9958 CRS -.6473 CST -.6771
FDE .2567 FRA 1.5575 FC3-8.3675 BSP 49850 SGB14268.9 R23 .0031 R13 .9509 LSA 4172.5 MSA 357.4 SSA 40.9
BDE 2.2405 BRA 1.8851 BC320.5844 FSP 1715 SG114259.4 SG2 520.5 THA 1.43 EL1 4159.4 EL2 44.7 ALF 6.77

LAUNCH DATE DEC 22 1964 FLIGHT TIME 380.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 819.099 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.261 GAL -.50 AZL 87.86 HCA 238.56 SMA 190.26 ECC .22675 INC 2.1390 V1 30.277
RP 206.79 LAP -1.82 LOP 328.73 VP 24.208 GAP -12.14 AZP 91.12 TAL 357.30 TAP 235.87 RCA 147.12 APO 233.40 V2 26.483
RC 329.378 GL 22.71 GP -5.99 ZAL 93.29 ZAP 30.85 ETS 168.70 ZAE 48.41 ETE 174.40 ZAC 81.65 ETC 256.26 CLP 30.32

PLANETOCENTRIC CONIC

C3 10.335 VHL 3.215 DLA 19.28 RAL 192.79 RAD 6567.4 VEL 11.477 PTH 2.00 VHP 5.621 DPA -3.76 RAP 177.21 ECC 1.1701

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 30	2716.77	-27.76	75.77	49.97	95.81	16 11 47	2116.8	-26.67	67.28
90.00	8 51 31	4064.47	-4.32	164.41	45.22	61.99	9 59 16	3464.5	-8.04	157.70
100.00	16 59 48	2415.88	-28.98	53.48	49.80	97.65	17 40 4	1815.9	-27.62	44.94
100.00	10 0 54	3840.59	-3.25	147.36	44.62	60.27	11 4 54	3240.6	-7.18	140.78
110.00	18 33 55	2121.44	-32.08	30.48	49.16	102.48	19 9 16	1521.4	-30.03	21.86
110.00	10 43 17	3707.79	-.57	135.62	42.96	55.82	11 45 4	3107.8	-5.05	129.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.0939 TRA 2.0779 TC-20.6978 BAU 2.8599 SGT14367.3 SGR 621.2 SG3 510.7 ST 3933.5 SR 488.8 SS 465.3
RDE .2665 RRA .2042 RC3 -.1679 FAU .09463 RRT .5291 RRF .5028 RTF .9499 CRT .9933 CRS -.5373 CST -.6034
FDE .1747 FRA 1.5768 FC3-7.9272 BSP 50330 SGB14380.7 R23 -.0006 R13 .9499 LSA 3973.3 MSA 372.4 SSA 41.3
BDE 2.1108 BRA 2.0879 BC320.6985 FSP 1648 SG114371.1 SG2 527.0 THA 1.31 EL1 3963.3 EL2 56.2 ALF 7.04

LAUNCH DATE DEC 22 1964 FLIGHT TIME 382.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 823.496 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.270	GAL	-.68	AZL	87.90	HCA	239.83	SMA	190.42	ECC	.22753	INC	2.1026	V1	30.277
RP	206.75	LAP	-1.82	LOP	330.00	VP	24.226	GAP	-12.21	AZP	91.06	TAL	356.34	TAP	236.17	RCA	147.09	APO	233.74	V2	26.488
RC	330.190	GL	22.26	GP	-5.84	ZAL	95.14	ZAP	30.36	ETS	168.74	ZAE	47.62	ETE	174.40	ZAC	81.97	ETC	256.21	CLP	29.84

PLANETOCENTRIC CONIC

C3	10.383	VHL	3.222	DLA	18.10	RAL	194.35	RAD	6567.4	VEL	11.479	PTH	2.00	VHP	5.690	DPA	-3.96	RAP	177.99	ECC	1.1709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 45 16	2670.62	-27.40	72.45	51.15	97.45	16 29 47	2070.6	-26.08	64.02
90.00	8 45 12	4112.49	-2.78	167.10	46.52	61.81	9 53 44	3512.5	-6.53	160.42
100.00	17 17 22	2373.67	-28.56	50.41	50.96	99.21	17 56 55	1773.7	-26.99	41.96
100.00	9 55 48	3884.67	-1.75	149.78	45.95	60.15	11 0 33	3284.7	-5.71	143.23
110.00	18 49 4	2086.70	-31.54	27.91	50.25	103.91	19 23 51	1486.7	-29.31	19.42
110.00	10 40 34	3744.41	.83	137.53	44.34	55.83	11 42 59	3144.4	-3.66	131.32

DIFFERENTIAL CORRECTIONS

TDE	1.9601	TRA	2.2899	TC-20.7682	BAU	2.8829	
RDE	.2658	RRA	.2050	RC3 -.1285	FAU	.08965	
FDE	.0997	FRA	1.5953	FC3-7.4746	BSP	50725	
BDE	1.9780	BRA	2.2991	BC320.7686	FSP	1575	

MID-COURSE EXECUTION ACCURACY

SGT14478.7	SGR	614.2	SG3	489.8			
RRT	.4946	RRF	.4674	RTF	.9487		
SGB14491.7	R23	-.0029	R13	.9487			
SG114481.9	SG2	533.7	THA	1.20			

ORBIT DETERMINATION ACCURACY

ST	3736.3	SR	486.4	SS	454.3		
CRT	.9882	CRS	-.4164	CST	-.5290		
LSA	3774.8	MSA	390.0	SSA	41.6		
EL1	3767.1	EL2	73.7	ALF	7.33		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 384.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 827.889 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.278	GAL	-.86	AZL	87.93	HCA	241.10	SMA	190.58	ECC	.22835	INC	2.0672	V1	30.277
RP	206.71	LAP	-1.81	LOP	331.27	VP	24.242	GAP	-12.29	AZP	91.00	TAL	355.37	TAP	236.47	RCA	147.06	APO	234.10	V2	26.492
RC	331.000	GL	21.79	GP	-5.70	ZAL	97.01	ZAP	29.87	ETS	168.77	ZAE	46.84	ETE	174.39	ZAC	82.28	ETC	256.17	CLP	29.38

PLANETOCENTRIC CONIC

C3	10.454	VHL	3.233	DLA	16.91	RAL	195.92	RAD	6567.4	VEL	11.482	PTH	2.00	VHP	5.761	DPA	-4.16	RAP	178.77	ECC	1.1721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 32	2626.35	-26.97	69.28	52.37	98.98	16 47 18	2026.4	-25.45	60.94
90.00	8 39 27	4159.53	-1.27	169.72	47.90	61.71	9 48 47	3559.5	-5.04	163.08
100.00	17 34 31	2332.92	-28.08	47.48	52.16	100.69	18 13 24	1732.9	-26.32	39.12
100.00	9 51 9	3928.19	-.28	152.17	47.35	60.11	10 56 37	3328.2	-4.25	145.64
110.00	19 4 3	2052.81	-30.96	25.44	51.39	105.26	19 38 15	1452.8	-28.56	17.06
110.00	10 38 7	3781.07	2.23	139.44	45.79	55.88	11 41 8	3181.1	-2.26	133.24

DIFFERENTIAL CORRECTIONS

TDE	1.8247	TRA	2.5088	TC-20.7925	BAU	2.9061	
RDE	.2659	RRA	.2053	RC3 -.0911	FAU	.08481	
FDE	.0307	FRA	1.6072	FC3-7.0234	BSP	51169	
BDE	1.8440	BRA	2.5172	BC320.7927	FSP	1510	

MID-COURSE EXECUTION ACCURACY

SGT14588.9	SGR	608.3	SG3	469.2			
RRT	.4600	RRF	.4314	RTF	.9476		
SGB14601.6	R23	-.0058	R13	.9476			
SG114591.6	SG2	540.1	THA	1.10			

ORBIT DETERMINATION ACCURACY

ST	3544.2	SR	484.8	SS	450.4		
CRT	.9797	CRS	-.2912	CST	-.4601		
LSA	3581.9	MSA	409.2	SSA	41.8		
EL1	3575.9	EL2	96.4	ALF	7.64		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 832.280 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.287	GAL	-1.05	AZL	87.97	HCA	242.37	SMA	190.74	ECC	.22922	INC	2.0326	V1	30.277
RP	206.69	LAP	-1.80	LOP	332.54	VP	24.257	GAP	-12.37	AZP	90.94	TAL	354.39	TAP	236.75	RCA	147.02	APO	234.46	V2	26.494
RC	331.806	GL	21.31	GP	-5.56	ZAL	98.91	ZAP	29.40	ETS	168.81	ZAE	46.07	ETE	174.39	ZAC	82.59	ETC	256.13	CLP	28.92

PLANETOCENTRIC CONIC

C3	10.550	VHL	3.248	DLA	15.70	RAL	197.49	RAD	6567.4	VEL	11.486	PTH	2.00	VHP	5.832	DPA	-4.38	RAP	179.57	ECC	1.1736

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 21 20	2583.77	-26.48	66.26	53.64	100.42	17 4 24	1983.8	-24.77	58.00
90.00	8 34 12	4205.80	.23	172.30	49.36	61.68	9 44 18	3605.8	-3.56	165.67
100.00	17 51 20	2293.52	-27.55	44.67	53.40	102.07	18 29 34	1693.5	-25.61	36.40
100.00	9 46 53	3971.28	1.18	154.53	48.83	60.13	10 53 4	3371.3	-2.80	148.01
110.00	19 18 50	2019.76	-30.35	23.06	52.59	106.55	19 52 30	1419.8	-27.78	14.81
110.00	10 35 53	3817.81	3.63	141.36	47.30	55.99	11 39 30	3217.8	-.86	135.16

DIFFERENTIAL CORRECTIONS

TDE	1.6873	TRA	2.7346	TC-20.7662	BAU	2.9290	
RDE	.2669	RRA	.2052	RC3 -.0553	FAU	.08001	
FDE	-.0328	FRA	1.6156	FC3-6.5658	BSP	51592	
BDE	1.7083	BRA	2.7422	BC320.7662	FSP	1443	

MID-COURSE EXECUTION ACCURACY

SGT14695.2	SGR	603.6	SG3	448.6			
RRT	.4250	RRF	.3953	RTF	.9463		
SGB14707.6	R23	-.0082	R13	.9462			
SG114697.5	SG2	546.3	THA	1.00			

ORBIT DETERMINATION ACCURACY

ST	3358.9	SR	484.2	SS	453.0		
CRT	.9663	CRS	-.1678	CST	-.4022		
LSA	3396.3	MSA	431.0	SSA	41.8		
EL1	3391.4	EL2	123.5	ALF	7.94		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 836.668 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.296	GAL	-1.24	AZL	88.00	HCA	243.64	SMA	190.90	ECC	.23014	INC	1.9988	V1	30.277
RP	206.68	LAP	-1.79	LOP	333.81	VP	24.271	GAP	-12.45	AZP	90.89	TAL	353.39	TAP	237.02	RCA	146.97	APO	234.83	V2	26.496
RC	332.609	GL	20.82	GP	-5.43	ZAL	100.82	ZAP	28.95	ETS	168.83	ZAE	45.31	ETE	174.38	ZAC	82.89	ETC	256.09	CLP	28.48

PLANETOCENTRIC CONIC

C3	10.671	VHL	3.267	DLA	14.49	RAL	199.07	RAD	6567.4	VEL	11.492	PTH	2.00	VHP	5.904	DPA	-4.61	RAP	180.37	ECC	1.1756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 38 45	2542.74	-25.94	63.37	54.95	101.77	17 21 7	1942.7	-24.06	55.21
90.00	8 29 23	4251.45	1.70	174.85	50.89	61.73	9 40 14	3651.4	-2.09	168.22
100.00	18 7 51	2255.40	-26.98	41.98	54.69	103.38	18 45 26	1655.4	-24.87	33.81
100.00	9 42 58	4014.05	2.63	156.88	50.37	60.21	10 49 52	3414.0	-1.35	150.36
110.00	19 33 27	1987.56	-29.70	20.78	53.83	107.76	20 6 34	1387.6	-26.99	12.64
110.00	10 33 51	3854.64	5.03	143.30	48.88	56.14	11 38 6	3254.6	.55	137.08

DIFFERENTIAL CORRECTIONS

TDE	1.5479	TRA	2.9684	TC-20.6889	BAU	2.9516	
RDE	.2688	RRA	.2046	RC3 -.0210	FAU	.07523	
FDE	-.0918	FRA	1.6200	FC3-6.1028	BSP	52022	
BDE	1.5711	BRA	2.9755	BC320.6889	FSP	1380	

MID-COURSE EXECUTION ACCURACY

SGT14798.5	SGR	599.8	SG3	428.0			
RRT	.3896	RRF	.3590	RTF	.9446		
SGB14810.6	R23	-.0104	R13	.9446			
SG114800.3	SG2	552.4	THA	.91			

ORBIT DETERMINATION ACCURACY

ST	3184.0	SR	484.3	SS	460.6		
CRT	.9463	CRS	-.0505	CST	-.3589		
LSA	3221.1	MSA	455.6	SSA	41.6		
EL1	3216.9	EL2	154.9	ALF	8.21		

LAUNCH DATE DEC 22 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 841.052 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.305	GAL	-1.43	AZL	88.03	HCA	244.91	SMA	191.06	ECC	.23111	INC	1.9657
RP	206.67	LAP	-1.78	LOP	335.08	VP	24.284	GAP	-12.53	AZP	90.83	TAL	352.38	TAP	237.28	RCA	146.90	APO	235.22
RC	333.409	GL	20.32	GP	-5.31	ZAL	102.74	ZAP	28.50	ETS	168.86	ZAE	44.56	ETE	174.37	ZAC	83.19	ETC	256.05

V1	30.277	V2	26.497	CLP	28.04														

PLANETOCENTRIC CONIC

C3	10.819	VHL	3.289	DLA	13.27	RAL	200.65	RAD	6567.4	VEL	11.498	PTH	2.00	VHP	5.977	DPA	-4.84	RAP	181.18
ECC	1.1781																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 47	2503.17	-25.36	60.62	56.30	103.03	17 37 30	1903.2	-23.32	52.55
90.00	8 24 55	4296.64	3.15	177.37	52.48	61.84	9 36 32	3696.6	-.64	170.74
100.00	18 24 3	2218.51	-26.37	39.40	56.03	104.60	19 1 2	1618.5	-24.11	31.34
100.00	9 39 20	4056.54	4.07	159.22	51.98	60.36	10 46 57	3456.5	.09	152.69
110.00	19 47 52	1956.24	-29.03	18.59	55.12	108.90	20 20 29	1356.2	-26.18	10.57
110.00	10 32 1	3891.57	6.43	145.24	50.52	56.35	11 36 52	3291.6	1.96	139.00

DIFFERENTIAL CORRECTIONS

TDE	1.4075	TRA	3.2104	TC-20.5654	BAU	2.9746	
RDE	.2715	RRA	.2037	RC3 .0109	FAU	.07061	
FDE	-.1451	FRA	1.6221	FC3-5.6502	BSP	52469	
BDE	1.4334	BRA	3.2169	BC320.5654	FSP	1318	

MID-COURSE EXECUTION ACCURACY

SGT14901.6	SGR	597.2	SG3	408.1			
RRT	.3549	RRF	.3235	RTF	.9427		
SGB14913.6	R23	-.0123	R13	.9427			
SG114903.1	SG2	558.3	THA	.82			

ORBIT DETERMINATION ACCURACY

ST	3024.4	SR	485.4	SS	471.9
CRT	.9182	CRS	.0548	CST	-.3354
LSA	3061.2	MSA	482.5	SSA	41.2
EL1	3057.2	EL2	190.2	ALF	8.42

LAUNCH DATE DEC 22 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 845.431 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.314	GAL	-1.63	AZL	88.07	HCA	246.17	SMA	191.22	ECC	.23213	INC	1.9334
RP	206.67	LAP	-1.77	LOP	336.35	VP	24.295	GAP	-12.61	AZP	90.78	TAL	351.36	TAP	237.53	RCA	146.83	APO	235.61
RC	334.204	GL	19.80	GP	-5.19	ZAL	104.67	ZAP	28.06	ETS	168.88	ZAE	43.82	ETE	174.36	ZAC	83.49	ETC	256.02

V1	30.277	V2	26.497	CLP	27.61														

PLANETOCENTRIC CONIC

C3	10.995	VHL	3.316	DLA	12.06	RAL	202.23	RAD	6567.4	VEL	11.506	PTH	2.00	VHP	6.052	DPA	-5.09	RAP	181.99
ECC	1.1809																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 30	2464.99	-24.75	57.99	57.70	104.21	17 53 35	1865.0	-22.56	50.01
90.00	8 20 47	4341.41	4.59	179.88	54.15	62.03	9 33 9	3741.4	.81	173.24
100.00	18 39 59	2182.82	-25.74	36.94	57.41	105.75	19 16 22	1582.8	-23.33	28.97
100.00	9 35 59	4098.82	5.48	161.55	53.65	60.57	10 44 18	3498.8	1.52	155.01
110.00	20 2 7	1925.81	-28.34	16.49	56.47	109.96	20 34 13	1325.8	-25.36	8.58
110.00	10 30 20	3928.59	7.82	147.21	52.22	56.62	11 35 49	3328.6	3.37	140.94

DIFFERENTIAL CORRECTIONS

TDE	1.2654	TRA	3.4582	TC-20.3927	BAU	2.9975	
RDE	.2750	RRA	.2023	RC3 .0404	FAU	.06612	
FDE	-.1933	FRA	1.6173	FC3-5.2066	BSP	52884	
BDE	1.2950	BRA	3.4641	BC320.3927	FSP	1258	

MID-COURSE EXECUTION ACCURACY

SGT15000.3	SGR	595.2	SG3	388.3			
RRT	.3204	RRF	.2879	RTF	.9408		
SGB15012.1	R23	-.0148	R13	.9408			
SG115001.5	SG2	563.8	THA	.73			

ORBIT DETERMINATION ACCURACY

ST	2882.0	SR	487.1	SS	484.1
CRT	.8799	CRS	.1483	CST	-.3310
LSA	2918.2	MSA	510.4	SSA	40.7
EL1	2913.9	EL2	229.0	ALF	8.51

LAUNCH DATE DEC 22 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 849.806 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.322	GAL	-1.83	AZL	88.10	HCA	247.44	SMA	191.39	ECC	.23321	INC	1.9016
RP	206.68	LAP	-1.76	LOP	337.62	VP	24.306	GAP	-12.70	AZP	90.73	TAL	350.32	TAP	237.77	RCA	146.75	APO	236.02
RC	334.996	GL	19.28	GP	-5.08	ZAL	106.61	ZAP	27.63	ETS	168.90	ZAE	43.09	ETE	174.35	ZAC	83.79	ETC	255.99

V1	30.277	V2	26.495	CLP	27.20														

PLANETOCENTRIC CONIC

C3	11.199	VHL	3.347	DLA	10.84	RAL	203.80	RAD	6567.4	VEL	11.515	PTH	2.01	VHP	6.127	DPA	-5.34	RAP	182.81
ECC	1.1843																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 53	2428.16	-24.11	55.48	59.15	105.31	18 9 21	1828.2	-21.78	47.59
90.00	8 16 57	4385.83	6.00	182.38	55.87	62.27	9 30 3	3785.8	2.24	175.72
100.00	18 55 39	2148.33	-25.08	34.59	58.84	106.82	19 31 27	1548.3	-22.54	26.72
100.00	9 32 53	4140.90	6.89	163.89	55.39	60.84	10 41 53	3540.9	2.95	157.32
110.00	20 16 11	1896.31	-27.64	14.48	57.86	110.97	20 47 47	1296.3	-24.54	6.68
110.00	10 28 50	3965.69	9.20	149.19	53.98	56.93	11 34 55	3365.7	4.78	142.88

DIFFERENTIAL CORRECTIONS

TDE	1.1226	TRA	3.7159	TC-20.1768	BAU	3.0210	
RDE	.2793	RRA	.2006	RC3 .0678	FAU	.06172	
FDE	-.2383	FRA	1.6119	FC3-4.7709	BSP	53323	
BDE	1.1568	BRA	3.7213	BC320.1770	FSP	1199	

MID-COURSE EXECUTION ACCURACY

SGT15100.5	SGR	594.1	SG3	369.2			
RRT	.2866	RRF	.2531	RTF	.9383		
SGB15112.2	R23	-.0169	R13	.9382			
SG115101.5	SG2	569.1	THA	.65			

ORBIT DETERMINATION ACCURACY

ST	2763.1	SR	489.5	SS	498.3
CRT	.8297	CRS	.2317	CST	-.3432
LSA	2798.0	MSA	540.3	SSA	40.0
EL1	2793.0	EL2	270.3	ALF	8.44

LAUNCH DATE DEC 22 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 854.175 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.331	GAL	-2.03	AZL	88.13	HCA	248.71	SMA	191.55	ECC	.23434	INC	1.8704
RP	206.70	LAP	-1.74	LOP	338.89	VP	24.316	GAP	-12.78	AZP	90.68	TAL	349.28	TAP	237.99	RCA	146.66	APO	236.44
RC	335.784	GL	18.76	GP	-4.97	ZAL	108.54	ZAP	27.22	ETS	168.92	ZAE	42.37	ETE	174.34	ZAC	84.08	ETC	255.95

V1	30.277	V2	26.493	CLP	26.79														

PLANETOCENTRIC CONIC

C3	11.434	VHL	3.381	DLA	9.63	RAL	205.37	RAD	6567.4	VEL	11.525	PTH	2.01	VHP	6.203	DPA	-5.61	RAP	183.64
ECC	1.1882																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 58	2392.66	-23.45	53.09	60.64	106.34	18 24 50	1792.7	-20.99	45.28
90.00	8 13 23	4429.94	7.39	184.88	57.65	62.59	9 27 13	3829.9	3.66	178.19
100.00	19 11 2	2115.03	-24.41	32.35	60.32	107.82	19 46 17	1515.0	-21.74	24.57
100.00	9 29 59	4182.80	8.27	166.23	57.18	61.17	10 39 42	3582.8	4.36	159.63
110.00	20 30 3	1867.77	-26.93	12.56	59.31	111.90	21 1 11	1267.8	-23.72	4.87
110.00	10 27 28	4002.83	10.57	151.19	55.79	57.30	11 34 10	3402.8	6.19	144.84

DIFFERENTIAL CORRECTIONS

TDE	.9800	TRA	3.9810	TC-19.9147	BAU	3.0443	
RDE	.2844	RRA	.1984	RC3 .0930	FAU	.05737	
FDE	-.2776	FRA	1.6021	FC3-4.3434	BSP	53738	
BDE	1.0204	BRA	3.9860	BC319.9149	FSP	1141	

MID-COURSE EXECUTION ACCURACY

SGT15197.4	SGR	593.7	SG3	350.2			
RRT	.2534	RRF	.2192	RTF	.9353		
SGB15209.0	R23	-.0187	R13	.9353			
SG115198.2	SG2	574.3	THA	.57			

ORBIT DETERMINATION ACCURACY

ST	2670.8	SR	492.6	SS	511.6
CRT	.7672	CRS	.3026	CST	-.3726
LSA	2704.2	MSA	568.9	SSA	39.2
EL1	2697.8	EL2	312.8	ALF	8.16

LAUNCH DATE DEC 22 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 858.538 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.340 GAL -2.24 AZL 88.16 HCA 249.98 SMA 191.71 ECC .23553 INC 1.8398 V1 30.277
RP 206.73 LAP -1.73 LOP 340.16 VP 24.324 GAP -12.87 AZP 90.63 TAL 348.22 TAP 238.20 RCA 146.56 APO 236.87 V2 26.490
RC 336.567 GL 18.22 GP -4.87 ZAL 110.47 ZAP 26.81 ETS 168.93 ZAE 41.66 ETE 174.32 ZAC 84.37 ETC 255.93 CLP 26.40

PLANETOCENTRIC CONIC

C3 11.701 VHL 3.421 DLA 8.43 RAL 206.93 RAD 6567.4 VEL 11.536 PTH 2.01 VHP 6.281 DPA -5.88 RAP 184.48 ECC 1.1926

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 45	2358.46	-22.78	50.81	62.17	107.29	18 40 3	1758.5	-20.20	43.09
90.00	8 10 3	4473.76	8.76	187.37	59.50	62.96	9 24 36	3873.8	5.06	180.64
100.00	19 26 10	2082.93	-23.72	30.21	61.84	108.75	20 0 53	1482.9	-20.94	22.52
100.00	9 27 18	4224.52	9.63	168.58	59.03	61.56	10 37 42	3624.5	5.76	161.94
110.00	20 43 44	1840.21	-26.22	10.74	60.79	112.77	21 14 24	1240.2	-22.90	3.15
110.00	10 26 14	4040.01	11.93	153.21	57.66	57.73	11 33 34	3440.0	7.59	146.81

DIFFERENTIAL CORRECTIONS
TDE .8354 TRA 4.2517 TC-19.6165 BAU 3.0688
RDE .2903 RRA .1958 RC3 .1157 FAU .05318
FDE -.3128 FRA 1.5869 FC3-3.9348 BSP 54131
BDE .8844 BRA 4.2562 BC319.6168 FSP 1082

MID-COURSE EXECUTION ACCURACY
SGT15293.7 SGR 593.8 SG3 331.7
RRT .2207 RRF .1855 RTF .9322
SGB15305.2 R23 -.0211 R13 .9322
SG115294.2 SG2 579.1 THA .49

ORBIT DETERMINATION ACCURACY
ST 2604.7 SR 496.3 SS 523.5
CRT .6917 CRS .3650 CST -.4140
LSA 2636.2 MSA 595.0 SSA 38.3
EL1 2627.7 EL2 355.3 ALF 7.65

LAUNCH DATE DEC 22 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 862.894 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.349 GAL -2.45 AZL 88.19 HCA 251.25 SMA 191.88 ECC .23678 INC 1.8097 V1 30.277
RP 206.77 LAP -1.71 LOP 341.43 VP 24.332 GAP -12.97 AZP 90.58 TAL 347.16 TAP 238.41 RCA 146.44 APO 237.31 V2 26.485
RC 337.346 GL 17.68 GP -4.77 ZAL 112.40 ZAP 26.41 ETS 168.94 ZAE 40.95 ETE 174.30 ZAC 84.66 ETC 255.90 CLP 26.01

PLANETOCENTRIC CONIC

C3 12.002 VHL 3.464 DLA 7.23 RAL 208.48 RAD 6567.5 VEL 11.549 PTH 2.02 VHP 6.359 DPA -6.16 RAP 185.32 ECC 1.1975

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 16 14	2325.57	-22.10	48.64	63.75	108.17	18 55 0	1725.6	-19.41	41.00
90.00	8 6 55	4517.29	10.09	189.87	61.39	63.40	9 22 12	3917.3	6.44	183.10
100.00	19 41 3	2052.03	-23.03	28.18	63.40	109.60	20 15 15	1452.0	-20.15	20.57
100.00	9 24 48	4266.07	10.97	170.94	60.94	62.02	10 35 54	3666.1	7.14	164.25
110.00	20 57 13	1813.68	-25.50	9.00	62.33	113.57	21 27 26	1213.7	-22.10	1.51
110.00	10 25 7	4077.18	13.28	155.25	59.58	58.21	11 33 4	3477.2	8.98	148.79

DIFFERENTIAL CORRECTIONS
TDE .6923 TRA 4.5319 TC-19.2750 BAU 3.0928
RDE .2970 RRA .1927 RC3 .1363 FAU .04903
FDE -.3433 FRA 1.5681 FC3-3.5365 BSP 54548
BDE .7533 BRA 4.5360 BC319.2755 FSP 1026

MID-COURSE EXECUTION ACCURACY
SGT15386.7 SGR 594.5 SG3 313.4
RRT .1889 RRF .1528 RTF .9284
SGB15398.2 R23 -.0233 R13 .9284
SG115387.1 SG2 583.7 THA .42

ORBIT DETERMINATION ACCURACY
ST 2570.8 SR 500.6 SS 533.5
CRT .6059 CRS .4188 CST -.4635
LSA 2600.4 MSA 617.0 SSA 37.2
EL1 2589.0 EL2 395.4 ALF 6.89

LAUNCH DATE DEC 22 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 867.243 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.358 GAL -2.66 AZL 88.22 HCA 252.52 SMA 192.04 ECC .23810 INC 1.7800 V1 30.277
RP 206.81 LAP -1.70 LOP 342.70 VP 24.338 GAP -13.06 AZP 90.54 TAL 346.08 TAP 238.59 RCA 146.32 APO 237.77 V2 26.480
RC 338.120 GL 17.14 GP -4.68 ZAL 114.31 ZAP 26.02 ETS 168.95 ZAE 40.26 ETE 174.28 ZAC 84.95 ETC 255.88 CLP 25.63

PLANETOCENTRIC CONIC

C3 12.337 VHL 3.512 DLA 6.05 RAL 210.02 RAD 6567.5 VEL 11.564 PTH 2.02 VHP 6.439 DPA -6.44 RAP 186.17 ECC 1.2030

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 27	2293.98	-21.41	46.57	65.36	108.98	19 9 41	1694.0	-18.63	39.01
90.00	8 4 0	4560.55	11.40	192.38	63.35	63.90	9 20 0	3960.5	7.80	185.55
100.00	19 55 40	2022.35	-22.34	26.24	65.01	110.40	20 29 22	1422.4	-19.36	18.71
100.00	9 22 28	4307.41	12.28	173.31	62.89	62.53	10 34 15	3707.4	8.50	166.56
110.00	21 10 29	1788.20	-24.80	7.36	63.90	114.32	21 40 17	1188.2	-21.31	359.95
110.00	10 24 8	4114.32	14.60	157.32	61.55	58.74	11 32 42	3514.3	10.35	150.79

DIFFERENTIAL CORRECTIONS
TDE .5486 TRA 4.8198 TC-18.9018 BAU 3.1177
RDE .3044 RRA .1892 RC3 .1546 FAU .04499
FDE -.3700 FRA 1.5459 FC3-3.1571 BSP 54926
BDE .6274 BRA 4.8235 BC318.9024 FSP 971

MID-COURSE EXECUTION ACCURACY
SGT15479.7 SGR 595.6 SG3 295.7
RRT .1580 RRF .1209 RTF .9241
SGB15491.1 R23 -.0256 R13 .9241
SG115480.0 SG2 588.1 THA .35

ORBIT DETERMINATION ACCURACY
ST 2566.2 SR 505.3 SS 541.5
CRT .5121 CRS .4659 CST -.5167
LSA 2594.4 MSA 634.0 SSA 36.2
EL1 2579.6 EL2 431.7 ALF 5.92

LAUNCH DATE DEC 22 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 871.584 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.367 GAL -2.88 AZL 88.25 HCA 253.78 SMA 192.21 ECC .23947 INC 1.7507 V1 30.277
RP 206.87 LAP -1.68 LOP 343.96 VP 24.344 GAP -13.16 AZP 90.49 TAL 344.99 TAP 238.77 RCA 146.18 APO 238.24 V2 26.474
RC 338.890 GL 16.59 GP -4.59 ZAL 116.20 ZAP 25.65 ETS 168.96 ZAE 39.57 ETE 174.26 ZAC 85.23 ETC 255.86 CLP 25.26

PLANETOCENTRIC CONIC

C3 12.709 VHL 3.565 DLA 4.89 RAL 211.54 RAD 6567.5 VEL 11.580 PTH 2.03 VHP 6.520 DPA -6.73 RAP 187.02 ECC 1.2092

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 23	2263.69	-20.73	44.62	67.02	109.73	19 24 6	1663.7	-17.85	37.12
90.00	8 1 15	4603.52	12.67	194.89	65.35	64.47	9 17 58	4003.5	9.13	188.00
100.00	20 10 1	1993.90	-21.65	24.41	66.65	111.13	20 43 15	1393.9	-18.59	16.95
100.00	9 20 17	4348.54	13.56	175.70	64.90	63.10	10 32 46	3748.5	9.84	168.88
110.00	21 23 33	1763.80	-24.11	5.80	65.52	115.00	21 52 56	1163.8	-20.54	358.48
110.00	10 23 15	4151.40	15.90	159.41	63.57	59.33	11 32 27	3551.4	11.71	152.80

DIFFERENTIAL CORRECTIONS
TDE .4065 TRA 5.1156 TC-18.4979 BAU 3.1431
RDE .3126 RRA .1853 RC3 .1705 FAU .04105
FDE -.3925 FRA 1.5196 FC3-2.7965 BSP 55315
BDE .5128 BRA 5.1189 BC318.4987 FSP 914

MID-COURSE EXECUTION ACCURACY
SGT15571.4 SGR 597.1 SG3 278.4
RRT .1281 RRF .0901 RTF .9191
SGB15582.8 R23 -.0281 R13 .9191
SG115571.6 SG2 592.2 THA .28

ORBIT DETERMINATION ACCURACY
ST 2590.6 SR 510.4 SS 546.8
CRT .4150 CRS .5070 CST -.5695
LSA 2617.9 MSA 645.1 SSA 35.1
EL1 2599.6 EL2 462.8 ALF 4.83

LAUNCH DATE DEC 22 1964 FLIGHT TIME 406.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 875.916 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.376	GAL	-3.11	AZL	88.28	HCA	255.05	SMA	192.37	ECC	.24092	INC	1.7219
RP	206.93	LAP	-1.66	LOP	345.23	VP	24.348	GAP	-13.26	AZP	90.44	TAL	343.89	TAP	238.94	RCA	146.03	APO	238.72
RC	339.657	GL	16.05	GP	-4.50	ZAL	118.08	ZAP	25.28	ETS	168.96	ZAE	38.90	ETE	174.24	ZAC	85.52	ETC	255.84

V1	30.277	V2	26.466	CLP	24.90														

PLANETOCENTRIC CONIC

C3	13.120	VHL	3.622	DLA	3.75	RAL	213.06	RAD	6567.5	VEL	11.598	PTH	2.03	VHP	6.602	DPA	-7.03	RAP	187.89
ECC	1.2159																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 2	2234.70	-20.05	42.76	68.72	110.42	19 38 16	1634.7	-17.09	35.33
90.00	7 58 40	4646.19	13.91	197.41	67.40	65.09	9 16 6	4046.2	10.44	190.46
100.00	20 24 7	1966.67	-20.97	22.67	68.34	111.80	20 56 54	1366.7	-17.83	15.29
100.00	9 18 15	4389.44	14.80	178.09	66.96	63.73	10 31 25	3789.4	11.15	171.20
110.00	21 36 23	1740.50	-23.43	4.33	67.17	115.63	22 5 24	1140.5	-19.79	357.09
110.00	10 22 29	4188.38	17.17	161.52	65.65	59.98	11 32 17	3588.4	13.05	154.83

DIFFERENTIAL CORRECTIONS

TDE	.2646	TRA	5.4197	TC-18.0658	BAU	3.1689													
RDE	.3215	RRA	.1809	RC3 .1844	FAU	.03716													
FDE	-.4113	FRA	1.4889	FC3-2.4523	BSP	55689													
BDE	.4164	BRA	5.4227	BC318.0668	FSP	862													

MID-COURSE EXECUTION ACCURACY

SGT15661.0	SGR	599.0	SG3	261.3					
RRT .0989	RRF	.0600	RTF	.9131					
SGB15672.4	R23	-.0307	R13	.9131					
SG115661.1	SG2	596.1	THA	.22					

ORBIT DETERMINATION ACCURACY

ST	2640.5	SR	515.9	SS	549.3				
CRT	.3179	CRS	.5438	CST	-.6188				
LSA	2667.5	MSA	650.8	SSA	34.0				
EL1	2645.8	EL2	488.1	ALF	3.68				

LAUNCH DATE DEC 22 1964 FLIGHT TIME 408.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 880.239 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.385	GAL	-3.34	AZL	88.31	HCA	256.31	SMA	192.54	ECC	.24244	INC	1.6934
RP	207.00	LAP	-1.65	LOP	346.50	VP	24.351	GAP	-13.37	AZP	90.40	TAL	342.77	TAP	239.09	RCA	145.86	APO	239.22
RC	340.420	GL	15.51	GP	-4.42	ZAL	119.93	ZAP	24.91	ETS	168.96	ZAE	38.23	ETE	174.21	ZAC	85.80	ETC	255.83

V1	30.277	V2	26.458	CLP	24.54														

PLANETOCENTRIC CONIC

C3	13.571	VHL	3.684	DLA	2.62	RAL	214.55	RAD	6567.5	VEL	11.617	PTH	2.04	VHP	6.685	DPA	-7.34	RAP	188.75
ECC	1.2233																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 24	2207.01	-19.38	41.00	70.45	111.05	19 52 11	1607.0	-16.35	33.64
90.00	7 56 14	4688.55	15.11	199.95	69.50	65.77	9 14 23	4088.6	11.71	192.92
100.00	20 37 58	1940.70	-20.31	21.03	70.06	112.42	21 10 18	1340.7	-17.09	13.71
100.00	9 16 21	4430.10	16.01	180.51	69.07	64.42	10 30 12	3830.1	12.44	173.54
110.00	21 49 1	1718.33	-22.77	2.95	68.86	116.21	22 17 39	1118.3	-19.06	355.78
110.00	10 21 48	4225.23	18.41	163.65	67.77	60.68	11 32 13	3625.2	14.36	156.88

DIFFERENTIAL CORRECTIONS

TDE	.1245	TRA	5.7315	TC-17.6105	BAU	3.1953													
RDE	.3311	RRA	.1761	RC3 .1962	FAU	.03338													
FDE	-.4268	FRA	1.4550	FC3-2.1293	BSP	56054													
BDE	.3538	BRA	5.7342	BC317.6116	FSP	808													

MID-COURSE EXECUTION ACCURACY

SGT15748.6	SGR	601.1	SG3	244.9					
RRT .0709	RRF	.0309	RTF	.9060					
SGB15760.1	R23	-.0335	R13	.9060					
SG115748.6	SG2	599.6	THA	.16					

ORBIT DETERMINATION ACCURACY

ST	2712.1	SR	521.6	SS	549.4				
CRT	.2250	CRS	.5768	CST	-.6625				
LSA	2739.2	MSA	652.2	SSA	32.9				
EL1	2714.7	EL2	507.7	ALF	2.57				

LAUNCH DATE DEC 22 1964 FLIGHT TIME 410.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 884.552 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.394	GAL	-3.57	AZL	88.33	HCA	257.58	SMA	192.71	ECC	.24403	INC	1.6652
RP	207.08	LAP	-1.63	LOP	347.76	VP	24.353	GAP	-13.47	AZP	90.36	TAL	341.65	TAP	239.23	RCA	145.68	APO	239.73
RC	341.179	GL	14.97	GP	-4.34	ZAL	121.76	ZAP	24.56	ETS	168.97	ZAE	37.57	ETE	174.18	ZAC	86.08	ETC	255.82

V1	30.277	V2	26.449	CLP	24.20														

PLANETOCENTRIC CONIC

C3	14.065	VHL	3.750	DLA	1.52	RAL	216.03	RAD	6567.6	VEL	11.638	PTH	2.04	VHP	6.769	DPA	-7.65	RAP	189.63
ECC	1.2315																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 30	2180.62	-18.73	39.34	72.21	111.63	20 5 50	1580.6	-15.63	32.04
90.00	7 53 57	4730.59	16.27	202.49	71.65	66.50	9 12 48	4130.6	12.95	195.38
100.00	20 51 33	1915.97	-19.66	19.48	71.81	112.98	21 23 29	1316.0	-16.38	12.22
100.00	9 14 35	4470.47	17.18	182.93	71.22	65.16	10 29 6	3870.5	13.69	175.88
110.00	22 1 24	1697.29	-22.13	1.65	70.58	116.74	22 29 42	1097.3	-18.36	354.54
110.00	10 21 13	4261.92	19.62	165.81	69.93	61.43	11 32 15	3661.9	15.65	158.94

DIFFERENTIAL CORRECTIONS

TDE	-.0146	TRA	6.0510	TC-17.1371	BAU	3.2225													
RDE	.3415	RRA	.1709	RC3 .2060	FAU	.02966													
FDE	-.4387	FRA	1.4160	FC3-1.8260	BSP	56391													
BDE	.3418	BRA	6.0534	BC317.1383	FSP	755													

MID-COURSE EXECUTION ACCURACY

SGT15834.8	SGR	603.5	SG3	228.7					
RRT .0436	RRF	.0024	RTF	.8977					
SGB15846.3	R23	-.0368	R13	.8977					
SG115834.8	SG2	602.9	THA	.10					

ORBIT DETERMINATION ACCURACY

ST	2801.1	SR	527.5	SS	546.3				
CRT	.1380	CRS	.6068	CST	-.7002				
LSA	2828.3	MSA	650.0	SSA	31.8				
EL1	2802.1	EL2	522.3	ALF	1.54				

LAUNCH DATE DEC 22 1964 FLIGHT TIME 412.00 ARRIVAL DATE FEB 7 1966

HELIOCENTRIC CONIC DISTANCE 888.854 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.403	GAL	-3.81	AZL	88.36	HCA	258.84	SMA	192.87	ECC	.24569	INC	1.6374
RP	207.17	LAP	-1.61	LOP	349.03	VP	24.354	GAP	-13.58	AZP	90.32	TAL	340.52	TAP	239.36	RCA	145.49	APO	240.26
RC	341.936	GL	14.43	GP	-4.27	ZAL	123.56	ZAP	24.22	ETS	168.96	ZAE	36.92	ETE	174.15	ZAC	86.35	ETC	255.81

V1	30.277	V2	26.438	CLP	23.86														

PLANETOCENTRIC CONIC

C3	14.603	VHL	3.821	DLA	.44	RAL	217.50	RAD	6567.6	VEL	11.661	PTH	2.05	VHP	6.855	DPA	-7.96	RAP	190.51
ECC	1.2403																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 19	2155.53	-18.09	37.78	74.00	112.16	20 19 14	1555.5	-14.93	30.53
90.00	7 51 48	4772.29	17.38	205.04	73.84	67.29	9 11 20	4172.3	14.16	197.85
100.00	21 4 52	1892.49	-19.03	18.02	73.59	113.50	21 36 24	1292.5	-15.69	10.82
100.00	9 12 56	4510.56	18.31	185.37	73.42	65.95	10 28 7	3910.6	14.91	178.23
110.00	22 13 35	1677.41	-21.52	.43	72.33	117.23	22 41 32	1077.4	-17.70	353.39
110.00	10 20 43	4298.41	20.79	167.99	72.14	62.24	11 32 21	3698.4	16.91	161.01

DIFFERENTIAL CORRECTIONS

TDE	-.1514	TRA	6.3795	TC-16.6477	BAU	3.2503													
RDE	.3524	RRA	.1652	RC3 .2140	FAU	.02604													
FDE	-.4472	FRA	1.3737	FC3-1.5439	BSP	56730													
BDE	.3836	BRA	6.3816	BC316.6491	FSP	704													

MID-COURSE EXECUTION ACCURACY

SGT15919.6	SGR	606.1	SG3	213.1					
RRT .0175	RRF	-.0248	RTF	.8879					
SGB15931.1	R23	-.0404	R13	.8879					
SG115919.6	SG2	606.0	THA	.04					

ORBIT DETERMINATION ACCURACY

ST	2903.8	SR	533.7	SS	540.4				
CRT	.0590	CRS	.6337	CST	-.7317				
LSA	2931.1	MSA	645.4	SSA	30.7				
EL1	2904.0	EL2	532.7	ALF	.64				

LAUNCH DATE DEC 22 1964 FLIGHT TIME 414.00 ARRIVAL DATE FEB 9 1966

HELIOCENTRIC CONIC DISTANCE 893.145 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.412 GAL -4.05 AZL 88.39 HCA 260.11 SMA 193.04 ECC .24743 INC 1.6097 V1 30.277
RP 207.27 LAP -1.59 LOP 350.29 VP 24.354 GAP -13.70 AZP 90.28 TAL 339.38 TAP 239.48 RCA 145.28 APO 240.81 V2 26.427
RC 342.690 GL 13.90 GP -4.19 ZAL 125.33 ZAP 23.89 ETS 168.96 ZAE 36.27 ETE 174.11 ZAC 86.63 ETC 255.81 CLP 23.54

PLANETOCENTRIC CONIC

C3 15.188 VHL 3.897 DLA -.61 RAL 218.94 RAD 6567.6 VEL 11.686 PTH 2.06 VHP 6.942 DPA -8.28 RAP 191.40 ECC 1.2499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 52	2131.73	-17.48	36.30	75.83	112.64	20 32 23	1531.7	-14.26	29.11
90.00	7 49 46	4813.63	18.45	207.61	76.07	68.13	9 10 0	4213.6	15.32	200.33
100.00	21 17 55	1870.26	-18.42	16.65	75.40	113.97	21 49 6	1270.3	-15.02	9.50
100.00	9 11 24	4550.33	19.40	187.83	75.65	66.80	10 27 14	3950.3	16.09	180.60
110.00	22 25 31	1658.68	-20.93	359.30	74.11	117.66	22 53 10	1058.7	-17.06	352.31
110.00	10 20 18	4334.68	21.93	170.20	74.39	63.09	11 32 32	3734.7	18.14	163.11

DIFFERENTIAL CORRECTIONS
TDE -.2871 TRA 6.7159 TC-16.1494 BAU 3.2793
RDE .3641 RRA .1591 RC3 .2202 FAU .02249
FDE -.4528 FRA 1.3271 FC3-1.2821 BSP 57043
BDE .4636 BRA 6.7178 BC316.1509 FSP 652

MID-COURSE EXECUTION ACCURACY
SGT16003.7 SGR 608.8 SG3 198.0
RRT -.0078 RRF -.0512 RTF .8762
SGB16015.3 R23 .0443 R13 -.8762
SG116003.7 SG2 608.8 THA 179.98

ORBIT DETERMINATION ACCURACY
ST 3016.0 SR 539.8 SS 532.0
CRT -.0123 CRS .6587 CST -.7575
LSA 3043.1 MSA 639.4 SSA 29.7
EL1 3016.0 EL2 539.8 ALF 179.87

LAUNCH DATE DEC 22 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 11 1966

HELIOCENTRIC CONIC DISTANCE 897.423 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.421 GAL -4.29 AZL 88.42 HCA 261.37 SMA 193.21 ECC .24925 INC 1.5824 V1 30.277
RP 207.37 LAP -1.56 LOP 351.55 VP 24.353 GAP -13.82 AZP 90.24 TAL 338.22 TAP 239.59 RCA 145.05 APO 241.37 V2 26.415
RC 343.441 GL 13.38 GP -4.12 ZAL 127.07 ZAP 23.56 ETS 168.96 ZAE 35.64 ETE 174.08 ZAC 86.90 ETC 255.81 CLP 23.22

PLANETOCENTRIC CONIC

C3 15.822 VHL 3.978 DLA -1.64 RAL 220.36 RAD 6567.6 VEL 11.713 PTH 2.06 VHP 7.031 DPA -8.61 RAP 192.29 ECC 1.2604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 8	2109.21	-16.88	34.92	77.68	113.08	20 45 17	1509.2	-13.61	27.77
90.00	7 47 52	4854.60	19.47	210.18	78.33	69.03	9 8 46	4254.6	15.45	202.81
100.00	21 30 43	1849.28	-17.83	15.37	77.24	114.40	22 1 32	1249.3	-14.39	8.26
100.00	9 9 58	4589.77	20.44	190.30	77.93	67.70	10 26 28	3989.8	17.24	182.97
110.00	22 37 13	1641.11	-20.37	358.24	75.91	118.06	23 4 34	1041.1	-16.46	351.30
110.00	10 19 57	4370.70	23.02	172.42	76.68	64.00	11 32 48	3770.7	19.34	165.22

DIFFERENTIAL CORRECTIONS
TDE -.4205 TRA 7.0601 TC-15.6436 BAU 3.3093
RDE .3763 RRA .1525 RC3 .2248 FAU .01899
FDE -.4558 FRA 1.2761 FC3-1.0393 BSP 57329
BDE .5643 BRA 7.0618 BC315.6453 FSP 602

MID-COURSE EXECUTION ACCURACY
SGT16085.7 SGR 611.6 SG3 183.2
RRT -.0323 RRF -.0768 RTF .8618
SGB16097.4 R23 .0489 R13 -.8618
SG116085.8 SG2 611.3 THA 179.93

ORBIT DETERMINATION ACCURACY
ST 3134.0 SR 546.0 SS 521.2
CRT -.0754 CRS .6823 CST -.7776
LSA 3160.8 MSA 632.8 SSA 28.8
EL1 3134.3 EL2 544.4 ALF 179.22

LAUNCH DATE DEC 22 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 13 1966

HELIOCENTRIC CONIC DISTANCE 901.688 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.430 GAL -4.55 AZL 88.44 HCA 262.63 SMA 193.38 ECC .25115 INC 1.5552 V1 30.277
RP 207.48 LAP -1.54 LOP 352.81 VP 24.351 GAP -13.94 AZP 90.20 TAL 337.06 TAP 239.68 RCA 144.81 APO 241.95 V2 26.402
RC 344.188 GL 12.86 GP -4.06 ZAL 128.78 ZAP 23.24 ETS 168.95 ZAE 35.01 ETE 174.04 ZAC 87.18 ETC 255.81 CLP 22.91

PLANETOCENTRIC CONIC

C3 16.507 VHL 4.063 DLA -2.63 RAL 221.77 RAD 6567.7 VEL 11.743 PTH 2.07 VHP 7.121 DPA -8.94 RAP 193.19 ECC 1.2717

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 23 8	2087.96	-16.31	33.62	79.55	113.47	20 57 56	1488.0	-12.99	26.51
90.00	7 46 4	4895.18	20.44	212.76	80.63	69.96	9 7 39	4295.2	17.53	205.30
100.00	21 43 15	1829.52	-17.27	14.17	79.10	114.78	22 13 45	1229.5	-13.79	7.11
100.00	9 8 38	4628.85	21.43	192.78	80.24	68.64	10 25 47	4028.8	18.34	185.35
110.00	22 48 41	1624.70	-19.84	357.26	77.74	118.42	23 15 46	1024.7	-15.89	350.37
110.00	10 19 41	4406.44	24.07	174.67	79.01	64.96	11 33 8	3806.4	20.49	167.35

DIFFERENTIAL CORRECTIONS
TDE -.5513 TRA 7.4132 TC-15.1332 BAU 3.3401
RDE .3892 RRA .1455 RC3 .2279 FAU .01557
FDE -.4554 FRA 1.2216 FC3 -.8167 BSP 57599
BDE .6748 BRA 7.4146 BC315.1349 FSP 552

MID-COURSE EXECUTION ACCURACY
SGT16166.1 SGR 614.5 SG3 169.0
RRT -.0558 RRF -.1007 RTF .8445
SGB16177.7 R23 .0536 R13 -.8445
SG116166.1 SG2 613.6 THA 179.88

ORBIT DETERMINATION ACCURACY
ST 3255.4 SR 552.3 SS 507.5
CRT -.1308 CRS .7038 CST -.7935
LSA 3281.4 MSA 625.9 SSA 27.9
EL1 3256.2 EL2 547.4 ALF 178.69

LAUNCH DATE DEC 22 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 15 1966

HELIOCENTRIC CONIC DISTANCE 905.939 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.439 GAL -4.80 AZL 88.47 HCA 263.88 SMA 193.55 ECC .25314 INC 1.5282 V1 30.277
RP 207.61 LAP -1.52 LOP 354.07 VP 24.348 GAP -14.07 AZP 90.16 TAL 335.88 TAP 239.77 RCA 144.55 APO 242.54 V2 26.387
RC 344.932 GL 12.36 GP -3.99 ZAL 130.45 ZAP 22.93 ETS 168.95 ZAE 34.39 ETE 173.99 ZAC 87.45 ETC 255.82 CLP 22.60

PLANETOCENTRIC CONIC

C3 17.247 VHL 4.153 DLA -3.60 RAL 223.15 RAD 6567.7 VEL 11.774 PTH 2.08 VHP 7.213 DPA -9.27 RAP 194.10 ECC 1.2838

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 35 53	2067.95	-15.76	32.41	81.44	113.83	21 10 21	1468.0	-12.41	25.33
90.00	7 44 22	4935.35	21.35	215.36	82.97	70.95	9 6 37	4335.4	18.56	207.80
100.00	21 55 32	1810.98	-16.74	13.05	80.98	115.13	22 25 43	1211.0	-13.22	6.03
100.00	9 7 24	4667.56	22.37	195.27	82.58	69.63	10 25 11	4067.6	19.39	187.74
110.00	22 59 55	1609.50	-19.34	356.36	79.59	118.75	23 26 45	1009.5	-15.36	349.50
110.00	10 19 30	4441.88	25.07	176.93	81.37	65.96	11 33 32	3841.9	21.61	169.49

DIFFERENTIAL CORRECTIONS
TDE -.6805 TRA 7.7741 TC-14.6235 BAU 3.3723
RDE .4026 RRA .1381 RC3 .2297 FAU .01221
FDE -.4526 FRA 1.1628 FC3 -.6131 BSP 57844
BDE .7907 BRA 7.7754 BC314.6253 FSP 503

MID-COURSE EXECUTION ACCURACY
SGT16245.1 SGR 617.5 SG3 155.4
RRT -.0785 RRF -.1235 RTF .8232
SGB16256.8 R23 .0590 R13 -.8232
SG116245.2 SG2 615.6 THA 179.83

ORBIT DETERMINATION ACCURACY
ST 3377.6 SR 558.4 SS 491.7
CRT -.1797 CRS .7246 CST -.8054
LSA 3402.6 MSA 619.2 SSA 27.0
EL1 3379.2 EL2 549.1 ALF 178.25

LAUNCH DATE DEC 22 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 17 1966

HELIOCENTRIC CONIC DISTANCE 910.175 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.448 GAL -5.06 AZL 88.50 HCA 265.14 SMA 193.72 ECC .25521 INC 1.5014 V1 30.277
RP 207.74 LAP -1.50 LOP 355.33 VP 24.344 GAP -14.20 AZP 90.13 TAL 334.70 TAP 239.84 RCA 144.28 APO 243.16 V2 26.372
RC 345.671 GL 11.86 GP -3.93 ZAL 132.09 ZAP 22.63 ETS 168.94 ZAE 33.78 ETE 173.95 ZAC 87.72 ETC 255.83 CLP 22.31

PLANETOCENTRIC CONIC

C3 18.044 VHL 4.248 DLA -4.54 RAL 224.52 RAD 6567.7 VEL 11.808 PTH 2.09 VHP 7.306 DPA -9.61 RAP 195.01 ECC 1.2970

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 48 21	2049.17	-15.24	31.27	83.36	114.16	21 22 30	1449.2	-11.85	24.24
90.00	7 42 46	4975.12	22.21	217.95	85.33	71.98	9 5 41	4375.1	19.54	210.30
100.00	22 7 33	1793.65	-16.24	12.01	82.88	115.45	22 37 27	1193.6	-12.68	5.02
100.00	9 6 15	4705.88	23.25	197.77	84.95	70.67	10 24 40	4105.9	20.40	190.14
110.00	23 10 55	1595.28	-18.88	355.52	81.45	119.04	23 37 30	995.3	-14.86	348.71
110.00	10 19 22	4477.00	26.02	179.22	83.77	67.01	11 33 59	3877.0	22.68	171.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.8046 TRA 8.1455 TC-14.1120 BAU 3.4048 SGT16321.3 SGR 620.5 SG3 142.2 ST 3498.5 SR 564.4 SS 473.8
RDE .4166 RRA .1302 RC3 .2303 FAU .00890 RRT -.1001 RRF -.1447 RTF .7967 CRT -.2214 CRS .7446 CST -.8130
FDE -.4473 FRA 1.0990 FC3 -.4272 BSP 58101 SGB16333.1 R23 .0652 R13 -.7967 LSA 3522.2 MSA 613.0 SSA 26.2
BDE .9061 BRA 8.1465 BC314.1139 FSP 455 SG116321.4 SG2 617.4 THA 179.78 EL1 3500.8 EL2 550.0 ALF 177.90

LAUNCH DATE DEC 22 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 19 1966

HELIOCENTRIC CONIC DISTANCE 914.394 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.456 GAL -5.33 AZL 88.53 HCA 266.40 SMA 193.89 ECC .25738 INC 1.4747 V1 30.277
RP 207.87 LAP -1.47 LOP 356.58 VP 24.339 GAP -14.34 AZP 90.09 TAL 333.51 TAP 239.91 RCA 143.99 APO 243.79 V2 26.356
RC 346.405 GL 11.37 GP -3.87 ZAL 133.70 ZAP 22.34 ETS 168.94 ZAE 33.18 ETE 173.90 ZAC 87.99 ETC 255.85 CLP 22.02

PLANETOCENTRIC CONIC

C3 18.902 VHL 4.348 DLA -5.44 RAL 225.86 RAD 6567.8 VEL 11.844 PTH 2.10 VHP 7.400 DPA -9.95 RAP 195.93 ECC 1.3111

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 0 33	2031.60	-14.75	30.22	85.29	114.45	21 34 25	1431.6	-11.33	23.21
90.00	7 41 16	5014.45	23.02	220.56	87.72	73.04	9 4 50	4414.4	20.48	212.80
100.00	22 19 19	1777.49	-15.76	11.04	84.80	115.73	22 48 57	1177.5	-12.17	4.09
100.00	9 5 11	4743.80	24.08	200.28	87.35	71.74	10 24 15	4143.8	21.36	192.54
110.00	23 21 41	1582.26	-18.45	354.76	83.33	119.30	23 48 3	982.3	-14.40	347.98
110.00	10 19 19	4511.79	26.93	181.52	86.20	68.10	11 34 31	3911.8	23.72	173.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.9272 TRA 8.5249 TC-13.6072 BAU 3.4390 SGT16396.6 SGR 623.5 SG3 129.7 ST 3616.9 SR 570.2 SS 454.1
RDE .4311 RRA .1219 RC3 .2298 FAU .00567 RRT -.1210 RRF -.1644 RTF .7637 CRT -.2582 CRS .7645 CST -.8172
FDE -.4399 FRA 1.0324 FC3 -.2597 BSP 58314 SGB16408.4 R23 .0724 R13 -.7637 LSA 3639.2 MSA 607.3 SSA 25.5
BDE 1.0225 BRA 8.5257 BC313.6092 FSP 407 SG116396.8 SG2 618.9 THA 179.74 EL1 3620.0 EL2 550.4 ALF 177.61

LAUNCH DATE DEC 22 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 21 1966

HELIOCENTRIC CONIC DISTANCE 918.597 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.465 GAL -5.60 AZL 88.55 HCA 267.65 SMA 194.06 ECC .25964 INC 1.4481 V1 30.277
RP 208.02 LAP -1.45 LOP 357.84 VP 24.333 GAP -14.48 AZP 90.06 TAL 332.31 TAP 239.96 RCA 143.67 APO 244.45 V2 26.339
RC 347.135 GL 10.90 GP -3.81 ZAL 135.27 ZAP 22.06 ETS 168.93 ZAE 32.58 ETE 173.85 ZAC 88.25 ETC 255.86 CLP 21.74

PLANETOCENTRIC CONIC

C3 19.822 VHL 4.452 DLA -6.32 RAL 227.18 RAD 6567.8 VEL 11.883 PTH 2.11 VHP 7.497 DPA -10.30 RAP 196.86 ECC 1.3262

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 12 30	2015.20	-14.29	29.24	87.23	114.71	21 46 5	1415.2	-10.83	22.26
90.00	7 39 51	5053.35	23.77	223.16	90.13	74.14	9 4 4	4453.3	21.36	215.31
100.00	22 30 50	1762.48	-15.31	10.15	86.73	115.99	23 0 13	1162.5	-11.70	3.23
100.00	9 4 12	4781.30	24.86	202.80	89.78	72.84	10 23 53	4181.3	22.28	194.95
110.00	23 32 13	1570.33	-18.05	354.07	85.23	119.54	23 58 23	970.3	-13.98	347.32
110.00	10 19 19	4546.21	27.78	183.83	88.66	69.23	11 35 5	3946.2	24.70	176.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.0473 TRA 8.9130 TC-13.1094 BAU 3.4745 SGT16470.0 SGR 626.4 SG3 118.0 ST 3731.7 SR 575.8 SS 432.6
RDE .4461 RRA .1131 RC3 .2283 FAU .00248 RRT -.1412 RRF -.1813 RTF .7218 CRT -.2903 CRS .7839 CST -.8186
FDE -.4303 FRA .9616 FC3 -.1082 BSP 58507 SGB16481.9 R23 .0800 R13 -.7218 LSA 3752.5 MSA 602.0 SSA 24.8
BDE 1.1384 BRA 8.9138 BC313.1114 FSP 360 SG116470.2 SG2 620.2 THA 179.69 EL1 3735.5 EL2 550.5 ALF 177.38

LAUNCH DATE DEC 22 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 23 1966

HELIOCENTRIC CONIC DISTANCE 922.781 EARTH TO MARS

RL 147.15 LAL -.00 LOL 90.19 VL 33.475 GAL -5.88 AZL 88.58 HCA 268.90 SMA 194.23 ECC .26200 INC 1.4216 V1 30.277
RP 208.17 LAP -1.42 LOP 359.09 VP 24.326 GAP -14.63 AZP 90.03 TAL 331.09 TAP 240.00 RCA 143.34 APO 245.12 V2 26.322
RC 347.858 GL 10.43 GP -3.76 ZAL 136.80 ZAP 21.78 ETS 168.92 ZAE 32.00 ETE 173.79 ZAC 88.52 ETC 255.89 CLP 21.47

PLANETOCENTRIC CONIC

C3 20.809 VHL 4.562 DLA -7.16 RAL 228.48 RAD 6567.8 VEL 11.924 PTH 2.12 VHP 7.595 DPA -10.64 RAP 197.79 ECC 1.3425

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 24 11	1999.94	-13.85	28.33	89.19	114.95	21 57 31	1399.9	-10.37	21.38
90.00	7 38 31	5091.79	24.46	225.77	92.57	75.27	9 3 23	4491.8	22.20	217.83
100.00	22 42 6	1748.60	-14.90	9.33	88.67	116.22	23 11 15	1148.6	-11.26	2.43
100.00	9 3 18	4818.37	25.58	205.32	92.23	73.98	10 23 36	4218.4	23.14	197.37
110.00	23 42 30	1559.46	-17.68	353.44	87.13	119.74	24 8 30	959.5	-13.59	346.71
110.00	10 19 23	4580.27	28.58	186.16	91.14	70.40	11 35 43	3980.3	25.64	178.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.1644 TRA 9.3093 TC-12.6219 BAU 3.5119 SGT16541.6 SGR 629.3 SG3 107.1 ST 3841.6 SR 581.2 SS 409.8
RDE .4616 RRA .1040 RC3 .2261 FAU-.00066 RRT -.1606 RRF -.1952 RTF .6683 CRT -.3182 CRS .8038 CST -.8165
FDE -.4188 FRA .8860 FC3 .0275 BSP 58655 SGB16553.5 R23 .0889 R13 -.6683 LSA 3860.8 MSA 597.3 SSA 24.1
BDE 1.2525 BRA 9.3099 BC312.6239 FSP 314 SG116541.9 SG2 621.2 THA 179.65 EL1 3846.1 EL2 550.3 ALF 177.19

LAUNCH DATE DEC 22 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 25 1966

HELIOCENTRIC CONIC DISTANCE 926.946 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.484	GAL	-6.17	AZL	88.60	HCA	270.15	SMA	194.40	ECC	.26446	INC	1.3952	V1	30.277
RP	208.33	LAP	-1.40	LOP	.34	VP	24.319	GAP	-14.79	AZP	90.00	TAL	329.87	TAP	240.03	RCA	142.99	APO	245.81	V2	26.303
RC	348.577	GL	9.98	GP	-3.70	ZAL	138.30	ZAP	21.51	ETS	168.91	ZAE	31.42	ETE	173.73	ZAC	88.79	ETC	255.91	CLP	21.21

PLANETOCENTRIC CONIC

C3	21.865	VHL	4.676	DLA	-7.98	RAL	229.75	RAD	6567.9	VEL	11.968	PTH	2.13	VHP	7.695	DPA	-10.99	RAP	198.73	ECC	1.3598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 35 37	1985.80	-13.44	27.49	91.16	115.16	22 8 43	1385.8	-9.94	20.56
90.00	7 37 17	5129.78	25.09	228.37	95.02	76.43	9 2 46	4529.8	22.98	220.34
100.00	22 53 7	1735.81	-14.51	8.58	90.63	116.42	23 22 3	1135.8	-10.85	1.70
100.00	9 2 28	4855.01	26.24	207.84	94.69	75.15	10 23 23	4255.0	23.95	199.79
110.00	23 52 34	1549.64	-17.35	352.87	89.05	119.93	24 18 24	949.6	-13.24	346.17
110.00	10 19 30	4613.94	29.33	188.49	93.65	71.60	11 36 24	4013.9	26.53	180.42

DIFFERENTIAL CORRECTIONS

TDE	-1.2776	TRA	9.7155	TC	-12.1446	BAU	3.5507	SGT	16611.8	SGR	632.2	SG3	97.0	ST	3946.1	SR	586.3	SS	385.5
RDE	.4776	RRA	.0944	RC3	.2231	FAU	-.00376	RRT	-.1792	RRF	-.2042	RTF	.5997	CRT	-.3423	CRS	.8239	CST	-.8109
FDE	-.4053	FRA	.8065	FC3	.1490	BSP	58802	SGB	16623.8	R23	.0982	R13	-.5997	LSA	3963.8	MSA	593.0	SSA	23.5
BDE	1.3640	BRA	9.7160	BC3	12.1466	FSP	268	SG1	16612.1	SG2	621.9	THA	179.61	EL1	3951.3	EL2	550.2	ALF	177.03

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 22 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 27 1966

HELIOCENTRIC CONIC DISTANCE 931.091 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.493	GAL	-6.46	AZL	88.63	HCA	271.40	SMA	194.58	ECC	.26702	INC	1.3688	V1	30.277
RP	208.50	LAP	-1.37	LOP	1.59	VP	24.310	GAP	-14.95	AZP	89.97	TAL	328.65	TAP	240.04	RCA	142.62	APO	246.53	V2	26.283
RC	349.289	GL	9.54	GP	-3.65	ZAL	139.76	ZAP	21.25	ETS	168.90	ZAE	30.85	ETE	173.67	ZAC	89.05	ETC	255.95	CLP	20.95

PLANETOCENTRIC CONIC

C3	22.996	VHL	4.795	DLA	-8.77	RAL	231.01	RAD	6567.9	VEL	12.016	PTH	2.14	VHP	7.797	DPA	-11.34	RAP	199.67	ECC	1.3785

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 46 49	1972.74	-13.06	26.72	93.14	115.35	22 19 41	1372.7	-9.54	19.81
90.00	7 36 6	5167.31	25.67	230.97	97.48	77.61	9 2 14	4567.3	23.70	222.85
100.00	23 3 53	1724.08	-14.16	7.89	92.59	116.61	23 32 37	1124.1	-10.47	1.03
100.00	9 1 43	4891.20	26.85	210.36	97.17	76.34	10 23 14	4291.2	24.71	202.21
110.00	0 6 21	1540.83	-17.05	352.36	90.97	120.09	0 32 1	940.8	-12.92	345.68
110.00	10 19 41	4647.21	30.02	190.84	96.18	72.83	11 37 8	4047.2	27.38	182.64

DIFFERENTIAL CORRECTIONS

TDE	-1.3879	TRA	10.1311	TC	-11.6768	BAU	3.5905	SGT	16678.6	SGR	634.9	SG3	88.2	ST	4045.2	SR	591.1	SS	360.4
RDE	.4940	RRA	.0844	RC3	.2194	FAU	-.00682	RRT	-.1970	RRF	-.2073	RTF	.5120	CRT	-.3632	CRS	.8449	CST	-.8012
FDE	-.3903	FRA	.7228	FC3	.2569	BSP	58930	SGB	16690.7	R23	.1084	R13	-.5121	LSA	4061.4	MSA	589.3	SSA	22.9
BDE	1.4732	BRA	10.1315	BC3	11.6789	FSP	224	SG1	16679.1	SG2	622.5	THA	179.57	EL1	4051.0	EL2	549.9	ALF	176.90

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 22 1964 FLIGHT TIME 434.00 ARRIVAL DATE MAR 1 1966

HELIOCENTRIC CONIC DISTANCE 935.213 EARTH TO MARS

RL	147.15	LAL	-.00	LOL	90.19	VL	33.502	GAL	-6.75	AZL	88.66	HCA	272.65	SMA	194.75	ECC	.26969	INC	1.3424	V1	30.277
RP	208.68	LAP	-1.34	LOP	2.83	VP	24.300	GAP	-15.11	AZP	89.94	TAL	327.41	TAP	240.05	RCA	142.23	APO	247.27	V2	26.263
RC	349.997	GL	9.12	GP	-3.60	ZAL	141.19	ZAP	21.00	ETS	168.89	ZAE	30.28	ETE	173.61	ZAC	89.31	ETC	255.98	CLP	20.70

PLANETOCENTRIC CONIC

C3	24.204	VHL	4.920	DLA	-9.52	RAL	232.24	RAD	6568.0	VEL	12.066	PTH	2.16	VHP	7.901	DPA	-11.70	RAP	200.63	ECC	1.3983

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 45	1960.71	-12.71	26.01	95.13	115.52	22 30 26	1360.7	-9.17	19.12
90.00	7 35 1	5204.36	26.18	233.56	99.95	78.81	9 1 45	4604.4	24.37	225.36
100.00	23 14 25	1713.38	-13.83	7.26	94.56	116.77	23 42 59	1113.4	-10.13	.43
100.00	9 1 2	4926.93	27.40	212.87	99.66	77.56	10 23 9	4326.9	25.41	204.63
110.00	0 15 57	1532.99	-16.78	351.91	92.90	120.23	0 41 30	933.0	-12.64	345.25
110.00	10 19 55	4680.08	30.66	193.18	98.72	74.08	11 37 55	4080.1	28.17	184.87

DIFFERENTIAL CORRECTIONS

TDE	-1.4942	TRA	10.5558	TC	-11.2235	BAU	3.6324	SGT	16744.0	SGR	637.6	SG3	80.6	ST	4137.9	SR	595.6	SS	334.5
RDE	.5109	RRA	.0739	RC3	.2153	FAU	-.00985	RRT	-.2142	RRF	-.2018	RTF	.4013	CRT	-.3812	CRS	.8669	CST	-.7865
FDE	-.3737	FRA	.6347	FC3	.3522	BSP	59003	SGB	16756.2	R23	.1185	R13	-.4014	LSA	4152.7	MSA	586.0	SSA	22.3
BDE	1.5791	BRA	10.5561	BC3	11.2255	FSP	180	SG1	16744.6	SG2	622.7	THA	179.53	EL1	4144.2	EL2	549.7	ALF	176.80

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 23 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 344.988 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	35.012	GAL	3.64	AZL	88.98	HCA	105.93	SMA	229.59	ECC	.36397	INC	1.0239	V1	30.278
RP	242.87	LAP	.98	LOP	197.14	VP	22.690	GAP	21.10	AZP	90.28	TAL	13.69	TAP	119.62	RCA	146.03	APO	313.15	V2	22.598
RC	144.629	GL	6.84	GP	2.78	ZAL	63.73	ZAP	171.40	ETS	159.85	ZAE	152.32	ETE	4.03	ZAC	92.38	ETC	255.90	CLP	171.86

PLANETOCENTRIC CONIC

C3	27.467	VHL	5.241	DLA	16.14	RAL	159.18	RAD	6568.1	VEL	12.200	PTH	2.19	VHP	9.783	DPA	.06	RAP	189.90	ECC	1.4520		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 40 27	2818.67	-28.24	83.19	32.21	92.13	14 27 26	2218.7	-27.65	74.57
90.00	6 1 32	4408.93	6.73	183.69	24.31	62.43	7 15 1	3808.9	2.99	177.01
100.00	15 10 48	2527.30	-29.72	61.67	32.13	93.40	15 52 55	1927.3	-28.93	52.96
100.00	7 13 52	4175.52	8.03	165.83	23.60	61.11	8 23 28	3575.5	4.11	159.23
110.00	16 39 1	2251.31	-33.57	40.31	31.72	96.84	17 16 32	1651.3	-32.26	31.32
110.00	8 2 9	4024.28	11.36	152.35	21.60	57.54	9 9 13	3424.3	7.00	145.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1957	TRA	-.8118	TC3	1.2855	BAU	.4722	SGT	1647.8	SGR	674.6	SG3	198.9	ST	352.4	SR	634.8	SS	223.5
RDE	-.5770	RRA	-.2086	RC3	.0263	FAU	.06918	RRT	.1094	RRF	-.1273	RTF	-.7717	CRT	-.5147	CRS	.9390	CST	-.6467
FDE	.2318	FRA	-.0935	FC3	-2.1806	BSP	5216	SGB	1780.5	R23	-.0263	R13	-.7725	LSA	700.4	MSA	287.9	SSA	60.9
BDE	.6093	BRA	.8382	BC3	1.2858	FSP	544	SG1	1649.7	SG2	669.7	THA	3.07	EL1	666.6	EL2	287.7	ALF	109.78

LAUNCH DATE DEC 23 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 347.573 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	34.901	GAL	3.76	AZL	89.00	HCA	106.85	SMA	226.52	ECC	.35578	INC	1.0024	V1	30.278
RP	242.60	LAP	.96	LOP	198.06	VP	22.544	GAP	20.46	AZP	90.29	TAL	14.38	TAP	121.23	RCA	145.93	APO	307.12	V2	22.624
RC	146.900	GL	6.77	GP	2.86	ZAL	62.51	ZAP	170.76	ETS	160.70	ZAE	152.52	ETE	4.36	ZAC	92.51	ETC	255.89	CLP	171.21

PLANETOCENTRIC CONIC

C3	26.685	VHL	5.166	DLA	16.53	RAL	157.97	RAD	6568.1	VEL	12.168	PTH	2.18	VHP	9.535	DPA	.02	RAP	190.17	ECC	1.4392		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 31 55	2825.86	-28.26	83.71	30.62	91.87	14 19 1	2225.9	-27.70	75.09
90.00	6 0 28	4387.39	6.05	182.47	22.73	62.28	7 13 35	3787.4	2.29	175.81
100.00	15 2 35	2533.47	-29.74	62.13	30.55	93.16	15 44 49	1933.5	-28.99	53.41
100.00	7 12 29	4155.01	7.35	164.68	22.02	60.94	8 21 44	3555.0	3.42	158.10
110.00	16 31 27	2255.41	-33.61	40.62	30.16	96.66	17 9 3	1655.4	-32.32	31.63
110.00	8 0 6	4005.83	10.68	151.35	20.01	57.33	9 6 52	3405.8	6.30	145.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1780	TRA	-.7811	TC3	1.3528	BAU	.4828	SGT	1676.1	SGR	673.8	SG3	210.0	ST	338.0	SR	635.4	SS	242.8
RDE	-.5694	RRA	-.2009	RC3	.0330	FAU	.07187	RRT	.1177	RRF	-.1366	RTF	-.7781	CRT	-.4925	CRS	.9334	CST	-.6562
FDE	.2541	FRA	-.1354	FC3	-2.3316	BSP	5334	SGB	1806.4	R23	-.0278	R13	-.7790	LSA	701.9	MSA	283.2	SSA	63.7
BDE	.5966	BRA	.8065	BC3	1.3533	FSP	580	SG1	1678.3	SG2	668.2	THA	3.22	EL1	662.0	EL2	282.3	ALF	108.08

LAUNCH DATE DEC 23 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 350.250 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	34.794	GAL	3.88	AZL	89.02	HCA	107.77	SMA	223.69	ECC	.34804	INC	.9805	V1	30.278
RP	242.34	LAP	.93	LOP	198.98	VP	22.405	GAP	19.82	AZP	90.30	TAL	15.07	TAP	122.85	RCA	145.83	APO	301.54	V2	22.651
RC	149.184	GL	6.69	GP	2.94	ZAL	61.30	ZAP	170.10	ETS	161.44	ZAE	152.76	ETE	4.71	ZAC	92.65	ETC	255.88	CLP	170.54

PLANETOCENTRIC CONIC

C3	25.977	VHL	5.097	DLA	16.90	RAL	156.77	RAD	6568.1	VEL	12.139	PTH	2.18	VHP	9.295	DPA	-.01	RAP	190.44	ECC	1.4275		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 23 31	2833.07	-28.28	84.24	29.07	91.60	14 10 44	2233.1	-27.75	75.61
90.00	5 59 17	4366.84	5.40	181.31	21.19	62.16	7 12 4	3766.8	1.63	174.66
100.00	14 54 30	2539.67	-29.76	62.59	29.01	92.92	15 36 49	1939.7	-29.04	53.86
100.00	7 10 59	4135.48	6.71	163.59	20.48	60.80	8 19 55	3535.5	2.76	157.02
110.00	16 24 1	2259.60	-33.64	40.95	28.63	96.47	17 1 40	1659.6	-32.38	31.94
110.00	7 57 58	3988.32	10.04	150.40	18.45	57.15	9 4 26	3388.3	5.64	144.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1610	TRA	-.7497	TC3	1.4206	BAU	.4936	SGT	1704.6	SGR	672.8	SG3	221.7	ST	323.2	SR	635.7	SS	262.8
RDE	-.5623	RRA	-.1932	RC3	.0403	FAU	.07472	RRT	.1265	RRF	-.1466	RTF	-.7846	CRT	-.4688	CRS	.9269	CST	-.6615
FDE	.2773	FRA	-.1809	FC3	-2.4902	BSP	5449	SGB	1832.6	R23	-.0296	R13	-.7855	LSA	704.1	MSA	278.2	SSA	66.6
BDE	.5848	BRA	.7742	BC3	1.4212	FSP	617	SG1	1707.1	SG2	666.5	THA	3.37	EL1	657.6	EL2	276.0	ALF	106.37

LAUNCH DATE DEC 23 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 353.012 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	34.692	GAL	3.99	AZL	89.04	HCA	108.70	SMA	221.06	ECC	.34074	INC	.9585	V1	30.278
RP	242.06	LAP	.91	LOP	199.91	VP	22.275	GAP	19.19	AZP	90.31	TAL	15.76	TAP	124.46	RCA	145.73	APO	296.38	V2	22.678
RC	151.478	GL	6.60	GP	3.03	ZAL	60.10	ZAP	169.43	ETS	162.08	ZAE	153.04	ETE	5.08	ZAC	92.79	ETC	255.87	CLP	169.87

PLANETOCENTRIC CONIC

C3	25.337	VHL	5.034	DLA	17.25	RAL	155.58	RAD	6568.0	VEL	12.113	PTH	2.17	VHP	9.061	DPA	-.04	RAP	190.71	ECC	1.4170		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 15 15	2840.24	-28.29	84.76	27.56	91.34	14 2 36	2240.2	-27.80	76.13
90.00	5 58 1	4347.34	4.78	180.22	19.70	62.06	7 10 28	3747.3	1.00	173.57
100.00	14 46 33	2545.84	-29.78	63.05	27.50	92.68	15 28 59	1945.8	-29.09	54.31
100.00	7 9 24	4116.97	6.09	162.56	18.98	60.68	8 18 1	3517.0	2.14	156.00
110.00	16 16 42	2263.80	-33.67	41.27	27.14	96.28	16 54 25	1663.8	-32.44	32.26
110.00	7 55 45	3971.77	9.43	149.51	16.94	56.99	9 1 57	3371.8	5.01	143.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1444	TRA	-.7188	TC3	1.4864	BAU	.5038	SGT	1732.1	SGR	671.7	SG3	234.0	ST	308.4	SR	635.9	SS	283.1
RDE	-.5556	RRA	-.1856	RC3	.0482	FAU	.07770	RRT	.1360	RRF	-.1573	RTF	-.7905	CRT	-.4429	CRS	.9200	CST	-.6624
FDE	.3012	FRA	-.2296	FC3	-2.6549	BSP	5566	SGB	1857.8	R23	-.0315	R13	-.7915	LSA	707.1	MSA	273.5	SSA	69.4
BDE	.5741	BRA	.7424	BC3	1.4872	FSP	657	SG1	1734.9	SG2	664.4	THA	3.54	EL1	653.5	EL2	269.0	ALF	104.66

LAUNCH DATE DEC 23 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 355.851 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 34.596 GAL 4.10 AZL 89.06 HCA 109.62 SMA 218.61 ECC .33384 INC .9360 V1 30.278
RP 241.79 LAP .88 LOP 200.83 VP 22.152 GAP 18.56 AZP 90.31 TAL 16.46 TAP 126.08 RCA 145.63 APO 291.60 V2 22.706
RC 153.781 GL 6.51 GP 3.12 ZAL 58.92 ZAP 168.75 ETS 162.66 ZAE 153.35 ETE 5.47 ZAC 92.93 ETC 255.87 CLP 169.19

PLANETOCENTRIC CONIC

C3 24.758 VHL 4.976 DLA 17.59 RAL 154.39 RAD 6568.0 VEL 12.089 PTH 2.16 VHP 8.833 DPA -.05 RAP 190.96 ECC 1.4075

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 7 11	2847.30	-28.30	85.28	26.08	91.08	13 54 38	2247.3	-27.85	76.64
90.00	5 56 38	4328.89	4.19	179.18	18.24	61.97	7 8 46	3728.9	.41	172.54
100.00	14 38 46	2551.92	-29.80	63.50	26.02	92.44	15 21 18	1951.9	-29.14	54.76
100.00	7 7 43	4099.51	5.51	161.59	17.51	60.57	8 16 2	3499.5	1.55	155.05
110.00	16 9 32	2267.98	-33.70	41.59	25.68	96.09	16 47 20	1668.0	-32.49	32.57
110.00	7 53 27	3956.21	8.85	148.68	15.46	56.85	8 59 23	3356.2	4.42	142.39

DIFFERENTIAL CORRECTIONS
TDE .1282 TRA -.6874 TC3 1.5511 BAU .5138
RDE -.5494 RRA -.1779 RC3 .0569 FAU .08086
FDE .3263 FRA -.2822 FC3-2.8274 BSP 5682
BDE .5642 BRA .7101 BC3 1.5522 FSP 699

MID-COURSE EXECUTION ACCURACY
SGT 1759.0 SGR 670.5 SG3 247.0
RRT .1462 RRF -.1689 RTF -.7963
SGB 1882.5 R23 -.0336 R13 -.7973
SG1 1762.2 SG2 662.1 THA 3.71

ORBIT DETERMINATION ACCURACY
ST 293.3 SR 635.9 SS 304.1
CRT -.4143 CRS .9127 CST -.6594
LSA 710.9 MSA 268.9 SSA 72.2
EL1 649.7 EL2 261.2 ALF 102.95

LAUNCH DATE DEC 23 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 358.760 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 34.503 GAL 4.20 AZL 89.09 HCA 110.55 SMA 216.34 ECC .32733 INC .9133 V1 30.278
RP 241.51 LAP .86 LOP 201.76 VP 22.037 GAP 17.94 AZP 90.32 TAL 17.15 TAP 127.70 RCA 145.53 APO 287.16 V2 22.734
RC 156.092 GL 6.40 GP 3.21 ZAL 57.76 ZAP 168.06 ETS 163.16 ZAE 153.70 ETE 5.89 ZAC 93.07 ETC 255.86 CLP 168.49

PLANETOCENTRIC CONIC

C3 24.235 VHL 4.923 DLA 17.90 RAL 153.22 RAD 6568.0 VEL 12.067 PTH 2.16 VHP 8.612 DPA -.06 RAP 191.21 ECC 1.3989

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 59 18	2854.18	-28.31	85.78	24.63	90.83	13 46 52	2254.2	-27.89	77.14
90.00	5 55 8	4311.53	3.63	178.21	16.82	61.90	7 7 0	3711.5	-.15	171.57
100.00	14 31 11	2557.85	-29.82	63.94	24.59	92.21	15 13 49	1957.8	-29.19	55.19
100.00	7 5 56	4083.09	4.96	160.68	16.09	60.48	8 13 59	3483.1	.99	154.15
110.00	16 2 32	2272.07	-33.73	41.91	24.26	95.91	16 40 24	1672.1	-32.55	32.87
110.00	7 51 5	3941.64	8.31	147.90	14.03	56.72	8 56 46	3341.6	3.87	141.62

DIFFERENTIAL CORRECTIONS
TDE .1128 TRA -.6566 TC3 1.6142 BAU .5235
RDE -.5436 RRA -.1702 RC3 .0662 FAU .08416
FDE .3519 FRA -.3383 FC3-3.0065 BSP 5785
BDE .5552 BRA .6783 BC3 1.6156 FSP 743

MID-COURSE EXECUTION ACCURACY
SGT 1785.6 SGR 669.2 SG3 260.7
RRT .1571 RRF -.1813 RTF -.8017
SGB 1906.8 R23 -.0359 R13 -.8029
SG1 1789.1 SG2 659.6 THA 3.90

ORBIT DETERMINATION ACCURACY
ST 278.5 SR 635.8 SS 325.2
CRT -.3837 CRS .9053 CST -.6527
LSA 715.4 MSA 264.8 SSA 74.9
EL1 646.4 EL2 253.0 ALF 101.29

LAUNCH DATE DEC 23 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 361.735 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 34.415 GAL 4.31 AZL 89.11 HCA 111.48 SMA 214.22 ECC .32118 INC .8903 V1 30.278
RP 241.22 LAP .83 LOP 202.69 VP 21.928 GAP 17.33 AZP 90.33 TAL 17.84 TAP 129.32 RCA 145.42 APO 283.03 V2 22.762
RC 158.408 GL 6.28 GP 3.31 ZAL 56.62 ZAP 167.35 ETS 163.61 ZAE 154.09 ETE 6.34 ZAC 93.22 ETC 255.85 CLP 167.78

PLANETOCENTRIC CONIC

C3 23.765 VHL 4.875 DLA 18.20 RAL 152.05 RAD 6568.0 VEL 12.048 PTH 2.15 VHP 8.396 DPA -.07 RAP 191.46 ECC 1.3911

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 51 37	2860.86	-28.31	86.27	23.23	90.58	13 39 18	2260.9	-27.93	77.63
90.00	5 53 32	4295.24	3.11	177.30	15.44	61.84	7 5 7	3695.2	-.68	170.67
100.00	14 23 48	2563.61	-29.83	64.37	23.19	91.99	15 6 31	1963.6	-29.24	55.61
100.00	7 4 2	4067.72	4.44	159.84	14.70	60.41	8 11 50	3467.7	.47	153.30
110.00	15 55 42	2276.06	-33.76	42.22	22.88	95.73	16 33 38	1676.1	-32.60	33.18
110.00	7 48 37	3928.03	7.80	147.18	12.63	56.61	8 54 5	3328.0	3.35	140.91

DIFFERENTIAL CORRECTIONS
TDE .1126 TRA -.6111 TC3 1.6997 BAU .5406
RDE -.5383 RRA -.1625 RC3 .0761 FAU .08758
FDE .3798 FRA -.3970 FC3-3.1903 BSP 5545
BDE .5500 BRA .6323 BC3 1.7014 FSP 794

MID-COURSE EXECUTION ACCURACY
SGT 1826.3 SGR 668.0 SG3 274.8
RRT .1567 RRF -.1951 RTF -.8133
SGB 1944.6 R23 -.0492 R13 -.8147
SG1 1829.7 SG2 658.5 THA 3.77

ORBIT DETERMINATION ACCURACY
ST 267.3 SR 635.6 SS 347.7
CRT -.4118 CRS .8987 CST -.6860
LSA 724.4 MSA 255.8 SSA 78.0
EL1 646.6 EL2 239.4 ALF 101.41

LAUNCH DATE DEC 23 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 364.769 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 34.332 GAL 4.41 AZL 89.13 HCA 112.41 SMA 212.25 ECC .31538 INC .8669 V1 30.278
RP 240.93 LAP .80 LOP 203.62 VP 21.827 GAP 16.71 AZP 90.33 TAL 18.52 TAP 130.94 RCA 145.31 APO 279.19 V2 22.791
RC 160.729 GL 6.15 GP 3.42 ZAL 55.50 ZAP 166.62 ETS 164.01 ZAE 154.52 ETE 6.82 ZAC 93.36 ETC 255.85 CLP 167.06

PLANETOCENTRIC CONIC

C3 23.340 VHL 4.831 DLA 18.47 RAL 150.91 RAD 6567.9 VEL 12.030 PTH 2.15 VHP 8.186 DPA -.06 RAP 191.69 ECC 1.3841

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 44 13	2867.17	-28.31	86.73	21.86	90.35	13 32 0	2267.2	-27.97	78.09
90.00	5 51 49	4280.13	2.62	176.45	14.10	61.79	7 3 9	3680.1	-1.17	169.82
100.00	14 16 40	2569.05	-29.84	64.77	21.83	91.77	14 59 29	1969.0	-29.28	56.01
100.00	7 2 3	4053.48	3.96	159.05	13.36	60.35	8 9 37	3453.5	-.02	152.52
110.00	15 49 6	2279.83	-33.78	42.51	21.53	95.56	16 27 6	1679.8	-32.65	33.46
110.00	7 46 6	3915.46	7.32	146.51	11.28	56.52	8 51 22	3315.5	2.87	140.25

DIFFERENTIAL CORRECTIONS
TDE .0911 TRA -.5876 TC3 1.7459 BAU .5455
RDE -.5332 RRA -.1546 RC3 .0870 FAU .09129
FDE .4058 FRA -.4628 FC3-3.3859 BSP 5826
BDE .5409 BRA .6076 BC3 1.7481 FSP 841

MID-COURSE EXECUTION ACCURACY
SGT 1843.2 SGR 666.5 SG3 290.1
RRT .1754 RRF -.2089 RTF -.8148
SGB 1960.0 R23 -.0461 R13 -.8163
SG1 1847.4 SG2 654.7 THA 4.15

ORBIT DETERMINATION ACCURACY
ST 250.7 SR 635.0 SS 368.4
CRT -.3483 CRS .8903 CST -.6534
LSA 727.9 MSA 255.9 SSA 79.9
EL1 641.9 EL2 232.4 ALF 99.02

LAUNCH DATE DEC 23 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 367.858 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	34.252	GAL	4.51	AZL	89.16	HCA	113.35	SMA	210.41	ECC	.30991	INC	.8431
RP	240.64	LAP	.77	LOP	204.56	VP	21.732	GAP	16.11	AZP	90.33	TAL	19.20	TAP	132.55	RCA	145.20	APO	275.62
RC	163.052	GL	6.02	GP	3.52	ZAL	54.41	ZAP	165.89	ETS	164.37	ZAE	154.97	ETE	7.34	ZAC	93.51	ETC	255.84

V1 30.278 V2 22.821 CLP 166.32

PLANETOCENTRIC CONIC

C3	22.959	VHL	4.792	DLA	18.72	RAL	149.79	RAD	6567.9	VEL	12.014	PTH	2.14	VHP	7.982	DPA	-.04	RAP	191.92

ECC 1.3778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 37 5	2873.13	-28.32	87.17	20.53	90.13	13 24 58	2273.1	-28.00	78.52
90.00	5 49 59	4266.14	2.17	175.67	12.80	61.76	7 1 5	3666.1	-1.62	169.04
100.00	14 9 47	2574.18	-29.85	65.15	20.50	91.57	14 52 41	1974.2	-29.32	56.39
100.00	6 59 58	4040.32	3.52	158.32	12.05	60.30	8 7 18	3440.3	-.46	151.80
110.00	15 42 44	2283.39	-33.81	42.78	20.22	95.39	16 20 47	1683.4	-32.69	33.73
110.00	7 43 31	3903.87	6.89	145.89	9.97	56.44	8 48 35	3303.9	2.43	139.65

DIFFERENTIAL CORRECTIONS

TDE	.0739	TRA	-.5612	TC3	1.7957	BAU	.5520
RDE	-.5284	RRA	-.1466	RC3	.0986	FAU	.09517
FDE	.4330	FRA	-.5319	FC3	-3.5887	BSP	6021
BDE	.5335	BRA	.5800	BC3	1.7985	FSP	893

MID-COURSE EXECUTION ACCURACY

SGT	1863.2	SGR	665.1	SG3	306.0		
RRT	.1921	RRF	-.2241	RTF	-.8178		
SGB	1978.3	R23	-.0460	R13	-.8193		
SG1	1868.1	SG2	651.0	THA	4.47		

ORBIT DETERMINATION ACCURACY

ST	235.9	SR	634.2	SS	389.7
CRT	-.2933	CRS	.8823	CST	-.6245
LSA	733.3	MSA	255.6	SSA	81.5
EL1	638.5	EL2	224.0	ALF	97.11

LAUNCH DATE DEC 23 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 370.997 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	34.176	GAL	4.60	AZL	89.18	HCA	114.29	SMA	208.69	ECC	.30475	INC	.8189
RP	240.34	LAP	.75	LOP	205.49	VP	21.644	GAP	15.51	AZP	90.34	TAL	19.88	TAP	134.16	RCA	145.09	APO	272.29
RC	165.375	GL	5.88	GP	3.63	ZAL	53.34	ZAP	165.13	ETS	164.70	ZAE	155.47	ETE	7.90	ZAC	93.66	ETC	255.84

V1 30.278 V2 22.851 CLP 165.57

PLANETOCENTRIC CONIC

C3	22.617	VHL	4.756	DLA	18.95	RAL	148.68	RAD	6567.9	VEL	12.000	PTH	2.14	VHP	7.784	DPA	-.02	RAP	192.13

ECC 1.3722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 30 13	2878.69	-28.32	87.58	19.24	89.93	13 18 12	2278.7	-28.03	78.92
90.00	5 48 3	4253.33	1.76	174.95	11.54	61.73	6 58 56	3653.3	-2.03	168.32
100.00	14 3 10	2578.96	-29.86	65.51	19.22	91.39	14 46 9	1979.0	-29.35	56.74
100.00	6 57 47	4028.23	3.11	157.66	10.79	60.25	8 4 55	3428.2	-.87	151.14
110.00	15 36 35	2286.70	-33.83	43.04	18.95	95.24	16 14 41	1686.7	-32.73	33.98
110.00	7 40 51	3893.26	6.49	145.33	8.70	56.36	8 45 45	3293.3	2.02	139.09

DIFFERENTIAL CORRECTIONS

TDE	.0594	TRA	-.5331	TC3	1.8455	BAU	.5590
RDE	-.5239	RRA	-.1385	RC3	.1110	FAU	.09924
FDE	.4611	FRA	-.6056	FC3	-3.7987	BSP	6161
BDE	.5272	BRA	.5508	BC3	1.8489	FSP	947

MID-COURSE EXECUTION ACCURACY

SGT	1883.5	SGR	663.8	SG3	322.8		
RRT	.2080	RRF	-.2404	RTF	-.8212		
SGB	1997.1	R23	-.0477	R13	-.8229		
SG1	1889.3	SG2	647.3	THA	4.75		

ORBIT DETERMINATION ACCURACY

ST	222.3	SR	633.3	SS	411.2
CRT	-.2430	CRS	.8745	CST	-.5974
LSA	739.9	MSA	255.6	SSA	82.8
EL1	635.9	EL2	214.7	ALF	95.50

LAUNCH DATE DEC 23 1964 FLIGHT TIME 160.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 374.184 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	34.103	GAL	4.70	AZL	89.21	HCA	115.23	SMA	207.08	ECC	.29988	INC	.7944
RP	240.04	LAP	.72	LOP	206.43	VP	21.562	GAP	14.92	AZP	90.34	TAL	20.54	TAP	135.77	RCA	144.98	APO	269.18
RC	167.697	GL	5.73	GP	3.75	ZAL	52.30	ZAP	164.36	ETS	164.99	ZAE	155.99	ETE	8.50	ZAC	93.82	ETC	255.83

V1 30.278 V2 22.881 CLP 164.81

PLANETOCENTRIC CONIC

C3	22.310	VHL	4.723	DLA	19.16	RAL	147.60	RAD	6567.9	VEL	11.987	PTH	2.14	VHP	7.591	DPA	.01	RAP	192.34

ECC 1.3672

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 23 39	2883.80	-28.32	87.95	17.99	89.74	13 11 43	2283.8	-28.05	79.29
90.00	5 45 59	4241.54	1.38	174.30	10.32	61.71	6 56 41	3641.5	-2.41	167.67
100.00	13 56 49	2583.35	-29.87	65.83	17.97	91.22	14 39 53	1983.3	-29.38	57.06
100.00	6 55 30	4017.22	2.74	157.05	9.57	60.22	8 2 27	3417.2	-1.25	150.53
110.00	15 30 40	2289.73	-33.85	43.28	17.72	95.11	16 8 50	1689.7	-32.77	34.20
110.00	7 38 8	3883.61	6.12	144.82	7.46	56.30	8 42 52	3283.6	1.66	138.59

DIFFERENTIAL CORRECTIONS

TDE	.0472	TRA	-.5043	TC3	1.8948	BAU	.5664
RDE	-.5196	RRA	-.1303	RC3	.1243	FAU	.10353
FDE	.4894	FRA	-.6840	FC3	-4.0172	BSP	6271
BDE	.5217	BRA	.5208	BC3	1.8989	FSP	1005

MID-COURSE EXECUTION ACCURACY

SGT	1904.4	SGR	662.6	SG3	340.4		
RRT	.2238	RRF	-.2577	RTF	-.8249		
SGB	2016.4	R23	-.0505	R13	-.8268		
SG1	1910.9	SG2	643.6	THA	5.02		

ORBIT DETERMINATION ACCURACY

ST	209.5	SR	632.3	SS	432.5
CRT	-.1973	CRS	.8666	CST	-.5723
LSA	747.0	MSA	256.2	SSA	83.7
EL1	633.8	EL2	204.9	ALF	94.18

LAUNCH DATE DEC 23 1964 FLIGHT TIME 162.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 377.415 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	34.034	GAL	4.79	AZL	89.23	HCA	116.17	SMA	205.57	ECC	.29529	INC	.7693
RP	239.73	LAP	.69	LOP	207.38	VP	21.485	GAP	14.33	AZP	90.34	TAL	21.20	TAP	137.37	RCA	144.87	APO	266.28
RC	170.016	GL	5.57	GP	3.87	ZAL	51.29	ZAP	163.58	ETS	165.25	ZAE	156.55	ETE	9.16	ZAC	93.97	ETC	255.82

V1 30.278 V2 22.912 CLP 164.03

PLANETOCENTRIC CONIC

C3	22.036	VHL	4.694	DLA	19.35	RAL	146.55	RAD	6567.9	VEL	11.976	PTH	2.13	VHP	7.403	DPA	.06	RAP	192.54

ECC 1.3627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 17 23	2888.42	-28.31	88.29	16.78	89.57	13 5 32	2288.4	-28.07	79.63
90.00	5 43 49	4230.93	1.04	173.71	9.14	61.70	6 54 19	3630.9	-2.75	167.08
100.00	13 50 46	2587.30	-29.88	66.13	16.77	91.06	14 33 54	1987.3	-29.41	57.35
100.00	6 53 7	4007.28	2.40	156.51	8.38	60.20	7 59 54	3407.3	-1.58	149.99
110.00	15 25 1	2292.44	-33.86	43.49	16.52	94.98	16 3 13	1692.4	-32.80	34.41
110.00	7 35 21	3874.90	5.80	144.36	6.27	56.25	8 39 56	3274.9	1.32	138.13

DIFFERENTIAL CORRECTIONS

TDE	.0359	TRA	-.4752	TC3	1.9413	BAU	.5734
RDE	-.5155	RRA	-.1219	RC3	.1383	FAU	.10801
FDE	.5190	FRA	-.7679	FC3	-4.2433	BSP	6361
BDE	.5168	BRA	.4905	BC3	1.9462	FSP	1067

MID-COURSE EXECUTION ACCURACY

SGT	1923.9	SGR	661.6	SG3	358.9		
RRT	.2405	RRF	-.2763	RTF	-.8286		
SGB	2034.5	R23	-.0539	R13	-.8306		
SG1	1931.3	SG2	639.7	THA	5.31		

ORBIT DETERMINATION ACCURACY

ST	197.3	SR	631.0	SS	454.2
CRT	-.1497	CRS	.8590	CST	-.5437
LSA	755.0	MSA	257.6	SSA	84.2
EL1	631.8	EL2	194.8	ALF	92.96

LAUNCH DATE DEC 23 1964 FLIGHT TIME 164.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 380.686 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.969 GAL 4.87 AZL 89.26 HCA 117.11 SMA 204.16 ECC .29096 INC .7438 V1 30.278
RP 239.42 LAP .66 LOP 208.32 VP 21.415 GAP 13.75 AZP 90.34 TAL 21.85 TAP 138.96 RCA 144.76 APO 263.57 V2 22.943
RC 172.331 GL 5.40 GP 4.00 ZAL 50.30 ZAP 162.77 ETS 165.49 ZAE 157.14 ETE 9.88 ZAC 94.13 ETC 255.82 CLP 163.23

PLANETOCENTRIC CONIC

C3 21.791 VHL 4.668 DLA 19.51 RAL 145.51 RAD 6567.9 VEL 11.965 PTH 2.13 VHP 7.219 DPA .12 RAP 192.72 ECC 1.3586

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 11 27	2892.50	-28.31	88.59	15.60	89.42	12 59 40	2292.5	-28.09	79.93
90.00	5 41 31	4221.44	.73	173.18	8.00	61.69	6 51 53	3621.4	-3.06	166.55
100.00	13 45 1	2590.78	-29.88	66.39	15.60	90.92	14 28 12	1990.8	-29.43	57.61
100.00	6 50 38	3998.40	2.10	156.02	7.23	60.17	7 57 17	3398.4	-1.88	149.50
110.00	15 19 37	2294.81	-33.88	43.67	15.36	94.88	15 57 52	1694.8	-32.83	34.59
110.00	7 32 32	3867.13	5.50	143.95	5.12	56.21	8 36 59	3267.1	1.03	137.73

DIFFERENTIAL CORRECTIONS
TDE .0259 TRA -.4471 TC3 1.9853 BAU .5801
RDE -.5117 RRA -.1133 RC3 .1533 FAU .11275
FDE .5485 FRA -.8563 FC3-4.4792 BSP 6450
BDE .5123 BRA .4612 BC3 1.9912 FSP 1132

MID-COURSE EXECUTION ACCURACY
SGT 1943.1 SGR 660.8 SG3 378.4
RRT .2580 RRF -.2961 RTF -.8320
SGB 2052.4 R23 -.0577 R13 -.8342
SG1 1951.5 SG2 635.7 THA 5.61

ORBIT DETERMINATION ACCURACY
ST 186.0 SR 629.6 SS 475.4
CRT -.1026 CRS .8514 CST -.5139
LSA 763.1 MSA 260.0 SSA 84.3
EL1 629.9 EL2 185.0 ALF 91.90

LAUNCH DATE DEC 23 1964 FLIGHT TIME 166.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 383.996 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.906 GAL 4.96 AZL 89.28 HCA 118.06 SMA 202.84 ECC .28688 INC .7178 V1 30.278
RP 239.11 LAP .63 LOP 209.27 VP 21.349 GAP 13.18 AZP 90.34 TAL 22.48 TAP 140.54 RCA 144.65 APO 261.03 V2 22.975
RC 174.639 GL 5.23 GP 4.14 ZAL 49.35 ZAP 161.95 ETS 165.70 ZAE 157.76 ETE 10.67 ZAC 94.29 ETC 255.81 CLP 162.42

PLANETOCENTRIC CONIC

C3 21.573 VHL 4.645 DLA 19.66 RAL 144.51 RAD 6567.9 VEL 11.956 PTH 2.13 VHP 7.041 DPA .18 RAP 192.90 ECC 1.3550

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 5 51	2896.02	-28.31	88.84	14.47	89.29	12 54 7	2296.0	-28.11	80.18
90.00	5 39 7	4213.06	.46	172.71	6.89	61.69	6 49 20	3613.1	-3.33	166.08
100.00	13 39 35	2593.76	-29.88	66.61	14.47	90.81	14 22 49	1993.8	-29.45	57.83
100.00	6 48 4	3990.55	1.84	155.59	6.13	60.16	7 54 35	3390.5	-2.15	149.07
110.00	15 14 30	2296.80	-33.89	43.82	14.24	94.78	15 52 47	1696.8	-32.85	34.74
110.00	7 29 39	3860.27	5.24	143.59	4.01	56.17	8 33 59	3260.3	.76	137.37

DIFFERENTIAL CORRECTIONS
TDE .0166 TRA -.4191 TC3 2.0250 BAU .5861
RDE -.5080 RRA -.1044 RC3 .1692 FAU .11769
FDE .5790 FRA -.9509 FC3-4.7230 BSP 6530
BDE .5082 BRA .4319 BC3 2.0321 FSP 1200

MID-COURSE EXECUTION ACCURACY
SGT 1959.7 SGR 660.3 SG3 398.8
RRT .2766 RRF -.3172 RTF -.8351
SGB 2067.9 R23 -.0619 R13 -.8376
SG1 1969.1 SG2 631.5 THA 5.94

ORBIT DETERMINATION ACCURACY
ST 175.3 SR 628.0 SS 496.9
CRT -.0531 CRS .8439 CST -.4804
LSA 771.8 MSA 263.2 SSA 84.0
EL1 628.0 EL2 175.0 ALF 90.92

LAUNCH DATE DEC 23 1964 FLIGHT TIME 168.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 387.342 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.847 GAL 5.04 AZL 89.31 HCA 119.01 SMA 201.59 ECC .28303 INC .6913 V1 30.278
RP 238.79 LAP .60 LOP 210.22 VP 21.289 GAP 12.61 AZP 90.34 TAL 23.11 TAP 142.12 RCA 144.54 APO 258.65 V2 23.007
RC 176.939 GL 5.05 GP 4.28 ZAL 48.43 ZAP 161.11 ETS 165.90 ZAE 158.41 ETE 11.54 ZAC 94.45 ETC 255.81 CLP 161.58

PLANETOCENTRIC CONIC

C3 21.379 VHL 4.624 DLA 19.78 RAL 143.53 RAD 6567.9 VEL 11.948 PTH 2.13 VHP 6.868 DPA .26 RAP 193.06 ECC 1.3518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 0 34	2898.98	-28.31	89.06	13.37	89.19	12 48 53	2299.0	-28.12	80.40
90.00	5 36 36	4205.75	.22	172.30	5.82	61.68	6 46 42	3605.7	-3.56	165.67
100.00	13 34 26	2596.25	-29.88	66.79	13.38	90.71	14 17 43	1996.3	-29.47	58.01
100.00	6 45 24	3983.70	1.60	155.21	5.06	60.15	7 51 48	3383.7	-2.38	148.69
110.00	15 9 38	2298.44	-33.90	43.95	13.15	94.71	15 47 56	1698.4	-32.87	34.86
110.00	7 26 42	3854.29	5.02	143.28	2.93	56.14	8 30 57	3254.3	.53	137.06

DIFFERENTIAL CORRECTIONS
TDE .0188 TRA -.3819 TC3 2.0812 BAU .5972
RDE -.5043 RRA -.0952 RC3 .1863 FAU .12298
FDE .6079 FRA -1.0525 FC3-4.9801 BSP 6357
BDE .5047 BRA .3935 BC3 2.0895 FSP 1269

MID-COURSE EXECUTION ACCURACY
SGT 1989.3 SGR 660.3 SG3 420.6
RRT .2893 RRF -.3392 RTF -.8415
SGB 2096.0 R23 -.0718 R13 -.8443
SG1 1999.5 SG2 628.8 THA 6.09

ORBIT DETERMINATION ACCURACY
ST 163.2 SR 626.1 SS 517.1
CRT -.0843 CRS .8355 CST -.5085
LSA 780.5 MSA 264.1 SSA 84.2
EL1 626.3 EL2 162.6 ALF 91.35

LAUNCH DATE DEC 23 1964 FLIGHT TIME 170.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 390.719 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.790 GAL 5.11 AZL 89.34 HCA 119.96 SMA 200.43 ECC .27941 INC .6642 V1 30.278
RP 238.47 LAP .58 LOP 211.17 VP 21.235 GAP 12.06 AZP 90.33 TAL 23.72 TAP 143.68 RCA 144.43 APO 256.43 V2 23.040
RC 179.231 GL 4.86 GP 4.43 ZAL 47.54 ZAP 160.25 ETS 166.07 ZAE 159.08 ETE 12.50 ZAC 94.62 ETC 255.80 CLP 160.73

PLANETOCENTRIC CONIC

C3 21.205 VHL 4.605 DLA 19.88 RAL 142.59 RAD 6567.9 VEL 11.941 PTH 2.12 VHP 6.699 DPA .36 RAP 193.22 ECC 1.3490

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 55 39	2901.26	-28.30	89.23	12.32	89.10	12 44 0	2301.3	-28.13	80.57
90.00	5 33 59	4199.54	.02	171.96	4.79	61.68	6 43 58	3599.5	-3.76	165.32
100.00	13 29 39	2598.15	-29.89	66.93	12.32	90.64	14 12 57	1998.1	-29.48	58.15
100.00	6 42 40	3977.89	1.41	154.89	4.02	60.14	7 48 58	3377.9	-2.58	148.37
110.00	15 5 4	2299.62	-33.90	44.04	12.10	94.66	15 43 23	1699.6	-32.89	34.95
110.00	7 23 44	3849.18	4.82	143.01	1.90	56.12	8 27 53	3249.2	.34	136.79

DIFFERENTIAL CORRECTIONS
TDE .0026 TRA -.3646 TC3 2.0976 BAU .5975
RDE -.5009 RRA -.0857 RC3 .2041 FAU .12839
FDE .6403 FRA -1.1574 FC3-5.2417 BSP 6639
BDE .5009 BRA .3745 BC3 2.1075 FSP 1349

MID-COURSE EXECUTION ACCURACY
SGT 1991.2 SGR 660.8 SG3 443.0
RRT .3161 RRF -.3632 RTF -.8409
SGB 2098.0 R23 -.0722 R13 -.8441
SG1 2003.3 SG2 623.1 THA 6.63

ORBIT DETERMINATION ACCURACY
ST 155.9 SR 624.2 SS 538.9
CRT .0329 CRS .8289 CST -.4182
LSA 789.9 MSA 271.3 SSA 82.7
EL1 624.2 EL2 155.8 ALF 89.50

LAUNCH DATE DEC 23 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 394.129 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.736	GAL	5.19	AZL	89.36	HCA	120.92	SMA	199.33	ECC	.27600	INC	.6364	V1	30.278
RP	238.14	LAP	.55	LOP	212.12	VP	21.185	GAP	11.50	AZP	90.33	TAL	24.32	TAP	145.23	RCA	144.32	APO	254.35	V2	23.073
RC	181.513	GL	4.67	GP	4.58	ZAL	46.69	ZAP	159.37	ETS	166.24	ZAE	159.79	ETE	13.57	ZAC	94.79	ETC	255.80	CLP	159.86

PLANETOCENTRIC CONIC

C3	21.052	VHL	4.588	DLA	19.97	RAL	141.67	RAD	6567.9	VEL	11.934	PTH	2.12	VHP	6.535	DPA	.46	RAP	193.36	ECC	1.3465

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 51 4	2902.93	-28.30	89.35	11.30	89.04	12 39 27	2302.9	-28.14	80.69
90.00	5 31 15	4194.38	-.14	171.67	3.80	61.68	6 41 9	3594.4	-3.93	165.03
100.00	13 25 10	2599.50	-29.89	67.03	11.30	90.58	14 8 29	1999.5	-29.49	58.25
100.00	6 39 50	3973.04	1.24	154.63	3.03	60.13	7 46 3	3373.0	-2.74	148.11
110.00	15 0 46	2300.40	-33.91	44.10	11.09	94.62	15 39 6	1700.4	-32.90	35.01
110.00	7 20 43	3844.91	4.66	142.79	.90	56.10	8 24 48	3244.9	.18	136.57

DIFFERENTIAL CORRECTIONS

TDE	-.0043	TRA	-.3402	TC3	2.1244	BAU	.6012	SGT	2001.2	SGR	661.9	SG3	466.6	ST	147.8	SR	622.0	SS	559.4
RDE	-.4975	RRA	-.0759	RC3	.2231	FAU	.13412	RRT	.3383	RRF	-.3880	RTF	-.8428	CRT	.0852	CRS	.8215	CST	-.3772
FDE	.6710	FRA	-1.2699	FC3	-5.5155	BSP	6724	SGB	2107.8	R23	-.0772	R13	-.8463	LSA	799.0	MSA	276.7	SSA	81.5
BDE	.4975	BRA	.3486	BC3	2.1361	FSP	1428	SG1	2015.0	SG2	618.6	THA	7.05	EL1	622.2	EL2	147.2	ALF	88.77

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 23 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 397.568 EARTH. TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.685	GAL	5.26	AZL	89.39	HCA	121.87	SMA	198.30	ECC	.27278	INC	.6081	V1	30.278
RP	237.81	LAP	.52	LOP	213.08	VP	21.139	GAP	10.96	AZP	90.32	TAL	24.90	TAP	146.78	RCA	144.21	APO	252.40	V2	23.106
RC	183.786	GL	4.47	GP	4.74	ZAL	45.86	ZAP	158.47	ETS	166.38	ZAE	160.51	ETE	14.77	ZAC	94.96	ETC	255.80	CLP	158.97

PLANETOCENTRIC CONIC

C3	20.916	VHL	4.573	DLA	20.03	RAL	140.78	RAD	6567.8	VEL	11.929	PTH	2.12	VHP	6.376	DPA	.58	RAP	193.48	ECC	1.3442

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 46 49	2903.96	-28.30	89.42	10.32	89.00	12 35 13	2304.0	-28.14	80.76
90.00	5 28 24	4190.23	-.28	171.44	2.84	61.68	6 38 15	3590.2	-4.06	164.80
100.00	13 21 0	2600.29	-29.89	67.09	10.32	90.55	14 4 20	2000.3	-29.49	58.31
100.00	6 36 55	3969.14	1.11	154.41	2.07	60.13	7 43 4	3369.1	-2.87	147.89
110.00	14 56 44	2300.74	-33.91	44.13	10.11	94.61	15 35 5	1700.7	-32.90	35.04
110.00	7 17 40	3841.45	4.53	142.60	359.94	56.08	8 21 41	3241.4	.04	136.39

DIFFERENTIAL CORRECTIONS

TDE	-.0093	TRA	-.3159	TC3	2.1505	BAU	.6052	SGT	2011.6	SGR	663.8	SG3	491.5	ST	140.0	SR	619.7	SS	580.0
RDE	-.4942	RRA	-.0657	RC3	.2434	FAU	.14015	RRT	.3610	RRF	-.4142	RTF	-.8448	CRT	.1263	CRS	.8143	CST	-.3428
FDE	.7025	FRA	-1.3889	FC3	-5.8012	BSP	6773	SGB	2118.3	R23	-.0834	R13	-.8488	LSA	808.8	MSA	282.0	SSA	80.4
BDE	.4943	BRA	.3227	BC3	2.1642	FSP	1513	SG1	2027.3	SG2	614.2	THA	7.48	EL1	620.0	EL2	138.8	ALF	88.28

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 23 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 401.035 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.636	GAL	5.33	AZL	89.42	HCA	122.83	SMA	197.33	ECC	.26975	INC	.5791	V1	30.278
RP	237.48	LAP	.49	LOP	214.04	VP	21.099	GAP	10.42	AZP	90.31	TAL	25.47	TAP	148.30	RCA	144.10	APO	250.57	V2	23.140
RC	186.049	GL	4.26	GP	4.91	ZAL	45.07	ZAP	157.54	ETS	166.52	ZAE	161.27	ETE	16.11	ZAC	95.13	ETC	255.79	CLP	158.06

PLANETOCENTRIC CONIC

C3	20.795	VHL	4.560	DLA	20.07	RAL	139.93	RAD	6567.8	VEL	11.924	PTH	2.12	VHP	6.220	DPA	.72	RAP	193.60	ECC	1.3422

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 42 55	2904.34	-28.30	89.45	9.37	88.99	12 31 20	2304.3	-28.14	80.79
90.00	5 25 28	4187.09	-.38	171.26	1.91	61.69	6 35 15	3587.1	-4.16	164.62
100.00	13 17 9	2600.50	-29.89	67.11	9.37	90.54	14 0 29	2000.5	-29.49	58.33
100.00	6 33 55	3966.16	1.01	154.25	1.14	60.12	7 40 1	3366.2	-2.97	147.73
110.00	14 52 59	2300.66	-33.91	44.12	9.16	94.61	15 31 20	1700.7	-32.90	35.03
110.00	7 14 34	3838.77	4.43	142.46	359.01	56.07	8 18 33	3238.8	-.06	136.25

DIFFERENTIAL CORRECTIONS

TDE	-.0095	TRA	-.2882	TC3	2.1793	BAU	.6103	SGT	2024.7	SGR	666.4	SG3	517.8	ST	130.7	SR	617.2	SS	599.7
RDE	-.4909	RRA	-.0550	RC3	.2649	FAU	.14653	RRT	.3823	RRF	-.4413	RTF	-.8478	CRT	.1280	CRS	.8064	CST	-.3395
FDE	.7324	FRA	-1.5169	FC3	-6.1003	BSP	6716	SGB	2131.6	R23	-.0917	R13	-.8523	LSA	818.0	MSA	286.8	SSA	79.4
BDE	.4910	BRA	.2934	BC3	2.1954	FSP	1598	SG1	2042.3	SG2	610.5	THA	7.88	EL1	617.4	EL2	129.6	ALF	88.38

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 23 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 404.527 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.590	GAL	5.40	AZL	89.45	HCA	123.79	SMA	196.42	ECC	.26690	INC	.5494	V1	30.278
RP	237.15	LAP	.46	LOP	215.00	VP	21.062	GAP	9.89	AZP	90.31	TAL	26.02	TAP	149.82	RCA	144.00	APO	248.85	V2	23.174
RC	188.300	GL	4.04	GP	5.09	ZAL	44.31	ZAP	156.60	ETS	166.64	ZAE	162.04	ETE	17.62	ZAC	95.32	ETC	255.79	CLP	157.13

PLANETOCENTRIC CONIC

C3	20.688	VHL	4.548	DLA	20.09	RAL	139.10	RAD	6567.8	VEL	11.919	PTH	2.12	VHP	6.070	DPA	.87	RAP	193.70	ECC	1.3405

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 39 23	2904.02	-28.30	89.43	8.45	89.00	12 27 47	2304.0	-28.14	80.77
90.00	5 22 25	4184.94	-.45	171.14	1.02	61.69	6 32 10	3584.9	-4.23	164.50
100.00	13 13 38	2600.09	-29.89	67.08	8.46	90.56	13 56 58	2000.1	-29.49	58.30
100.00	6 30 51	3964.09	.94	154.14	.25	60.12	7 36 55	3364.1	-3.04	147.61
110.00	14 49 31	2300.09	-33.91	44.08	8.25	94.63	15 27 51	1700.1	-32.89	34.99
110.00	7 11 27	3836.86	4.35	142.36	358.12	56.06	8 15 24	3236.9	-.13	136.15

DIFFERENTIAL CORRECTIONS

TDE	-.0167	TRA	-.2705	TC3	2.1888	BAU	.6106	SGT	2024.1	SGR	670.3	SG3	544.9	ST	125.9	SR	614.6	SS	620.2
RDE	-.4877	RRA	-.0439	RC3	.2875	FAU	.15308	RRT	.4091	RRF	-.4698	RTF	-.8477	CRT	.1974	CRS	.8001	CST	-.2789
FDE	.7649	FRA	-1.6481	FC3	-6.4061	BSP	6852	SGB	2132.2	R23	-.0973	R13	-.8528	LSA	828.4	MSA	293.2	SSA	77.8
BDE	.4879	BRA	.2741	BC3	2.2077	FSP	1695	SG1	2044.4	SG2	605.5	THA	8.46	EL1	615.1	EL2	123.4	ALF	87.59

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 23 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 408.045 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.546 GAL 5.46 AZL 89.48 HCA 124.76 SMA 195.57 ECC .26421 INC .5188 V1 30.278
RP 236.81 LAP .43 LOP 215.97 VP 21.030 GAP 9.37 AZP 90.30 TAL 26.56 TAP 151.32 RCA 143.89 APO 247.24 V2 23.209
RC 190.540 GL 3.82 GP 5.28 ZAL 43.58 ZAP 155.63 ETS 166.75 ZAE 162.83 ETE 19.33 ZAC 95.50 ETC 255.78 CLP 156.17

PLANETOCENTRIC CONIC

C3 20.593 VHL 4.538 DLA 20.09 RAL 138.30 RAD 6567.8 VEL 11.915 PTH 2.12 VHP 5.923 DPA 1.03 RAP 193.78 ECC 1.3389

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 36 11	2903.03	-28.30	89.36	7.58	89.04	12 24 34	2303.0	-28.14	80.70
90.00	5 19 16	4183.73	-.49	171.07	.16	61.69	6 29 0	3583.7	-4.27	164.43
100.00	13 10 26	2599.10	-29.89	67.00	7.58	90.60	13 53 45	1999.1	-29.48	58.22
100.00	6 27 42	3962.90	.90	154.07	359.39	60.12	7 33 45	3362.9	-3.08	147.55
110.00	14 46 20	2299.08	-33.90	44.00	7.36	94.68	15 24 39	1699.1	32.88	34.91
110.00	7 8 18	3835.68	4.31	142.30	357.26	56.06	8 12 13	3235.7	-.18	136.09

DIFFERENTIAL CORRECTIONS
TDE -.0189 TRA -.2500 TC3 2.2018 BAU .6122
RDE -.4844 RRA -.0322 RC3 .3116 FAU .16001
FDE .7963 FRA-1.7883 FC3-6.7267 BSP 6882
BDE .4848 BRA .2521 BC3 2.2238 FSP 1793

MID-COURSE EXECUTION ACCURACY
SGT 2026.6 SGR 675.3 SG3 573.5
RRT .4344 RRF -.4992 RTF -.8486
SGB 2136.1 R23 -.1053 R13 -.8545
SG1 2049.7 SG2 601.4 THA 9.02

ORBIT DETERMINATION ACCURACY
ST 119.7 SR 611.8 SS 640.1
CRT .2243 CRS .7933 CST -.2520
LSA 838.6 MSA 298.9 SSA 76.5
EL1 612.4 EL2 116.5 ALF 87.39

LAUNCH DATE DEC 23 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 411.586 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.504 GAL 5.52 AZL 89.51 HCA 125.73 SMA 194.76 ECC .26168 INC .4874 V1 30.278
RP 236.46 LAP .40 LOP 216.93 VP 21.002 GAP 8.86 AZP 90.28 TAL 27.08 TAP 152.81 RCA 143.79 APO 245.73 V2 23.244
RC 192.768 GL 3.59 GP 5.47 ZAL 42.89 ZAP 154.63 ETS 166.86 ZAE 163.63 ETE 21.28 ZAC 95.69 ETC 255.78 CLP 155.19

PLANETOCENTRIC CONIC

C3 20.510 VHL 4.529 DLA 20.08 RAL 137.54 RAD 6567.8 VEL 11.912 PTH 2.12 VHP 5.780 DPA 1.22 RAP 193.85 ECC 1.3375

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 33 19	2901.36	-28.30	89.23	6.73	89.10	12 21 40	2301.4	-28.13	80.57
90.00	5 16 2	4183.44	-.50	171.06	359.33	61.69	6 25 45	3583.4	-4.28	164.42
100.00	13 7 33	2597.49	-29.89	66.88	6.73	90.66	13 50 50	1997.5	-29.47	58.10
100.00	6 24 29	3962.55	.89	154.05	358.56	60.12	7 30 31	3362.5	-3.10	147.53
110.00	14 43 24	2297.59	-33.89	43.89	6.51	94.75	15 21 42	1697.6	-32.86	34.80
110.00	7 5 7	3835.21	4.29	142.28	356.44	56.05	8 9 2	3235.2	-.20	136.06

DIFFERENTIAL CORRECTIONS
TDE -.0199 TRA -.2308 TC3 2.2104 BAU .6131
RDE -.4812 RRA -.0200 RC3 .3372 FAU .16725
FDE .8269 FRA-1.9362 FC3-7.0597 BSP 6900
BDE .4816 BRA .2317 BC3 2.2360 FSP 1896

MID-COURSE EXECUTION ACCURACY
SGT 2026.2 SGR 681.6 SG3 603.5
RRT .4599 RRF -.5292 RTF -.8491
SGB 2137.8 R23 -.1142 R13 -.8558
SG1 2052.6 SG2 597.4 THA 9.62

ORBIT DETERMINATION ACCURACY
ST 113.8 SR 608.9 SS 659.5
CRT .2403 CRS .7865 CST -.2336
LSA 848.7 MSA 304.4 SSA 75.2
EL1 609.5 EL2 110.3 ALF 87.34

LAUNCH DATE DEC 23 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 415.149 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.464 GAL 5.58 AZL 89.54 HCA 126.70 SMA 194.00 ECC .25930 INC .4554 V1 30.278
RP 236.12 LAP .37 LOP 217.90 VP 20.977 GAP 8.35 AZP 90.27 TAL 27.58 TAP 154.28 RCA 143.70 APO 244.31 V2 23.279
RC 194.983 GL 3.36 GP 5.68 ZAL 42.22 ZAP 153.61 ETS 166.96 ZAE 164.44 ETE 23.52 ZAC 95.88 ETC 255.77 CLP 154.18

PLANETOCENTRIC CONIC

C3 20.435 VHL 4.521 DLA 20.04 RAL 136.80 RAD 6567.8 VEL 11.909 PTH 2.12 VHP 5.642 DPA 1.42 RAP 193.91 ECC 1.3363

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 30 47	2899.02	-28.31	89.06	5.91	89.18	12 19 6	2299.0	-28.12	80.40
90.00	5 12 42	4184.06	-.48	171.09	358.53	61.69	6 22 26	3584.1	-4.26	164.45
100.00	13 4 58	2595.28	-29.88	66.72	5.91	90.75	13 48 13	1995.3	-29.46	57.94
100.00	6 21 11	3963.02	.90	154.08	357.76	60.12	7 27 14	3363.0	-3.08	147.55
110.00	14 40 45	2295.64	-33.88	43.73	5.68	94.84	15 19 0	1695.6	-32.84	34.65
110.00	7 1 54	3835.43	4.30	142.29	355.65	56.06	8 5 50	3235.4	-.19	136.08

DIFFERENTIAL CORRECTIONS
TDE -.0190 TRA -.2119 TC3 2.2171 BAU .6138
RDE -.4779 RRA -.0071 RC3 .3644 FAU .17485
FDE .8569 FRA-2.0930 FC3-7.4075 BSP 6879
BDE .4782 BRA .2120 BC3 2.2468 FSP 2002

MID-COURSE EXECUTION ACCURACY
SGT 2024.9 SGR 689.5 SG3 634.9
RRT .4854 RRF -.5599 RTF -.8497
SGB 2139.1 R23 -.1241 R13 -.8573
SG1 2054.9 SG2 594.1 THA 10.25

ORBIT DETERMINATION ACCURACY
ST 107.5 SR 605.7 SS 678.5
CRT .2367 CRS .7796 CST -.2302
LSA 858.8 MSA 309.7 SSA 73.9
EL1 606.3 EL2 104.3 ALF 87.52

LAUNCH DATE DEC 23 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 418.734 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.426 GAL 5.63 AZL 89.58 HCA 127.67 SMA 193.29 ECC .25706 INC .4222 V1 30.278
RP 235.77 LAP .33 LOP 218.88 VP 20.957 GAP 7.85 AZP 90.26 TAL 28.07 TAP 155.74 RCA 143.60 APO 242.97 V2 23.315
RC 197.185 GL 3.11 GP 5.89 ZAL 41.59 ZAP 152.56 ETS 167.05 ZAE 165.26 ETE 26.10 ZAC 96.08 ETC 255.77 CLP 153.15

PLANETOCENTRIC CONIC

C3 20.370 VHL 4.513 DLA 19.99 RAL 136.10 RAD 6567.8 VEL 11.906 PTH 2.12 VHP 5.508 DPA 1.64 RAP 193.95 ECC 1.3352

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 28 34	2895.99	-28.31	88.84	5.12	89.30	12 16 50	2296.0	-28.11	80.18
90.00	5 9 16	4185.54	-.43	171.17	357.76	61.69	6 19 2	3585.5	-4.21	164.54
100.00	13 2 42	2592.47	-29.88	66.51	5.12	90.86	13 45 54	1992.5	-29.44	57.73
100.00	6 17 50	3964.29	.95	154.15	356.99	60.12	7 23 54	3364.3	-3.04	147.62
110.00	14 38 21	2293.20	-33.87	43.54	4.88	94.95	15 16 34	1693.2	-32.81	34.47
110.00	6 58 40	3836.32	4.33	142.33	354.88	56.06	8 2 36	3236.3	-.15	136.12

DIFFERENTIAL CORRECTIONS
TDE -.0137 TRA -.1920 TC3 2.2251 BAU .6154
RDE -.4744 RRA .0066 RC3 .3935 FAU .18289
FDE .8834 FRA-2.2591 FC3-7.7730 BSP 6778
BDE .4746 BRA .1921 BC3 2.2597 FSP 2109

MID-COURSE EXECUTION ACCURACY
SGT 2025.3 SGR 699.2 SG3 668.1
RRT .5096 RRF -.5909 RTF -.8505
SGB 2142.6 R23 -.1358 R13 -.8593
SG1 2059.3 SG2 591.7 THA 10.89

ORBIT DETERMINATION ACCURACY
ST 99.9 SR 602.3 SS 696.1
CRT .1815 CRS .7718 CST -.2668
LSA 867.8 MSA 314.7 SSA 72.9
EL1 602.6 EL2 98.2 ALF 88.23

LAUNCH DATE DEC 23 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 422.338 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.390 GAL 5.68 AZL 89.61 HCA 128.65 SMA 192.62 ECC .25494 INC .3880 V1 30.278
RP 235.42 LAP .30 LOP 219.85 VP 20.940 GAP 7.36 AZP 90.24 TAL 28.53 TAP 157.18 RCA 143.51 APO 241.72 V2 23.351
RC 199.372 GL 2.86 GP 6.12 ZAL 40.99 ZAP 151.49 ETS 167.13 ZAE 166.07 ETE 29.09 ZAC 96.28 ETC 255.76 CLP 152.10

PLANETOCENTRIC CONIC

C3 20.310 VHL 4.507 DLA 19.92 RAL 135.42 RAD 6567.8 VEL 11.903 PTH 2.11 VHP 5.377 DPA 1.88 RAP 193.97 ECC 1.3343

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 26 42	2892.25	-28.31	88.57	4.37	89.43	12 14 54	2292.3	-28.09	79.91
90.00	5 5 45	4187.88	-.35	171.31	357.02	61.69	6 15 33	3587.9	-4.14	164.67
100.00	13 0 44	2589.01	-29.88	66.25	4.36	90.99	13 43 53	1989.0	-29.42	57.48
100.00	6 14 24	3966.35	1.02	154.26	356.26	60.12	7 20 30	3366.4	-2.97	147.74
110.00	14 36 14	2290.26	-33.85	43.32	4.11	95.08	15 14 24	1690.3	-32.77	34.24
110.00	6 55 24	3837.87	4.39	142.42	354.15	56.07	7 59 22	3237.9	-.09	136.20

DIFFERENTIAL CORRECTIONS
TDE -.0168 TRA -.1831 TC3 2.2098 BAU .6110
RDE -.4711 RRA .0208 RC3 .4238 FAU .19096
FDE .9154 FRA-2.4276 FC3-8.1398 BSP 6896
BDE .4714 BRA .1843 BC3 2.2501 FSP 2236

MID-COURSE EXECUTION ACCURACY
SGT 2007.3 SGR 710.9 SG3 701.7
RRT .5372 RRF -.6220 RTF -.8481
SGB 2129.4 R23 -.1463 R13 -.8583
SG1 2046.6 SG2 588.1 THA 11.76

ORBIT DETERMINATION ACCURACY
ST 97.7 SR 599.1 SS 715.7
CRT .2194 CRS .7671 CST -.2336
LSA 879.4 MSA 319.8 SSA 71.5
EL1 599.5 EL2 95.3 ALF 87.90

LAUNCH DATE DEC 23 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 425.963 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.356 GAL 5.73 AZL 89.65 HCA 129.63 SMA 191.98 ECC .25295 INC .3529 V1 30.278
RP 235.06 LAP .27 LOP 220.83 VP 20.926 GAP 6.88 AZP 90.23 TAL 28.98 TAP 158.61 RCA 143.42 APO 240.55 V2 23.387
RC 201.544 GL 2.61 GP 6.36 ZAL 40.41 ZAP 150.38 ETS 167.21 ZAE 166.87 ETE 32.57 ZAC 96.49 ETC 255.76 CLP 151.01

PLANETOCENTRIC CONIC

C3 20.257 VHL 4.501 DLA 19.82 RAL 134.77 RAD 6567.8 VEL 11.901 PTH 2.11 VHP 5.251 DPA 2.14 RAP 193.97 ECC 1.3334

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 25 9	2887.84	-28.31	88.25	3.63	89.59	12 13 16	2287.8	-28.07	79.59
90.00	5 2 9	4191.04	-.25	171.48	356.30	61.68	6 12 0	3591.0	-4.03	164.84
100.00	12 59 4	2584.95	-29.87	65.95	3.62	91.15	13 42 9	1984.9	-29.39	57.18
100.00	6 10 54	3969.17	1.11	154.42	355.55	60.13	7 17 3	3369.2	-2.87	147.89
110.00	14 34 22	2286.83	-33.83	43.05	3.36	95.24	15 12 28	1686.8	-32.73	33.99
110.00	6 52 6	3840.05	4.47	142.53	353.45	56.08	7 56 6	3240.0	-.01	136.32

DIFFERENTIAL CORRECTIONS
TDE -.0139 TRA -.1710 TC3 2.2004 BAU .6086
RDE -.4677 RRA .0359 RC3 .4563 FAU .19955
FDE .9439 FRA-2.6076 FC3-8.5283 BSP 6868
BDE .4679 BRA .1748 BC3 2.2472 FSP 2360

MID-COURSE EXECUTION ACCURACY
SGT 1994.2 SGR 724.9 SG3 737.3
RRT .5623 RRF -.6530 RTF -.8467
SGB 2121.9 R23 -.1592 R13 -.8587
SG1 2039.3 SG2 586.2 THA 12.61

ORBIT DETERMINATION ACCURACY
ST 93.1 SR 595.7 SS 734.0
CRT .1854 CRS .7613 CST -.2557
LSA 890.1 MSA 324.2 SSA 70.3
EL1 595.9 EL2 91.4 ALF 88.30

LAUNCH DATE DEC 23 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 429.606 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.324 GAL 5.78 AZL 89.68 HCA 130.61 SMA 191.39 ECC .25108 INC .3167 V1 30.278
RP 234.71 LAP .24 LOP 221.82 VP 20.916 GAP 6.41 AZP 90.21 TAL 29.41 TAP 160.02 RCA 143.34 APO 239.44 V2 23.424
RC 203.699 GL 2.34 GP 6.61 ZAL 39.87 ZAP 149.25 ETS 167.29 ZAE 167.63 ETE 36.64 ZAC 96.71 ETC 255.75 CLP 149.90

PLANETOCENTRIC CONIC

C3 20.209 VHL 4.495 DLA 19.72 RAL 134.16 RAD 6567.8 VEL 11.899 PTH 2.11 VHP 5.129 DPA 2.42 RAP 193.96 ECC 1.3326

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 23 54	2882.74	-28.32	87.87	2.93	89.78	12 11 57	2282.7	-28.05	79.22
90.00	4 58 27	4195.02	-.12	171.70	355.62	61.68	6 8 22	3595.0	-3.91	165.07
100.00	12 57 42	2580.26	-29.87	65.60	2.91	91.34	13 40 42	1980.3	-29.36	56.84
100.00	6 7 20	3972.72	1.23	154.61	354.86	60.13	7 13 33	3372.7	-2.75	148.09
110.00	14 32 45	2282.91	-33.80	42.75	2.64	95.42	15 10 48	1682.9	-32.68	33.69
110.00	6 48 47	3842.84	4.58	142.68	352.78	56.09	7 52 50	3242.8	.10	136.46

DIFFERENTIAL CORRECTIONS
TDE -.0098 TRA -.1609 TC3 2.1861 BAU .6053
RDE -.4641 RRA .0519 RC3 .4908 FAU .20849
FDE .9702 FRA-2.7965 FC3-8.9315 BSP 6830
BDE .4642 BRA .1691 BC3 2.2406 FSP 2488

MID-COURSE EXECUTION ACCURACY
SGT 1977.6 SGR 741.3 SG3 774.5
RRT .5863 RRF -.6834 RTF -.8447
SGB 2112.0 R23 -.1732 R13 -.8588
SG1 2029.3 SG2 585.3 THA 13.54

ORBIT DETERMINATION ACCURACY
ST 88.9 SR 592.0 SS 751.6
CRT .1291 CRS .7554 CST -.2956
LSA 900.4 MSA 328.4 SSA 69.2
EL1 592.2 EL2 88.1 ALF 88.86

LAUNCH DATE DEC 23 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 433.266 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.294 GAL 5.82 AZL 89.72 HCA 131.59 SMA 190.83 ECC .24932 INC .2794 V1 30.278
RP 234.35 LAP .21 LOP 222.80 VP 20.909 GAP 5.94 AZP 90.19 TAL 29.82 TAP 161.41 RCA 143.25 APO 238.41 V2 23.461
RC 205.837 GL 2.06 GP 6.88 ZAL 39.36 ZAP 148.09 ETS 167.36 ZAE 168.35 ETE 41.38 ZAC 96.93 ETC 255.75 CLP 148.76

PLANETOCENTRIC CONIC

C3 20.165 VHL 4.491 DLA 19.59 RAL 133.57 RAD 6567.8 VEL 11.897 PTH 2.11 VHP 5.010 DPA 2.73 RAP 193.93 ECC 1.3319

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 22 58	2876.95	-28.32	87.45	2.25	89.99	12 10 55	2276.9	-28.02	78.80
90.00	4 54 41	4199.77	.03	171.97	354.95	61.68	6 4 40	3599.8	-3.75	165.33
100.00	12 56 37	2574.95	-29.86	65.21	2.22	91.54	13 39 32	1974.9	-29.32	56.45
100.00	6 3 42	3977.00	1.38	154.85	354.21	60.14	7 9 59	3377.0	-2.61	148.32
110.00	14 31 23	2278.47	-33.77	42.40	1.93	95.62	15 9 21	1678.5	-32.63	33.36
110.00	6 45 26	3846.25	4.71	142.86	352.13	56.10	7 49 32	3246.2	.23	136.64

DIFFERENTIAL CORRECTIONS
TDE -.0040 TRA -.1524 TC3 2.1678 BAU .6015
RDE -.4604 RRA .0689 RC3 .5275 FAU .21776
FDE .9945 FRA-2.9941 FC3-9.3488 BSP 6772
BDE .4604 BRA .1673 BC3 2.2311 FSP 2623

MID-COURSE EXECUTION ACCURACY
SGT 1957.8 SGR 760.4 SG3 813.0
RRT .6087 RRF -.7130 RTF -.8422
SGB 2100.3 R23 -.1885 R13 -.8588
SG1 2017.0 SG2 585.6 THA 14.55

ORBIT DETERMINATION ACCURACY
ST 85.3 SR 588.3 SS 768.7
CRT .0414 CRS .7495 CST -.3578
LSA 910.6 MSA 332.1 SSA 68.2
EL1 588.3 EL2 85.2 ALF 89.65

LAUNCH DATE DEC 23 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 436.945 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.265 GAL 5.86 AZL 89.76 HCA 132.58 SMA 190.30 ECC .24765 INC .2408 V1 30.278
RP 233.98 LAP .18 LOP 223.79 VP 20.905 GAP 5.48 AZP 90.16 TAL 30.21 TAP 162.79 RCA 143.17 APO 237.43 V2 23.498
RC 207.958 GL 1.78 GP 7.15 ZAL 38.88 ZAP 146.89 ETS 167.43 ZAE 168.99 ETE 46.91 ZAC 97.16 ETC 255.74 CLP 147.59

PLANETOCENTRIC CONIC

C3 20.126 VHL 4.486 DLA 19.44 RAL 133.00 RAD 6567.8 VEL 11.896 PTH 2.11 VHP 4.895 DPA 3.05 RAP 193.87 ECC 1.3312

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 22 19	2870.48	-28.32	86.98	1.58	90.23	12 10 10	2270.5	-27.98	78.33
90.00	4 50 48	4205.30	.21	172.28	354.32	61.68	6 0 54	3605.3	-3.58	165.64
100.00	12 55 48	2569.02	-29.84	64.77	1.55	91.77	13 38 37	1969.0	-29.28	56.01
100.00	6 0 0	3981.99	1.55	155.12	353.57	60.14	7 6 22	3382.0	-2.44	148.60
110.00	14 30 15	2273.53	-33.74	42.02	1.25	95.84	15 8 9	1673.5	-32.56	32.98
110.00	6 42 3	3850.25	4.86	143.07	351.51	56.12	7 46 13	3250.2	.38	136.85

DIFFERENTIAL CORRECTIONS
TDE .0117 TRA -.1374 TC3 2.1628 BAU .6016
RDE -.4559 RRA .0875 RC3 .5679 FAU .22789
FDE 1.0065 FRA-3.2106 FC3-9.8031 BSP 6485
BDE .4561 BRA .1629 BC3 2.2361 FSP 2740

MID-COURSE EXECUTION ACCURACY
SGT 1949.5 SGR 782.8 SG3 855.0
RRT .6278 RRF -.7417 RTF -.8418
SGB 2100.8 R23 -.2051 R13 -.8612
SG1 2016.5 SG2 589.1 THA 15.50

ORBIT DETERMINATION ACCURACY
ST 82.0 SR 583.6 SS 782.6
CRT -.2052 CRS .7399 CST -.5055
LSA 917.6 MSA 336.5 SSA 67.4
EL1 583.8 EL2 80.3 ALF 91.68

LAUNCH DATE DEC 23 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 440.638 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.237 GAL 5.90 AZL 89.80 HCA 133.57 SMA 189.81 ECC .24609 INC .2008 V1 30.278
RP 233.62 LAP .15 LOP 224.78 VP 20.904 GAP 5.03 AZP 90.14 TAL 30.58 TAP 164.15 RCA 143.10 APO 236.52 V2 23.536
RC 210.060 GL 1.48 GP 7.44 ZAL 38.42 ZAP 145.67 ETS 167.50 ZAE 169.53 ETE 53.27 ZAC 97.40 ETC 255.74 CLP 146.39

PLANETOCENTRIC CONIC

C3 20.087 VHL 4.482 DLA 19.28 RAL 132.46 RAD 6567.8 VEL 11.894 PTH 2.11 VHP 4.785 DPA 3.40 RAP 193.81 ECC 1.3306

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 22 0	2863.27	-28.31	86.45	.95	90.50	12 9 43	2263.3	-27.94	77.80
90.00	4 46 51	4211.60	.41	172.63	353.70	61.69	5 57 3	3611.6	-3.37	166.00
100.00	12 55 18	2562.41	-29.83	64.28	.91	92.03	13 38 0	1962.4	-29.23	55.52
100.00	5 56 14	3987.70	1.74	155.43	352.97	60.15	7 2 42	3387.7	-2.25	148.91
110.00	14 29 24	2268.02	-33.70	41.60	.58	96.09	15 7 12	1668.0	-32.49	32.57
110.00	6 38 38	3854.85	5.04	143.31	350.91	56.15	7 42 53	3254.8	.56	137.09

DIFFERENTIAL CORRECTIONS
TDE .0078 TRA -.1457 TC3 2.1110 BAU .5899
RDE -.4527 RRA .1058 RC3 .6079 FAU .23726
FDE 1.0401 FRA-3.4113 FC-10.2256 BSP 6675
BDE .4528 BRA .1800 BC3 2.1968 FSP 2913

MID-COURSE EXECUTION ACCURACY
SGT 1902.5 SGR 807.7 SG3 894.3
RRT .6488 RRF -.7687 RTF -.8338
SGB 2066.9 R23 -.2225 R13 -.8575
SG1 1980.8 SG2 590.3 THA 16.95

ORBIT DETERMINATION ACCURACY
ST 82.6 SR 580.5 SS 802.1
CRT -.1547 CRS .7400 CST -.4976
LSA 931.9 MSA 338.2 SSA 66.3
EL1 580.7 EL2 81.6 ALF 91.29

LAUNCH DATE DEC 23 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 444.348 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.212 GAL 5.93 AZL 89.84 HCA 134.57 SMA 189.34 ECC .24461 INC .1595 V1 30.278
RP 233.25 LAP .11 LOP 225.77 VP 20.905 GAP 4.59 AZP 90.11 TAL 30.93 TAP 165.50 RCA 143.03 APO 235.66 V2 23.574
RC 212.144 GL 1.17 GP 7.75 ZAL 38.00 ZAP 144.41 ETS 167.57 ZAE 169.94 ETE 60.47 ZAC 97.65 ETC 255.74 CLP 145.15

PLANETOCENTRIC CONIC

C3 20.052 VHL 4.478 DLA 19.09 RAL 131.95 RAD 6567.8 VEL 11.893 PTH 2.11 VHP 4.678 DPA 3.78 RAP 193.72 ECC 1.3300

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 21 57	2855.38	-28.31	85.87	.33	90.79	12 9 33	2255.4	-27.90	77.23
90.00	4 42 49	4218.65	.64	173.02	353.11	61.69	5 53 7	3618.6	-3.15	166.39
100.00	12 55 3	2555.17	-29.81	63.74	.28	92.32	13 37 39	1955.2	-29.17	54.99
100.00	5 52 24	3994.10	1.96	155.78	352.38	60.17	6 58 58	3394.1	-2.03	149.26
110.00	14 28 46	2262.00	-33.66	41.13	359.94	96.36	15 6 28	1662.0	-32.41	32.12
110.00	6 35 11	3860.03	5.23	143.58	350.34	56.17	7 39 31	3260.0	.75	137.36

DIFFERENTIAL CORRECTIONS
TDE .0159 TRA -.1454 TC3 2.0756 BAU .5832
RDE -.4485 RRA .1260 RC3 .6520 FAU .24754
FDE 1.0581 FRA-3.6340 FC-10.6875 BSP 6588
BDE .4488 BRA .1924 BC3 2.1756 FSP 3064

MID-COURSE EXECUTION ACCURACY
SGT 1869.4 SGR 836.4 SG3 937.2
RRT .6654 RRF -.7943 RTF -.8283
SGB 2047.9 R23 -.2411 R13 -.8568
SG1 1959.4 SG2 595.7 THA 18.33

ORBIT DETERMINATION ACCURACY
ST 83.7 SR 576.4 SS 817.8
CRT -.2839 CRS .7352 CST -.5824
LSA 942.2 MSA 340.7 SSA 65.4
EL1 576.9 EL2 80.2 ALF 92.41

LAUNCH DATE DEC 23 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 448.073 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.187 GAL 5.96 AZL 89.88 HCA 135.57 SMA 188.91 ECC .24322 INC .1151 V1 30.278
RP 232.88 LAP .08 LOP 226.77 VP 20.910 GAP 4.15 AZP 90.08 TAL 31.26 TAP 166.82 RCA 142.96 APO 234.85 V2 23.612
RC 214.210 GL .86 GP 8.07 ZAL 37.60 ZAP 143.11 ETS 167.64 ZAE 170.19 ETE 68.41 ZAC 97.90 ETC 255.73 CLP 143.89

PLANETOCENTRIC CONIC

C3 20.018 VHL 4.474 DLA 18.89 RAL 131.46 RAD 6567.8 VEL 11.891 PTH 2.11 VHP 4.575 DPA 4.19 RAP 193.61 ECC 1.3294

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 22 12	2846.78	-28.30	85.24	359.72	91.10	12 9 39	2246.8	-27.84	76.61
90.00	4 38 40	4226.44	.89	173.46	352.54	61.70	5 49 7	3626.4	-2.90	166.83
100.00	12 55 5	2547.27	-29.79	63.15	359.67	92.62	13 37 33	1947.3	-29.11	54.42
100.00	5 48 29	4001.19	2.20	156.17	351.82	60.18	6 55 10	3401.2	-1.79	149.65
110.00	14 28 22	2255.42	-33.61	40.62	359.30	96.66	15 5 58	1655.4	-32.32	31.63
110.00	6 31 41	3865.81	5.45	143.88	349.79	56.20	7 36 7	3265.8	.97	137.66

DIFFERENTIAL CORRECTIONS
TDE .0251 TRA -.1477 TC3 2.0343 BAU .5757
RDE -.4441 RRA .1476 RC3 .6990 FAU .25813
FDE 1.0720 FRA-3.8661 FC-11.1638 BSP 6489
BDE .4448 BRA .2088 BC3 2.1511 FSP 3218

MID-COURSE EXECUTION ACCURACY
SGT 1831.6 SGR 868.7 SG3 981.5
RRT .6791 RRF -.8182 RTF -.8216
SGB 2027.2 R23 -.2604 R13 -.8561
SG1 1935.2 SG2 603.5 THA 19.86

ORBIT DETERMINATION ACCURACY
ST 87.2 SR 572.2 SS 832.7
CRT -.4172 CRS .7304 CST -.6630
LSA 952.1 MSA 343.0 SSA 64.5
EL1 573.3 EL2 79.1 ALF 93.71

LAUNCH DATE DEC 23 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 451.814 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.164 GAL 5.99 AZL 89.93 HCA 136.57 SMA 188.50 ECC .24191 INC .0710 V1 30.278
RP 232.51 LAP .05 LOP 227.77 VP 20.917 GAP 3.73 AZP 90.05 TAL 31.57 TAP 168.14 RCA 142.90 APO 234.10 V2 23.650
RC 216.258 GL .52 GP 8.41 ZAL 37.23 ZAP 141.79 ETS 167.71 ZAE 170.23 ETE 76.84 ZAC 98.17 ETC 255.73 CLP 142.59

PLANETOCENTRIC CONIC

C3 19.985 VHL 4.470 DLA 18.67 RAL 131.00 RAD 6567.8 VEL 11.890 PTH 2.11 VHP 4.475 DPA 4.62 RAP 193.48 ECC 1.3289

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 22 44	2837.46	-28.28	84.56	359.14	91.44	12 10 2	2237.5	-27.78	75.93
90.00	4 34 27	4234.99	1.17	173.93	351.99	61.71	5 45 2	3635.0	-2.62	167.30
100.00	12 55 23	2538.70	-29.76	62.52	359.07	92.96	13 37 42	1938.7	-29.03	53.79
100.00	5 44 29	4008.98	2.46	156.60	351.28	60.20	6 51 18	3409.0	-1.52	150.08
110.00	14 28 13	2248.27	-33.55	40.07	358.69	96.98	15 5 41	1648.3	-32.22	31.09
110.00	6 28 9	3872.18	5.69	144.22	349.27	56.24	7 32 41	3272.2	1.22	137.99

DIFFERENTIAL CORRECTIONS
TDE .0345 TRA -.1538 TC3 1.9866 BAU .5672
RDE -.4395 RRA .1704 RC3 .7489 FAU .26900
FDE 1.0841 FRA-4.1038 FC-11.6527 BSP 6397
BDE .4409 BRA .2295 BC3 2.1231 FSP 3381

MID-COURSE EXECUTION ACCURACY
SGT 1788.9 SGR 904.9 SG3 1027.0
RRT .6897 RRF -.8403 RTF -.8131
SGB 2004.7 R23 -.2803 R13 -.8553
SG1 1908.3 SG2 614.2 THA 21.58

ORBIT DETERMINATION ACCURACY
ST 93.2 SR 567.9 SS 847.3
CRT -.5318 CRS .7265 CST -.7281
LSA 962.4 MSA 344.6 SSA 63.7
EL1 570.1 EL2 78.6 ALF 95.09

LAUNCH DATE DEC 23 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 455.568 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.142 GAL 6.02 AZL 89.98 HCA 137.57 SMA 188.11 ECC .24067 INC .0221 V1 30.278
RP 232.14 LAP .02 LOP 228.78 VP 20.926 GAP 3.31 AZP 90.02 TAL 31.86 TAP 169.43 RCA 142.84 APO 233.39 V2 23.689
RC 218.287 GL .18 GP 8.77 ZAL 36.89 ZAP 140.43 ETS 167.79 ZAE 170.05 ETE 85.41 ZAC 98.45 ETC 255.72 CLP 141.25

PLANETOCENTRIC CONIC

C3 19.953 VHL 4.467 DLA 18.42 RAL 130.56 RAD 6567.8 VEL 11.888 PTH 2.11 VHP 4.380 DPA 5.08 RAP 193.33 ECC 1.3284

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 23 34	2827.40	-28.26	83.83	358.56	91.81	12 10 41	2227.4	-27.71	75.20
90.00	4 30 7	4244.28	1.47	174.45	351.47	61.72	5 40 51	3644.3	-2.32	167.82
100.00	12 55 57	2529.44	-29.72	61.83	358.49	93.32	13 38 7	1929.4	-28.95	53.11
100.00	5 40 24	4017.47	2.75	157.07	350.75	60.22	6 47 22	3417.5	-1.24	150.55
110.00	14 28 18	2240.53	-33.48	39.48	358.08	97.33	15 5 38	1640.5	-32.11	30.52
110.00	6 24 33	3879.14	5.96	144.59	348.76	56.28	7 29 12	3279.1	1.48	138.36

DIFFERENTIAL CORRECTIONS
TDE .0449 TRA -.1631 TC3 1.9326 BAU .5582
RDE -.4345 RRA .1947 RC3 .8020 FAU .28014
FDE 1.0904 FRA-4.3497 FC-12.1551 BSP 6292
BDE .4368 BRA .2540 BC3 2.0924 FSP 3547

MID-COURSE EXECUTION ACCURACY
SGT 1741.5 SGR 945.1 SG3 1073.8
RRT .6968 RRF -.8605 RTF -.8026
SGB 1981.5 R23 -.3002 R13 -.8546
SG1 1879.2 SG2 628.2 THA 23.49

ORBIT DETERMINATION ACCURACY
ST 101.9 SR 563.3 SS 860.8
CRT -.6308 CRS .7225 CST -.7785
LSA 972.1 MSA 346.1 SSA 62.9
EL1 567.1 EL2 78.5 ALF 96.64

LAUNCH DATE DEC 23 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 459.337 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.122 GAL 6.05 AZL 90.02 HCA 138.58 SMA 187.75 ECC .23950 INC .0198 V1 30.278
RP 231.76 LAP -.02 LOP 229.78 VP 20.938 GAP 2.90 AZP 89.98 TAL 32.13 TAP 170.71 RCA 142.79 APO 232.72 V2 23.728
RC 220.299 GL -.18 GP 9.15 ZAL 36.57 ZAP 139.03 ETS 167.87 ZAE 169.64 ETE 93.73 ZAC 98.73 ETC 255.72 CLP 139.89

PLANETOCENTRIC CONIC

C3 19.921 VHL 4.463 DLA 18.15 RAL 130.14 RAD 6567.8 VEL 11.887 PTH 2.11 VHP 4.288 DPA 5.57 RAP 193.17 ECC 1.3278

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 24 39	2816.59	-28.24	83.04	358.00	92.21	12 11 36	2216.6	-27.63	74.42
90.00	4 25 41	4254.33	1.79	175.01	350.96	61.74	5 36 35	3654.3	-2.00	168.38
100.00	12 56 47	2519.47	-29.68	61.09	357.92	93.70	13 38 47	1919.5	-28.85	52.39
100.00	5 36 14	4026.67	3.06	157.57	350.25	60.25	6 43 21	3426.7	-.92	151.05
110.00	14 28 37	2232.19	-33.41	38.84	357.48	97.70	15 5 49	1632.2	-31.98	29.90
110.00	6 20 54	3886.72	6.24	144.99	348.28	56.32	7 25 41	3286.7	1.77	138.75

DIFFERENTIAL CORRECTIONS
TDE .0560 TRA -.1752 TC3 1.8727 BAU .5487
RDE -.4294 RRA .2205 RC3 .8585 FAU .29154
FDE 1.0940 FRA-4.6033 FC-12.6698 BSP 6177
BDE .4330 BRA .2816 BC3 2.0601 FSP 3717

MID-COURSE EXECUTION ACCURACY
SGT 1689.9 SGR 989.8 SG3 1121.7
RRT .7000 RRF -.8788 RTF -.7901
SGB 1958.4 R23 -.3191 R13 -.8547
SG1 1848.8 SG2 646.1 THA 25.65

ORBIT DETERMINATION ACCURACY
ST 112.8 SR 558.8 SS 874.3
CRT -.7110 CRS .7193 CST -.8130
LSA 982.4 MSA 347.1 SSA 62.1
EL1 564.7 EL2 78.5 ALF 98.33

LAUNCH DATE DEC 23 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 463.119 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.103 GAL 6.07 AZL 90.08 HCA 139.59 SMA 187.41 ECC .23840 INC .0737 V1 30.278
RP 231.38 LAP -.05 LOP 230.79 VP 20.952 GAP 2.49 AZP 89.94 TAL 32.38 TAP 171.97 RCA 142.74 APO 232.09 V2 23.768
RC 222.292 GL -.55 GP 9.54 ZAL 36.29 ZAP 137.59 ETS 167.95 ZAE 169.00 ETE 101.49 ZAC 99.03 ETC 255.72 CLP 138.48

PLANETOCENTRIC CONIC

C3 19.889 VHL 4.460 DLA 17.87 RAL 129.75 RAD 6567.8 VEL 11.886 PTH 2.11 VHP 4.200 DPA 6.09 RAP 192.98 ECC 1.3273

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 26 2	2805.00	-28.20	82.19	357.46	92.63	12 12 47	2205.0	-27.54	73.59
90.00	4 21 8	4265.15	2.14	175.61	350.47	61.76	5 32 13	3665.2	-1.65	168.99
100.00	12 57 54	2508.78	-29.63	60.30	357.36	94.12	13 39 42	1908.8	-28.75	51.61
100.00	5 31 58	4036.60	3.39	158.12	349.77	60.28	6 39 14	3436.6	-.59	151.60
110.00	14 29 10	2223.22	-33.32	38.15	356.90	98.10	15 6 13	1623.2	-31.85	29.24
110.00	6 17 11	3894.93	6.55	145.42	347.82	56.38	7 22 6	3294.9	2.09	139.18

DIFFERENTIAL CORRECTIONS
TDE .0678 TRA -.1911 TC3 1.8058 BAU .5387
RDE -.4237 RRA .2479 RC3 .9185 FAU .30313
FDE 1.0908 FRA-4.8629 FC-13.1949 BSP 6070
BDE .4291 BRA .3131 BC3 2.0260 FSP 3893

MID-COURSE EXECUTION ACCURACY
SGT 1633.5 SGR 1039.0 SG3 1170.6
RRT .6987 RRF -.8952 RTF -.7745
SGB 1935.9 R23 -.3365 R13 -.8553
SG1 1816.9 SG2 668.3 THA 28.09

ORBIT DETERMINATION ACCURACY
ST 126.2 SR 554.1 SS 886.5
CRT -.7726 CRS .7161 CST -.8354
LSA 991.9 MSA 347.9 SSA 61.3
EL1 562.7 EL2 78.9 ALF 100.18

LAUNCH DATE DEC 23 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 466.914 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.085	GAL	6.09	AZL	90.13	HCA	140.60	SMA	187.10	ECC	.23736	INC	.1278
RP	231.01	LAP	-.08	LOP	231.81	VP	20.969	GAP	2.10	AZP	89.90	TAL	32.62	TAP	173.22	RCA	142.69	APO	231.51
RC	224.266	GL	-.95	GP	9.96	ZAL	36.02	ZAP	136.13	ETS	168.04	ZAE	168.17	ETE	108.46	ZAC	99.35	ETC	255.72

V1 30.278 V2 23.807 CLP 137.05

PLANETOCENTRIC CONIC

C3 19.857 VHL 4.456 DLA 17.55 RAL 129.37 RAD 6567.8 VEL 11.884 PTH 2.11 VHP 4.117 DPA 6.64 RAP 192.77 ECC 1.3268

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 27 42	2792.63	-28.16	81.29	356.92	93.08	12 14 14	2192.6	-27.44	72.70
90.00	4 16 28	4276.76	2.51	176.26	349.99	61.79	5 27 45	3676.8	-1.28	169.64
100.00	12 59 16	2497.34	-29.57	59.46	356.81	94.56	13 40 53	1897.3	-28.63	50.78
100.00	5 27 36	4047.28	3.75	158.71	349.31	60.32	6 35 3	3447.3	-.23	152.18
110.00	14 29 57	2213.59	-33.23	37.42	356.32	98.52	15 6 51	1613.6	-31.70	28.53
110.00	6 13 23	3903.79	6.89	145.89	347.37	56.43	7 18 27	3303.8	2.43	139.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0802	TRA	-.2111	TC3	1.7314	BAU	.5284	SGT	1572.5	SGR	1092.7	SG3	1220.0	ST	141.7	SR	549.1	SS	897.7
RDE	-.4176	RRA	.2770	RC3	.9822	FAU	.31484	RRT	.6919	RRF	-.9098	RTF	-.7550	CRT	-.8191	CRS	.7133	CST	-.8489
FDE	1.0814	FRA	-5.1271	FC-13.7267		BSP	5961	SGB	1914.9	R23	-.3513	R13	-.8571	LSA	1001.2	MSA	348.5	SSA	60.6
BDE	.4252	BRA	.3483	BC3	1.9906	FSP	4072	SG1	1784.2	SG2	695.3	THA	30.87	EL1	561.5	EL2	79.5	ALF	102.18

LAUNCH DATE DEC 23 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 470.722 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.068	GAL	6.10	AZL	90.18	HCA	141.62	SMA	186.80	ECC	.23638	INC	.1837
RP	230.62	LAP	-.11	LOP	232.83	VP	20.987	GAP	1.71	AZP	89.86	TAL	32.83	TAP	174.45	RCA	142.65	APO	230.96
RC	226.222	GL	-1.36	GP	10.40	ZAL	35.79	ZAP	134.62	ETS	168.14	ZAE	167.14	ETE	114.60	ZAC	99.68	ETC	255.71

V1 30.278 V2 23.847 CLP 135.57

PLANETOCENTRIC CONIC

C3 19.825 VHL 4.452 DLA 17.22 RAL 129.01 RAD 6567.8 VEL 11.883 PTH 2.11 VHP 4.037 DPA 7.23 RAP 192.55 ECC 1.3263

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 29 38	2779.42	-28.11	80.32	356.39	93.56	12 15 57	2179.4	-27.32	71.75
90.00	4 11 41	4289.18	2.91	176.96	349.54	61.82	5 23 10	3689.2	-.88	170.33
100.00	13 0 54	2485.12	-29.51	58.56	356.27	95.03	13 42 19	1885.1	-28.50	49.90
100.00	5 23 6	4058.72	4.14	159.34	348.86	60.37	6 30 45	3458.7	.16	152.81
110.00	14 30 58	2203.28	-33.12	36.63	355.75	98.97	15 7 42	1603.3	-31.53	27.77
110.00	6 9 31	3913.32	7.24	146.40	346.95	56.50	7 14 44	3313.3	2.79	140.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0936	TRA	-.2342	TC3	1.6514	BAU	.6187	SGT	1508.8	SGR	1151.7	SG3	1270.5	ST	159.4	SR	543.9	SS	908.3
RDE	-.4109	RRA	.3081	RC3	1.0501	FAU	.32676	RRT	.6794	RRF	-.9227	RTF	-.7314	CRT	-.8562	CRS	.7107	CST	-.8543
FDE	1.0647	FRA	-5.3985	FC-14.2698		BSP	5853	SGB	1898.1	R23	-.3614	R13	-.8608	LSA	1010.4	MSA	349.1	SSA	59.8
BDE	.4214	BRA	.3870	BC3	1.9570	FSP	4252	SG1	1753.3	SG2	727.3	THA	34.04	EL1	561.2	EL2	79.8	ALF	104.38

LAUNCH DATE DEC 23 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 474.543 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.052	GAL	6.12	AZL	90.24	HCA	142.64	SMA	186.53	ECC	.23545	INC	.2419
RP	230.24	LAP	-.15	LOP	233.85	VP	21.008	GAP	1.33	AZP	89.81	TAL	33.03	TAP	175.67	RCA	142.61	APO	230.44
RC	228.159	GL	-1.79	GP	10.86	ZAL	35.58	ZAP	133.08	ETS	168.24	ZAE	165.96	ETE	119.90	ZAC	100.02	ETC	255.71

V1 30.278 V2 23.887 CLP 134.06

PLANETOCENTRIC CONIC

C3 19.792 VHL 4.449 DLA 16.85 RAL 128.67 RAD 6567.8 VEL 11.882 PTH 2.11 VHP 3.961 DPA 7.85 RAP 192.31 ECC 1.3257

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 31 51	2765.37	-28.05	79.30	355.86	94.07	12 17 56	2165.4	-27.19	70.74
90.00	4 6 46	4302.45	3.34	177.70	349.10	61.86	5 18 28	3702.5	-.45	171.07
100.00	13 2 48	2472.08	-29.42	57.60	355.73	95.53	13 44 0	1872.1	-28.35	48.96
100.00	5 18 30	4070.97	4.55	160.01	348.44	60.42	6 26 21	3471.0	.58	153.48
110.00	14 32 14	2192.26	-33.00	35.79	355.18	99.46	15 8 46	1592.3	-31.35	26.96
110.00	6 5 33	3923.56	7.63	146.94	346.54	56.58	7 10 57	3323.6	3.18	140.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1071	TRA	-.2614	TC3	1.5628	BAU	.5091	SGT	1441.0	SGR	1215.6	SG3	1321.2	ST	178.6	SR	538.5	SS	918.0
RDE	-.4035	RRA	.3412	RC3	1.1220	FAU	.33866	RRT	.6594	RRF	-.9340	RTF	-.7015	CRT	-.8836	CRS	.7084	CST	-.8555
FDE	1.0397	FRA	-5.6738	FC-14.8137		BSP	5766	SGB	1885.2	R23	-.3654	R13	-.8671	LSA	1019.3	MSA	349.6	SSA	58.9
BDE	.4175	BRA	.4298	BC3	1.9239	FSP	4435	SG1	1723.4	SG2	764.1	THA	37.73	EL1	561.7	EL2	80.2	ALF	106.69

LAUNCH DATE DEC 23 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 478.376 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.037	GAL	6.13	AZL	90.30	HCA	143.66	SMA	186.27	ECC	.23457	INC	.3039
RP	229.86	LAP	-.18	LOP	234.87	VP	21.030	GAP	.96	AZP	89.76	TAL	33.20	TAP	176.87	RCA	142.58	APO	229.96
RC	230.076	GL	-2.25	GP	11.35	ZAL	35.40	ZAP	131.50	ETS	168.36	ZAE	164.64	ETE	124.45	ZAC	100.38	ETC	255.71

V1 30.278 V2 23.927 CLP 132.52

PLANETOCENTRIC CONIC

C3 19.758 VHL 4.445 DLA 16.46 RAL 128.35 RAD 6567.8 VEL 11.880 PTH 2.11 VHP 3.889 DPA 8.51 RAP 192.04 ECC 1.3252

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 34 21	2750.42	-27.97	78.21	355.34	94.61	12 20 12	2150.4	-27.04	69.67
90.00	4 1 41	4316.61	3.79	178.49	348.68	61.92	5 13 38	3716.6	.01	171.86
100.00	13 4 58	2458.19	-29.33	56.57	355.19	96.06	13 45 57	1858.2	-28.18	47.96
100.00	5 13 45	4084.06	4.99	160.74	348.02	60.49	6 21 49	3484.1	1.02	154.20
110.00	14 33 44	2180.48	-32.87	34.90	354.61	99.97	15 10 5	1580.5	-31.14	26.10
110.00	6 1 29	3934.54	8.04	147.52	346.15	56.66	7 7 3	3334.5	3.60	141.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1209	TRA	-.2926	TC3	1.4670	BAU	.5003	SGT	1371.0	SGR	1284.7	SG3	1371.8	ST	199.3	SR	533.0	SS	927.1
RDE	-.3956	RRA	.3762	RC3	1.1982	FAU	.35052	RRT	.6307	RRF	-.9438	RTF	-.6642	CRT	-.9046	CRS	.7070	CST	-.8537
FDE	1.0081	FRA	-5.9503	FC-15.3582		BSP	5694	SGB	1878.9	R23	-.3606	R13	-.8767	LSA	1028.4	MSA	349.9	SSA	58.1
BDE	.4137	BRA	.4766	BC3	1.8941	FSP	4619	SG1	1697.6	SG2	805.2	THA	42.05	EL1	563.3	EL2	80.4	ALF	109.09

LAUNCH DATE DEC 23 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 482.221 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.023	GAL	6.14	AZL	90.37	HCA	144.69	SMA	186.03	ECC	.23374	INC	.3688	V1	30.278
RP	229.47	LAP	-.21	LOP	235.90	VP	21.055	GAP	.59	AZP	89.70	TAL	33.36	TAP	178.05	RCA	142.55	APO	229.51	V2	23.968
RC	231.973	GL	-2.73	GP	11.86	ZAL	35.25	ZAP	129.88	ETS	168.49	ZAE	163.20	ETE	128.36	ZAC	100.76	ETC	255.71	CLP	130.94

PLANETOCENTRIC CONIC

C3	19.725	VHL	4.441	DLA	16.04	RAL	128.05	RAD	6567.8	VEL	11.879	PTH	2.11	VHP	3.821	DPA	9.20	RAP	191.77	ECC	1.3246

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 37 9	2734.53	-27.88	77.06	354.82	95.18	12 22 44	2134.5	-26.87	68.54
90.00	3 56 27	4331.69	4.28	179.34	348.28	61.98	5 8 39	3731.7	.50	172.70
100.00	13 7 26	2443.41	-29.22	55.49	354.66	96.62	13 48 9	1843.4	-27.99	46.90
100.00	5 8 52	4098.04	5.46	161.51	347.63	60.56	6 17 10	3498.0	1.50	154.97
110.00	14 35 29	2167.90	-32.72	33.95	354.05	100.51	15 11 37	1567.9	-30.92	25.19
110.00	5 57 18	3946.32	8.48	148.15	345.78	56.76	7 3 4	3346.3	4.05	141.87

DIFFERENTIAL CORRECTIONS

TDE	.1349	TRA	-.3284	TC3	1.3629	BAU	.4929
RDE	-.3868	RRA	.4134	RC3	1.2790	FAU	.36227
FDE	.9659	FRA	-6.2279	FC	-15.9000	BSP	5659
BDE	.4096	BRA	.5279	BC3	1.8690	FSP	4805

MID-COURSE EXECUTION ACCURACY

SGT	1300.1	SGR	1359.2	SG3	1422.1		
RRT	.5907	RRF	-.9523	RTF	-.6167		
SGB	1880.9	R23	-.3441	R13	-.8905		
SG1	1678.0	SG2	849.7	THA	47.16		

ORBIT DETERMINATION ACCURACY

ST	221.5	SR	527.1	SS	935.1
CRT	-.9214	CRS	.7058	CST	-.8495
LSA	1037.0	MSA	350.4	SSA	57.1
EL1	566.1	EL2	80.2	ALF	111.62

LAUNCH DATE DEC 23 1964 FLIGHT TIME 222.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 486.079 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.010	GAL	6.14	AZL	90.44	HCA	145.72	SMA	185.81	ECC	.23295	INC	.4369	V1	30.278
RP	229.09	LAP	-.25	LOP	236.93	VP	21.081	GAP	.24	AZP	89.64	TAL	33.50	TAP	179.22	RCA	142.52	APO	229.09	V2	24.009
RC	233.848	GL	-3.23	GP	12.41	ZAL	35.13	ZAP	128.23	ETS	168.63	ZAE	161.65	ETE	131.70	ZAC	101.16	ETC	255.72	CLP	129.32

PLANETOCENTRIC CONIC

C3	19.691	VHL	4.438	DLA	15.59	RAL	127.75	RAD	6567.8	VEL	11.877	PTH	2.11	VHP	3.758	DPA	9.93	RAP	191.47	ECC	1.3241

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 40 15	2717.65	-27.77	75.84	354.30	95.78	12 25 33	2117.6	-26.68	67.34
90.00	3 51 2	4347.76	4.79	180.24	347.89	62.06	5 3 30	3747.8	1.02	173.59
100.00	13 10 10	2427.67	-29.09	54.34	354.13	97.21	13 50 38	1827.7	-27.79	45.78
100.00	5 3 48	4112.97	5.96	162.34	347.25	60.65	6 12 21	3513.0	2.00	155.78
110.00	14 37 29	2154.48	-32.54	32.94	353.48	101.09	15 13 23	1554.5	-30.67	24.22
110.00	5 52 58	3958.95	8.95	148.83	345.42	56.87	6 58 57	3358.9	4.53	142.53

DIFFERENTIAL CORRECTIONS

TDE	.1489	TRA	-.3684	TC3	1.2512	BAU	.4874
RDE	-.3769	RRA	.4530	RC3	1.3647	FAU	.37391
FDE	.9124	FRA	-6.5064	FC	-16.4390	BSP	5657
BDE	.4053	BRA	.5839	BC3	1.8515	FSP	4985

MID-COURSE EXECUTION ACCURACY

SGT	1230.4	SGR	1439.7	SG3	1472.1		
RRT	.5372	RRF	-.9597	RTF	-.5565		
SGB	1893.8	R23	-.3126	R13	-.9087		
SG1	1668.8	SG2	895.3	THA	53.18		

ORBIT DETERMINATION ACCURACY

ST	245.0	SR	520.9	SS	942.4
CRT	-.9351	CRS	.7049	CST	-.8431
LSA	1045.4	MSA	351.3	SSA	56.1
EL1	570.1	EL2	79.3	ALF	114.24

LAUNCH DATE DEC 23 1964 FLIGHT TIME 224.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 489.947 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	32.998	GAL	6.15	AZL	90.51	HCA	146.76	SMA	185.60	ECC	.23221	INC	.5090	V1	30.278
RP	228.70	LAP	-.28	LOP	237.96	VP	21.108	GAP	-.11	AZP	89.57	TAL	33.61	TAP	180.37	RCA	142.50	APO	228.70	V2	24.049
RC	235.703	GL	-3.77	GP	12.98	ZAL	35.04	ZAP	126.55	ETS	168.78	ZAE	160.01	ETE	134.58	ZAC	101.59	ETC	255.72	CLP	127.67

PLANETOCENTRIC CONIC

C3	19.658	VHL	4.434	DLA	15.10	RAL	127.48	RAD	6567.8	VEL	11.876	PTH	2.11	VHP	3.698	DPA	10.71	RAP	191.17	ECC	1.3235

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 43 39	2699.72	-27.64	74.54	353.78	96.42	12 28 39	2099.7	-26.46	66.07
90.00	3 45 25	4364.88	5.34	181.20	347.52	62.15	4 58 10	3764.9	1.57	174.55
100.00	13 13 12	2410.94	-28.94	53.12	353.60	97.84	13 53 23	1810.9	-27.55	44.59
100.00	4 58 33	4128.90	6.49	163.22	346.89	60.76	6 7 22	3528.9	2.54	156.66
110.00	14 39 44	2140.16	-32.35	31.87	352.92	101.69	15 15 24	1540.2	-30.40	23.20
110.00	5 48 30	3972.45	9.45	149.55	345.08	57.00	6 54 43	3372.4	5.04	143.24

DIFFERENTIAL CORRECTIONS

TDE	.1631	TRA	-.4125	TC3	1.1327	BAU	.4848
RDE	-.3657	RRA	.4953	RC3	1.4561	FAU	.38544
FDE	.8455	FRA	-6.7861	FC	-16.9745	BSP	5698
BDE	.4004	BRA	.6446	BC3	1.8448	FSP	5159

MID-COURSE EXECUTION ACCURACY

SGT	1165.4	SGR	1526.4	SG3	1521.9		
RRT	.4673	RRF	-.9660	RTF	-.4810		
SGB	1920.5	R23	-.2638	R13	-.9299		
SG1	1675.4	SG2	938.7	THA	60.15		

ORBIT DETERMINATION ACCURACY

ST	269.7	SR	514.2	SS	949.1
CRT	-.9472	CRS	.7043	CST	-.8338
LSA	1053.8	MSA	352.8	SSA	54.9
EL1	575.5	EL2	77.3	ALF	116.94

LAUNCH DATE DEC 23 1964 FLIGHT TIME 226.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 493.826 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	32.987	GAL	6.15	AZL	90.59	HCA	147.79	SMA	185.41	ECC	.23150	INC	.5861	V1	30.278
RP	228.31	LAP	-.31	LOP	239.00	VP	21.138	GAP	-.45	AZP	89.50	TAL	33.72	TAP	181.51	RCA	142.49	APO	228.34	V2	24.090
RC	237.537	GL	-4.34	GP	13.58	ZAL	34.97	ZAP	124.83	ETS	168.95	ZAE	158.28	ETE	137.07	ZAC	102.03	ETC	255.72	CLP	125.99

PLANETOCENTRIC CONIC

C3	19.626	VHL	4.430	DLA	14.58	RAL	127.21	RAD	6567.8	VEL	11.875	PTH	2.11	VHP	3.643	DPA	11.52	RAP	190.85	ECC	1.3230

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 47 22	2680.69	-27.49	73.17	353.26	97.09	12 32 2	2080.7	-26.22	64.73
90.00	3 39 36	4383.14	5.92	182.23	347.16	62.26	4 52 39	3783.1	2.16	175.57
100.00	13 16 31	2393.13	-28.77	51.82	353.06	98.50	13 56 25	1793.1	-27.29	43.33
100.00	4 53 7	4145.92	7.05	164.17	346.54	60.88	6 2 13	3545.9	3.12	157.60
110.00	14 42 15	2124.88	-32.14	30.73	352.35	102.34	15 17 40	1524.9	-30.10	22.11
110.00	5 43 52	3986.94	9.99	150.33	344.76	57.14	6 50 19	3386.9	5.59	144.00

DIFFERENTIAL CORRECTIONS

TDE	.1764	TRA	-.4616	TC3	1.0043	BAU	.4849
RDE	-.3535	RRA	.5397	RC3	1.5516	FAU	.39631
FDE	.7697	FRA	-7.0562	FC	-17.4822	BSP	5810
BDE	.3951	BRA	.7102	BC3	1.8482	FSP	5337

MID-COURSE EXECUTION ACCURACY

SGT	1106.5	SGR	1618.3	SG3	1569.1		
RRT	.3764	RRF	-.9714	RTF	-.3851		
SGB	1960.5	R23	-.1991	R13	-.9510		
SG1	1700.5	SG2	975.6	THA	67.98		

ORBIT DETERMINATION ACCURACY

ST	294.9	SR	507.5	SS	955.3
CRT	-.9569	CRS	.7054	CST	-.8247
LSA	1062.4	MSA	354.4	SSA	53.7
EL1	582.2	EL2	74.7	ALF	119.62

LAUNCH DATE DEC 23 1964 FLIGHT TIME 228.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 497.718 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.977 GAL 6.15 AZL 90.67 HCA 148.83 SMA 185.24 ECC .23083 INC .6673 V1 30.278
RP 227.92 LAP -.35 LOP 240.04 VP 21.168 GAP -.79 AZP 89.43 TAL 33.80 TAP 182.63 RCA 142.48 APO 227.99 V2 24.132
RC 239.350 GL -4.95 GP 14.21 ZAL 34.94 ZAP 123.08 ETS 169.14 ZAE 156.48 ETE 139.24 ZAC 102.51 ETC 255.73 CLP 124.27

PLANETOCENTRIC CONIC

C3 19.595 VHL 4.427 DLA 14.01 RAL 126.96 RAD 6567.8 VEL 11.873 PTH 2.11 VHP 3.593 DPA 12.37 RAP 190.52 ECC 1.3225

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 51 24	2660.46	-27.31	71.72	352.74	97.80	12 35 44	2060.5	-25.95	63.31
90.00	3 33 31	4402.61	6.53	183.33	346.82	62.39	4 46 54	3802.6	2.78	176.66
100.00	13 20 10	2374.18	-28.57	50.45	352.52	99.19	13 59 44	1774.2	-27.00	41.99
100.00	4 47 27	4164.12	7.65	165.19	346.21	61.02	5 56 51	3564.1	3.73	158.60
110.00	14 45 3	2108.57	-31.89	29.52	351.77	103.01	15 20 12	1508.6	-29.77	20.95
110.00	5 39 3	4002.50	10.56	151.17	344.45	57.30	6 45 45	3402.5	6.18	144.82

DIFFERENTIAL CORRECTIONS
TDE .1894 TRA -.5152 TC3 .8687 BAU .4892
RDE -.3395 RRA .5873 RC3 1.6532 FAU .40691
FDE .6775 FRA-7.3256 FC-17.9783 BSP 5981
BDE .3887 BRA .7812 BC3 1.8675 FSP 5502

MID-COURSE EXECUTION ACCURACY
SGT 1060.1 SGR 1717.3 SG3 1615.5
RRT .2633 RRF -.9760 RTF -.2678
SGB 2018.1 R23 -.1254 R13 -.9679
SG1 1751.3 SG2 1002.8 THA 76.14

ORBIT DETERMINATION ACCURACY
ST 321.1 SR 500.3 SS 961.4
CRT -.9658 CRS .7070 CST -.8128
LSA 1071.2 MSA 357.1 SSA 52.2
EL1 590.2 EL2 70.6 ALF 122.31

LAUNCH DATE DEC 23 1964 FLIGHT TIME 230.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 501.621 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.967 GAL 6.15 AZL 90.75 HCA 149.88 SMA 185.07 ECC .23020 INC .7544 V1 30.278
RP 227.53 LAP -.38 LOP 241.09 VP 21.201 GAP -1.12 AZP 89.35 TAL 33.87 TAP 183.74 RCA 142.47 APO 227.68 V2 24.173
RC 241.142 GL -5.60 GP 14.88 ZAL 34.94 ZAP 121.30 ETS 169.35 ZAE 154.61 ETE 141.13 ZAC 103.01 ETC 255.73 CLP 122.52

PLANETOCENTRIC CONIC

C3 19.567 VHL 4.423 DLA 13.41 RAL 126.71 RAD 6567.8 VEL 11.872 PTH 2.11 VHP 3.547 DPA 13.27 RAP 190.18 ECC 1.3220

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 55 46	2638.99	-27.10	70.18	352.21	98.54	12 39 45	2039.0	-25.64	61.82
90.00	3 27 11	4423.41	7.19	184.51	346.50	62.54	4 40 55	3823.4	3.45	177.82
100.00	13 24 7	2354.04	-28.34	48.99	351.98	99.93	14 3 21	1754.0	-26.68	40.58
100.00	4 41 31	4183.59	8.29	166.28	345.90	61.18	5 51 15	3583.6	4.39	159.67
110.00	14 48 8	2091.19	-31.62	28.24	351.19	103.73	15 22 59	1491.2	-29.41	19.73
110.00	5 34 0	4019.21	11.17	152.08	344.17	57.48	6 40 59	3419.2	6.81	145.71

DIFFERENTIAL CORRECTIONS
TDE .2106 TRA -.5640 TC3 .7440 BAU .5018
RDE -.3196 RRA .6417 RC3 1.7680 FAU .41878
FDE .5272 FRA-7.6291 FC-18.5291 BSP 6093
BDE .3828 BRA .8543 BC3 1.9181 FSP 5568

MID-COURSE EXECUTION ACCURACY
SGT 1035.2 SGR 1829.7 SG3 1667.3
RRT .1451 RRF -.9800 RTF -.1489
SGB 2102.3 R23 -.0578 R13 -.9783
SG1 1838.7 SG2 1019.3 THA 83.21

ORBIT DETERMINATION ACCURACY
ST 354.4 SR 489.2 SS 968.8
CRT -.9793 CRS .7028 CST -.7705
LSA 1078.9 MSA 370.3 SSA 49.7
EL1 601.2 EL2 58.3 ALF 125.74

LAUNCH DATE DEC 23 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 505.534 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.958 GAL 6.14 AZL 90.85 HCA 150.93 SMA 184.93 ECC .22960 INC .8470 V1 30.278
RP 227.14 LAP -.41 LOP 242.14 VP 21.234 GAP -1.44 AZP 89.26 TAL 33.91 TAP 184.84 RCA 142.47 APO 227.38 V2 24.214
RC 242.914 GL -6.29 GP 15.59 ZAL 34.98 ZAP 119.50 ETS 169.58 ZAE 152.68 ETE 142.80 ZAC 103.54 ETC 255.74 CLP 120.74

PLANETOCENTRIC CONIC

C3 19.541 VHL 4.420 DLA 12.75 RAL 126.47 RAD 6567.8 VEL 11.871 PTH 2.11 VHP 3.505 DPA 14.21 RAP 189.84 ECC 1.3216

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 0 31	2616.09	-26.86	68.55	351.67	99.33	12 44 7	2016.1	-25.29	60.23
90.00	3 20 33	4445.67	7.88	185.77	346.19	62.71	4 34 39	3845.7	4.16	179.07
100.00	13 28 26	2332.53	-28.08	47.45	351.42	100.70	14 7 19	1732.5	-26.31	39.09
100.00	4 35 19	4204.47	8.98	167.45	345.60	61.37	5 45 23	3604.5	5.09	160.83
110.00	14 51 31	2072.57	-31.31	26.88	350.59	104.48	15 26 4	1472.6	-29.00	18.43
110.00	5 28 43	4037.19	11.83	153.05	343.90	57.69	6 36 1	3437.2	7.48	146.66

DIFFERENTIAL CORRECTIONS
TDE .2180 TRA -.6306 TC3 .5841 BAU .5138
RDE -.3028 RRA .6942 RC3 1.8782 FAU .42739
FDE .4180 FRA-7.8663 FC-18.9352 BSP 6471
BDE .3731 BRA .9379 BC3 1.9670 FSP 5744

MID-COURSE EXECUTION ACCURACY
SGT 1024.1 SGR 1939.7 SG3 1705.9
RRT -.0133 RRF -.9832 RTF .0133
SGB 2193.5 R23 .0049 R13 -.9832
SG1 1939.7 SG2 1024.0 THA 90.56

ORBIT DETERMINATION ACCURACY
ST 378.6 SR 482.8 SS 975.8
CRT -.9833 CRS .7107 CST -.7656
LSA 1089.9 MSA 371.9 SSA 48.1
EL1 611.1 EL2 54.5 ALF 127.99

LAUNCH DATE DEC 23 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 509.457 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.950 GAL 6.13 AZL 90.95 HCA 151.98 SMA 184.79 ECC .22902 INC .9462 V1 30.278
RP 226.75 LAP -.44 LOP 243.19 VP 21.269 GAP -1.75 AZP 89.16 TAL 33.94 TAP 185.92 RCA 142.47 APO 227.11 V2 24.256
RC 244.666 GL -7.04 GP 16.34 ZAL 35.05 ZAP 117.67 ETS 169.84 ZAE 150.70 ETE 144.28 ZAC 104.11 ETC 255.74 CLP 118.94

PLANETOCENTRIC CONIC

C3 19.519 VHL 4.418 DLA 12.04 RAL 126.24 RAD 6567.8 VEL 11.870 PTH 2.11 VHP 3.469 DPA 15.20 RAP 189.50 ECC 1.3212

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 5 38	2591.71	-26.58	66.82	351.12	100.15	12 48 50	1991.7	-24.90	58.55
90.00	3 13 35	4469.53	8.62	187.13	345.90	62.92	4 28 5	3869.5	4.93	180.41
100.00	13 33 7	2309.58	-27.78	45.81	350.86	101.51	14 11 37	1709.6	-25.91	37.51
100.00	4 28 48	4226.89	9.71	168.72	345.33	61.59	5 39 14	3626.9	5.84	162.07
110.00	14 55 13	2052.65	-30.96	25.43	349.99	105.27	15 29 26	1452.7	-28.56	17.05
110.00	5 23 10	4056.58	12.53	154.12	343.65	57.93	6 30 47	3456.6	8.21	147.69

DIFFERENTIAL CORRECTIONS
TDE .2252 TRA -.7010 TC3 .4186 BAU .5318
RDE -.2830 RRA .7504 RC3 1.9946 FAU .43526
FDE .2865 FRA-8.0962 FC-19.3054 BSP 6901
BDE .3616 BRA 1.0269 BC3 2.0381 FSP 5893

MID-COURSE EXECUTION ACCURACY
SGT 1042.1 SGR 2057.0 SG3 1741.7
RRT -.1773 RRF -.9860 RTF .1798
SGB 2305.9 R23 .0528 R13 -.9846
SG1 2067.9 SG2 1020.2 THA 96.79

ORBIT DETERMINATION ACCURACY
ST 404.0 SR 476.0 SS 983.7
CRT -.9873 CRS .7200 CST -.7549
LSA 1101.8 MSA 375.9 SSA 46.2
EL1 622.4 EL2 49.2 ALF 130.26

LAUNCH DATE DEC 23 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 513.390 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.943 GAL 6.12 AZL 91.05 HCA 153.03 SMA 184.67 ECC .22848 INC 1.0532 V1 30.278
RP 226.36 LAP -.48 LOP 244.24 VP 21.305 GAP -2.06 AZP 89.06 TAL 33.95 TAP 186.99 RCA 142.47 APO 226.86 V2 24.297
RC 246.398 GL -7.84 GP 17.13 ZAL 35.17 ZAP 115.81 ETS 170.12 ZAE 148.66 ETE 145.59 ZAC 104.71 ETC 255.75 CLP 117.11

PLANETOCENTRIC CONIC

C3 19.504 VHL 4.416 DLA 11.27 RAL 126.02 RAD 6567.8 VEL 11.869 PTH 2.11 VHP 3.438 DPA 16.23 RAP 189.17 ECC 1.3210

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 11 10	2565.70	-26.25	64.98	350.56	101.02	12 53 56	1965.7	-24.47	56.77
90.00	3 6 15	4495.16	9.42	188.60	345.64	63.17	4 21 10	3895.2	5.74	181.85
100.00	13 38 11	2285.07	-27.43	44.07	350.29	102.37	14 16 16	1685.1	-25.45	35.83
100.00	4 21 55	4251.01	10.49	170.09	345.07	61.85	5 32 46	3651.0	6.64	163.41
110.00	14 59 16	2031.33	-30.57	23.89	349.38	106.10	15 33 7	1431.3	-28.06	15.59
110.00	5 17 19	4077.53	13.29	155.27	343.42	58.21	6 25 17	3477.5	8.99	148.81

DIFFERENTIAL CORRECTIONS
TDE .2310 TRA -.7756 TC3 .2469 BAU .5556
RDE -.2606 RRA .8100 RC3 2.1167 FAU .44214
FDE .1401 FRA-8.3090 FC-19.6260 BSP 7411
BDE .3482 BRA 1.1215 BC3 2.1310 FSP 6034

MID-COURSE EXECUTION ACCURACY
SGT 1090.9 SGR 2181.2 SG3 1773.5
RRT -.3333 RRF -.9883 RTF .3373
SGB 2438.8 R23 .0868 R13 -.9845
SG1 2219.5 SG2 1010.8 THA 101.99

ORBIT DETERMINATION ACCURACY
ST 429.6 SR 469.8 SS 993.0
CRT -.9902 CRS .7325 CST -.7422
LSA 1115.4 MSA 381.1 SSA 44.2
EL1 635.1 EL2 44.4 ALF 132.42

LAUNCH DATE DEC 23 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 517.334 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.937 GAL 6.11 AZL 91.17 HCA 154.09 SMA 184.56 ECC .22796 INC 1.1687 V1 30.278
RP 225.97 LAP -.51 LOP 245.30 VP 21.343 GAP -2.36 AZP 88.95 TAL 33.95 TAP 188.04 RCA 142.48 APO 226.63 V2 24.339
RC 248.110 GL -8.70 GP 17.97 ZAL 35.33 ZAP 113.94 ETS 170.42 ZAE 146.57 ETE 146.78 ZAC 105.36 ETC 255.75 CLP 115.25

PLANETOCENTRIC CONIC

C3 19.496 VHL 4.415 DLA 10.43 RAL 125.79 RAD 6567.8 VEL 11.869 PTH 2.11 VHP 3.411 DPA 17.32 RAP 188.84 ECC 1.3209

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 17 8	2537.92	-25.88	63.04	349.99	101.92	12 59 26	1937.9	-23.97	54.88
90.00	2 58 29	4522.77	10.26	190.19	345.40	63.46	4 13 51	3922.8	6.61	183.41
100.00	13 43 39	2258.85	-27.04	42.22	349.70	103.26	14 21 18	1658.9	-24.94	34.05
100.00	4 14 38	4277.07	11.32	171.57	344.84	62.15	5 25 55	3677.1	7.50	164.86
110.00	15 3 40	2008.46	-30.13	22.26	348.75	106.98	15 37 9	1408.5	-27.51	14.04
110.00	5 11 6	4100.22	14.10	156.53	343.22	58.53	6 19 27	3500.2	9.83	150.03

DIFFERENTIAL CORRECTIONS
TDE .2351 TRA -.8545 TC3 .0688 BAU .5852
RDE -.2345 RRA .8740 RC3 2.2443 FAU .44788
FDE -.0283 FRA-8.5084 FC-19.8878 BSP 7989
BDE .3320 BRA 1.2223 BC3 2.2453 FSP 6152

MID-COURSE EXECUTION ACCURACY
SGT 1169.6 SGR 2313.0 SG3 1800.9
RRT -.4704 RRF -.9902 RTF .4750
SGB 2591.9 R23 .1095 R13 -.9842
SG1 2392.1 SG2 998.0 THA 106.29

ORBIT DETERMINATION ACCURACY
ST 455.5 SR 464.5 SS 1004.8
CRT -.9912 CRS .7485 CST -.7257
LSA 1131.5 MSA 388.5 SSA 41.8
EL1 649.2 EL2 43.2 ALF 134.44

LAUNCH DATE DEC 23 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 521.288 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.931 GAL 6.10 AZL 91.29 HCA 155.16 SMA 184.46 ECC .22747 INC 1.2938 V1 30.278
RP 225.58 LAP -.54 LOP 246.37 VP 21.381 GAP -2.65 AZP 88.83 TAL 33.93 TAP 189.08 RCA 142.50 APO 226.41 V2 24.381
RC 249.803 GL -9.64 GP 18.86 ZAL 35.54 ZAP 112.06 ETS 170.76 ZAE 144.44 ETE 147.84 ZAC 106.06 ETC 255.75 CLP 113.38

PLANETOCENTRIC CONIC

C3 19.500 VHL 4.416 DLA 9.52 RAL 125.56 RAD 6567.8 VEL 11.869 PTH 2.11 VHP 3.391 DPA 18.46 RAP 188.52 ECC 1.3209

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 23 33	2508.19	-25.44	60.97	349.41	102.87	13 5 22	1908.2	-23.42	52.88
90.00	2 50 14	4552.59	11.16	191.92	345.18	63.81	4 6 6	3952.6	7.55	185.10
100.00	13 49 35	2230.75	-26.58	40.26	349.11	104.20	14 26 45	1630.8	-24.37	32.16
100.00	4 6 54	4305.26	12.21	173.19	344.64	62.50	5 18 39	3705.3	8.43	166.44
110.00	15 8 28	1983.91	-29.62	20.52	348.11	107.89	15 41 31	1383.9	-26.89	12.40
110.00	5 4 30	4124.87	14.97	157.91	343.04	58.90	6 13 15	3524.9	10.74	151.36

DIFFERENTIAL CORRECTIONS
TDE .2370 TRA -.9379 TC3 -.1146 BAU .6207
RDE -.2041 RRA .9423 RC3 2.3782 FAU .45247
FDE -.2184 FRA-8.6892 FC-20.0880 BSP 8633
BDE .3128 BRA 1.3295 BC3 2.3809 FSP 6243

MID-COURSE EXECUTION ACCURACY
SGT 1275.6 SGR 2453.3 SG3 1823.7
RRT -.5827 RRF -.9919 RTF .5873
SGB 2765.1 R23 .1238 R13 -.9842
SG1 2584.0 SG2 984.2 THA 109.86

ORBIT DETERMINATION ACCURACY
ST 481.2 SR 460.9 SS 1020.2
CRT -.9887 CRS .7689 CST -.7066
LSA 1151.0 MSA 398.0 SSA 39.2
EL1 664.5 EL2 50.0 ALF 136.25

LAUNCH DATE DEC 23 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 525.253 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.925 GAL 6.08 AZL 91.43 HCA 156.22 SMA 184.37 ECC .22700 INC 1.4296 V1 30.278
RP 225.19 LAP -.58 LOP 247.43 VP 21.421 GAP -2.94 AZP 88.69 TAL 33.89 TAP 190.11 RCA 142.52 APO 226.22 V2 24.423
RC 251.477 GL -10.65 GP 19.81 ZAL 35.80 ZAP 110.16 ETS 171.13 ZAE 142.27 ETE 148.81 ZAC 106.81 ETC 255.75 CLP 111.49

PLANETOCENTRIC CONIC

C3 19.518 VHL 4.418 DLA 8.53 RAL 125.33 RAD 6567.8 VEL 11.870 PTH 2.11 VHP 3.376 DPA 19.65 RAP 188.22 ECC 1.3212

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 30 30	2476.29	-24.94	58.76	348.82	103.87	13 11 46	1876.3	-22.79	50.76
90.00	2 41 26	4584.92	12.13	193.80	344.99	64.21	3 57 51	3984.9	8.56	186.94
100.00	13 55 59	2200.58	-26.06	38.17	348.50	105.18	14 32 40	1600.6	-23.72	30.15
100.00	3 58 38	4335.86	13.16	174.96	344.47	62.92	5 10 54	3735.9	9.43	168.16
110.00	15 13 40	1957.48	-29.06	18.67	347.46	108.85	15 46 18	1357.5	-26.21	10.65
110.00	4 57 26	4151.73	15.91	159.42	342.90	59.34	6 6 38	3551.7	11.72	152.82

DIFFERENTIAL CORRECTIONS
TDE .2352 TRA-1.0266 TC3 -.3045 BAU .6618
RDE -.1686 RRA 1.0158 RC3 2.5178 FAU .45569
FDE -.4320 FRA-8.8502 FC-20.2124 BSP 9335
BDE .2894 BRA 1.4442 BC3 2.5361 FSP 6303

MID-COURSE EXECUTION ACCURACY
SGT 1406.4 SGR 2602.2 SG3 1840.9
RRT -.6718 RRF -.9932 RTF .6761
SGB 2958.0 R23 .1321 R13 -.9845
SG1 2794.4 SG2 970.1 THA 112.87

ORBIT DETERMINATION ACCURACY
ST 506.2 SR 460.4 SS 1040.5
CRT -.9811 CRS .7944 CST -.6865
LSA 1175.7 MSA 409.1 SSA 36.4
EL1 681.1 EL2 66.3 ALF 137.76

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LAUNCH DATE  DEC 23 1964                          FLIGHT TIME 244.00                                  ARRIVAL DATE  AUG 24 1965

  HELIOCENTRIC CONIC                                  DISTANCE 529.227                                      EARTH  TO  MARS
   RL  147.14 LAL   -.00 LOL  91.21 VL  32.921 GAL   6.06 AZL  91.58 HCA 157.29 SMA 184.29 ECC .22655 INC 1.5781 V1  30.278
   RP  224.80 LAP   -.61 LOP 248.50 VP  21.461 GAP  -3.22 AZP  88.54 TAL  33.84 TAP 191.13 RCA 142.54 APO 226.04 V2  24.465
   RC 253.132 GL  -11.76 GP   20.82 ZAL  36.12 ZAP 108.25 ETS 171.54 ZAE 140.06 ETE 149.69 ZAC 107.61 ETC 255.75 CLP 109.58
  PLANETOCENTRIC CONIC
   C3  19.554 VHL  4.422 DLA   7.45 RAL 125.09 RAD 6567.8 VEL 11.872 PTH   2.11 VHP  3.368 DPA  20.91 RAP 187.95 ECC 1.3218
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00     12 38  1   2442.00     -24.36     56.42     348.21     104.90   13 18 43    1842.0     -22.08     48.49
      90.00      2 32  0   4620.09      13.16    195.87     344.85      64.70    3 49  0    4020.1       9.64    188.95
     100.00     14  2 56   2168.11     -25.46     35.94     347.87     106.21   14 39  4    1568.1     -23.00     28.01
     100.00      3 49 46   4369.21      14.19    176.91     344.33      63.41    5  2 36    3769.2      10.51    170.05
     110.00     15 19 20   1928.98     -28.41     16.70     346.80     109.86   15 51 29    1329.0     -25.44      8.79
     110.00      4 49 51   4181.10      16.92    161.10     342.80      59.85    5 59 32    3581.1      12.79    154.43
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE  .2300 TRA-1.1199 TC3 -.4984 BAU  .7077      SGT 1557.1 SGR 2758.7 SG3 1850.6             ST   530.7 SR   465.3 SS  1066.2
   RDE -.1280 RRA 1.0943 RC3 2.6610 FAU .45704      RRT -.7401 RRF -.9944 RTF  .7439             CRT -.9665 CRS  .8248 CST -.6672
   FDE -.6622 FRA-8.9832 FC-20.2352 BSP  10113      SGB 3167.8 R23  .1362 R13 -.9851             LSA 1206.8 MSA  421.4 SSA   33.5
   BDE  .2632 BRA 1.5658 BC3 2.7072 FSP   6344      SG1 3020.0 SG2  956.5 THA 115.40             EL1  700.0 EL2   90.6 ALF 138.88

LAUNCH DATE  DEC 23 1964                          FLIGHT TIME 246.00                                  ARRIVAL DATE  AUG 26 1965

  HELIOCENTRIC CONIC                                  DISTANCE 533.214                                      EARTH  TO  MARS
   RL  147.14 LAL   -.00 LOL  91.21 VL  32.917 GAL   6.04 AZL  91.74 HCA 158.36 SMA 184.22 ECC .22612 INC 1.7407 V1  30.278
   RP  224.41 LAP   -.64 LOP 249.58 VP  21.503 GAP  -3.49 AZP  88.38 TAL  33.77 TAP 192.13 RCA 142.56 APO 225.87 V2  24.506
   RC 254.766 GL  -12.98 GP   21.90 ZAL  36.51 ZAP 106.35 ETS 171.99 ZAE 137.81 ETE 150.51 ZAC 108.49 ETC 255.74 CLP 107.66
  PLANETOCENTRIC CONIC
   C3  19.615 VHL  4.429 DLA   6.26 RAL 124.84 RAD 6567.8 VEL 11.874 PTH   2.11 VHP  3.366 DPA  22.22 RAP 187.71 ECC 1.3228
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00     12 46  8   2405.05     -23.69     53.92     347.60     105.98   13 26 13    1805.1     -21.27     46.08
      90.00      2 21 51   4658.51      14.26    198.15     344.74      65.28    3 39 30    4058.5      10.81    191.17
     100.00     14 10 27   2133.10     -24.78     33.56     347.24     107.28   14 46  0    1533.1     -22.18     25.73
     100.00      3 40 13   4405.70      15.29    179.06     344.24      64.00    4 53 39    3805.7      11.67    172.14
     110.00     15 25 31   1898.21     -27.68     14 61     346.12     110.90   15 57  9    1298.2     -24.59      6.80
     110.00      4 41 39   4213.35      18.01    162.98     342.74      60.45    5 51 53    3613.3      13.94    156.21
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE  .2237 TRA-1.2142 TC3 -.6875 BAU  .7622      SGT 1718.1 SGR 2941.3 SG3 1864.4             ST   555.7 SR   478.7 SS  1111.7
   RDE -.0731 RRA 1.1864 RC3 2.8242 FAU .45929      RRT -.7897 RRF -.9954 RTF  .7924             CRT -.9335 CRS  .8610 CST -.6304
   FDE -.9701 FRA-9.1442 FC-20.2717 BSP  10810      SGB 3406.3 R23  .1365 R13 -.9860             LSA 1255.3 MSA  444.1 SSA   29.9
   BDE  .2353 BRA 1.6976 BC3 2.9067 FSP   6231      SG1 3271.9 SG2  947.4 THA 117.24             EL1  721.5 EL2  132.2 ALF 139.56

LAUNCH DATE  DEC 23 1964                          FLIGHT TIME 248.00                                  ARRIVAL DATE  AUG 28 1965

  HELIOCENTRIC CONIC                                  DISTANCE 537.205                                      EARTH  TO  MARS
   RL  147.14 LAL   -.00 LOL  91.21 VL  32.913 GAL   6.02 AZL  91.92 HCA 159.44 SMA 184.16 ECC .22571 INC 1.9203 V1  30.278
   RP  224.02 LAP   -.67 LOP 250.66 VP  21.545 GAP  -3.76 AZP  88.20 TAL  33.68 TAP 193.12 RCA 142.59 APO 225.72 V2  24.548
   RC 256.380 GL  -14.31 GP   23.05 ZAL  36.99 ZAP 104.45 ETS 172.48 ZAE 135.54 ETE 151.25 ZAC 109.43 ETC 255.73 CLP 105.73
  PLANETOCENTRIC CONIC
   C3  19.704 VHL  4.439 DLA   4.96 RAL 124.57 RAD 6567.8 VEL 11.878 PTH   2.11 VHP  3.372 DPA  23.60 RAP 187.52 ECC 1.3243
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00     12 54 59   2365.02     -22.91     51.24     346.97     107.11   13 34 25    1765.0     -20.35     43.50
      90.00      2 10 52   4700.69      15.45    200.68     344.69      65.97    3 29 12    4100.7      12.07    193.63
     100.00     14 18 40   2095.13     -23.98     31.02     346.60     108.40   14 53 35    1495.1     -21.25     23.29
     100.00      3 29 52   4445.82      16.47    181.45     344.20      64.70    4 43 58    3845.8      12.93    174.45
     110.00     15 32 16   1864.80     -26.85     12.37     345.43     111.99   16  3 21    1264.8     -23.63      4.69
     110.00      4 32 46   4248.90      19.19    165.04     342.74      61.16    5 43 35    3648.9      15.20    158.20
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE  .2026 TRA-1.3243 TC3 -.9002 BAU  .8150      SGT 1910.7 SGR 3100.7 SG3 1847.7             ST   577.8 SR   501.0 SS  1139.6
   RDE -.0255 RRA 1.2701 RC3 2.9600 FAU .45438      RRT -.8325 RRF -.9962 RTF  .8352             CRT -.9140 CRS  .8926 CST -.6394
   FDE-1.1855 FRA-9.1606 FC-19.9640 BSP  11824      SGB 3642.1 R23  .1365 R13 -.9868             LSA 1297.6 MSA  446.0 SSA   27.7
   BDE  .2042 BRA 1.8349 BC3 3.0938 FSP   6327      SG1 3520.8 SG2  932.4 THA 119.42             EL1  748.5 EL2  157.0 ALF 139.45

LAUNCH DATE  DEC 23 1964                          FLIGHT TIME 250.00                                  ARRIVAL DATE  AUG 30 1965

  HELIOCENTRIC CONIC                                  DISTANCE 541.207                                      EARTH  TO  MARS
   RL  147.14 LAL   -.00 LOL  91.21 VL  32.910 GAL   5.99 AZL  92.12 HCA 160.52 SMA 184.11 ECC .22532 INC 2.1197 V1  30.278
   RP  223.63 LAP   -.71 LOP 251.74 VP  21.588 GAP  -4.02 AZP  88.00 TAL  33.58 TAP 194.10 RCA 142.62 APO 225.59 V2  24.590
   RC 257.974 GL  -15.77 GP   24.29 ZAL  37.56 ZAP 102.56 ETS 173.01 ZAE 133.24 ETE 151.94 ZAC 110.47 ETC 255.70 CLP 103.80
  PLANETOCENTRIC CONIC
   C3  19.833 VHL  4.453 DLA   3.52 RAL 124.28 RAD 6567.8 VEL 11.883 PTH   2.11 VHP  3.386 DPA  25.06 RAP 187.38 ECC 1.3264
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00     13  4 39   2321.58     -22.01     48.38     346.34     108.28   13 43 20    1721.6     -19.31     40.74
      90.00      1 58 53   4747.24      16.72    203.51     344.71      66.81    3 18  0    4147.2      13.44    196.36
     100.00     14 27 38   2053.90     -23.07     28.30     345.95     109.55   15  1 52    1453.9     -20.19     20.68
     100.00      3 18 35   4490.15      17.74    184.13     344.24      65.54    4 33 25    3890.1      14.29    177.03
     110.00     15 39 39   1828.50     -25.90      9.97     344.73     113.12   16 10  7    1228.5     -22.55      2.42
     110.00      4 23  3   4288.32      20.47    167.39     342.81      62.01    5 34 31    3688.3      16.57    160.44
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE  .1766 TRA-1.4385 TC3-1.1097 BAU  .8721      SGT 2113.4 SGR 3268.9 SG3 1822.4             ST   601.6 SR   534.3 SS  1174.9
   RDE  .0310 RRA 1.3612 RC3 3.0963 FAU .44740      RRT -.8641 RRF -.9968 RTF  .8667             CRT -.8903 CRS  .9216 CST -.6485
   FDE-1.4224 FRA-9.1461 FC-19.5293 BSP  12912      SGB 3892.5 R23  .1349 R13 -.9877             LSA 1350.9 MSA  449.6 SSA   25.2
   BDE  .1793 BRA 1.9804 BC3 3.2891 FSP   6381      SG1 3782.5 SG2  919.1 THA 121.24             EL1  782.6 EL2  187.0 ALF 138.80
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LAUNCH DATE DEC 23 1964 FLIGHT TIME 252.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 545.221 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.907 GAL 5.96 AZL 92.34 HCA 161.60 SMA 184.07 ECC .22494 INC 2.3422 V1 30.278
RP 223.24 LAP -.74 LOP 252.82 VP 21.632 GAP -4.27 AZP 87.78 TAL 33.47 TAP 195.07 RCA 142.66 APO 225.47 V2 24.632
RC 259.547 GL -17.40 GP 25.62 ZAL 38.23 ZAP 100.69 ETS 173.60 ZAE 130.91 ETE 152.58 ZAC 111.59 ETC 255.67 CLP 101.87

PLANETOCENTRIC CONIC

C3 20.016 VHL 4.474 DLA 1.93 RAL 123.95 RAD 6567.8 VEL 11.891 PTH 2.11 VHP 3.409 DPA 26.60 RAP 187.30 ECC 1.3294

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 15 12	2274.29	-20.97	45.30	345.72	109.47	13 53 7	1674.3	-18.13	37.78
90.00	1 45 44	4798.89	18.08	206.69	344.81	67.83	3 5 43	4198.9	14.91	199.44
100.00	14 37 27	2009.03	-22.02	25.38	345.30	110.74	15 10 56	1409.0	-19.00	17.89
100.00	3 6 11	4539.39	19.10	187.15	344.36	66.56	4 21 50	3939.4	15.77	179.94
110.00	15 47 45	1788.98	-24.82	7.41	344.04	114.29	16 17 34	1189.0	-21.33	360.00
110.00	4 12 22	4332.20	21.85	170.04	342.98	63.03	5 24 34	3732.2	18.06	162.97

DIFFERENTIAL CORRECTIONS
TDE .1476 TRA-1.5934 TC3-1.3061 BAU .9388
RDE .1108 RRA 1.4732 RC3 3.2559 FAU .44169
FDE-1.7570 FRA-9.1717 FC-19.1036 BSP 13628
BDE .1845 BRA 2.1408 BC3 3.5081 FSP 6226

MID-COURSE EXECUTION ACCURACY
SGT 2315.9 SGR 3474.5 SG3 1802.8
RRT -.8868 RRF -.9974 RTF .8887
SGB 4175.4 RZS .1314 R13 -.9887
SG1 4074.5 SG2 912.7 THA 122.41

ORBIT DETERMINATION ACCURACY
ST 627.3 SR 590.3 SS 1241.1
CRT -.8490 CRS .9490 CST -.6423
LSA 1437.3 MSA 465.0 SSA 22.1
EL1 828.4 EL2 236.2 ALF 137.05

LAUNCH DATE DEC 23 1964 FLIGHT TIME 254.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 549.244 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.906 GAL 5.93 AZL 92.59 HCA 162.69 SMA 184.03 ECC .22459 INC 2.5927 V1 30.278
RP 222.85 LAP -.77 LOP 253.91 VP 21.677 GAP -4.52 AZP 87.52 TAL 33.34 TAP 196.03 RCA 142.70 APO 225.36 V2 24.674
RC 261.100 GL -19.20 GP 27.07 ZAL 39.03 ZAP 98.84 ETS 174.24 ZAE 128.56 ETE 153.19 ZAC 112.82 ETC 255.62 CLP 99.94

PLANETOCENTRIC CONIC

C3 20.268 VHL 4.502 DLA .16 RAL 123.59 RAD 6567.8 VEL 11.902 PTH 2.11 VHP 3.443 DPA 28.22 RAP 187.31 ECC 1.3336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 26 51	2222.53	-19.76	41.99	345.10	110.70	14 3 53	1622.5	-16.77	34.59
90.00	1 31 11	4856.61	19.52	210.31	345.03	69.07	2 52 8	4256.6	16.50	202.93
100.00	14 48 16	1959.91	-20.80	22.24	344.67	111.97	15 20 56	1359.9	-17.64	14.87
100.00	2 52 27	4594.46	20.56	190.59	344.59	67.81	4 9 2	3994.5	17.37	183.25
110.00	15 56 41	1745.75	-23.58	4.66	343.35	119.49	16 25 46	1145.8	-19.96	357.40
110.00	4 0 32	4381.38	23.34	173.09	343.26	64.28	5 13 33	3781.4	19.68	165.85

DIFFERENTIAL CORRECTIONS
TDE .1092 TRA-1.6753 TC3-1.4977 BAU 1.0092
RDE .2030 RRA 1.5952 RC3 3.4101 FAU .43298
FDE-2.0954 FRA-9.1470 FC-18.4945 BSP 14822
BDE .2305 BRA 2.3133 BC3 3.7245 FSP 6050

MID-COURSE EXECUTION ACCURACY
SGT 2526.6 SGR 3690.0 SG3 1770.5
RRT -.9046 RRF -.9978 RTF .9059
SGB 4472.1 RZS .1273 R13 -.9897
SG1 4379.0 SG2 907.8 THA 123.40

ORBIT DETERMINATION ACCURACY
ST 655.8 SR 668.0 SS 1315.5
CRT -.8158 CRS .9689 CST -.6494
LSA 1542.4 MSA 476.9 SSA 19.3
EL1 892.0 EL2 284.0 ALF 134.36

LAUNCH DATE DEC 23 1964 FLIGHT TIME 256.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 553.275 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.904 GAL 5.90 AZL 92.88 HCA 163.78 SMA 184.01 ECC .22425 INC 2.8766 V1 30.278
RP 222.47 LAP -.80 LOP 255.01 VP 21.722 GAP -4.76 AZP 87.24 TAL 33.19 TAP 196.97 RCA 142.74 APO 225.27 V2 24.716
RC 262.633 GL -21.21 GP 28.63 ZAL 39.97 ZAP 97.04 ETS 174.95 ZAE 126.19 ETE 153.76 ZAC 114.18 ETC 255.54 CLP 98.02

PLANETOCENTRIC CONIC

C3 20.610 VHL 4.540 DLA -1.81 RAL 123.17 RAD 6567.8 VEL 11.916 PTH 2.12 VHP 3.489 DPA 29.94 RAP 187.41 ECC 1.3392

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 39 46	2165.54	-18.35	38.40	344.52	111.95	14 15 52	1565.5	-15.21	31.13
90.00	1 14 57	4921.60	21.05	214.46	345.38	70.61	2 36 58	4321.6	18.21	206.94
100.00	15 0 17	1905.86	-19.39	18.85	344.07	113.21	15 32 2	1305.9	-16.08	11.62
100.00	2 37 8	4656.51	22.10	194.56	344.97	69.35	3 54 44	4056.5	19.09	187.05
110.00	16 6 35	1698.28	-22.16	1.71	342.68	116.72	16 34 54	1098.3	-18.40	354.60
110.00	3 47 18	4436.86	24.93	176.61	343.70	65.82	5 1 15	3836.9	21.45	169.19

DIFFERENTIAL CORRECTIONS
TDE .0586 TRA-1.8066 TC3-1.6840 BAU 1.0821
RDE .3077 RRA 1.7254 RC3 3.5478 FAU .42022
FDE-2.4195 FRA-9.0481 FC-17.6518 BSP 15934
BDE .3132 BRA 2.4982 BC3 3.9272 FSP 5884

MID-COURSE EXECUTION ACCURACY
SGT 2747.2 SGR 3908.2 SG3 1720.9
RRT -.9190 RRF -.9982 RTF .9200
SGB 4777.2 RZS .1232 R13 -.9906
SG1 4691.1 SG2 902.5 THA 124.31

ORBIT DETERMINATION ACCURACY
ST 689.9 SR 766.4 SS 1391.3
CRT -.8001 CRS .9817 CST -.6726
LSA 1662.9 MSA 483.1 SSA 16.9
EL1 978.9 EL2 324.0 ALF 131.25

LAUNCH DATE DEC 23 1964 FLIGHT TIME 258.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 557.315 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.903 GAL 5.87 AZL 93.20 HCA 164.88 SMA 183.99 ECC .22392 INC 3.2013 V1 30.278
RP 222.08 LAP -.83 LOP 256.10 VP 21.768 GAP -5.00 AZP 86.91 TAL 33.03 TAP 197.90 RCA 142.79 APO 225.19 V2 24.758
RC 264.145 GL -23.46 GP 30.33 ZAL 41.10 ZAP 95.28 ETS 175.72 ZAE 123.81 ETE 154.29 ZAC 115.67 ETC 255.44 CLP 96.12

PLANETOCENTRIC CONIC

C3 21.075 VHL 4.591 DLA -4.01 RAL 122.69 RAD 6567.9 VEL 11.935 PTH 2.12 VHP 3.550 DPA 31.78 RAP 187.64 ECC 1.3468

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 54 16	2102.43	-16.70	34.50	343.99	113.21	14 29 18	1502.4	-13.42	27.37
90.00	0 56 37	4995.41	22.64	219.29	345.92	72.52	2 19 52	4395.4	20.03	211.59
100.00	15 13 44	1846.09	-17.74	15.17	343.51	114.46	15 44 30	1246.1	-14.29	8.08
100.00	2 19 50	4726.98	23.72	199.17	345.54	71.26	3 38 37	4127.0	20.94	191.47
110.00	16 17 40	1645.93	-20.52	358.53	342.06	117.96	16 45 6	1045.9	-16.62	351.58
110.00	3 32 23	4499.91	26.62	180.73	344.34	67.72	4 47 23	3899.9	23.37	173.08

DIFFERENTIAL CORRECTIONS
TDE -.0046 TRA-1.9468 TC3-1.8564 BAU 1.1599
RDE .4331 RRA 1.8721 RC3 3.6743 FAU .40472
FDE-2.7504 FRA-8.9018 FC-16.6254 BSP 17072
BDE .4331 BRA 2.7009 BC3 4.1169 FSP 5661

MID-COURSE EXECUTION ACCURACY
SGT 2972.9 SGR 4142.5 SG3 1659.3
RRT -.9304 RRF -.9985 RTF .9312
SGB 5098.9 RZS .1187 R13 -.9915
SG1 5019.0 SG2 899.2 THA 125.02

ORBIT DETERMINATION ACCURACY
ST 732.5 SR 892.3 SS 1475.9
CRT -.7982 CRS .9897 CST -.7048
LSA 1809.2 MSA 487.5 SSA 14.6
EL1 1097.3 EL2 358.8 ALF 128.02

LAUNCH DATE DEC 23 1964 FLIGHT TIME 260.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 561.363 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	32.902	GAL	5.83	AZL	93.58	HCA	165.97	SMA	183.98	ECC	.22361	INC	3.5766
RP	221.70	LAP	-.87	LOP	257.20	VP	21.815	GAP	-5.23	AZP	86.53	TAL	32.86	TAP	198.83	RCA	142.84	APO	225.12
RC	265.639	GL	-25.99	GP	32.19	ZAL	42.43	ZAP	93.58	ETS	176.56	ZAE	121.41	ETE	154.80	ZAC	117.32	ETC	255.31

PLANETOCENTRIC CONIC

C3	21.708	VHL	4.659	DLA	-6.48	RAL	122.12	RAD	6567.9	VEL	11.962	PTH	2.13	VHP	3.629	DPA	33.73	RAP	188.02

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 10 43	2031.98	-14.76	30.24	343.56	114.44	14 44 35	1432.0	-11.34	23.23
90.00	0 35 39	5080.13	24.25	224.97	346.70	74.92	2 0 19	4480.1	21.95	217.06
100.00	15 28 59	1779.51	-15.82	11.16	343.05	115.70	15 58 38	1179.5	-12.23	4.21
100.00	2 0 5	4807.83	25.38	204.60	346.35	73.65	3 20 12	4207.8	22.90	196.68
110.00	16 30 10	1587.92	-18.63	355.09	341.52	119.19	16 56 38	987.9	-14.60	348.30
110.00	3 15 22	4572.18	28.40	185.60	345.25	70.12	4 31 34	3972.2	25.42	177.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0843	TRA	-2.0992	TC3	-2.0117	BAU	1.2431	SGT	3205.4	SGR	4392.7	SG3	1583.8	ST	788.3	SR	1049.0	SS	1566.4
RDE	.5845	RRA	2.0382	RC3	3.7814	FAU	.38601	RRT	-.9399	RRF	-.9988	RTF	.9403	CRT	-.8106	CRS	.9944	CST	-.7449
FDE	-3.0803	FRA	-8.6982	FC	-15.3942	BSP	18230	SGB	5437.9	R23	.1140	R13	-.9923	LSA	1983.9	MSA	489.4	SSA	12.5
BDE	.5905	BRA	2.9259	BC3	4.2832	FSP	5387	SG1	5363.4	SG2	896.7	THA	125.59	EL1	1254.1	EL2	386.2	ALF	125.17

LAUNCH DATE DEC 23 1964 FLIGHT TIME 262.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 565.420 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	32.902	GAL	5.79	AZL	94.02	HCA	167.07	SMA	183.98	ECC	.22331	INC	4.0160
RP	221.32	LAP	-.90	LOP	258.31	VP	21.862	GAP	-5.45	AZP	86.09	TAL	32.67	TAP	199.74	RCA	142.89	APO	225.06
RC	267.114	GL	-28.85	GP	34.23	ZAL	44.01	ZAP	91.96	ETS	177.48	ZAE	119.00	ETE	155.29	ZAC	119.15	ETC	255.13

PLANETOCENTRIC CONIC

C3	22.577	VHL	4.752	DLA	-9.25	RAL	121.45	RAD	6567.9	VEL	11.998	PTH	2.14	VHP	3.730	DPA	35.81	RAP	188.59

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 29 42	1952.49	-12.47	25.53	343.27	115.63	15 2 15	1352.5	-8.92	18.65
90.00	0 11 16	5178.61	25.83	231.76	347.79	77.97	1 37 35	4578.6	23.91	223.61
100.00	15 46 31	1704.68	-13.56	6.75	342.72	116.90	16 14 56	1104.7	-9.85	359.93
100.00	1 37 8	4901.65	27.02	211.09	347.49	76.70	2 58 50	4301.7	24.92	202.92
110.00	16 44 27	1523.27	-16.45	351.36	341.09	120.40	17 9 50	923.3	-12.29	344.72
110.00	2 55 41	4655.83	30.19	191.45	346.51	73.15	4 13 17	4055.8	27.59	183.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1797	TRA	-2.2627	TC3	-2.1360	BAU	1.3310	SGT	3436.5	SGR	4659.2	SG3	1492.8	ST	859.3	SR	1238.9	SS	1657.3
RDE	.7671	RRA	2.2282	RC3	3.8580	FAU	.36383	RRT	-.9473	RRF	-.9990	RTF	.9476	CRT	-.8308	CRS	.9970	CST	-.7859
FDE	-3.3935	FRA	-8.4277	FC	-13.9512	BSP	19438	SGB	5789.4	R23	.1093	R13	-.9930	LSA	2186.0	MSA	490.8	SSA	10.6
BDE	.7879	BRA	3.1756	BC3	4.4098	FSP	5058	SG1	5719.6	SG2	896.4	THA	125.96	EL1	1451.4	EL2	408.2	ALF	122.88

LAUNCH DATE DEC 23 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 569.485 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	32.902	GAL	5.75	AZL	94.54	HCA	168.18	SMA	183.98	ECC	.22302	INC	4.5380
RP	220.94	LAP	-.93	LOP	259.42	VP	21.909	GAP	-5.67	AZP	85.56	TAL	32.47	TAP	200.64	RCA	142.95	APO	225.01
RC	268.570	GL	-32.08	GP	36.47	ZAL	45.88	ZAP	90.44	ETS	178.48	ZAE	116.58	ETE	155.75	ZAC	121.19	ETC	254.90

PLANETOCENTRIC CONIC

C3	23.781	VHL	4.877	DLA	-12.38	RAL	120.63	RAD	6568.0	VEL	12.048	PTH	2.15	VHP	3.861	DPA	38.04	RAP	189.39

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 8	1861.44	-9.73	20.24	343.23	116.72	15 23 10	1261.4	-6.07	13.48
90.00	23 38 21	5295.01	27.22	239.99	349.24	81.87	25 6 36	4695.0	25.81	231.60
100.00	16 7 8	1619.50	-10.89	1.84	342.62	118.01	16 34 7	1019.5	-7.06	355.15
100.00	1 9 58	5012.19	28.50	218.96	349.01	80.59	2 33 30	4412.2	26.91	210.53
110.00	17 1 2	1450.64	-13.90	347.27	340.86	121.55	17 25 13	850.6	-9.63	340.78
110.00	2 32 33	4753.80	31.91	198.56	348.23	77.04	3 51 46	4153.8	29.80	189.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2932	TRA	-2.4400	TC3	-2.2196	BAU	1.4227	SGT	3663.3	SGR	4935.1	SG3	1383.1	ST	947.8	SR	1461.0	SS	1737.6
RDE	.9863	RRA	2.4454	RC3	3.8853	FAU	.33738	RRT	-.9534	RRF	-.9992	RTF	.9534	CRT	-.8548	CRS	.9984	CST	-.8245
FDE	-3.6630	FRA	-8.0703	FC	-12.2819	BSP	20784	SGB	6146.2	R23	.1048	R13	-.9937	LSA	2410.4	MSA	491.7	SSA	9.0
BDE	1.0290	BRA	3.4545	BC3	4.4747	FSP	4697	SG1	6080.3	SG2	897.1	THA	126.20	EL1	1688.7	EL2	425.5	ALF	121.21

LAUNCH DATE DEC 23 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 573.557 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	32.903	GAL	5.71	AZL	95.17	HCA	169.28	SMA	183.99	ECC	.22275	INC	5.1677
RP	220.56	LAP	-.96	LOP	260.53	VP	21.957	GAP	-5.89	AZP	84.92	TAL	32.25	TAP	201.53	RCA	143.00	APO	224.97
RC	270.009	GL	-35.75	GP	38.94	ZAL	48.10	ZAP	89.03	ETS	179.56	ZAE	114.17	ETE	156.20	ZAC	123.46	ETC	254.58

PLANETOCENTRIC CONIC

C3	25.480	VHL	5.048	DLA	-15.91	RAL	119.61	RAD	6568.0	VEL	12.118	PTH	2.17	VHP	4.030	DPA	40.42	RAP	190.48

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 37	1754.48	-6.40	14.15	343.58	117.64	15 48 51	1154.5	-2.65	7.47
90.00	23 2 46	5435.88	28.16	250.18	351.10	86.89	24 33 22	4835.9	27.43	241.59
100.00	16 32 8	1520.50	-7.67	356.26	342.89	118.98	16 57 28	920.5	-3.74	349.67
100.00	0 36 52	5145.09	29.59	228.69	350.99	85.59	2 2 37	4545.1	28.67	220.01
110.00	17 20 47	1368.10	-10.92	342.74	340.93	122.60	17 43 35	768.1	-6.54	336.38
110.00	2 4 43	4870.25	33.35	207.34	350.52	82.04	3 25 53	4270.3	31.89	198.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4304	TRA	-2.6380	TC3	-2.2555	BAU	1.5216	SGT	3888.2	SGR	5231.1	SG3	1256.9	ST	1056.4	SR	1721.7	SS	1803.3
RDE	1.2567	RRA	2.7030	RC3	3.8557	FAU	.30729	RRT	-.9584	RRF	-.9993	RTF	.9581	CRT	-.8791	CRS	.9991	CST	-.8589
FDE	-3.8824	FRA	-7.6307	FC	-10.4409	BSP	22140	SGB	6517.9	R23	.1003	R13	-.9943	LSA	2662.6	MSA	492.5	SSA	7.5
BDE	1.3283	BRA	3.7769	BC3	4.4670	FSP	4267	SG1	6455.6	SG2	899.2	THA	126.28	EL1	1971.5	EL2	439.7	ALF	119.99

LAUNCH DATE DEC 23 1964 FLIGHT TIME 268.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 577.635 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.904 GAL 5.67 AZL 95.94 HCA 170.39 SMA 184.01 ECC .22250 INC 5.9430 V1 30.278
RP 220.18 LAP -.99 LOP 261.65 VP 22.005 GAP -6.10 AZP 84.14 TAL 32.03 TAP 202.42 RCA 143.06 APO 224.95 V2 24.965
RC 271.430 GL -39.90 GP 41.66 ZAL 50.71 ZAP 87.78 ETS 180.73 ZAE 111.77 ETE 156.64 ZAC 125.98 ETC 254.17 CLP 87.03

PLANETOCENTRIC CONIC

C3 27.931 VHL 5.285 DLA -19.89 RAL 118.33 RAD 6568.1 VEL 12.219 PTH 2.20 VHP 4.253 DPA 42.96 RAP 191.93 ECC 1.4597

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 55 23	1622.63	-2.19	6.75	344.59	118.24	16 22 26	1022.6	1.60	.12
90.00	22 16 48	5613.30	28.13	263.15	353.29	93.38	23 50 22	5013.3	28.30	254.49
100.00	17 4 3	1401.02	-3.68	349.63	343.77	119.69	17 27 24	801.0	.30	343.11
100.00	23 50 49	5310.14	29.83	240.94	353.38	92.02	25 19 19	4710.1	29.79	232.13
110.00	17 45 6	1272.39	-7.36	337.61	341.50	123.48	18 6 19	672.4	-2.91	331.35
110.00	1 30 12	5011.54	34.15	218.28	353.40	88.46	2 53 43	4411.5	33.56	209.09

DIFFERENTIAL CORRECTIONS
TDE -.5974 TRA-2.8661 TC3-2.2369 BAU 1.6328
RDE 1.5963 RRA 3.0188 RC3 3.7573 FAU .27390
FDE-4.0287 FRA-7.1045 FC3-8.4898 BSP 23372
BDE 1.7044 BRA 4.1626 BC3 4.3728 FSP 3752

MID-COURSE EXECUTION ACCURACY
SGT 4114.5 SGR 5557.1 SG3 1115.5
RRT -.9627 RRF -.9994 RTF .9622
SGB 6914.5 R23 .0958 R13 -.9948
SG1 6855.4 SG2 902.3 THA 126.21

ORBIT DETERMINATION ACCURACY
ST 1186.3 SR 2024.7 SS 1844.0
CRT -.9012 CRS .9995 CST -.8875
LSA 2943.3 NSA 493.8 SSA 6.2
EL1 2302.6 EL2 452.2 ALF 119.06

LAUNCH DATE DEC 23 1964 FLIGHT TIME 270.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 581.719 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.905 GAL 5.62 AZL 96.92 HCA 171.50 SMA 184.03 ECC .22225 INC 6.9220 V1 30.278
RP 219.81 LAP -1.02 LOP 262.77 VP 22.054 GAP -6.30 AZP 83.15 TAL 31.79 TAP 203.29 RCA 143.13 APO 224.93 V2 25.006
RC 272.833 GL -44.61 GP 44.66 ZAL 53.77 ZAP 86.72 ETS 181.96 ZAE 109.39 ETE 157.05 ZAC 128.78 ETC 253.61 CLP 85.38

PLANETOCENTRIC CONIC

C3 31.578 VHL 5.619 DLA -24.37 RAL 116.69 RAD 6568.3 VEL 12.367 PTH 2.23 VHP 4.551 DPA 45.64 RAP 193.85 ECC 1.5197

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 42	1438.97	3.73	356.49	346.94	118.09	17 12 41	839.0	7.46	349.80
90.00	21 10 22	5858.45	25.89	280.71	355.21	101.88	22 48 1	5258.4	27.27	272.31
100.00	17 49 16	1243.49	1.66	340.98	345.79	119.85	18 9 59	643.5	5.62	334.43
100.00	22 52 30	5529.16	28.22	256.99	355.72	100.30	24 24 39	4929.2	29.35	248.37
110.00	18 16 58	1156.61	-2.97	331.51	342.90	124.07	18 36 14	556.6	1.52	325.31
110.00	0 45 13	5188.81	33.62	232.08	356.66	96.60	2 11 42	4588.8	34.16	222.88

DIFFERENTIAL CORRECTIONS
TDE -.7889 TRA-3.1276 TC3-2.1425 BAU 1.7538
RDE 2.0152 RRA 3.4056 RC3 3.5592 FAU .23626
FDE-4.0394 FRA-6.4544 FC3-6.4773 BSP 24720
BDE 2.1641 BRA 4.6239 BC3 4.1543 FSP 3196

MID-COURSE EXECUTION ACCURACY
SGT 4324.4 SGR 5895.3 SG3 954.9
RRT -.9661 RRF -.9995 RTF .9652
SGB 7311.3 R23 .0918 R13 -.9953
SG1 7254.8 SG2 907.1 THA 125.97

ORBIT DETERMINATION ACCURACY
ST 1324.8 SR 2354.6 SS 1831.9
CRT -.9176 CRS .9997 CST -.9080
LSA 3226.0 NSA 498.1 SSA 5.2
EL1 2661.2 EL2 465.9 ALF 118.25

LAUNCH DATE DEC 23 1964 FLIGHT TIME 272.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 585.807 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.907 GAL 5.58 AZL 98.20 HCA 172.61 SMA 184.06 ECC .22203 INC 8.1972 V1 30.278
RP 219.44 LAP -1.05 LOP 263.89 VP 22.103 GAP -6.50 AZP 81.87 TAL 31.55 TAP 204.15 RCA 143.19 APO 224.92 V2 25.047
RC 274.220 GL -49.93 GP 47.93 ZAL 57.32 ZAP 85.89 ETS 183.21 ZAE 107.07 ETE 157.43 ZAC 131.85 ETC 252.87 CLP 83.85

PLANETOCENTRIC CONIC

C3 37.236 VHL 6.102 DLA -29.36 RAL 114.52 RAD 6568.5 VEL 12.594 PTH 2.28 VHP 4.961 DPA 48.44 RAP 196.36 ECC 1.6128

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.92	17 44 19	1261.29	16.16	349.83	353.48	114.84	18 5 21	661.3	19.38	342.55
98.08	19 57 25	831.24	16.18	318.27	353.49	114.83	20 11 16	231.2	19.39	310.99
100.00	19 24 38	936.29	11.81	323.83	351.27	117.66	19 40 15	336.3	15.42	316.90
100.00	20 59 47	631.48	20.63	305.51	355.52	112.12	21 10 18	31.5	23.45	297.85
110.00	19 4 28	999.86	3.02	323.33	345.98	124.07	19 21 7	399.9	7.47	317.07
110.00	23 36 27	5428.72	30.29	249.95	359.28	106.66	25 6 56	4828.7	32.27	241.29

DIFFERENTIAL CORRECTIONS
TDE-1.0008 TRA-3.4373 TC3-1.9665 BAU 1.8910
RDE 2.5334 RRA 3.8967 RC3 3.2500 FAU .19497
FDE-3.8630 FRA-5.6665 FC3-4.5330 BSP 26153
BDE 2.7240 BRA 5.1961 BC3 3.7987 FSP 2596

MID-COURSE EXECUTION ACCURACY
SGT 4511.6 SGR 6246.1 SG3 777.7
RRT -.9687 RRF -.9995 RTF .9675
SGB 7705.0 R23 .0883 R13 -.9956
SG1 7650.7 SG2 913.6 THA 125.57

ORBIT DETERMINATION ACCURACY
ST 1456.8 SR 2694.2 SS 1743.0
CRT -.9281 CRS .9998 CST -.9208
LSA 3487.4 NSA 506.8 SSA 4.2
EL1 3024.5 EL2 483.0 ALF 117.41

LAUNCH DATE DEC 23 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 648.831 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.966 GAL 4.53 AZL 81.67 HCA 190.10 SMA 185.05 ECC .21894 INC 8.3342 V1 30.278
RP 214.24 LAP -1.46 LOP 281.20 VP 22.842 GAP -8.84 AZP 98.21 TAL 25.66 TAP 215.76 RCA 144.53 APO 225.56 V2 25.626
RC 292.998 GL 53.65 GP -37.81 ZAL 62.85 ZAP 68.28 ETS 161.07 ZAE 91.23 ETE 179.58 ZAC 47.36 ETC 253.68 CLP 62.07

PLANETOCENTRIC CONIC

C3 34.977 VHL 5.914 DLA 66.53 RAL 166.83 RAD 6568.4 VEL 12.504 PTH 2.26 VHP 4.529 DPA -26.44 RAP 149.49 ECC 1.5756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
10.60	9 13 9	4256.62	-56.17	242.42	130.44	16.92	10 24 6	3656.6	-63.73	237.59
10.60	0 12 19	4892.32	-13.87	251.62	6.72	9.60	1 33 51	4292.3	-21.75	250.61
20.60	7 47 55	4332.63	-47.61	230.34	97.31	27.35	9 0 8	3732.6	-54.56	224.42
20.60	2 17 44	4781.17	-19.38	242.79	28.86	19.17	3 37 25	4181.2	-26.91	240.27
26.90	5 16 31	4538.99	-32.36	230.99	60.87	28.13	6 32 10	3939.0	-39.32	226.54
153.10	15 26 30	2809.96	-32.35	85.28	60.85	28.13	16 13 20	2210.0	-39.32	80.83

DIFFERENTIAL CORRECTIONS
TDE 7.2634 TRA -.4254 TC3-3.9419 BAU 2.1661
RDE 3.4477 RRA .1208 RC3-2.4329 FAU .24347
FDE 7.4979 FRA .3304 FC3-6.0263 BSP 32354
BDE 8.0401 BRA .4422 BC3 4.6323 FSP 3192

MID-COURSE EXECUTION ACCURACY
SGT 8504.5 SGR 4418.6 SG3 882.0
RRT .9744 RRF .9978 RTF .9620
SGB 9583.8 R23 .2232 R13 .9736
SG1 9542.9 SG2 884.6 THA 27.10

ORBIT DETERMINATION ACCURACY
ST 7044.9 SR 3342.4 SS 2845.2
CRT .9975 CRS-1.0000 CST -.9970
LSA 8295.9 NSA 274.8 SSA 6.2
EL1 7794.7 EL2 213.4 ALF 25.35

LAUNCH DATE DEC 23 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 653.062 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.971 GAL 4.45 AZL 82.41 HCA 191.27 SMA 185.14 ECC .21884 INC 7.5897 V1 30.278
RP 213.93 LAP -1.48 LOP 282.38 VP 22.890 GAP -8.97 AZP 97.45 TAL 25.19 TAP 216.47 RCA 144.63 APO 225.66 V2 25.662
RC 294.131 GL 51.01 GP -34.81 ZAL 61.65 ZAP 66.24 ETS 161.29 ZAE 89.81 ETE 178.59 ZAC 50.19 ETC 254.43 CLP 60.61

PLANETOCENTRIC CONIC

C3 31.203 VHL 5.586 DLA 63.96 RAL 164.36 RAD 6568.2 VEL 12.352 PTH 2.23 VHP 4.370 DPA -23.64 RAP 150.70 ECC 1.5135

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
29.91	5 13 34	4499.57	-33.30	226.68	55.66	31.68	6 28 34	3899.6	-39.99	221.63
150.09	15 9 46	2791.83	-33.29	84.35	55.64	31.67	15 56 17	2191.8	-39.98	79.29
29.91	5 13 34	4499.57	-33.30	226.68	55.66	31.68	6 28 34	3899.6	-39.99	221.63
150.09	15 9 46	2791.83	-33.29	84.35	55.64	31.67	15 56 17	2191.8	-39.98	79.29
29.91	5 13 34	4499.57	-33.30	226.68	55.66	31.68	6 28 34	3899.6	-39.99	221.63
150.09	15 9 46	2791.83	-33.29	84.35	55.64	31.67	15 56 17	2191.8	-39.98	79.29

DIFFERENTIAL CORRECTIONS
TDE 6.8239 TRA -.5817 TC3-4.4592 BAU 2.1213
RDE 2.9507 RRA .0605 RC3-2.4443 FAU .25913
FDE 7.5869 FRA .2124 FC3-7.1898 BSP 32837
BDE 7.4345 BRA .5849 BC3 5.0852 FSP 3541

MID-COURSE EXECUTION ACCURACY
SGT 8698.1 SGR 4078.8 SG3 967.2
RRT .9751 RRF .9977 RTF .9634
SGB 9607.0 R23 .2246 R13 .9730
SG1 9571.8 SG2 821.6 THA 24.77

ORBIT DETERMINATION ACCURACY
ST 7012.8 SR 3028.0 SS 2940.1
CRT .9974 CRS-1.0000 CST -.9970
LSA 8180.4 MSA 271.6 SSA 7.2
EL1 7636.0 EL2 201.2 ALF 23.32

LAUNCH DATE DEC 23 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 657.308 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.977 GAL 4.36 AZL 83.02 HCA 192.45 SMA 185.24 ECC .21875 INC 6.9829 V1 30.278
RP 213.62 LAP -1.50 LOP 283.57 VP 22.937 GAP -9.09 AZP 96.82 TAL 24.71 TAP 217.17 RCA 144.72 APO 225.77 V2 25.697
RC 295.251 GL 48.68 GP -32.13 ZAL 60.70 ZAP 64.32 ETS 161.57 ZAE 88.37 ETE 177.78 ZAC 52.75 ETC 255.01 CLP 59.23

PLANETOCENTRIC CONIC

C3 28.333 VHL 5.323 DLA 61.64 RAL 162.66 RAD 6568.1 VEL 12.236 PTH 2.20 VHP 4.260 DPA -21.14 RAP 151.77 ECC 1.4663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
32.66	5 13 23	4464.31	-33.88	222.64	51.42	34.90	6 27 47	3864.3	-40.30	217.07
147.34	14 56 24	2778.76	-33.87	83.52	51.41	34.90	15 42 43	2178.8	-40.29	77.94
32.66	5 13 23	4464.31	-33.88	222.64	51.42	34.90	6 27 47	3864.3	-40.30	217.07
147.34	14 56 24	2778.76	-33.87	83.52	51.41	34.90	15 42 43	2178.8	-40.29	77.94
32.66	5 13 23	4464.31	-33.88	222.64	51.42	34.90	6 27 47	3864.3	-40.30	217.07
147.34	14 56 24	2778.76	-33.87	83.52	51.41	34.90	15 42 43	2178.8	-40.29	77.94

DIFFERENTIAL CORRECTIONS
TDE 6.4517 TRA -.7186 TC3-4.9840 BAU 2.1023
RDE 2.5355 RRA .0107 RC3-2.4423 FAU .27229
FDE 7.4831 FRA .0690 FC3-8.3201 BSP 32918
BDE 6.9321 BRA .7186 BC3 5.5502 FSP 3728

MID-COURSE EXECUTION ACCURACY
SGT 8890.0 SGR 3769.5 SG3 1034.5
RRT .9761 RRF .9974 RTF .9646
SGB 9656.1 R23 .2252 R13 .9725
SG1 9626.4 SG2 756.9 THA 22.63

ORBIT DETERMINATION ACCURACY
ST 6963.7 SR 2730.3 SS 2966.2
CRT .9973 CRS-1.0000 CST -.9971
LSA 8042.2 MSA 261.8 SSA 8.1
EL1 7477.5 EL2 185.7 ALF 21.37

LAUNCH DATE DEC 23 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 661.562 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.983 GAL 4.28 AZL 83.52 HCA 193.64 SMA 185.35 ECC .21867 INC 6.4780 V1 30.278
RP 213.31 LAP -1.52 LOP 284.76 VP 22.985 GAP -9.21 AZP 96.30 TAL 24.22 TAP 217.86 RCA 144.82 APO 225.88 V2 25.731
RC 296.356 GL 46.61 GP -29.73 ZAL 59.96 ZAP 62.53 ETS 161.90 ZAE 86.92 ETE 177.11 ZAC 55.05 ETC 255.47 CLP 57.92

PLANETOCENTRIC CONIC

C3 26.080 VHL 5.107 DLA 59.52 RAL 161.50 RAD 6568.1 VEL 12.143 PTH 2.18 VHP 4.185 DPA -18.92 RAP 152.73 ECC 1.4292

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.18	5 14 58	4432.32	-34.20	218.89	47.94	37.82	6 28 50	3832.3	-40.36	212.88
144.82	14 45 27	2769.55	-34.19	82.81	47.92	37.82	15 31 37	2169.6	-40.35	76.80
35.18	5 14 58	4432.32	-34.20	218.89	47.94	37.82	6 28 50	3832.3	-40.36	212.88
144.82	14 45 27	2769.55	-34.19	82.81	47.92	37.82	15 31 37	2169.6	-40.35	76.80
35.18	5 14 58	4432.32	-34.20	218.89	47.94	37.82	6 28 50	3832.3	-40.36	212.88
144.82	14 45 27	2769.55	-34.19	82.81	47.92	37.82	15 31 37	2169.6	-40.35	76.80

DIFFERENTIAL CORRECTIONS
TDE 6.1416 TRA -.8316 TC3-5.5048 BAU 2.0957
RDE 2.1985 RRA -.0191 RC3-2.4132 FAU .28132
FDE 7.2847 FRA -.0451 FC3-9.3385 BSP 33030
BDE 6.5232 BRA .8318 BC3 6.0105 FSP 3862

MID-COURSE EXECUTION ACCURACY
SGT 9081.6 SGR 3487.3 SG3 1085.3
RRT .9767 RRF .9970 RTF .9654
SGB 9728.1 R23 .2258 R13 .9719
SG1 9702.8 SG2 700.5 THA 20.67

ORBIT DETERMINATION ACCURACY
ST 6914.6 SR 2467.7 SS 2956.7
CRT .9972 CRS-1.0000 CST -.9970
LSA 7910.7 MSA 256.0 SSA 9.2
EL1 7339.7 EL2 174.1 ALF 19.60

LAUNCH DATE DEC 23 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 665.825 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.989 GAL 4.19 AZL 83.95 HCA 194.83 SMA 185.45 ECC .21860 INC 6.0515 V1 30.278
RP 213.01 LAP -1.55 LOP 285.95 VP 23.031 GAP -9.33 AZP 95.85 TAL 23.71 TAP 218.54 RCA 144.91 APO 225.99 V2 25.765
RC 297.448 GL 44.76 GP -27.60 ZAL 59.42 ZAP 60.85 ETS 162.24 ZAE 85.47 ETE 176.56 ZAC 57.12 ETC 255.83 CLP 56.66

PLANETOCENTRIC CONIC

C3 24.263 VHL 4.926 DLA 57.59 RAL 160.72 RAD 6568.0 VEL 12.068 PTH 2.16 VHP 4.135 DPA -16.96 RAP 153.61 ECC 1.3993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.50	5 17 57	4402.92	-34.34	215.36	45.03	40.47	6 31 20	3802.9	-40.24	208.99
142.50	14 36 19	2763.36	-34.33	82.23	45.02	40.46	15 22 22	2163.4	-40.23	75.85
37.50	5 17 57	4402.92	-34.34	215.36	45.03	40.47	6 31 20	3802.9	-40.24	208.99
142.50	14 36 19	2763.36	-34.33	82.23	45.02	40.46	15 22 22	2163.4	-40.23	75.85
37.50	5 17 57	4402.92	-34.34	215.36	45.03	40.47	6 31 20	3802.9	-40.24	208.99
142.50	14 36 19	2763.36	-34.33	82.23	45.02	40.46	15 22 22	2163.4	-40.23	75.85

DIFFERENTIAL CORRECTIONS
TDE 5.8871 TRA -.9176 TC3-6.0097 BAU 2.0946
RDE 1.9236 RRA -.0339 RC3-2.3625 FAU .28670
FDE 7.0294 FRA -.1264 FC-10.2299 BSP 33335
BDE 6.1934 BRA .9182 BC3 6.4574 FSP 3957

MID-COURSE EXECUTION ACCURACY
SGT 9268.8 SGR 3229.3 SG3 1121.5
RRT .9771 RRF .9965 RTF .9658
SGB 9815.2 R23 .2260 R13 .9712
SG1 9793.7 SG2 649.8 THA 18.89

ORBIT DETERMINATION ACCURACY
ST 6876.1 SR 2238.6 SS 2923.4
CRT .9970 CRS-1.0000 CST -.9970
LSA 7795.8 MSA 251.5 SSA 10.2
EL1 7229.5 EL2 164.5 ALF 17.99

LAUNCH DATE DEC 23 1964 FLIGHT TIME 312.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 670.096 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 32.996 GAL 4.10 AZL 84.31 HCA 196.02 SMA 185.56 ECC .21854 INC 5.6860 V1 30.278
RP 212.72 LAP -1.57 LOP 287.15 VP 23.078 GAP -9.44 AZP 95.47 TAL 23.19 TAP 219.21 RCA 145.01 APO 226.11 V2 25.798
RC 298.526 GL 43.11 GP -25.68 ZAL 59.04 ZAP 59.28 ETS 162.59 ZAE 84.04 ETE 176.11 ZAC 58.98 ETC 256.11 CLP 55.46

PLANETOCENTRIC CONIC

C3 22.764 VHL 4.771 DLA 55.82 RAL 160.23 RAD 6567.9 VEL 12.006 PTH 2.14 VHP 4.105 DPA -15.21 RAP 154.42 ECC 1.3746

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.65	5 21 50	4375.57	-34.34	212.08	42.61	42.86	6 34 45	3775.6	-40.00	205.40
140.35	14 28 33	2759.54	-34.32	81.77	42.60	42.86	15 14 33	2159.5	-39.99	75.09
39.65	5 21 50	4375.57	-34.34	212.08	42.61	42.86	6 34 45	3775.6	-40.00	205.40
140.35	14 28 33	2759.54	-34.32	81.77	42.60	42.86	15 14 33	2159.5	-39.99	75.09
39.65	5 21 50	4375.57	-34.34	212.08	42.61	42.86	6 34 45	3775.6	-40.00	205.40
140.35	14 28 33	2759.54	-34.32	81.77	42.60	42.86	15 14 33	2159.5	-39.99	75.09

DIFFERENTIAL CORRECTIONS
TDE 5.6713 TRA -.9855 TC3-6.5079 BAU 2.1005
RDE 1.6967 RRA -.0392 RC3-2.2981 FAU .28927
FDE 6.7401 FRA -.1791 FC-11.0012 BSP 33693
BDE 5.9196 BRA .9863 BC3 6.9018 FSP 4016

MID-COURSE EXECUTION ACCURACY
SGT 9454.4 SGR 2994.6 SG3 1145.8
RRT .9774 RRF .9958 RTF .9661
SGB 9917.3 R23 .2255 R13 .9705
SG1 9898.9 SG2 605.0 THA 17.27

ORBIT DETERMINATION ACCURACY
ST 6842.3 SR 2038.8 SS 2873.3
CRT .9968 CRS-1.0000 CST -.9969
LSA 7692.0 MSA 248.9 SSA 11.3
EL1 7137.8 EL2 156.8 ALF 16.55

LAUNCH DATE DEC 23 1964 FLIGHT TIME 314.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 674.376 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.002 GAL 4.01 AZL 84.63 HCA 197.21 SMA 185.67 ECC .21849 INC 5.3693 V1 30.278
RP 212.43 LAP -1.59 LOP 288.35 VP 23.124 GAP -9.55 AZP 95.13 TAL 22.65 TAP 219.87 RCA 145.10 APO 226.24 V2 25.831
RC 299.592 GL 41.63 GP -23.97 ZAL 58.80 ZAP 57.79 ETS 162.94 ZAE 82.63 ETE 175.74 ZAC 60.66 ETC 256.34 CLP 54.31

PLANETOCENTRIC CONIC

C3 21.503 VHL 4.637 DLA 54.20 RAL 159.97 RAD 6567.9 VEL 11.953 PTH 2.13 VHP 4.090 DPA -13.66 RAP 155.17 ECC 1.3539

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.65	5 26 26	4349.83	-34.24	209.01	40.59	45.04	6 38 56	3749.8	-39.67	202.08
138.35	14 21 52	2757.68	-34.22	81.43	40.57	45.03	15 7 49	2157.7	-39.66	74.49
41.65	5 26 26	4349.83	-34.24	209.01	40.59	45.04	6 38 56	3749.8	-39.67	202.08
138.35	14 21 52	2757.68	-34.22	81.43	40.57	45.03	15 7 49	2157.7	-39.66	74.49
41.65	5 26 26	4349.83	-34.24	209.01	40.59	45.04	6 38 56	3749.8	-39.67	202.08
138.35	14 21 52	2757.68	-34.22	81.43	40.57	45.03	15 7 49	2157.7	-39.66	74.49

DIFFERENTIAL CORRECTIONS
TDE 5.4910 TRA-1.0322 TC3-6.9099 BAU 2.1086
RDE 1.5082 RRA -.0371 RC3-2.2231 FAU .28939
FDE 6.4335 FRA -.2026 FC-11.6515 BSP 34221
BDE 5.6943 BRA 1.0328 BC3 7.3349 FSP 4054

MID-COURSE EXECUTION ACCURACY
SGT 9633.6 SGR 2780.2 SG3 1159.6
RRT .9774 RRF .9949 RTF .9661
SGB10026.8 R23 .2243 R13 .9698
SG110010.9 SG2 565.0 THA 15.80

ORBIT DETERMINATION ACCURACY
ST 6818.8 SR 1864.7 SS 2811.9
CRT .9965 CRS-1.0000 CST -.9967
LSA 7603.9 MSA 246.6 SSA 12.4
EL1 7067.6 EL2 150.2 ALF 15.25

LAUNCH DATE DEC 23 1964 FLIGHT TIME 316.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 678.663 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.009 GAL 3.91 AZL 84.91 HCA 198.41 SMA 185.79 ECC .21844 INC 5.0917 V1 30.278
RP 212.15 LAP -1.61 LOP 289.55 VP 23.169 GAP -9.66 AZP 94.83 TAL 22.11 TAP 220.52 RCA 145.20 APO 226.37 V2 25.863
RC 300.645 GL 40.30 GP -22.43 ZAL 58.70 ZAP 56.38 ETS 163.28 ZAE 81.24 ETE 175.43 ZAC 62.18 ETC 256.52 CLP 53.20

PLANETOCENTRIC CONIC

C3 20.423 VHL 4.519 DLA 52.69 RAL 159.89 RAD 6567.8 VEL 11.908 PTH 2.12 VHP 4.087 DPA -12.28 RAP 155.89 ECC 1.3361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.52	5 31 36	4325.44	-34.06	206.12	38.89	47.03	6 43 42	3725.4	-39.29	198.98
136.48	14 16 4	2757.33	-34.05	81.18	38.88	47.02	15 2 1	2157.3	-39.28	74.04
43.52	5 31 36	4325.44	-34.06	206.12	38.89	47.03	6 43 42	3725.4	-39.29	198.98
136.48	14 16 4	2757.33	-34.05	81.18	38.88	47.02	15 2 1	2157.3	-39.28	74.04
43.52	5 31 36	4325.44	-34.06	206.12	38.89	47.03	6 43 42	3725.4	-39.29	198.98
136.48	14 16 4	2757.33	-34.05	81.18	38.88	47.02	15 2 1	2157.3	-39.28	74.04

DIFFERENTIAL CORRECTIONS
TDE 5.3282 TRA-1.0715 TC3-7.4785 BAU 2.1243
RDE 1.3486 RRA -.0325 RC3-2.1462 FAU .28815
FDE 6.1137 FRA -.2124 FC-12.2149 BSP 34621
BDE 5.4962 BRA 1.0720 BC3 7.7804 FSP 4049

MID-COURSE EXECUTION ACCURACY
SGT 9815.6 SGR 2586.7 SG3 1166.1
RRT .9773 RRF .9939 RTF .9661
SGB10150.7 R23 .2219 R13 .9691
SG110136.8 SG2 530.2 THA 14.48

ORBIT DETERMINATION ACCURACY
ST 6791.8 SR 1711.0 SS 2740.1
CRT .9962 CRS -.9999 CST -.9966
LSA 7516.8 MSA 245.2 SSA 13.4
EL1 7002.5 EL2 144.8 ALF 14.09

LAUNCH DATE DEC 23 1964 FLIGHT TIME 318.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 682.957 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.015 GAL 3.81 AZL 85.15 HCA 199.62 SMA 185.90 ECC .21841 INC 4.8466 V1 30.278
RP 211.87 LAP -1.63 LOP 290.76 VP 23.214 GAP -9.76 AZP 94.57 TAL 21.54 TAP 221.16 RCA 145.30 APO 226.50 V2 25.895
RC 301.687 GL 39.09 GP -21.04 ZAL 58.72 ZAP 55.04 ETS 163.61 ZAE 79.88 ETE 175.17 ZAC 63.56 ETC 256.67 CLP 52.12

PLANETOCENTRIC CONIC

C3 19.484 VHL 4.414 DLA 51.28 RAL 159.96 RAD 6567.8 VEL 11.869 PTH 2.11 VHP 4.093 DPA -11.06 RAP 156.57 ECC 1.3207

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.28	5 37 16	4302.06	-33.83	203.39	37.47	48.85	6 48 58	3702.1	-38.86	196.07
134.72	14 10 59	2758.32	-33.82	81.04	37.46	48.84	14 56 57	2158.3	-38.85	73.73
45.28	5 37 16	4302.06	-33.83	203.39	37.47	48.85	6 48 58	3702.1	-38.86	196.07
134.72	14 10 59	2758.32	-33.82	81.04	37.46	48.84	14 56 57	2158.3	-38.85	73.73
45.28	5 37 16	4302.06	-33.83	203.39	37.47	48.85	6 48 58	3702.1	-38.86	196.07
134.72	14 10 59	2758.32	-33.82	81.04	37.46	48.84	14 56 57	2158.3	-38.85	73.73

DIFFERENTIAL CORRECTIONS
TDE 5.1905 TRA-1.0940 TC3-7.9514 BAU 2.1397
RDE 1.2146 RRA -.0230 RC3-2.0628 FAU .28504
FDE 5.7995 FRA -.1986 FC-12.6654 BSP 35180
BDE 5.3307 BRA 1.0943 BC3 8.2146 FSP 4038

MID-COURSE EXECUTION ACCURACY
SGT 9991.1 SGR 2409.3 SG3 1165.1
RRT .9770 RRF .9926 RTF .9659
SGB10277.5 R23 .2184 R13 .9685
SG110265.3 SG2 499.7 THA 13.29

ORBIT DETERMINATION ACCURACY
ST 6775.1 SR 1577.7 SS 2665.3
CRT .9958 CRS -.9999 CST -.9964
LSA 7445.5 MSA 244.3 SSA 14.5
EL1 6954.9 EL2 140.2 ALF 13.06

LAUNCH DATE DEC 23 1964 FLIGHT TIME 320.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 687.259 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.022 GAL 3.71 AZL 85.37 HCA 200.83 SMA 186.02 ECC .21839 INC 4.6280 V1 30.278
RP 211.60 LAP -1.64 LOP 291.97 VP 23.258 GAP -9.86 AZP 94.33 TAL 20.97 TAP 221.79 RCA 145.39 APO 226.64 V2 25.926
RC 302.717 GL 37.99 GP -19.78 ZAL 58.83 ZAP 53.76 ETS 163.93 ZAE 78.54 ETE 174.97 ZAC 64.82 ETC 256.79 CLP 51.08

PLANETOCENTRIC CONIC

C3 18.657 VHL 4.319 DLA 49.96 RAL 160.16 RAD 6567.8 VEL 11.834 PTH 2.10 VHP 4.107 DPA -9.97 RAP 157.23 ECC 1.3070

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.95	5 43 20	4279.48	-33.56	200.78	36.30	50.53	6 54 40	3679.5	-38.40	193.32
133.05	14 6 29	2760.44	-33.55	80.98	36.29	50.52	14 52 30	2160.4	-38.39	73.52
46.95	5 43 20	4279.48	-33.56	200.78	36.30	50.53	6 54 40	3679.5	-38.40	193.32
133.05	14 6 29	2760.44	-33.55	80.98	36.29	50.52	14 52 30	2160.4	-38.39	73.52
46.95	5 43 20	4279.48	-33.56	200.78	36.30	50.53	6 54 40	3679.5	-38.40	193.32
133.05	14 6 29	2760.44	-33.55	80.98	36.29	50.52	14 52 30	2160.4	-38.39	73.52

DIFFERENTIAL CORRECTIONS
TDE 5.0621 TRA-1.1102 TC3-8.4322 BAU 2.1605
RDE 1.0992 RRA -.0145 RC3-1.9814 FAU .28122
FDE 5.4827 FRA -.1752 FC-13.0493 BSP 35628
BDE 5.1801 BRA 1.1103 BC3 8.6619 FSP 3996

MID-COURSE EXECUTION ACCURACY
SGT10168.2 SGR 2248.7 SG3 1159.5
RRT .9765 RRF .9911 RTF .9657
SGB10413.8 R23 .2138 R13 .9679
SG110403.1 SG2 473.8 THA 12.21

ORBIT DETERMINATION ACCURACY
ST 6753.4 SR 1459.0 SS 2583.7
CRT .9954 CRS -.9999 CST -.9961
LSA 7372.4 MSA 243.9 SSA 15.6
EL1 6907.8 EL2 136.4 ALF 12.14

LAUNCH DATE DEC 23 1964 FLIGHT TIME 322.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 691.568 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.029 GAL 3.61 AZL 85.57 HCA 202.04 SMA 186.14 ECC .21839 INC 4.4320 V1 30.278
RP 211.33 LAP -1.66 LOP 293.18 VP 23.302 GAP -9.96 AZP 94.11 TAL 20.38 TAP 222.42 RCA 145.49 APO 226.79 V2 25.956
RC 303.736 GL 36.99 GP -18.64 ZAL 59.05 ZAP 52.55 ETS 164.24 ZAE 77.22 ETE 174.79 ZAC 65.98 ETC 256.88 CLP 50.08

PLANETOCENTRIC CONIC

C3 17.921 VHL 4.233 DLA 48.72 RAL 160.47 RAD 6567.7 VEL 11.803 PTH 2.09 VHP 4.127 DPA -9.00 RAP 157.87 ECC 1.2949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.54	5 49 48	4257.51	-33.26	198.29	35.33	52.09	7 0 45	3657.5	-37.92	190.70
131.46	14 2 29	2763.59	-33.25	81.01	35.32	52.08	14 48 33	2163.6	-37.91	73.43
48.54	5 49 48	4257.51	-33.26	198.29	35.33	52.09	7 0 45	3657.5	-37.92	190.70
131.46	14 2 29	2763.59	-33.25	81.01	35.32	52.08	14 48 33	2163.6	-37.91	73.43
48.54	5 49 48	4257.51	-33.26	198.29	35.33	52.09	7 0 45	3657.5	-37.92	190.70
131.46	14 2 29	2763.59	-33.25	81.01	35.32	52.08	14 48 33	2163.6	-37.91	73.43

DIFFERENTIAL CORRECTIONS
TDE 4.9492 TRA-1.1130 TC3-8.9045 BAU 2.1813
RDE 1.0007 RRA -.0035 RC3-1.8982 FAU .27628
FDE 5.1774 FRA -.1365 FC-13.3468 BSP 36144
BDE 5.0493 BRA 1.1139 BC3 9.1045 FSP 3946

MID-COURSE EXECUTION ACCURACY
SGT10340.7 SGR 2101.7 SG3 1149.1
RRT .9757 RRF .9893 RTF .9654
SGB10552.1 R23 .2079 R13 .9672
SG110542.4 SG2 451.7 THA 11.24

ORBIT DETERMINATION ACCURACY
ST 6737.3 SR 1355.2 SS 2501.7
CRT .9950 CRS -.9999 CST -.9959
LSA 7309.3 MSA 243.9 SSA 16.6
EL1 6870.9 EL2 133.1 ALF 11.32

LAUNCH DATE DEC 23 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 695.884 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.036 GAL 3.51 AZL 85.75 HCA 203.25 SMA 186.26 ECC .21839 INC 4.2549 V1 30.278
RP 211.08 LAP -1.68 LOP 294.40 VP 23.345 GAP -10.06 AZP 93.91 TAL 19.78 TAP 223.03 RCA 145.58 APO 226.94 V2 25.986
RC 304.746 GL 36.08 GP -17.61 ZAL 59.35 ZAP 51.39 ETS 164.53 ZAE 75.94 ETE 174.65 ZAC 67.04 ETC 256.95 CLP 49.10

PLANETOCENTRIC CONIC

C3 17.259 VHL 4.154 DLA 47.55 RAL 160.87 RAD 6567.7 VEL 11.775 PTH 2.08 VHP 4.152 DPA -8.14 RAP 158.50 ECC 1.2840

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.06	5 56 36	4235.97	-32.93	195.89	34.55	53.53	7 7 12	3636.0	-37.43	188.20
129.94	13 58 53	2767.64	-32.92	81.11	34.54	53.52	14 45 1	2167.6	-37.42	73.43
50.06	5 56 36	4235.97	-32.93	195.89	34.55	53.53	7 7 12	3636.0	-37.43	188.20
129.94	13 58 53	2767.64	-32.92	81.11	34.54	53.52	14 45 1	2167.6	-37.42	73.43
50.06	5 56 36	4235.97	-32.93	195.89	34.55	53.53	7 7 12	3636.0	-37.43	188.20
129.94	13 58 53	2767.64	-32.92	81.11	34.54	53.52	14 45 1	2167.6	-37.42	73.43

DIFFERENTIAL CORRECTIONS
TDE 4.8445 TRA-1.1084 TC3-9.3772 BAU 2.2038
RDE .9151 RRA .0080 RC3-1.8163 FAU .27072
FDE 4.8787 FRA -.0880 FC-13.5802 BSP 36666
BDE 4.9302 BRA 1.1084 BC3 9.5514 FSP 3885

MID-COURSE EXECUTION ACCURACY
SGT10510.6 SGR 1967.4 SG3 1135.2
RRT .9746 RRF .9872 RTF .9651
SGB10693.1 R23 .2009 R13 .9666
SG110684.4 SG2 433.4 THA 10.36

ORBIT DETERMINATION ACCURACY
ST 6720.0 SR 1262.9 SS 2417.0
CRT .9945 CRS -.9998 CST -.9955
LSA 7248.1 MSA 244.1 SSA 17.7
EL1 6836.4 EL2 130.3 ALF 10.59

LAUNCH DATE DEC 23 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 700.207 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.044 GAL 3.40 AZL 85.91 HCA 204.47 SMA 186.39 ECC .21841 INC 4.0942 V1 30.278
RP 210.82 LAP -1.69 LOP 295.62 VP 23.388 GAP -10.15 AZP 93.73 TAL 19.17 TAP 223.63 RCA 145.68 APO 227.10 V2 26.015
RC 305.746 GL 35.24 GP -16.66 ZAL 59.74 ZAP 50.27 ETS 164.81 ZAE 74.68 ETE 174.54 ZAC 68.02 ETC 257.00 CLP 48.16

PLANETOCENTRIC CONIC

C3 16.658 VHL 4.081 DLA 46.43 RAL 161.36 RAD 6567.7 VEL 11.749 PTH 2.07 VHP 4.182 DPA -7.37 RAP 159.12 ECC 1.2741

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.53	6 3 45	4214.74	-32.58	193.56	33.92	54.89	7 14 0	3614.7	-36.92	185.79
128.47	13 55 38	2772.55	-32.57	81.28	33.91	54.88	14 41 50	2172.5	-36.91	73.51
51.53	6 3 45	4214.74	-32.58	193.56	33.92	54.89	7 14 0	3614.7	-36.92	185.79
128.47	13 55 38	2772.55	-32.57	81.28	33.91	54.88	14 41 50	2172.5	-36.91	73.51
51.53	6 3 45	4214.74	-32.58	193.56	33.92	54.89	7 14 0	3614.7	-36.92	185.79
128.47	13 55 38	2772.55	-32.57	81.28	33.91	54.88	14 41 50	2172.5	-36.91	73.51

DIFFERENTIAL CORRECTIONS
TDE 4.7488 TRA-1.0931 TC3-9.8470 BAU 2.2267
RDE .8410 RRA .0201 RC3-1.7356 FAU .26460
FDE 4.5922 FRA -.0299 FC-13.7521 BSP 37214
BDE 4.8227 BRA 1.0933 BC3 9.9988 FSP 3817

MID-COURSE EXECUTION ACCURACY
SGT10677.4 SGR 1844.6 SG3 1118.5
RRT .9731 RRF .9846 RTF .9647
SGB10835.6 R23 .1928 R13 .9660
SG110827.5 SG2 418.7 THA 9.56

ORBIT DETERMINATION ACCURACY
ST 6704.3 SR 1181.5 SS 2332.3
CRT .9939 CRS -.9998 CST -.9952
LSA 7191.8 MSA 244.7 SSA 18.7
EL1 6806.4 EL2 128.0 ALF 9.94

LAUNCH DATE DEC 23 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 704.536 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.051 GAL 3.29 AZL 86.05 HCA 205.69 SMA 186.51 ECC .21844 INC 3.9475 V1 30.278
RP 210.58 LAP -1.71 LOP 296.84 VP 23.429 GAP -10.24 AZP 93.56 TAL 18.54 TAP 224.23 RCA 145.77 APO 227.26 V2 26.043
RC 306.737 GL 34.47 GP -15.79 ZAL 60.20 ZAP 49.21 ETS 165.07 ZAE 73.44 ETE 174.45 ZAC 68.92 ETC 257.04 CLP 47.24

PLANETOCENTRIC CONIC

C3 16.108 VHL 4.014 DLA 45.35 RAL 161.92 RAD 6567.6 VEL 11.726 PTH 2.07 VHP 4.215 DPA -6.69 RAP 159.73 ECC 1.2651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.96	6 11 16	4193.61	-32.22	191.28	33.44	56.16	7 21 9	3593.6	-36.41	183.44
127.04	13 52 38	2778.35	-32.21	81.53	33.43	56.15	14 38 56	2178.4	-36.40	73.69
52.96	6 11 16	4193.61	-32.22	191.28	33.44	56.16	7 21 9	3593.6	-36.41	183.44
127.04	13 52 38	2778.35	-32.21	81.53	33.43	56.15	14 38 56	2178.4	-36.40	73.69
52.96	6 11 16	4193.61	-32.22	191.28	33.44	56.16	7 21 9	3593.6	-36.41	183.44
127.04	13 52 38	2778.35	-32.21	81.53	33.43	56.15	14 38 56	2178.4	-36.40	73.69

DIFFERENTIAL CORRECTIONS
TDE 4.6596 TRA-1.0694 TC-10.3155 BAU 2.2499
RDE .7763 RRA .0322 RC3-1.6563 FAU .25805
FDE 4.3171 FRA .0348 FC-13.8686 BSP 37758
BDE 4.7238 BRA 1.0698 BC310.4477 FSP 3741

MID-COURSE EXECUTION ACCURACY
SGT10841.2 SGR 1732.1 SG3 1099.4
RRT .9713 RRF .9816 RTF .9643
SGB10978.7 R23 .1838 R13 .9653
SG110971.1 SG2 407.2 THA 8.83

ORBIT DETERMINATION ACCURACY
ST 6688.4 SR 1109.1 SS 2247.6
CRT .9934 CRS -.9997 CST -.9948
LSA 7138.3 MSA 245.6 SSA 19.7
EL1 6778.6 EL2 125.9 ALF 9.36

LAUNCH DATE DEC 23 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 708.871 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.058 GAL 3.18 AZL 86.19 HCA 206.91 SMA 186.64 ECC .21849 INC 3.8129 V1 30.278
RP 210.34 LAP -1.72 LOP 298.06 VP 23.471 GAP -10.33 AZP 93.40 TAL 17.90 TAP 224.81 RCA 145.86 APO 227.42 V2 26.071
RC 307.719 GL 33.76 GP -15.00 ZAL 60.73 ZAP 48.18 ETS 165.32 ZAE 72.23 ETE 174.37 ZAC 69.77 ETC 257.07 CLP 46.34

PLANETOCENTRIC CONIC

C3 15.603 VHL 3.950 DLA 44.32 RAL 162.56 RAD 6567.6 VEL 11.704 PTH 2.06 VHP 4.251 DPA -6.09 RAP 160.34 ECC 1.2568

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.36	6 19 6	4172.52	-31.84	189.05	33.09	57.37	7 28 39	3572.5	-35.88	181.15
125.64	13 49 51	2785.00	-31.83	81.84	33.08	57.36	14 36 16	2185.0	-35.87	73.95
54.36	6 19 6	4172.52	-31.84	189.05	33.09	57.37	7 28 39	3572.5	-35.88	181.15
125.64	13 49 51	2785.00	-31.83	81.84	33.08	57.36	14 36 16	2185.0	-35.87	73.95
54.36	6 19 6	4172.52	-31.84	189.05	33.09	57.37	7 28 39	3572.5	-35.88	181.15
125.64	13 49 51	2785.00	-31.83	81.84	33.08	57.36	14 36 16	2185.0	-35.87	73.95

DIFFERENTIAL CORRECTIONS
TDE 4.5730 TRA-1.0394 TC-10.7928 BAU 2.2754
RDE .7190 RRA .0430 RC3-1.5812 FAU .25150
FDE 4.0498 FRA .1013 FC-13.9547 BSP 38271
BDE 4.6292 BRA 1.0404 BC310.9080 FSP 3658

MID-COURSE EXECUTION ACCURACY
SGT11006.4 SGR 1629.7 SG3 1079.4
RRT .9690 RRF .9781 RTF .9638
SGB11126.4 R23 .1740 R13 .9647
SG111119.3 SG2 398.5 THA 8.18

ORBIT DETERMINATION ACCURACY
ST 6668.1 SR 1043.9 SS 2161.1
CRT .9927 CRS -.9997 CST -.9943
LSA 7082.6 MSA 246.4 SSA 20.7
EL1 6748.2 EL2 124.0 ALF 8.84

LAUNCH DATE DEC 23 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 713.212 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.066 GAL 3.07 AZL 86.31 HCA 208.13 SMA 186.77 ECC .21855 INC 3.6889 V1 30.278
RP 210.10 LAP -1.74 LOP 299.29 VP 23.511 GAP -10.41 AZP 93.25 TAL 17.25 TAP 225.38 RCA 145.95 APO 227.59 V2 26.098
RC 308.691 GL 33.10 GP -14.27 ZAL 61.33 ZAP 47.19 ETS 165.56 ZAE 71.04 ETE 174.31 ZAC 70.55 ETC 257.08 CLP 45.48

PLANETOCENTRIC CONIC

C3 15.136 VHL 3.890 DLA 43.32 RAL 163.26 RAD 6567.6 VEL 11.684 PTH 2.05 VHP 4.290 DPA -5.56 RAP 160.95 ECC 1.2491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.73	6 27 19	4151.26	-31.44	186.84	32.85	58.51	7 36 30	3551.3	-35.35	178.90
124.27	13 47 13	2792.57	-31.43	82.24	32.84	58.50	14 33 46	2192.6	-35.34	74.29
55.73	6 27 19	4151.26	-31.44	186.84	32.85	58.51	7 36 30	3551.3	-35.35	178.90
124.27	13 47 13	2792.57	-31.43	82.24	32.84	58.50	14 33 46	2192.6	-35.34	74.29
55.73	6 27 19	4151.26	-31.44	186.84	32.85	58.51	7 36 30	3551.3	-35.35	178.90
124.27	13 47 13	2792.57	-31.43	82.24	32.84	58.50	14 33 46	2192.6	-35.34	74.29

DIFFERENTIAL CORRECTIONS
TDE 4.4910 TRA-1.0006 TC-11.2664 BAU 2.3001
RDE .6686 RRA .0554 RC3-1.5068 FAU .24456
FDE 3.7954 FRA .1735 FC-13.9885 BSP 38816
BDE 4.5405 BRA 1.0022 BC311.3667 FSP 3573

MID-COURSE EXECUTION ACCURACY
SGT11166.7 SGR 1535.2 SG3 1057.6
RRT .9662 RRF .9741 RTF .9633
SGB11271.8 R23 .1636 R13 .9641
SG111264.9 SG2 392.4 THA 7.58

ORBIT DETERMINATION ACCURACY
ST 6647.0 SR 985.9 SS 2075.8
CRT .9921 CRS -.9996 CST - 9937
LSA 7028.7 MSA 247.7 SSA 21.7
EL1 6718.6 EL2 122.3 ALF 8.37

LAUNCH DATE DEC 23 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 717.559 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.074 GAL 2.95 AZL 86.43 HCA 209.36 SMA 186.91 ECC .21863 INC 3.5743 V1 30.278
RP 209.88 LAP -1.75 LOP 300.52 VP 23.551 GAP -10.50 AZP 93.12 TAL 16.59 TAP 225.95 RCA 146.04 APO 227.77 V2 26.124
RC 309.654 GL 32.48 GP -13.60 ZAL 61.99 ZAP 46.24 ETS 165.78 ZAE 69.88 ETE 174.26 ZAC 71.29 ETC 257.09 CLP 44.63

PLANETOCENTRIC CONIC

C3 14.702 VHL 3.834 DLA 42.35 RAL 164.02 RAD 6567.6 VEL 11.666 PTH 2.05 VHP 4.332 DPA -5.10 RAP 161.57 ECC 1.2420

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.09	6 35 55	4129.69	-31.04	184.65	32.72	59.61	7 44 45	3529.7	-34.81	176.66
122.91	13 44 40	2801.14	-31.02	82.71	32.71	59.59	14 31 21	2201.1	-34.80	74.72
57.09	6 35 55	4129.69	-31.04	184.65	32.72	59.61	7 44 45	3529.7	-34.81	176.66
122.91	13 44 40	2801.14	-31.02	82.71	32.71	59.59	14 31 21	2201.1	-34.80	74.72
57.09	6 35 55	4129.69	-31.04	184.65	32.72	59.61	7 44 45	3529.7	-34.81	176.66
122.91	13 44 40	2801.14	-31.02	82.71	32.71	59.59	14 31 21	2201.1	-34.80	74.72

DIFFERENTIAL CORRECTIONS
TDE 4.4120 TRA -.9539 TC-11.7384 BAU 2.3243
RDE .6241 RRA .0668 RC3-1.4337 FAU .23737
FDE 3.5531 FRA .2489 FC-13.9775 BSP 39353
BDE 4.4559 BRA .9562 BC311.8256 FSP 3486

MID-COURSE EXECUTION ACCURACY
SGT11323.2 SGR 1448.0 SG3 1034.4
RRT .9627 RRF .9693 RTF .9628
SGB11415.4 R23 .1528 R13 .9634
SG111408.8 SG2 388.8 THA 7.03

ORBIT DETERMINATION ACCURACY
ST 6623.6 SR 934.1 SS 1991.5
CRT .9914 CRS -.9996 CST -.9931
LSA 6974.8 MSA 249.2 SSA 22.6
EL1 6688.1 EL2 120.8 ALF 7.96

LAUNCH DATE DEC 23 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 721.908 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.081 GAL 2.84 AZL 86.53 HCA 210.59 SMA 187.04 ECC .21672 INC 3.4678 V1 30.278
RP 209.66 LAP -1.76 LOP 301.75 VP 23.590 GAP -10.58 AZP 92.99 TAL 15.91 TAP 226.50 RCA 146.13 APO 227.95 V2 26.149
RC 310.607 GL 31.91 GP -12.98 ZAL 62.73 ZAP 45.32 ETS 165.99 ZAE 68.74 ETE 174.23 ZAC 71.98 ETC 257.08 CLP 43.81

PLANETOCENTRIC CONIC

C3 14.297 VHL 3.781 DLA 41.39 RAL 164.83 RAD 6567.6 VEL 11.648 PTH 2.04 VHP 4.375 DPA -4.69 RAP 162.19 ECC 1.2353

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.45	6 44 56	4107.71	-30.61	182.44	32.69	60.65	7 53 24	3507.7	-34.26	174.42
121.55	13 42 10	2810.72	-30.60	83.26	32.68	60.64	14 29 1	2210.7	-34.25	75.24
58.45	6 44 56	4107.71	-30.61	182.44	32.69	60.65	7 53 24	3507.7	-34.26	174.42
121.55	13 42 10	2810.72	-30.60	83.26	32.68	60.64	14 29 1	2210.7	-34.25	75.24
58.45	6 44 56	4107.71	-30.61	182.44	32.69	60.65	7 53 24	3507.7	-34.26	174.42
121.55	13 42 10	2810.72	-30.60	83.26	32.68	60.64	14 29 1	2210.7	-34.25	75.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 4.3554 TRA -.8798 TC-12.1580 BAU 2.3382 SGT11456.3 SGR 1366.1 SG3 1006.7 ST 6627.0 SR 892.7 SS 1925.4
RDE .5879 RRA .0815 RC3-1.3522 FAU .22845 RRT .9577 RRF .9638 RTF .9620 CRT .9908 CRS -.9996 CST -.9922
FDE 3.3518 FRA .3600 FC-13.8333 BSP 40398 SGB11537.5 R23 .1440 R13 .9625 LSA 6953.8 MSA 255.2 SSA 23.1
BDE 4.3949 BRA .8835 BC312.2329 FSP 3466 SG111530.9 SG2 390.7 THA 6.52 EL1 6685.8 EL2 120.0 ALF 7.60

LAUNCH DATE DEC 23 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 726.267 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.089 GAL 2.72 AZL 86.63 HCA 211.83 SMA 187.18 ECC .21884 INC 3.3685 V1 30.278
RP 209.44 LAP -1.78 LOP 302.99 VP 23.628 GAP -10.66 AZP 92.86 TAL 15.22 TAP 227.05 RCA 146.21 APO 228.14 V2 26.174
RC 311.551 GL 31.37 GP -12.40 ZAL 63.52 ZAP 44.43 ETS 166.19 ZAE 67.62 ETE 174.20 ZAC 72.63 ETC 257.07 CLP 43.01

PLANETOCENTRIC CONIC

C3 13.919 VHL 3.731 DLA 40.46 RAL 165.70 RAD 6567.5 VEL 11.632 PTH 2.04 VHP 4.421 DPA -4.33 RAP 162.81 ECC 1.2291

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.81	6 54 23	4085.15	-30.17	180.22	32.74	61.66	8 2 29	3485.1	-33.70	172.18
120.19	13 39 39	2821.49	-30.16	83.91	32.73	61.64	14 26 40	2221.5	-33.69	75.86
59.81	6 54 23	4085.15	-30.17	180.22	32.74	61.66	8 2 29	3485.1	-33.70	172.18
120.19	13 39 39	2821.49	-30.16	83.91	32.73	61.64	14 26 40	2221.5	-33.69	75.86
59.81	6 54 23	4085.15	-30.17	180.22	32.74	61.66	8 2 29	3485.1	-33.70	172.18
120.19	13 39 39	2821.49	-30.16	83.91	32.73	61.64	14 26 40	2221.5	-33.69	75.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 4.2700 TRA -.8277 TC-12.6596 BAU 2.3679 SGT11619.9 SGR 1294.0 SG3 984.5 ST 6582.9 SR 848.3 SS 1834.7
RDE .5509 RRA .0902 RC3-1.2893 FAU .22206 RRT .9531 RRF .9575 RTF .9615 CRT .9901 CRS -.9995 CST -.9914
FDE 3.1168 FRA .4221 FC-13.8116 BSP 40709 SGB11691.8 R23 .1324 R13 .9620 LSA 6881.5 MSA 255.3 SSA 24.2
BDE 4.3054 BRA .8326 BC312.7251 FSP 3345 SG111685.3 SG2 389.4 THA 6.07 EL1 6636.3 EL2 118.2 ALF 7.27

LAUNCH DATE DEC 23 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 730.630 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.097 GAL 2.59 AZL 86.72 HCA 213.06 SMA 187.31 ECC .21897 INC 3.2758 V1 30.278
RP 209.24 LAP -1.79 LOP 304.23 VP 23.665 GAP -10.74 AZP 92.75 TAL 14.52 TAP 227.58 RCA 146.30 APO 228.33 V2 26.198
RC 312.486 GL 30.86 GP -11.87 ZAL 64.36 ZAP 43.57 ETS 166.38 ZAE 66.52 ETE 174.18 ZAC 73.25 ETC 257.06 CLP 42.23

PLANETOCENTRIC CONIC

C3 13.565 VHL 3.683 DLA 39.53 RAL 166.62 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 4.468 DPA -4.02 RAP 163.43 ECC 1.2233

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.18	7 4 20	4061.79	-29.72	177.97	32.88	62.63	8 12 2	3461.8	-33.12	169.90
118.82	13 37 2	2833.58	-29.70	84.65	32.88	62.62	14 24 16	2233.6	-33.11	76.58
61.18	7 4 20	4061.79	-29.72	177.97	32.88	62.63	8 12 2	3461.8	-33.12	169.90
118.82	13 37 2	2833.58	-29.70	84.65	32.88	62.62	14 24 16	2233.6	-33.11	76.58
61.18	7 4 20	4061.79	-29.72	177.97	32.88	62.63	8 12 2	3461.8	-33.12	169.90
118.82	13 37 2	2833.58	-29.70	84.65	32.88	62.62	14 24 16	2233.6	-33.11	76.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 4.1876 TRA -.7657 TC-13.1529 BAU 2.3957 SGT11776.8 SGR 1226.8 SG3 961.1 ST 6537.3 SR 808.5 SS 1745.9
RDE .5180 RRA .0991 RC3-1.2261 FAU .21534 RRT .9476 RRF .9503 RTF .9610 CRT .9894 CRS -.9994 CST .9904
FDE 2.8943 FRA .4892 FC-13.7432 BSP 41101 SGB11840.5 R23 .1211 R13 .9614 LSA 6809.7 MSA 255.9 SSA 25.3
BDE 4.2195 BRA .7721 BC313.2099 FSP 3233 SG111834.1 SG2 389.9 THA 5.64 EL1 6586.1 EL2 116.4 ALF 6.98

LAUNCH DATE DEC 23 1964 FLIGHT TIME 342.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 734.998 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.105 GAL 2.47 AZL 86.81 HCA 214.30 SMA 187.45 ECC .21912 INC 3.1889 V1 30.278
RP 209.04 LAP -1.80 LOP 305.47 VP 23.702 GAP -10.82 AZP 92.64 TAL 13.80 TAP 228.10 RCA 146.38 APO 228.53 V2 26.221
RC 313.411 GL 30.38 GP -11.37 ZAL 65.27 ZAP 42.73 ETS 166.55 ZAE 65.44 ETE 174.16 ZAC 73.83 ETC 257.04 CLP 41.48

PLANETOCENTRIC CONIC

C3 13.233 VHL 3.638 DLA 38.61 RAL 167.59 RAD 6567.5 VEL 11.603 PTH 2.03 VHP 4.517 DPA -3.76 RAP 164.07 ECC 1.2178

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.57	7 14 50	4037.44	-29.24	175.66	33.10	63.57	8 22 8	3437.4	-32.53	167.58
117.43	13 34 16	2847.18	-29.23	85.51	33.10	63.56	14 21 43	2247.2	-32.52	77.43
62.57	7 14 50	4037.44	-29.24	175.66	33.10	63.57	8 22 8	3437.4	-32.53	167.58
117.43	13 34 16	2847.18	-29.23	85.51	33.10	63.56	14 21 43	2247.2	-32.52	77.43
62.57	7 14 50	4037.44	-29.24	175.66	33.10	63.57	8 22 8	3437.4	-32.53	167.58
117.43	13 34 16	2847.18	-29.23	85.51	33.10	63.56	14 21 43	2247.2	-32.52	77.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 4.1079 TRA -.6936 TC-13.6391 BAU 2.4218 SGT11928.3 SGR 1164.6 SG3 936.7 ST 6490.4 SR 773.2 SS 1660.7
RDE .4889 RRA .1083 RC3-1.1628 FAU .20835 RRT .9410 RRF .9421 RTF .9604 CRT .9888 CRS -.9993 CST -.9893
FDE 2.6864 FRA .5621 FC-13.6304 BSP 41573 SGB11985.1 R23 .1106 R13 .9608 LSA 6739.0 MSA 257.6 SSA 26.2
BDE 4.1369 BRA .7020 BC313.6886 FSP 3136 SG111978.6 SG2 392.5 THA 5.25 EL1 6535.3 EL2 114.8 ALF 6.72

LAUNCH DATE DEC 23 1964 FLIGHT TIME 344.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 739.370 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.113	GAL	2.34	AZL	86.89	HCA	215.54	SMA	187.59	ECC	.21929	INC	3.1071
RP	208.85	LAP	-1.81	LOP	306.71	VP	23.737	GAP	-10.89	AZP	92.53	TAL	13.07	TAP	228.62	RCA	146.45	APO	228.73
RC	314.329	GL	29.93	GP	-10.91	ZAL	66.24	ZAP	41.93	ETS	166.72	ZAE	64.39	ETE	174.15	ZAC	74.38	ETC	257.01

V1	30.278	V2	26.243	CLP	40.74														

PLANETOCENTRIC CONIC

C3	12.922	VHL	3.595	DLA	37.70	RAL	168.61	RAD	6567.5	VEL	11.589	PTH	2.03	VHP	4.567	DPA	-3.53	RAP	164.71

ECC	1.2127	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		64.00	7 25 58	4011.79	-28.75	173.27	33.40	64.49	8 32 50	3411.8	-31.93	165.18							
		116.00	13 31 14	2862.54	-28.74	86.50	33.39	64.47	14 18 56	2262.5	-31.92	78.41							
		64.00	7 25 58	4011.79	-28.75	173.27	33.40	64.49	8 32 50	3411.8	-31.93	165.18							
		116.00	13 31 14	2862.54	-28.74	86.50	33.39	64.47	14 18 56	2262.5	-31.92	78.41							
		64.00	7 25 58	4011.79	-28.75	173.27	33.40	64.49	8 32 50	3411.8	-31.93	165.18							
		116.00	13 31 14	2862.54	-28.74	86.50	33.39	64.47	14 18 56	2262.5	-31.92	78.41							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.0277	TRA	-.6148	TC	-14.1252	BAU	2.4476	SGT	12077.9	SGR	1107.5	SG3	912.4	ST	6437.7	SR	741.4	SS	1576.9
RDE	.4628	RRA	.1170	RC3	-1.1014	FAU	.20145	RRT	.9333	RRF	.9328	RTF	.9598	CRT	.9882	CRS	-.9992	CST	-.9879
FDE	2.4888	FRA	.6336	FC	-13.4963	BSP	42026	SGB	12128.6	R23	.1003	R13	.9601	LSA	6664.2	MSA	259.4	SSA	27.2
BDE	4.0542	BRA	.6258	BC	314.1680	FSP	3035	SG1	12122.1	SG2	396.2	THA	4.90	EL1	6479.3	EL2	113.0	ALF	6.49

LAUNCH DATE DEC 23 1964 FLIGHT TIME 346.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 743.747 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.121	GAL	2.21	AZL	86.97	HCA	216.79	SMA	187.73	ECC	.21949	INC	3.0301
RP	208.67	LAP	-1.81	LOP	307.95	VP	23.772	GAP	-10.97	AZP	92.43	TAL	12.33	TAP	229.12	RCA	146.53	APO	228.94
RC	315.238	GL	29.49	GP	-10.48	ZAL	67.26	ZAP	41.14	ETS	166.87	ZAE	63.35	ETE	174.15	ZAC	74.91	ETC	256.98

V1	30.278	V2	26.264	CLP	40.02														

PLANETOCENTRIC CONIC

C3	12.630	VHL	3.554	DLA	36.79	RAL	169.66	RAD	6567.5	VEL	11.577	PTH	2.02	VHP	4.619	DPA	-3.35	RAP	165.35

ECC	1.2079	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		65.47	7 37 46	3984.68	-28.24	170.80	33.77	65.38	8 44 11	3384.7	-31.31	162.70							
		114.53	13 27 53	2879.85	-28.23	87.64	33.76	65.36	14 15 53	2279.8	-31.30	79.54							
		65.47	7 37 46	3984.68	-28.24	170.80	33.77	65.38	8 44 11	3384.7	-31.31	162.70							
		114.53	13 27 53	2879.85	-28.23	87.64	33.76	65.36	14 15 53	2279.8	-31.30	79.54							
		65.47	7 37 46	3984.68	-28.24	170.80	33.77	65.38	8 44 11	3384.7	-31.31	162.70							
		114.53	13 27 53	2879.85	-28.23	87.64	33.76	65.36	14 15 53	2279.8	-31.30	79.54							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.9474	TRA	-.5288	TC	-14.6085	BAU	2.4730	SGT	12224.9	SGR	1054.8	SG3	887.8	ST	6379.5	SR	712.6	SS	1494.6
RDE	.4393	RRA	.1253	RC3	-1.0409	FAU	.19453	RRT	.9245	RRF	.9223	RTF	.9593	CRT	.9876	CRS	-.9990	CST	-.9862
FDE	2.3011	FRA	.7044	FC	-13.3337	BSP	42504	SGB	12270.4	R23	.0906	R13	.9595	LSA	6585.7	MSA	261.4	SSA	28.1
BDE	3.9717	BRA	.5434	BC	314.6456	FSP	2943	SG1	12263.8	SG2	400.8	THA	4.57	EL1	6418.3	EL2	111.0	ALF	6.30

LAUNCH DATE DEC 23 1964 FLIGHT TIME 348.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 748.127 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.129	GAL	2.08	AZL	87.04	HCA	218.03	SMA	187.88	ECC	.21970	INC	2.9572
RP	208.49	LAP	-1.82	LOP	309.20	VP	23.806	GAP	-11.04	AZP	92.33	TAL	11.58	TAP	229.61	RCA	146.60	APO	229.15
RC	316.140	GL	29.07	GP	-10.08	ZAL	68.34	ZAP	40.38	ETS	167.02	ZAE	62.33	ETE	174.15	ZAC	75.42	ETC	256.95

V1	30.278	V2	26.285	CLP	39.32														

PLANETOCENTRIC CONIC

C3	12.357	VHL	3.515	DLA	35.87	RAL	170.77	RAD	6567.5	VEL	11.565	PTH	2.02	VHP	4.672	DPA	-3.20	RAP	166.01

ECC	1.2034	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		66.99	7 50 26	3955.48	-27.71	168.18	34.21	66.25	8 56 22	3355.5	-30.67	160.08							
		113.01	13 24 1	2899.72	-27.70	88.96	34.20	66.23	14 12 20	2299.7	-30.66	80.87							
		66.99	7 50 26	3955.48	-27.71	168.18	34.21	66.25	8 56 22	3355.5	-30.67	160.08							
		113.01	13 24 1	2899.72	-27.70	88.96	34.20	66.23	14 12 20	2299.7	-30.66	80.87							
		66.99	7 50 26	3955.48	-27.71	168.18	34.21	66.25	8 56 22	3355.5	-30.67	160.08							
		113.01	13 24 1	2899.72	-27.70	88.96	34.20	66.23	14 12 20	2299.7	-30.66	80.87							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.8654	TRA	-.4348	TC	-15.0886	BAU	2.4979	SGT	12368.9	SGR	1006.3	SG3	863.3	ST	6313.9	SR	686.5	SS	1413.6
RDE	.4181	RRA	.1333	RC3	-.9817	FAU	.18767	RRT	.9144	RRF	.9105	RTF	.9587	CRT	.9872	CRS	-.9987	CST	-.9842
FDE	2.1224	FRA	.7750	FC	-13.1484	BSP	42992	SGB	12409.7	R23	.0814	R13	.9589	LSA	6501.1	MSA	263.8	SSA	29.0
BDE	3.8880	BRA	.4548	BC	315.1205	FSP	2850	SG1	12403.1	SG2	406.3	THA	4.26	EL1	6350.2	EL2	108.9	ALF	6.13

LAUNCH DATE DEC 23 1964 FLIGHT TIME 350.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 752.512 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.137	GAL	1.94	AZL	87.11	HCA	219.28	SMA	188.02	ECC	.21994	INC	2.8882
RP	208.32	LAP	-1.83	LOP	310.45	VP	23.839	GAP	-11.11	AZP	92.24	TAL	10.81	TAP	230.09	RCA	146.67	APO	229.38
RC	317.035	GL	28.67	GP	-9.71	ZAL	69.47	ZAP	39.65	ETS	167.16	ZAE	61.33	ETE	174.15	ZAC	75.90	ETC	256.91

V1	30.278	V2	26.304	CLP	38.63														

PLANETOCENTRIC CONIC

C3	12.101	VHL	3.479	DLA	34.95	RAL	171.91	RAD	6567.5	VEL	11.554	PTH	2.02	VHP	4.726	DPA	-3.08	RAP	166.67

ECC	1.1992	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		68.60	8 4 3	3923.89	-27.16	165.41	34.71	67.10	9 9 27	3323.9	-30.01	157.31							
		111.40	13 19 31	2922.45	-27.14	90.50	34.71	67.09	14 8 14	2322.5	-30.00	82.40							
		68.60	8 4 3	3923.89	-27.16	165.41	34.71	67.10	9 9 27	3323.9	-30.01	157.31							
		111.40	13 19 31	2922.45	-27.14	90.50	34.71	67.09	14 8 14	2322.5	-30.00	82.40							
		68.60	8 4 3	3923.89	-27.16	165.41	34.71	67.10	9 9 27	3323.9	-30.01	157.31							
		111.40	13 19 31	2922.45	-27.14	90.50	34.71	67.09	14 8 14	2322.5	-30.00	82.40							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.7817	TRA	-.3341	TC	-15.5651	BAU	2.5225	SGT	12510.7	SGR	961.5	SG3	838.7	ST	6240.5	SR	662.6	SS	1333.1
RDE	.3988	RRA	.1409	RC3	-.9236	FAU	.18085	RRT	.9028	RRF	.8973	RTF	.9581	CRT	.9868	CRS	-.9982	CST	-.9817
FDE	1.9510	FRA	.8447	FC	-12.9385	BSP	43467	SGB	12547.6	R23	.0731	R13	.9582	LSA	6410.0	MSA	266.6	SSA	29.9
BDE	3.8027	BRA	.3626	BC	315.5924	FSP	2758	SG1	12540.8	SG2	412.6	THA	3.97	EL1	6274.7	EL2	106.6	ALF	5.98

LAUNCH DATE DEC 23 1964 FLIGHT TIME 352.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 756.899 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.146 GAL 1.81 AZL 87.18 HCA 220.53 SMA 188.17 ECC .22020 INC 2.8226 V1 30.278
RP 208.16 LAP -1.83 LOP 311.70 VP 23.871 GAP -11.18 AZP 92.15 TAL 10.04 TAP 230.56 RCA 146.73 APO 229.60 V2 26.323
RC 317.924 GL 28.27 GP -9.35 ZAL 70.66 ZAP 38.93 ETS 167.29 ZAE 60.34 ETE 174.15 ZAC 76.37 ETC 256.87 CLP 37.96

PLANETOCENTRIC CONIC

C3 11.862 VHL 3.444 DLA 34.02 RAL 173.10 RAD 6567.5 VEL 11.543 PTH 2.01 VHP 4.781 DPA -2.99 RAP 167.34 ECC 1.1952

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.30	8 18 50	3889.15	-26.58	162.41	35.28	67.94	9 23 39	3289.2	-29.33	154.32
109.70	13 14 11	2948.80	-26.57	92.30	35.28	67.92	14 3 20	2348.8	-29.32	84.21
70.30	8 18 50	3889.15	-26.58	162.41	35.28	67.94	9 23 39	3289.2	-29.33	154.32
109.70	13 14 11	2948.80	-26.57	92.30	35.28	67.92	14 3 20	2348.8	-29.32	84.21
110.00	13 41 16	2866.19	-28.56	86.71	36.13	70.37	14 29 2	2266.2	-30.97	78.33
110.00	12 50 55	3019.76	-24.62	96.90	34.35	65.50	13 41 15	2419.8	-27.71	89.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.6952 TRA -.2262 TC-16.0383 BAU 2.5472 SGT12651.0 SGR 920.6 SG3 814.6 ST 6157.6 SR 640.9 SS 1254.3
RDE .3814 RRA .1481 RC3 -.8670 FAU .17420 RRT .8897 RRF .8827 RTF .9574 CRT .9866 CRS -.9974 CST -.9787
FDE 1.7879 FRA .9128 FC-12.7132 BSP 43952 SGB12684.5 R23 .0654 R13 .9576 LSA 6310.8 MSA 269.8 SSA 30.7
BDE 3.7148 BRA .2704 BC316.0617 FSP 2668 SG112677.5 SG2 419.4 THA 3.71 EL1 6190.0 EL2 103.9 ALF 5.86

LAUNCH DATE DEC 23 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 761.290 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.154 GAL 1.67 AZL 87.24 HCA 221.78 SMA 188.32 ECC .22048 INC 2.7603 V1 30.278
RP 208.01 LAP -1.84 LOP 312.95 VP 23.902 GAP -11.26 AZP 92.06 TAL 9.24 TAP 231.02 RCA 146.80 APO 229.84 V2 26.341
RC 318.808 GL 27.89 GP -9.02 ZAL 71.90 ZAP 38.23 ETS 167.41 ZAE 59.37 ETE 174.16 ZAC 76.82 ETC 256.83 CLP 37.31

PLANETOCENTRIC CONIC

C3 11.641 VHL 3.412 DLA 33.08 RAL 174.32 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 4.838 DPA -2.93 RAP 168.01 ECC 1.1916

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.14	8 35 4	3850.34	-25.98	159.14	35.91	68.76	9 39 14	3250.3	-28.63	151.06
107.86	13 7 42	2979.71	-25.97	94.43	35.91	68.75	13 57 22	2379.7	-28.62	86.35
72.14	8 35 4	3850.34	-25.98	159.14	35.91	68.76	9 39 14	3250.3	-28.63	151.06
107.86	13 7 42	2979.71	-25.97	94.43	35.91	68.75	13 57 22	2379.7	-28.62	86.35
110.00	14 26 32	2737.58	-31.16	77.60	37.83	75.18	15 12 10	2137.6	-32.88	68.80
110.00	12 15 24	3140.47	-21.01	104.41	33.45	62.39	13 7 45	2540.5	-24.53	97.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.6066 TRA -.1114 TC-16.4997 BAU 2.5709 SGT12786.6 SGR 882.8 SG3 790.2 ST 6066.5 SR 621.0 SS 1175.9
RDE .3655 RRA .1550 RC3 -.8109 FAU .16755 RRT .8751 RRF .8664 RTF .9567 CRT .9866 CRS -.9961 CST -.9748
FDE 1.6312 FRA .9786 FC-12.4610 BSP 44449 SGB12817.0 R23 .0583 R13 .9569 LSA 6204.4 MSA 273.2 SSA 31.6
BDE 3.6251 BRA .1909 BC316.5196 FSP 2584 SG112809.9 SG2 426.5 THA 3.46 EL1 6097.3 EL2 101.0 ALF 5.77

LAUNCH DATE DEC 23 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 765.683 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.162 GAL 1.52 AZL 87.30 HCA 223.03 SMA 188.46 ECC .22079 INC 2.7008 V1 30.278
RP 207.86 LAP -1.84 LOP 314.21 VP 23.932 GAP -11.33 AZP 91.97 TAL 8.44 TAP 231.47 RCA 146.85 APO 230.08 V2 26.357
RC 319.685 GL 27.51 GP -8.71 ZAL 73.19 ZAP 37.56 ETS 167.53 ZAE 58.42 ETE 174.16 ZAC 77.25 ETC 256.79 CLP 36.68

PLANETOCENTRIC CONIC

C3 11.436 VHL 3.382 DLA 32.13 RAL 175.58 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 4.895 DPA -2.90 RAP 168.70 ECC 1.1882

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.15	8 53 13	3805.91	-25.35	155.47	36.61	69.57	9 56 39	3205.9	-27.90	147.40
105.85	12 59 36	3016.74	-25.34	97.00	36.61	69.56	13 49 53	2416.7	-27.89	88.93
74.15	8 53 13	3805.91	-25.35	155.47	36.61	69.57	9 56 39	3205.9	-27.90	147.40
105.85	12 59 36	3016.74	-25.34	97.00	36.61	69.56	13 49 53	2416.7	-27.89	88.93
110.00	14 55 19	2658.88	-32.39	71.79	38.91	78.41	15 39 38	2058.9	-33.64	62.79
110.00	11 56 41	3211.76	-18.70	108.65	33.30	60.85	12 50 12	2611.8	-22.44	101.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.5240 TRA .0183 TC-16.9216 BAU 2.5896 SGT12908.6 SGR 848.3 SG3 764.5 ST 5980.6 SR 604.3 SS 1106.3
RDE .3519 RRA .1620 RC3 -.7525 FAU .16046 RRT .8581 RRF .8485 RTF .9560 CRT .9868 CRS -.9942 CST -.9703
FDE 1.4914 FRA 1.0494 FC-12.1474 BSP 45128 SGB12936.4 R23 .0529 R13 .9561 LSA 6105.6 MSA 277.7 SSA 32.2
BDE 3.5415 BRA .1630 BC316.9383 FSP 2515 SG112929.1 SG2 434.8 THA 3.23 EL1 6010.3 EL2 97.5 ALF 5.70

LAUNCH DATE DEC 23 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 770.080 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.171 GAL 1.38 AZL 87.36 HCA 224.29 SMA 188.61 ECC .22113 INC 2.6440 V1 30.278
RP 207.73 LAP -1.85 LOP 315.46 VP 23.962 GAP -11.39 AZP 91.89 TAL 7.62 TAP 231.91 RCA 146.91 APO 230.32 V2 26.373
RC 320.558 GL 27.14 GP -8.42 ZAL 74.54 ZAP 36.90 ETS 167.63 ZAE 57.48 ETE 174.17 ZAC 77.67 ETC 256.74 CLP 36.06

PLANETOCENTRIC CONIC

C3 11.247 VHL 3.354 DLA 31.16 RAL 176.87 RAD 6567.4 VEL 11.517 PTH 2.01 VHP 4.953 DPA -2.89 RAP 169.39 ECC 1.1851

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.42	9 14 0	3753.47	-24.70	151.23	37.37	70.37	10 16 34	3153.5	-27.15	143.18
103.58	12 49 8	3062.30	-24.69	100.19	37.36	70.36	13 40 10	2462.3	-27.14	92.14
76.42	9 14 0	3753.47	-24.70	151.23	37.37	70.37	10 16 34	3153.5	-27.15	143.18
103.58	12 49 8	3062.30	-24.69	100.19	37.36	70.36	13 40 10	2462.3	-27.14	92.14
110.00	15 19 14	2594.97	-33.16	66.97	39.81	81.17	16 2 28	1995.0	-34.02	57.83
110.00	11 43 5	3268.80	-16.77	111.95	33.43	59.77	12 37 34	2668.8	-20.66	104.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.4206 TRA .1369 TC-17.4008 BAU 2.6187 SGT13055.6 SGR 816.8 SG3 742.5 ST 5854.9 SR 586.6 SS 1024.8
RDE .3382 RRA .1670 RC3 -.7024 FAU .15471 RRT .8409 RRF .8289 RTF .9555 CRT .9870 CRS -.9913 CST -.9643
FDE 1.3404 FRA 1.0987 FC-11.9079 BSP 45383 SGB13081.1 R23 .0452 R13 .9556 LSA 5966.1 MSA 280.2 SSA 33.3
BDE 3.4373 BRA .2160 BC317.4149 FSP 2410 SG113073.7 SG2 441.4 THA 3.01 EL1 5883.5 EL2 93.7 ALF 5.65

LAUNCH DATE DEC 23 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 774.479 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.179 GAL 1.23 AZL 87.41 HCA 225.54 SMA 188.76 ECC .22150 INC 2.5896 V1 30.278
RP 207.60 LAP -1.85 LOP 316.72 VP 23.990 GAP -11.46 AZP 91.81 TAL 6.80 TAP 232.34 RCA 146.95 APO 230.58 V2 26.388
RC 321.425 GL 26.76 GP -8.15 ZAL 75.93 ZAP 36.25 ETS 167.73 ZAE 56.56 ETE 174.18 ZAC 78.07 ETC 256.69 CLP 35.45

PLANETOCENTRIC CONIC

C3 11.076 VHL 3.328 DLA 30.17 RAL 178.20 RAD 6567.4 VEL 11.509 PTH 2.00 VHP 5.013 DPA -2.90 RAP 170.09 ECC 1.1823

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.11	9 38 55	3688.17	-24.02	146.08	38.18	71.16	10 40 23	3088.2	-26.37	138.04
100.89	12 34 49	3121.26	-24.01	104.35	38.18	71.15	13 26 50	2521.3	-26.36	96.31
79.11	9 38 55	3688.17	-24.02	146.08	38.18	71.16	10 40 23	3088.2	-26.37	138.04
100.89	12 34 49	3121.26	-24.01	104.35	38.18	71.15	13 26 50	2521.3	-26.36	96.31
110.00	15 40 36	2538.88	-33.66	62.67	40.64	83.67	16 22 55	1938.9	-34.17	53.46
110.00	11 32 19	3318.55	-15.05	114.78	33.76	58.94	12 27 37	2718.5	-19.05	107.95

DIFFERENTIAL CORRECTIONS
TDE 3.3216 TRA .2706 TC-17.8316 BAU 2.6421
RDE .3264 RRA .1723 RC3 -.6495 FAU .14844
FDE 1.2027 FRA 1.1524 FC-11.6031 BSP 45851
BDE 3.3376 BRA .3208 BC317.8434 FSP 2328

MID-COURSE EXECUTION ACCURACY
SGT13185.6 SGR 787.6 SG3 718.7
RRT .8213 RRF .8073 RTF .9549
SGB13209.1 R23 .0389 R13 .9550
SG113201.5 SG2 448.8 THA 2.81

ORBIT DETERMINATION ACCURACY
ST 5731.8 SR 571.4 SS 950.3
CRT .9876 CRS -.9868 CST -.9568
LSA 5831.0 MSA 283.8 SSA 34.1
EL1 5759.5 EL2 89.4 ALF 5.62

LAUNCH DATE DEC 23 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 778.979 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.188 GAL 1.08 AZL 87.46 HCA 226.80 SMA 188.92 ECC .22190 INC 2.5373 V1 30.278
RP 207.48 LAP -1.85 LOP 317.98 VP 24.017 GAP -11.53 AZP 91.74 TAL 5.95 TAP 232.76 RCA 147.00 APO 230.84 V2 26.402
RC 322.286 GL 26.39 GP -7.89 ZAL 77.38 ZAP 35.63 ETS 167.83 ZAE 55.65 ETE 174.19 ZAC 78.47 ETC 256.65 CLP 34.86

PLANETOCENTRIC CONIC

C3 10.921 VHL 3.305 DLA 29.17 RAL 179.56 RAD 6567.4 VEL 11.503 PTH 2.00 VHP 5.073 DPA -2.94 RAP 170.80 ECC 1.1797

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.68	10 11 54	3597.04	-23.31	139.06	39.06	71.95	11 11 51	2997.0	-25.56	131.05
97.32	12 12 40	3206.60	-23.30	110.42	39.05	71.93	13 6 7	2606.6	-25.55	102.40
100.00	13 28 42	2962.81	-27.15	93.56	40.24	76.98	14 18 5	2362.8	-28.67	85.09
100.00	11 38 34	3316.07	-19.57	117.01	37.55	66.94	12 33 50	2716.1	-22.52	109.46
110.00	16 0 22	2487.77	-33.98	58.71	41.42	85.99	16 41 50	1887.8	-34.16	49.47
110.00	11 23 23	3363.88	-13.44	117.30	34.24	58.27	12 19 27	2763.9	-17.54	110.59

DIFFERENTIAL CORRECTIONS
TDE 3.2188 TRA .4113 TC-18.2503 BAU 2.6660
RDE .3158 RRA .1773 RC3 -.5979 FAU .14237
FDE 1.0721 FRA 1.2054 FC-11.2857 BSP 46281
BDE 3.2342 BRA .4479 BC318.2601 FSP 2244

MID-COURSE EXECUTION ACCURACY
SGT13315.8 SGR 761.5 SG3 695.6
RRT .7998 RRF .7842 RTF .9542
SGB13337.6 R23 .0336 R13 .9543
SG113329.7 SG2 456.6 THA 2.62

ORBIT DETERMINATION ACCURACY
ST 5597.7 SR 557.7 SS 878.8
CRT .9883 CRS -.9802 CST -.9470
LSA 5686.2 MSA 288.5 SSA 35.0
EL1 5624.8 EL2 84.5 ALF 5.63

LAUNCH DATE DEC 23 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 783.281 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.196 GAL .93 AZL 87.51 HCA 228.06 SMA 189.07 ECC .22232 INC 2.4873 V1 30.278
RP 207.36 LAP -1.85 LOP 319.24 VP 24.043 GAP -11.60 AZP 91.66 TAL 5.10 TAP 233.16 RCA 147.03 APO 231.10 V2 26.416
RC 323.141 GL 26.02 GP -7.64 ZAL 78.88 ZAP 35.02 ETS 167.91 ZAE 54.76 ETE 174.19 ZAC 78.85 ETC 256.60 CLP 34.28

PLANETOCENTRIC CONIC

C3 10.783 VHL 3.284 DLA 28.15 RAL 180.95 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 5.134 DPA -2.99 RAP 171.52 ECC 1.1775

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 44 45	3311.90	-24.35	118.48	40.55	75.09	12 39 57	2711.9	-26.17	110.28
90.00	10 50 55	3486.56	-20.81	130.04	39.36	70.35	11 49 2	2886.6	-23.30	122.26
100.00	14 4 40	2860.76	-28.50	86.28	41.55	80.58	14 52 21	2260.8	-29.51	77.62
100.00	11 13 41	3412.93	-16.88	122.94	37.65	64.96	12 10 34	2812.9	-20.12	115.64
110.00	16 19 4	2440.14	-34.14	55.00	42.20	88.18	16 59 44	1840.1	-34.02	45.76
110.00	11 15 47	3406.31	-11.91	119.64	34.85	57.72	12 12 33	2806.3	-16.08	113.02

DIFFERENTIAL CORRECTIONS
TDE 3.1153 TRA .5602 TC-18.6449 BAU 2.6890
RDE .3065 RRA .1819 RC3 -.5469 FAU .13636
FDE .9498 FRA 1.2557 FC-10.9475 BSP 46789
BDE 3.1303 BRA .5890 BC318.6529 FSP 2168

MID-COURSE EXECUTION ACCURACY
SGT13443.1 SGR 737.9 SG3 672.7
RRT .7766 RRF .7595 RTF .9536
SGB13463.4 R23 .0287 R13 .9536
SG113455.4 SG2 464.5 THA 2.44

ORBIT DETERMINATION ACCURACY
ST 5458.1 SR 545.6 SS 811.7
CRT .9894 CRS -.9705 CST -.9346
LSA 5537.2 MSA 293.5 SSA 35.8
EL1 5484.8 EL2 79.0 ALF 5.65

LAUNCH DATE DEC 23 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 787.685 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.205 GAL .77 AZL 87.56 HCA 229.32 SMA 189.22 ECC .22278 INC 2.4390 V1 30.278
RP 207.26 LAP -1.85 LOP 320.50 VP 24.069 GAP -11.67 AZP 91.59 TAL 4.23 TAP 233.56 RCA 147.07 APO 231.38 V2 26.428
RC 323.990 GL 25.64 GP -7.41 ZAL 80.43 ZAP 34.43 ETS 168.00 ZAE 53.88 ETE 174.20 ZAC 79.22 ETC 256.55 CLP 33.72

PLANETOCENTRIC CONIC

C3 10.663 VHL 3.265 DLA 27.11 RAL 182.37 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 5.196 DPA -3.07 RAP 172.25 ECC 1.1755

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 35 59	3160.18	-26.60	107.94	42.22	79.91	13 28 39	2560.2	-27.72	99.45
90.00	10 11 0	3633.70	-17.16	139.30	39.22	67.13	11 11 34	3033.7	-20.12	131.87
100.00	14 32 45	2783.75	-29.23	80.67	42.66	83.45	15 19 9	2183.8	-29.83	71.92
100.00	10 56 55	3485.36	-14.74	127.26	38.07	63.70	11 55 0	2885.4	-18.16	120.13
110.00	16 36 57	2395.11	-34.18	51.48	42.98	90.26	17 16 52	1795.1	-33.77	42.26
110.00	11 9 12	3446.77	-10.43	121.84	35.56	57.26	12 6 39	2846.8	-14.67	115.30

DIFFERENTIAL CORRECTIONS
TDE 3.0066 TRA .7140 TC-19.0221 BAU 2.7126
RDE .2982 RRA .1860 RC3 -.4973 FAU .13054
FDE .8338 FRA 1.3011 FC-10.5988 BSP 47251
BDE 3.0213 BRA .7379 BC319.0286 FSP 2095

MID-COURSE EXECUTION ACCURACY
SGT13569.9 SGR 716.7 SG3 650.2
RRT .7517 RRF .7331 RTF .9530
SGB13588.8 R23 .0240 R13 .9530
SG113580.6 SG2 472.3 THA 2.28

ORBIT DETERMINATION ACCURACY
ST 5305.4 SR 534.8 SS 747.9
CRT .9906 CRS -.9565 CST -.9187
LSA 5376.1 MSA 298.8 SSA 36.7
EL1 5331.8 EL2 72.9 ALF 5.70

LAUNCH DATE DEC 23 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 792.089 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.213 GAL .61 AZL 87.61 HCA 230.59 SMA 189.38 ECC .22327 INC 2.3926 V1 30.278
RP 207.16 LAP -1.85 LOP 321.77 VP 24.093 GAP -11.74 AZP 91.52 TAL 3.35 TAP 233.94 RCA 147.09 APO 231.66 V2 26.439
RC 324.833 GL 25.26 GP -7.19 ZAL 82.02 ZAP 33.85 ETS 168.07 ZAE 53.01 ETE 174.21 ZAC 79.59 ETC 256.50 CLP 33.16

PLANETOCENTRIC CONIC

C3 10.560 VHL 3.250 DLA 26.05 RAL 183.81 RAD 6567.4 VEL 11.487 PTH 2.00 VHP 5.258 DPA -3.16 RAP 172.98 ECC 1.1738

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 8 32	3068.66	-27.52	101.40	43.46	83.06	13 59 41	2468.7	-28.20	92.80
90.00	9 49 59	3721.29	-14.77	144.62	39.63	65.56	10 52 0	3121.3	-17.95	137.38
100.00	14 57 17	2718.08	-29.64	75.84	43.69	85.96	15 42 35	2118.1	-29.89	67.04
100.00	10 43 55	3547.10	-12.85	130.87	38.67	62.78	11 43 2	2947.1	-16.40	123.87
110.00	16 54 15	2352.10	-34.12	48.13	43.78	92.25	17 33 27	1752.1	-33.43	38.95
110.00	11 3 26	3485.85	-8.98	123.94	36.38	56.88	12 1 32	2885.8	-13.28	117.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.8939 TRA .8754 TC-19.3715 BAU 2.7356 SGT13692.9 SGR 697.4 SG3 627.4 ST 5142.2 SR 524.9 SS 686.7
RDE .2908 RRA .1897 RC3 -.4480 FAU .12473 RRT .7249 RRF .7047 RTF .9523 CRT .9919 CRS -.9361 CST -.8976
FDE .7218 FRA 1.3426 FC-10.2259 BSP 47643 SGB13710.6 R23 .0196 R13 .9524 LSA 5205.3 MSA 304.8 SSA 37.5
BDE 2.9085 BRA .8957 BC319.3766 FSP 2006 SG113702.2 SG2 480.1 THA 2.12 EL1 5168.5 EL2 66.2 ALF 5.78

LAUNCH DATE DEC 23 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 796.494 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.222 GAL .45 AZL 87.65 HCA 231.85 SMA 189.53 ECC .22380 INC 2.3477 V1 30.278
RP 207.08 LAP -1.85 LOP 323.03 VP 24.116 GAP -11.81 AZP 91.45 TAL 2.46 TAP 234.31 RCA 147.12 APO 231.95 V2 26.449
RC 325.671 GL 24.86 GP -6.99 ZAL 83.66 ZAP 33.28 ETS 168.14 ZAE 52.16 ETE 174.21 ZAC 79.95 ETC 256.45 CLP 32.63

PLANETOCENTRIC CONIC

C3 10.476 VHL 3.237 DLA 24.97 RAL 185.28 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 5.322 DPA -3.27 RAP 173.72 ECC 1.1724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 35 30	2994.63	-28.02	96.04	44.59	85.70	14 25 34	2394.6	-28.32	87.39
90.00	9 34 35	3792.07	-12.73	148.82	40.27	64.49	10 37 47	3192.1	-16.07	141.72
100.00	15 19 42	2659.20	-29.85	71.47	44.70	88.25	16 4 1	2059.2	-29.77	62.67
100.00	10 33 14	3602.73	-11.10	134.06	39.43	62.06	11 33 17	3002.7	-14.75	127.18
110.00	17 11 4	2310.73	-33.96	44.90	44.60	94.15	17 49 35	1710.7	-33.01	35.79
110.00	10 58 20	3523.97	-7.56	125.97	37.30	56.56	11 57 4	2924.0	-11.90	119.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.7768 TRA 1.0444 TC-19.6903 BAU 2.7582 SGT13812.4 SGR 679.8 SG3 604.8 ST 4968.2 SR 515.7 SS 627.9
RDE .2842 RRA .1930 RC3 -.3997 FAU .11904 RRT .6964 RRF .6744 RTF .9514 CRT .9934 CRS -.9058 CST -.8685
FDE .6118 FRA 1.3819 FC3-9.8374 BSP 48088 SGB13829.2 R23 .0153 R13 .9514 LSA 5024.4 MSA 312.2 SSA 38.3
BDE 2.7913 BRA 1.0621 BC319.6943 FSP 1930 SG113820.6 SG2 487.5 THA 1.97 EL1 4994.6 EL2 59.0 ALF 5.89

LAUNCH DATE DEC 23 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 800.899 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.231 GAL .29 AZL 87.70 HCA 233.11 SMA 189.69 ECC .22436 INC 2.3043 V1 30.278
RP 207.00 LAP -1.84 LOP 324.30 VP 24.138 GAP -11.88 AZP 91.38 TAL 1.56 TAP 234.67 RCA 147.13 APO 232.25 V2 26.459
RC 326.503 GL 24.46 GP -6.79 ZAL 85.35 ZAP 32.73 ETS 168.21 ZAE 51.31 ETE 174.22 ZAC 80.30 ETC 256.41 CLP 32.10

PLANETOCENTRIC CONIC

C3 10.410 VHL 3.226 DLA 23.87 RAL 186.77 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 5.387 DPA -3.39 RAP 174.47 ECC 1.1713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 59 55	2929.88	-28.26	91.32	45.68	88.05	14 48 45	2329.9	-28.23	82.65
90.00	9 22 14	3854.29	-10.88	152.45	41.06	63.70	10 26 28	3254.3	-14.33	145.47
100.00	15 40 42	2604.95	-29.89	67.44	45.71	90.37	16 24 7	2004.9	-29.52	58.65
100.00	10 24 8	3654.46	-9.43	137.00	40.30	61.50	11 25 2	3054.5	-13.17	130.20
110.00	17 27 31	2270.72	-33.72	41.81	45.46	95.97	18 5 22	1670.7	-32.53	32.77
110.00	10 53 48	3561.44	-6.15	127.96	38.30	56.31	11 53 9	2961.4	-10.53	121.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.6566 TRA 1.2177 TC-19.9852 BAU 2.7819 SGT13934.3 SGR 664.3 SG3 583.0 ST 4786.3 SR 508.0 SS 576.3
RDE .2787 RRA .1956 RC3 -.3534 FAU .11364 RRT .6670 RRF .6428 RTF .9509 CRT .9948 CRS -.8649 CST -.8325
FDE .5108 FRA 1.4124 FC3-9.4505 BSP 48505 SGB13950.1 R23 .0104 R13 .9509 LSA 4836.8 MSA 319.2 SSA 39.1
BDE 2.6712 BRA 1.2333 BC319.9883 FSP 1852 SG113941.3 SG2 494.7 THA 1.82 EL1 4812.9 EL2 51.6 ALF 6.03

LAUNCH DATE DEC 23 1964 FLIGHT TIME 374.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 805.303 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.239 GAL .12 AZL 87.74 HCA 234.38 SMA 189.85 ECC .22496 INC 2.2623 V1 30.278
RP 206.93 LAP -1.84 LOP 325.56 VP 24.159 GAP -11.95 AZP 91.32 TAL .64 TAP 235.02 RCA 147.14 APO 232.56 V2 26.467
RC 327.330 GL 24.05 GP -6.60 ZAL 87.07 ZAP 32.20 ETS 168.27 ZAE 50.48 ETE 174.22 ZAC 80.64 ETC 256.36 CLP 31.58

PLANETOCENTRIC CONIC

C3 10.364 VHL 3.219 DLA 22.74 RAL 188.29 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 5.452 DPA -3.54 RAP 175.23 ECC 1.1706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 22 21	2871.10	-28.32	87.02	46.76	90.21	15 10 13	2271.1	-27.99	78.37
90.00	9 11 51	3911.28	-9.14	155.73	41.98	63.08	10 17 2	3311.3	-12.68	148.84
100.00	16 0 40	2554.09	-29.81	63.66	46.73	92.36	16 43 15	1954.1	-29.16	54.92
100.00	10 16 13	3703.52	-7.83	139.76	41.28	61.06	11 17 57	3103.5	-11.63	133.03
110.00	17 43 40	2231.89	-33.41	38.82	46.35	97.71	18 20 52	1631.9	-31.98	29.88
110.00	10 49 43	3598.48	-4.74	129.91	39.38	56.11	11 49 42	2998.5	-9.16	123.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.5315 TRA 1.3991 TC-20.2537 BAU 2.8066 SGT14058.7 SGR 650.4 SG3 563.2 ST 4594.4 SR 500.4 SS 526.6
RDE .2737 RRA .1978 RC3 -.3107 FAU .10882 RRT .6380 RRF .6094 RTF .9502 CRT .9959 CRS -.8031 CST -.7801
FDE .4069 FRA 1.4394 FC3-9.0902 BSP 48859 SGB14073.8 R23 .0031 R13 .9503 LSA 4630.7 MSA 328.7 SSA 39.7
BDE 2.5463 BRA 1.4130 BC320.2561 FSP 1763 SG114064.9 SG2 500.6 THA 1.69 EL1 4621.3 EL2 44.9 ALF 6.19

LAUNCH DATE DEC 23 1964 FLIGHT TIME 376.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 809.706 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.248	GAL	-.05	AZL	87.78	HCA	235.65	SMA	190.01	ECC	.22560	INC	2.2216	V1	30.278
RP	206.86	LAP	-1.83	LOP	326.83	VP	24.179	GAP	-12.02	AZP	91.25	TAL	359.71	TAP	235.36	RCA	147.14	APO	232.87	V2	26.474
RC	328.152	GL	23.63	GP	-6.43	ZAL	88.84	ZAP	31.67	ETS	168.32	ZAE	49.66	ETE	174.23	ZAC	80.97	ETC	256.31	CLP	31.08

PLANETOCENTRIC CONIC

C3	10.338	VHL	3.215	DLA	21.60	RAL	189.82	RAD	6567.4	VEL	11.477	PTH	2.00	VHP	5.518	DPA	-3.69	RAP	175.99	ECC	1.1701

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 43 32	2816.55	-28.24	83.03	47.86	92.21	15 30 28	2216.6	-27.63	74.42
90.00	9 2 53	3964.81	-7.48	158.79	43.01	62.61	10 8 58	3364.8	-11.09	151.97
100.00	16 19 52	2505.90	-29.62	60.09	47.77	94.23	17 1 38	1905.9	-28.72	51.40
100.00	10 9 14	3750.70	-6.26	142.39	42.35	60.71	11 11 45	3150.7	-10.12	135.72
110.00	17 59 32	2194.11	-33.02	35.93	47.29	99.38	18 36 6	1594.1	-31.38	27.10
110.00	10 46 4	3635.25	-3.34	131.83	40.55	55.96	11 46 39	3035.3	-7.79	125.57

DIFFERENTIAL CORRECTIONS

TDE	2.4228	TRA	1.5980	TC-20.4135	BAU	2.8216	SGT14154.1	SGR	643.2	SG3	538.3
RDE	.2730	RRA	.2017	RC3 -.2582	FAU	.10199	RRT	.6002	RRF	.5832	RTF
FDE	.3643	FRA	1.4970	FC3-8.5407	BSP	49944	SGB14168.7	R23	.0160	R13	.9490
BDE	2.4381	BRA	1.6107	BC320.4151	FSP	1819	SG114159.4	SG2	514.2	THA	1.56

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	4431.6	SR	500.1	SS	520.0
CRT	.9966	CRS	-.7635	CST	-.7570
LSA	4477.0	MSA	338.5	SSA	40.5
EL1	4459.5	EL2	41.0	ALF	6.42

LAUNCH DATE DEC 23 1964 FLIGHT TIME 378.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 814.109 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.257	GAL	-.23	AZL	87.82	HCA	236.91	SMA	190.16	ECC	.22628	INC	2.1821	V1	30.278
RP	206.81	LAP	-1.83	LOP	328.10	VP	24.198	GAP	-12.09	AZP	91.19	TAL	358.77	TAP	235.68	RCA	147.13	APO	233.19	V2	26.480
RC	328.970	GL	23.20	GP	-6.26	ZAL	90.63	ZAP	31.16	ETS	168.37	ZAE	48.86	ETE	174.23	ZAC	81.31	ETC	256.27	CLP	30.59

PLANETOCENTRIC CONIC

C3	10.333	VHL	3.214	DLA	20.45	RAL	191.36	RAD	6567.4	VEL	11.477	PTH	2.00	VHP	5.585	DPA	-3.86	RAP	176.76	ECC	1.1701

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 3 45	2765.25	-28.05	79.29	48.97	94.07	15 49 50	2165.2	-27.19	70.73
90.00	8 55 0	4015.91	-5.87	161.68	44.14	62.25	10 1 56	3415.9	-9.54	154.92
100.00	16 38 27	2459.88	-29.34	56.70	48.84	95.99	17 19 27	1859.9	-28.20	48.08
100.00	10 2 59	3796.52	-4.73	144.93	43.52	60.45	11 6 16	3196.5	-8.63	138.31
110.00	18 15 10	2157.28	-32.58	33.15	48.28	100.97	18 51 8	1557.3	-30.73	24.42
110.00	10 42 46	3671.88	-1.95	133.75	41.79	55.87	11 43 57	3071.9	-6.41	127.51

DIFFERENTIAL CORRECTIONS

TDE	2.2857	TRA	1.7912	TC-20.6101	BAU	2.8472	SGT14274.9	SGR	630.8	SG3	517.2
RDE	.2690	RRA	.2027	RC3 -.2167	FAU	.09711	RRT	.5678	RRF	.5450	RTF
FDE	.2587	FRA	1.5107	FC3-8.1367	BSP	49905	SGB14288.9	R23	.0075	R13	.9477
BDE	2.3014	BRA	1.8026	BC320.6112	FSP	1661	SG114279.4	SG2	519.0	THA	1.44

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	4219.1	SR	493.2	SS	477.9
CRT	.9963	CRS	-.6582	CST	-.6756
LSA	4259.9	MSA	351.5	SSA	41.1
EL1	4247.6	EL2	42.3	ALF	6.64

LAUNCH DATE DEC 23 1964 FLIGHT TIME 380.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 818.511 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.266	GAL	-.40	AZL	87.86	HCA	238.18	SMA	190.32	ECC	.22700	INC	2.1437	V1	30.278
RP	206.77	LAP	-1.82	LOP	329.37	VP	24.216	GAP	-12.16	AZP	91.13	TAL	357.82	TAP	236.00	RCA	147.12	APO	233.53	V2	26.486
RC	329.784	GL	22.76	GP	-6.10	ZAL	92.46	ZAP	30.66	ETS	168.42	ZAE	48.06	ETE	174.23	ZAC	81.63	ETC	256.23	CLP	30.11

PLANETOCENTRIC CONIC

C3	10.349	VHL	3.217	DLA	19.27	RAL	192.92	RAD	6567.4	VEL	11.478	PTH	2.00	VHP	5.654	DPA	-4.04	RAP	177.54	ECC	1.1703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 14	2716.54	-27.76	75.76	50.11	95.82	16 8 30	2116.5	-26.66	67.26
90.00	8 47 59	4065.26	-4.30	164.45	45.36	61.98	9 55 44	3465.3	-8.01	157.74
100.00	16 56 31	2415.69	-28.98	53.46	49.95	97.66	17 38 47	1815.7	-27.62	44.92
100.00	9 57 22	3841.34	-3.22	147.40	44.77	60.27	11 1 23	3241.3	-7.16	140.82
110.00	18 30 36	2121.34	-32.08	30.47	49.31	102.48	19 5 58	1521.3	-30.03	21.86
110.00	10 39 46	3708.46	-.55	135.66	43.10	55.82	11 41 35	3108.5	-5.03	129.44

DIFFERENTIAL CORRECTIONS

TDE	2.1533	TRA	1.9934	TC-20.7534	BAU	2.8715	SGT14392.7	SGR	621.8	SG3	497.8
RDE	.2670	RRA	.2035	RC3 -.1776	FAU	.09255	RRT	.5356	RRF	.5094	RTF
FDE	.1779	FRA	1.5252	FC3-7.7416	BSP	50380	SGB14406.2	R23	.0016	R13	.9473
BDE	2.1698	BRA	2.0038	BC320.7541	FSP	1595	SG114396.6	SG2	525.0	THA	1.33

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	4017.6	SR	489.3	SS	455.1
CRT	.9945	CRS	-.5499	CST	-.6009
LSA	4056.2	MSA	364.4	SSA	41.5
EL1	4046.9	EL2	50.8	ALF	6.91

LAUNCH DATE DEC 23 1964 FLIGHT TIME 382.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 822.910 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.275	GAL	-.58	AZL	87.89	HCA	239.45	SMA	190.48	ECC	.22776	INC	2.1063	V1	30.278
RP	206.73	LAP	-1.81	LOP	330.64	VP	24.233	GAP	-12.24	AZP	91.07	TAL	356.85	TAP	236.30	RCA	147.10	APO	233.87	V2	26.490
RC	330.595	GL	22.30	GP	-5.95	ZAL	94.32	ZAP	30.17	ETS	168.46	ZAE	47.27	ETE	174.23	ZAC	81.95	ETC	256.18	CLP	29.64

PLANETOCENTRIC CONIC

C3	10.388	VHL	3.223	DLA	18.08	RAL	194.49	RAD	6567.4	VEL	11.479	PTH	2.00	VHP	5.722	DPA	-4.24	RAP	178.33	ECC	1.1710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 42 6	2670.01	-27.39	72.40	51.29	97.47	16 26 36	2070.0	-26.08	63.98
90.00	8 41 39	4113.31	-2.76	167.14	46.67	61.81	9 50 12	3513.3	-6.51	160.47
100.00	17 14 10	2373.12	-28.56	50.37	51.10	99.23	17 53 43	1773.1	-26.99	41.92
100.00	9 52 16	3885.43	-1.73	149.82	46.10	60.15	10 57 1	3285.4	-5.69	143.27
110.00	18 45 51	2086.26	-31.54	27.88	50.40	103.93	19 20 37	1486.3	-29.30	19.38
110.00	10 37 4	3745.05	.85	137.56	44.48	55.83	11 39 29	3145.1	-3.64	131.36

DIFFERENTIAL CORRECTIONS

TDE	2.0188	TRA	2.2044	TC-20.8347	BAU	2.8936	SGT14499.9	SGR	614.3	SG3	476.5
RDE	.2660	RRA	.2043	RC3 -.1369	FAU	.08744	RRT	.5004	RRF	.4732	RTF
FDE	.1030	FRA	1.5420	FC3-7.2873	BSP	50817	SGB14512.9	R23	-.0009	R13	.9458
BDE	2.0362	BRA	2.2139	BC320.8352	FSP	1531	SG114503.2	SG2	531.7	THA	1.22

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

ST	3817.2	SR	486.5	SS	442.7
CRT	.9906	CRS	-.4272	CST	-.5219
LSA	3854.5	MSA	380.8	SSA	41.9
EL1	3847.5	EL2	66.1	ALF	7.20

LAUNCH DATE DEC 23 1964 FLIGHT TIME 384.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 827.307 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.283 GAL -.77 AZL 87.93 HCA 240.72 SMA 190.65 ECC .22857 INC 2.0699 V1 30.278
RP 206.70 LAP -1.81 LOP 331.91 VP 24.248 GAP -12.31 AZP 91.01 TAL 355.87 TAP 236.59 RCA 147.07 APO 234.22 V2 26.493
RC 331.403 GL 21.83 GP -5.80 ZAL 96.21 ZAP 29.70 ETS 168.50 ZAE 46.50 ETE 174.23 ZAC 82.27 ETC 256.14 CLP 29.18

PLANETOCENTRIC CONIC

C3 10.451 VHL 3.233 DLA 16.88 RAL 196.07 RAD 6567.4 VEL 11.482 PTH 2.00 VHP 5.792 DPA -4.44 RAP 179.12 ECC 1.1720

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 0 27	2625.36	-26.96	69.21	52.51	99.01	16 44 12	2025.4	-25.44	60.87
90.00	8 35 54	4160.37	-1.24	169.77	48.05	61.71	9 45 14	3560.4	-5.01	163.12
100.00	17 31 25	2332.00	-28.07	47.41	52.30	100.72	18 10 17	1732.0	-26.31	39.05
100.00	9 47 37	3928.97	-.25	152.21	47.50	60.11	10 53 6	3329.0	-4.23	145.68
110.00	19 0 54	2052.02	-30.95	25.38	51.53	105.29	19 35 6	1452.0	-28.54	17.01
110.00	10 34 37	3781.71	2.25	139.48	45.93	55.88	11 37 39	3181.7	-2.24	133.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.8814 TRA 2.4239 TC-20.8746 BAU 2.9165 SGT14609.1 SGR 608.3 SG3 456.7 ST 3619.0 SR 484.8 SS 438.9
RDE .2659 RRA .2048 RC3 -.0993 FAU .08271 RRT .4659 RRF .4374 RTF .9445 CRT .9835 CRS -.2990 CST -.4473
FDE .0340 FRA 1.5564 FC3-6.8518 BSP 51214 SGB14621.8 R23 -.0037 R13 .9445 LSA 3655.5 MSA 399.9 SSA 42.1
BDE 1.9001 BRA 2.4325 BC320.8748 FSP 1461 SG114611.9 SG2 538.2 THA 1.11 EL1 3650.2 EL2 87.1 ALF 7.51

LAUNCH DATE DEC 23 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 831.701 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.292 GAL -.95 AZL 87.97 HCA 241.98 SMA 190.81 ECC .22943 INC 2.0343 V1 30.278
RP 206.68 LAP -1.80 LOP 333.17 VP 24.263 GAP -12.39 AZP 90.96 TAL 354.88 TAP 236.87 RCA 147.03 APO 234.58 V2 26.495
RC 332.208 GL 21.35 GP -5.67 ZAL 98.12 ZAP 29.23 ETS 168.53 ZAE 45.73 ETE 174.22 ZAC 82.58 ETC 256.10 CLP 28.73

PLANETOCENTRIC CONIC

C3 10.537 VHL 3.246 DLA 15.67 RAL 197.66 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 5.863 DPA -4.66 RAP 179.92 ECC 1.1734

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 18 22	2582.39	-26.46	66.16	53.78	100.46	17 1 24	1982.4	-24.75	57.91
90.00	8 30 39	4206.68	.25	172.35	49.51	61.68	9 40 46	3606.7	-3.53	165.72
100.00	17 48 20	2292.22	-27.54	44.57	53.54	102.12	18 26 33	1692.2	-25.59	36.32
100.00	9 43 21	3972.09	1.21	154.58	48.98	60.13	10 49 33	3372.1	-2.77	148.05
110.00	19 15 47	2018.62	-30.32	22.98	52.72	106.59	19 49 26	1418.6	-27.75	14.73
110.00	10 32 24	3818.46	3.65	141.40	47.45	55.99	11 36 2	3218.5	-.84	135.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7432 TRA 2.6503 TC-20.8620 BAU 2.9389 SGT14714.5 SGR 603.5 SG3 436.5 ST 3428.8 SR 484.0 SS 441.6
RDE .2667 RRA .2048 RC3 -.0628 FAU .07794 RRT .4307 RRF .4014 RTF .9429 CRT .9719 CRS -.1746 CST -.3855
FDE -.0283 FRA 1.5662 FC3-6.4032 BSP 51690 SGB14726.9 R23 -.0058 R13 .9429 LSA 3465.2 MSA 420.9 SSA 42.2
BDE 1.7635 BRA 2.6582 BC320.8621 FSP 1406 SG114716.8 SG2 544.6 THA 1.01 EL1 3461.0 EL2 112.8 ALF 7.82

LAUNCH DATE DEC 23 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 836.092 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.301 GAL -1.14 AZL 88.00 HCA 243.25 SMA 190.97 ECC .23033 INC 1.9996 V1 30.278
RP 206.67 LAP -1.79 LOP 334.44 VP 24.277 GAP -12.47 AZP 90.90 TAL 353.88 TAP 237.13 RCA 146.98 APO 234.96 V2 26.497
RC 333.009 GL 20.85 GP -5.53 ZAL 100.04 ZAP 28.78 ETS 168.56 ZAE 44.98 ETE 174.22 ZAC 82.89 ETC 256.06 CLP 28.29

PLANETOCENTRIC CONIC

C3 10.650 VHL 3.263 DLA 14.45 RAL 199.25 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 5.935 DPA -4.88 RAP 180.73 ECC 1.1753

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 35 53	2540.98	-25.92	63.25	55.09	101.82	17 18 14	1941.0	-24.03	55.09
90.00	8 25 49	4252.39	1.73	174.90	51.04	61.73	9 36 42	3652.4	-2.06	168.28
100.00	18 4 57	2253.72	-26.96	41.86	54.83	103.44	18 42 31	1653.7	-24.84	33.70
100.00	9 39 26	4014.89	2.66	156.93	50.52	60.22	10 46 21	3414.9	-1.32	150.40
110.00	19 30 30	1986.07	-29.67	20.67	53.96	107.81	20 3 36	1386.1	-26.95	12.54
110.00	10 30 23	3855.31	5.05	143.33	49.04	56.15	11 34 38	3255.3	.57	137.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6024 TRA 2.8841 TC-20.8017 BAU 2.9617 SGT14818.5 SGR 599.6 SG3 417.1 ST 3246.8 SR 483.9 SS 449.3
RDE .2683 RRA .2043 RC3 -.0288 FAU .07340 RRT .3960 RRF .3650 RTF .9413 CRT .9545 CRS -.0538 CST -.3363
FDE -.0874 FRA 1.5713 FC3-5.9672 BSP 52091 SGB14830.6 R23 -.0090 R13 .9413 LSA 3283.0 MSA 445.0 SSA 42.0
BDE 1.6247 BRA 2.8913 BC320.8017 FSP 1337 SG114820.4 SG2 550.5 THA .92 EL1 3279.6 EL2 143.0 ALF 8.11

LAUNCH DATE DEC 23 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 840.478 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.310 GAL -1.34 AZL 88.03 HCA 244.52 SMA 191.13 ECC .23129 INC 1.9657 V1 30.278
RP 206.67 LAP -1.77 LOP 335.71 VP 24.289 GAP -12.55 AZP 90.85 TAL 352.87 TAP 237.39 RCA 146.93 APO 235.34 V2 26.497
RC 333.807 GL 20.35 GP -5.41 ZAL 101.98 ZAP 28.34 ETS 168.59 ZAE 44.23 ETE 174.21 ZAC 83.20 ETC 256.03 CLP 27.86

PLANETOCENTRIC CONIC

C3 10.789 VHL 3.285 DLA 13.23 RAL 200.84 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 6.007 DPA -5.12 RAP 181.54 ECC 1.1776

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 2	2501.02	-25.33	60.47	56.44	103.10	17 34 43	1901.0	-23.28	52.40
90.00	8 21 22	4297.64	3.19	177.43	52.64	61.85	9 33 0	3697.6	-.60	170.80
100.00	18 21 16	2216.45	-26.34	39.26	56.16	104.67	18 58 13	1616.4	-24.07	31.20
100.00	9 35 49	4057.45	4.10	159.27	52.14	60.36	10 43 27	3457.4	.12	152.74
110.00	19 45 2	1954.38	-28.99	18.46	55.26	108.96	20 17 36	1354.4	-26.13	10.45
110.00	10 28 33	3892.28	6.45	145.28	50.68	56.36	11 33 26	3292.3	1.99	139.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.4617 TRA 3.1256 TC-20.6902 BAU 2.9842 SGT14920.1 SGR 596.8 SG3 397.6 ST 3080.8 SR 484.9 SS 460.3
RDE .2708 RRA .2035 RC3 .0036 FAU .06884 RRT .3610 RRF .3296 RTF .9393 CRT .9294 CRS .0513 CST -.3101
FDE -.1391 FRA 1.5737 FC3-5.5237 BSP 52540 SGB14932.0 R23 -.0108 R13 .9393 LSA 3116.8 MSA 470.9 SSA 41.7
BDE 1.4866 BRA 3.1322 BC320.6902 FSP 1281 SG114921.6 SG2 556.5 THA .83 EL1 3113.7 EL2 177.1 ALF 8.35

LAUNCH DATE DEC 23 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 844.860 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.319 GAL -1.54 AZL 88.07 HCA 245.79 SMA 191.30 ECC .23230 INC 1.9324 V1 30.278
RP 206.68 LAP -1.76 LOP 336.98 VP 24.300 GAP -12.63 AZP 90.79 TAL 351.84 TAP 237.63 RCA 146.86 APO 235.73 V2 26.496
RC 334.601 GL 19.84 GP -5.29 ZAL 103.93 ZAP 27.90 ETS 168.62 ZAE 43.50 ETE 174.20 ZAC 83.50 ETC 256.00 CLP 27.44

PLANETOCENTRIC CONIC

C3 10.955 VHL 3.310 DLA 12.00 RAL 202.44 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 6.081 DPA -5.37 RAP 182.37 ECC 1.1803

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 9 51	2462.45	-24.71	57.82	57.84	104.29	17 50 54	1862.4	-22.50	49.84
90.00	8 17 15	4342.49	4.62	179.94	54.31	62.03	9 29 38	3742.5	.85	173.30
100.00	18 37 19	2180.38	-25.69	36.78	57.55	105.83	19 13 39	1580.4	-23.27	28.81
100.00	9 32 29	4099.79	5.52	161.61	53.82	60.57	10 40 48	3499.8	1.56	155.06
110.00	19 59 23	1923.60	-28.29	16.33	56.61	110.04	20 31 26	1323.6	-25.30	8.44
110.00	10 26 54	3929.34	7.85	147.25	52.39	56.62	11 32 23	3329.3	3.40	140.98

DIFFERENTIAL COURSE CORRECTIONS
TDE 1.3186 TRA 3.3742 TC-20.5332 BAU 3.0074
RDE .2741 RRA .2022 RC3 .0338 FAU .06438
FDE -.1876 FRA 1.5712 FC3-5.0878 BSP 52957
BDE 1.3468 BRA 3.3802 BC320.5333 FSP 1219

MID-COURSE EXECUTION ACCURACY
SGT15020.9 SGR 594.8 SG3 378.4
RRT .3264 RRF .2939 RTF .9370
SGB15032.6 R23 -.0131 R13 .9370
SG115022.1 SG2 562.1 THA .74

ORBIT DETERMINATION ACCURACY
ST 2930.1 SR 486.5 SS 473.3
CRT .8945 CRS .1474 CST -.3009
LSA 2965.7 MSA 499.2 SSA 41.2
EL1 2962.5 EL2 215.1 ALF 8.49

LAUNCH DATE DEC 23 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 849.238 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.328 GAL -1.74 AZL 88.10 HCA 247.06 SMA 191.46 ECC .23336 INC 1.8998 V1 30.278
RP 206.69 LAP -1.75 LOP 338.25 VP 24.311 GAP -12.71 AZP 90.74 TAL 350.80 TAP 237.86 RCA 146.78 APO 236.14 V2 26.494
RC 335.390 GL 19.31 GP -5.18 ZAL 105.88 ZAP 27.48 ETS 168.64 ZAE 42.77 ETE 174.19 ZAC 83.80 ETC 255.96 CLP 27.03

PLANETOCENTRIC CONIC

C3 11.151 VHL 3.339 DLA 10.78 RAL 204.03 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 6.156 DPA -5.62 RAP 183.19 ECC 1.1835

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 26 22	2425.22	-24.06	55.28	59.29	105.40	18 6 47	1825.2	-21.71	47.40
90.00	8 13 25	4387.00	6.04	182.45	56.04	62.28	9 26 32	3787.0	2.28	175.78
100.00	18 53 6	2145.51	-25.02	34.40	58.98	106.91	19 28 51	1545.5	-22.47	26.53
100.00	9 29 23	4141.95	6.92	163.95	55.56	60.85	10 38 25	3542.0	2.98	157.38
110.00	20 13 33	1893.73	-27.58	14.30	58.00	111.05	20 45 7	1293.7	-24.46	6.52
110.00	10 25 25	3966.49	9.23	149.23	54.15	56.94	11 31 31	3366.5	4.81	142.93

DIFFERENTIAL CORRECTIONS
TDE 1.1755 TRA 3.6317 TC-20.3256 BAU 3.0302
RDE .2783 RRA .2005 RC3 .0617 FAU .06006
FDE -.2312 FRA 1.5658 FC3-4.6624 BSP 53383
BDE 1.2080 BRA 3.6372 BC320.3257 FSP 1161

MID-COURSE EXECUTION ACCURACY
SGT15118.9 SGR 593.5 SG3 359.7
RRT .2926 RRF .2590 RTF .9345
SGB15130.5 R23 -.0154 R13 .9345
SG115119.8 SG2 567.5 THA .66

ORBIT DETERMINATION ACCURACY
ST 2802.6 SR 488.9 SS 487.2
CRT .8484 CRS .2307 CST -.3113
LSA 2837.2 MSA 528.6 SSA 40.6
EL1 2833.4 EL2 256.0 ALF 8.49

LAUNCH DATE DEC 23 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 853.609 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.337 GAL -1.94 AZL 88.13 HCA 248.33 SMA 191.63 ECC .23447 INC 1.8679 V1 30.278
RP 206.72 LAP -1.74 LOP 339.52 VP 24.320 GAP -12.80 AZP 90.69 TAL 349.75 TAP 238.08 RCA 146.70 APO 236.56 V2 26.491
RC 336.176 GL 18.78 GP -5.07 ZAL 107.83 ZAP 27.07 ETS 168.66 ZAE 42.06 ETE 174.18 ZAC 84.09 ETC 255.94 CLP 26.63

PLANETOCENTRIC CONIC

C3 11.378 VHL 3.373 DLA 9.56 RAL 205.61 RAD 6567.4 VEL 11.522 PTH 2.01 VHP 6.231 DPA -5.88 RAP 184.03 ECC 1.1872

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 42 34	2389.32	-23.39	52.86	60.79	106.43	18 22 24	1789.3	-20.92	45.07
90.00	8 9 52	4431.21	7.43	184.95	57.83	62.60	9 23 43	3831.2	3.70	178.26
100.00	19 8 37	2111.82	-24.34	32.13	60.46	107.91	19 43 48	1511.8	-21.66	24.36
100.00	9 26 30	4183.94	8.31	166.30	57.36	61.18	10 36 14	3583.9	4.40	159.69
110.00	20 27 32	1864.83	-26.85	12.37	59.45	111.99	20 58 37	1264.8	-23.63	4.69
110.00	10 24 4	4003.71	10.61	151.23	55.97	57.31	11 30 47	3403.7	6.22	144.89

DIFFERENTIAL CORRECTIONS
TDE 1.0311 TRA 3.8953 TC-20.0757 BAU 3.0537
RDE .2832 RRA .1984 RC3 .0874 FAU .05578
FDE -.2700 FRA 1.5556 FC3-4.2442 BSP 53786
BDE 1.0693 BRA 3.9003 BC320.0758 FSP 1104

MID-COURSE EXECUTION ACCURACY
SGT15215.5 SGR 593.0 SG3 341.1
RRT .2590 RRF .2247 RTF .9314
SGB15227.0 R23 -.0174 R13 .9314
SG115216.3 SG2 572.8 THA .58

ORBIT DETERMINATION ACCURACY
ST 2699.0 SR 491.9 SS 500.4
CRT .7895 CRS .3027 CST -.3388
LSA 2732.1 MSA 557.7 SSA 39.8
EL1 2727.1 EL2 298.8 ALF 8.29

LAUNCH DATE DEC 23 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 857.975 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.346 GAL -2.15 AZL 88.16 HCA 249.60 SMA 191.79 ECC .23565 INC 1.8364 V1 30.278
RP 206.75 LAP -1.72 LOP 340.79 VP 24.328 GAP -12.89 AZP 90.64 TAL 348.69 TAP 238.29 RCA 146.60 APO 236.99 V2 26.488
RC 336.957 GL 18.24 GP -4.96 ZAL 109.78 ZAP 26.66 ETS 168.67 ZAE 41.35 ETE 174.16 ZAC 84.39 ETC 255.91 CLP 26.23

PLANETOCENTRIC CONIC

C3 11.636 VHL 3.411 DLA 8.35 RAL 207.19 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 6.308 DPA -6.16 RAP 184.87 ECC 1.1915

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 29	2354.74	-22.70	50.56	62.33	107.39	18 37 44	1754.7	-20.11	42.85
90.00	8 6 32	4475.14	8.80	187.45	59.69	62.98	9 21 7	3875.1	5.11	180.72
100.00	19 23 52	2079.34	-23.64	29.97	61.99	108.85	19 58 31	1479.3	-20.85	22.29
100.00	9 23 50	4225.77	9.67	168.65	59.22	61.58	10 34 16	3625.8	5.80	162.00
110.00	20 41 20	1836.91	-26.13	10.52	60.95	112.87	21 11 57	1236.9	-22.80	2.94
110.00	10 22 51	4040.96	11.97	153.26	57.85	57.74	11 30 12	3441.0	7.62	146.86

DIFFERENTIAL CORRECTIONS
TDE .8858 TRA 4.1669 TC-19.7841 BAU 3.0777
RDE .2890 RRA .1958 RC3 .1107 FAU .05164
FDE -.3048 FRA 1.5426 FC3-3.8420 BSP 54193
BDE .9317 BRA 4.1715 BC319.7844 FSP 1048

MID-COURSE EXECUTION ACCURACY
SGT15311.2 SGR 593.1 SG3 323.2
RRT .2262 RRF .1912 RTF .9279
SGB15322.7 R23 -.0196 R13 .9279
SG115311.8 SG2 577.7 THA .50

ORBIT DETERMINATION ACCURACY
ST 2623.2 SR 495.5 SS 512.9
CRT .7177 CRS .3653 CST -.3798
LSA 2654.4 MSA 585.2 SSA 38.9
EL1 2647.7 EL2 341.9 ALF 7.85

LAUNCH DATE DEC 23 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 862.334 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.355 GAL -2.36 AZL 88.19 HCA 250.86 SMA 191.96 ECC .23689 INC 1.8056 V1 30.278
RP 206.79 LAP -1.71 LOP 342.06 VP 24.335 GAP -12.98 AZP 90.59 TAL 347.62 TAP 238.49 RCA 146.49 APO 237.43 V2 26.483
RC 337.733 GL 17.70 GP -4.86 ZAL 111.72 ZAP 26.27 ETS 168.69 ZAE 40.65 ETE 174.14 ZAC 84.68 ETC 255.89 CLP 25.85

PLANETOCENTRIC CONIC

C3 11.928 VHL 3.454 DLA 7.15 RAL 208.76 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 6.386 DPA -6.43 RAP 185.72 ECC 1.1963

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 6	2321.45	-22.01	48.37	63.91	108.28	18 52 48	1721.5	-19.31	40.74
90.00	8 3 25	4518.80	10.14	189.96	61.60	63.42	9 18 44	3918.8	6.49	183.18
100.00	19 38 52	2048.06	-22.94	27.92	63.57	109.71	20 13 0	1448.1	-20.04	20.32
100.00	9 21 21	4267.43	11.01	171.02	61.14	62.03	10 32 28	3667.4	7.18	164.32
110.00	20 54 56	1810.02	-25.41	8.77	62.49	113.68	21 25 6	1210.0	-21.98	1.28
110.00	10 21 46	4078.22	13.31	155.31	59.79	58.22	11 29 44	3478.2	9.02	148.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7423 TRA 4.4478 TC-19.4506 BAU 3.1017 SGT15405.3 SGR 593.8 SG3 305.3 ST 2580.1 SR 499.7 SS 523.1
RDE .2955 RRA .1928 RC3 .1319 FAU .04751 RRT .1943 RRF .1586 RTF .9238 CRT .6348 CRS .4190 CST -.4299
FDE -.3348 FRA 1.5251 FC3-3.4487 BSP 54609 SGB15416.7 R23 -.0216 R13 .9237 LSA 2609.2 MSA 608.8 SSA 37.9
BDE .7990 BRA 4.4520 BC319.4511 FSP 994 SG115405.7 SG2 582.5 THA .43 EL1 2599.9 EL2 383.2 ALF 7.17

LAUNCH DATE DEC 23 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 866.685 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.364 GAL -2.58 AZL 88.22 HCA 252.13 SMA 192.12 ECC .23819 INC 1.7752 V1 30.278
RP 206.84 LAP -1.69 LOP 343.33 VP 24.341 GAP -13.07 AZP 90.54 TAL 346.54 TAP 238.67 RCA 146.36 APO 237.89 V2 26.477
RC 338.506 GL 17.15 GP -4.77 ZAL 113.65 ZAP 25.89 ETS 168.70 ZAE 39.96 ETE 174.12 ZAC 84.97 ETC 255.87 CLP 25.47

PLANETOCENTRIC CONIC

C3 12.254 VHL 3.501 DLA 5.96 RAL 210.31 RAD 6567.5 VEL 11.560 PTH 2.02 VHP 6.465 DPA -6.72 RAP 186.57 ECC 1.2017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 27	2289.48	-21.31	46.28	65.54	109.10	19 7 36	1689.5	-18.51	38.73
90.00	8 0 30	4562.18	11.45	192.47	63.56	63.92	9 16 33	3962.2	7.85	185.64
100.00	19 53 37	2018.01	-22.23	25.96	65.18	110.51	20 27 15	1418.0	-19.24	18.44
100.00	9 19 2	4308.89	12.32	173.40	63.11	62.55	10 30 50	3708.9	8.55	166.64
110.00	21 8 19	1784.19	-24.69	7.10	64.07	114.43	21 38 4	1184.2	-21.18	359.71
110.00	10 20 48	4115.46	14.64	157.38	61.77	58.76	11 29 24	3515.5	10.39	150.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5993 TRA 4.7353 TC-19.0813 BAU 3.1261 SGT15496.9 SGR 594.9 SG3 288.0 ST 2566.7 SR 504.4 SS 530.9
RDE .3029 RRA .1893 RC3 .1505 FAU .04356 RRT .1634 RRF .1266 RTF .9193 CRT .5433 CRS .4661 CST -.4843
FDE -.3607 FRA 1.5030 FC3-3.0777 BSP 55014 SGB15508.3 R23 -.0242 R13 .9192 LSA 2594.1 MSA 627.4 SSA 36.8
BDE .6715 BRA 4.7391 BC319.0819 FSP 939 SG115497.2 SG2 586.9 THA .36 EL1 2581.7 EL2 421.0 ALF 6.26

LAUNCH DATE DEC 23 1964 FLIGHT TIME 404.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 871.029 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.373 GAL -2.80 AZL 88.25 HCA 253.40 SMA 192.29 ECC .23955 INC 1.7452 V1 30.278
RP 206.90 LAP -1.67 LOP 344.60 VP 24.346 GAP -13.17 AZP 90.50 TAL 345.45 TAP 238.84 RCA 146.23 APO 238.36 V2 26.470
RC 339.274 GL 16.61 GP -4.67 ZAL 115.56 ZAP 25.51 ETS 168.71 ZAE 39.28 ETE 174.10 ZAC 85.26 ETC 255.85 CLP 25.11

PLANETOCENTRIC CONIC

C3 12.617 VHL 3.552 DLA 4.78 RAL 211.86 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 6.545 DPA -7.01 RAP 187.43 ECC 1.2076

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 31	2258.81	-20.62	44.30	67.21	109.85	19 22 9	1658.8	-17.73	36.82
90.00	7 57 47	4605.29	12.73	195.00	65.58	64.49	9 14 32	4005.3	9.19	188.10
100.00	20 8 6	1989.18	-21.53	24.10	66.84	111.25	20 41 15	1389.2	-18.46	16.66
100.00	9 16 52	4350.15	13.61	175.79	65.13	63.13	10 29 22	3750.1	9.89	168.97
110.00	21 21 30	1759.45	-23.98	5.53	65.70	115.12	21 50 50	1159.4	-20.40	358.22
110.00	10 19 57	4152.64	15.94	159.48	63.81	59.35	11 29 10	3552.6	11.76	152.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4565 TRA 5.8313 TC-18.6790 BAU 3.1509 SGT15587.0 SGR 596.4 SG3 271.0 ST 2582.6 SR 509.6 SS 536.3
RDE .3109 RRA .1854 RC3 .1670 FAU .03966 RRT .1333 RRF .0957 RTF .9138 CRT .4467 CRS .5074 CST -.5397
FDE -.3827 FRA 1.4777 FC3-2.7212 BSP 55395 SGB15598.5 R23 -.0266 R13 .9138 LSA 2608.7 MSA 640.5 SSA 35.7
BDE .5523 BRA 5.0347 BC318.6798 FSP 886 SG115587.3 SG2 591.1 THA .29 EL1 2592.9 EL2 454.1 ALF 5.20

LAUNCH DATE DEC 23 1964 FLIGHT TIME 406.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 875.364 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.382 GAL -3.02 AZL 88.28 HCA 254.66 SMA 192.46 ECC .24098 INC 1.7156 V1 30.278
RP 206.97 LAP -1.65 LOP 345.86 VP 24.350 GAP -13.27 AZP 90.45 TAL 344.34 TAP 239.01 RCA 146.08 APO 238.84 V2 26.462
RC 340.039 GL 16.06 GP -4.59 ZAL 117.46 ZAP 25.15 ETS 168.71 ZAE 38.60 ETE 174.07 ZAC 85.54 ETC 255.83 CLP 24.75

PLANETOCENTRIC CONIC

C3 13.019 VHL 3.608 DLA 3.63 RAL 213.39 RAD 6567.5 VEL 11.593 PTH 2.03 VHP 6.626 DPA -7.31 RAP 188.30 ECC 1.2143

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 18	2229.45	-19.93	42.43	68.91	110.54	19 36 27	1629.4	-16.95	35.01
90.00	7 55 13	4648.10	13.97	197.53	67.64	65.12	9 12 41	4048.1	10.50	190.57
100.00	20 22 20	1961.60	-20.84	22.35	68.53	111.92	20 55 2	1361.6	-17.69	14.98
100.00	9 14 51	4391.18	14.86	178.20	67.21	63.76	10 28 3	3791.2	11.21	171.30
110.00	21 34 28	1735.82	-23.29	4.04	67.36	115.76	22 3 24	1135.8	-19.63	356.81
110.00	10 19 12	4189.73	17.22	161.60	65.89	60.00	11 29 2	3589.7	13.10	154.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3135 TRA 5.3340 TC-18.2528 BAU 3.1771 SGT15677.3 SGR 598.2 SG3 254.5 ST 2624.2 SR 515.0 SS 539.6
RDE .3197 RRA .1811 RC3 .1814 FAU .03582 RRT .1039 RRF .0653 RTF .9071 CRT .3487 CRS .5451 CST -.5914
FDE -.4021 FRA 1.4484 FC3-2.3820 BSP 55740 SGB15688.7 R23 -.0293 R13 .9071 LSA 2649.8 MSA 648.6 SSA 34.6
BDE .4477 BRA 5.3371 BC318.2537 FSP 832 SG115677.4 SG2 595.0 THA .23 EL1 2630.6 EL2 481.5 ALF 4.05

LAUNCH DATE DEC 23 1964 FLIGHT TIME 408.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 879.690 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.391 GAL -3.25 AZL 88.31 HCA 255.93 SMA 192.63 ECC .24248 INC 1.6865 V1 30.278
RP 207.04 LAP -1.64 LOP 347.13 VP 24.352 GAP -13.37 AZP 90.41 TAL 343.23 TAP 239.16 RCA 145.92 APO 239.34 V2 26.453
RC 340.800 GL 15.51 GP -4.50 ZAL 119.33 ZAP 24.79 ETS 168.72 ZAE 37.94 ETE 174.04 ZAC 85.82 ETC 255.82 CLP 24.40

PLANETOCENTRIC CONIC

C3 13.461 VHL 3.669 DLA 2.50 RAL 214.91 RAD 6567.5 VEL 11.612 PTH 2.03 VHP 6.709 DPA -7.62 RAP 189.17 ECC 1.2215

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 48	2201.40	-19.25	40.65	70.65	111.18	19 50 29	1601.4	-16.20	33.30
90.00	7 52 48	4690.61	15.17	200.07	69.76	65.80	9 10 59	4090.6	11.78	193.04
100.00	20 36 18	1935.28	-20.17	20.69	70.26	112.55	21 8 34	1335.3	-16.93	13.38
100.00	9 12 59	4431.97	16.07	180.62	69.33	64.45	10 26 51	3832.0	12.50	173.65
110.00	21 47 13	1713.32	-22.62	2.64	69.07	116.34	22 15 47	1113.3	-18.90	355.48
110.00	10 18 33	4226.69	18.46	163.74	68.03	60.71	11 29 0	3626.7	14.42	156.96

DIFFERENTIAL CORRECTIONS
TDE .1731 TRA 5.6464 TC-17.7988 BAU 3.2033
RDE .3292 RRA .1763 RC3 .1935 FAU .03212
FDE -.4171 FRA 1.4146 FC3-2.0656 BSP 56114
BDE .3719 BRA 5.6492 BC317.7999 FSP 780

MID-COURSE EXECUTION ACCURACY
SGT15765.5 SGR 600.4 SG3 238.4
RRT .0758 RRF .0359 RTF .8998
SGB15776.9 R23 -.0326 R13 .8998
SG115765.6 SG2 598.6 THA .17

ORBIT DETERMINATION ACCURACY
ST 2690.3 SR 520.7 SS 539.6
CRT .2543 CRS .5782 CST -.6382
LSA 2715.6 MSA 651.3 SSA 33.4
EL1 2693.7 EL2 503.0 ALF 2.92

LAUNCH DATE DEC 23 1964 FLIGHT TIME 410.00 ARRIVAL DATE FEB 6 1966

HELIOCENTRIC CONIC DISTANCE 884.005 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.400 GAL -3.48 AZL 88.34 HCA 257.19 SMA 192.80 ECC .24405 INC 1.6576 V1 30.278
RP 207.13 LAP -1.62 LOP 348.39 VP 24.354 GAP -13.48 AZP 90.37 TAL 342.10 TAP 239.29 RCA 145.74 APO 239.85 V2 26.444
RC 341.558 GL 14.97 GP -4.42 ZAL 121.18 ZAP 24.44 ETS 168.72 ZAE 37.28 ETE 174.01 ZAC 86.11 ETC 255.81 CLP 24.06

PLANETOCENTRIC CONIC

C3 13.945 VHL 3.734 DLA 1.39 RAL 216.41 RAD 6567.5 VEL 11.633 PTH 2.04 VHP 6.793 DPA -7.93 RAP 190.05 ECC 1.2295

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 2	2174.67	-18.58	38.97	72.43	111.76	20 4 16	1574.7	-15.46	31.68
90.00	7 50 32	4732.80	16.33	202.62	71.92	66.54	9 9 25	4132.8	13.02	195.51
100.00	20 50 1	1910.21	-19.50	19.12	72.03	113.11	21 21 51	1310.2	-16.21	11.88
100.00	9 11 14	4472.49	17.24	183.05	71.50	65.20	10 25 46	3872.5	13.75	176.00
110.00	21 59 44	1691.97	-21.97	1.32	70.80	116.87	22 27 56	1092.0	-18.19	354.23
110.00	10 18 0	4263.49	19.67	165.90	70.21	61.46	11 29 3	3663.5	15.71	159.03

DIFFERENTIAL CORRECTIONS
TDE .0344 TRA 5.9658 TC-17.3246 BAU 3.2301
RDE .3394 RRA .1711 RC3 .2037 FAU .02844
FDE -.4282 FRA 1.3770 FC3-1.7656 BSP 56466
BDE .3412 BRA 5.9682 BC317.3258 FSP 729

MID-COURSE EXECUTION ACCURACY
SGT15851.0 SGR 602.8 SG3 222.6
RRT .0485 RRF .0078 RTF .8908
SGB15862.5 R23 -.0355 R13 .8908
SG115851.1 SG2 602.1 THA .11

ORBIT DETERMINATION ACCURACY
ST 2774.6 SR 526.7 SS 536.4
CRT .1656 CRS .6074 CST -.6792
LSA 2800.0 MSA 650.0 SSA 32.3
EL1 2776.0 EL2 519.2 ALF 1.87

LAUNCH DATE DEC 23 1964 FLIGHT TIME 412.00 ARRIVAL DATE FEB 8 1966

HELIOCENTRIC CONIC DISTANCE 888.310 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.409 GAL -3.72 AZL 88.37 HCA 258.46 SMA 192.97 ECC .24570 INC 1.6291 V1 30.278
RP 207.22 LAP -1.60 LOP 349.66 VP 24.355 GAP -13.59 AZP 90.33 TAL 340.96 TAP 239.42 RCA 145.55 APO 240.38 V2 26.433
RC 342.314 GL 14.43 GP -4.34 ZAL 123.00 ZAP 24.10 ETS 168.72 ZAE 36.63 ETE 173.98 ZAC 86.39 ETC 255.81 CLP 23.73

PLANETOCENTRIC CONIC

C3 14.474 VHL 3.804 DLA .30 RAL 217.89 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 6.878 DPA -8.24 RAP 190.93 ECC 1.2382

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 59	2149.24	-17.93	37.39	74.24	112.29	20 17 48	1549.2	-14.75	30.15
90.00	7 48 24	4774.65	17.45	205.19	74.13	67.34	9 7 59	4174.6	14.23	197.99
100.00	21 3 28	1886.41	-18.86	17.64	73.82	113.63	21 34 54	1286.4	-15.51	10.46
100.00	9 9 36	4512.71	18.37	185.51	73.71	66.00	10 24 49	3912.7	14.98	178.36
110.00	22 12 2	1671.79	-21.34	.09	72.57	117.36	22 39 54	1071.8	-17.51	353.06
110.00	10 17 32	4300.09	20.85	168.09	72.43	62.28	11 29 12	3700.1	16.97	161.11

DIFFERENTIAL CORRECTIONS
TDE -.1036 TRA 6.2930 TC-16.8363 BAU 3.2581
RDE .3503 RRA .1655 RC3 .2120 FAU .02486
FDE -.4371 FRA 1.3356 FC3-1.4867 BSP 56778
BDE .3653 BRA 6.2952 BC316.8376 FSP 679

MID-COURSE EXECUTION ACCURACY
SGT15936.1 SGR 605.4 SG3 207.3
RRT .0221 RRF -.0196 RTF .8801
SGB15947.6 R23 -.0391 R13 .8801
SG115936.1 SG2 605.2 THA .05

ORBIT DETERMINATION ACCURACY
ST 2873.4 SR 532.9 SS 531.0
CRT .0839 CRS .6349 CST -.7133
LSA 2898.9 MSA 646.4 SSA 31.3
EL1 2873.7 EL2 530.9 ALF .92

LAUNCH DATE DEC 23 1964 FLIGHT TIME 414.00 ARRIVAL DATE FEB 10 1966

HELIOCENTRIC CONIC DISTANCE 892.603 EARTH TO MARS

RL 147.14 LAL -.00 LOL 91.21 VL 33.418 GAL -3.96 AZL 88.40 HCA 259.72 SMA 193.13 ECC .24742 INC 1.6009 V1 30.278
RP 207.32 LAP -1.58 LOP 350.92 VP 24.354 GAP -13.70 AZP 90.29 TAL 339.82 TAP 239.54 RCA 145.35 APO 240.92 V2 26.421
RC 343.066 GL 13.89 GP -4.27 ZAL 124.79 ZAP 23.77 ETS 168.72 ZAE 35.99 ETE 173.95 ZAC 86.66 ETC 255.81 CLP 23.40

PLANETOCENTRIC CONIC

C3 15.049 VHL 3.879 DLA -.76 RAL 219.35 RAD 6567.6 VEL 11.680 PTH 2.05 VHP 6.964 DPA -8.56 RAP 191.82 ECC 1.2477

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 40	2125.12	-17.30	35.90	76.08	112.77	20 31 5	1525.1	-14.07	28.71
90.00	7 46 24	4816.14	18.52	207.76	76.37	68.19	9 6 40	4216.1	15.39	200.48
100.00	21 16 39	1863.87	-18.24	16.26	75.65	114.10	21 47 43	1263.9	-14.83	9.12
100.00	9 8 5	4552.62	19.46	187.97	75.96	66.85	10 23 58	3952.6	16.16	180.73
110.00	22 24 5	1652.78	-20.74	358.94	74.36	117.80	22 51 38	1052.8	-16.86	351.97
110.00	10 17 8	4336.47	21.98	170.31	74.70	63.14	11 29 25	3736.5	18.20	163.21

DIFFERENTIAL CORRECTIONS
TDE -.2384 TRA 6.6295 TC-16.3357 BAU 3.2870
RDE .3618 RRA .1594 RC3 .2186 FAU .02133
FDE -.4423 FRA 1.2898 FC3-1.2273 BSP 57095
BDE .4333 BRA 6.6314 BC316.3372 FSP 628

MID-COURSE EXECUTION ACCURACY
SGT16020.4 SGR 608.1 SG3 192.5
RRT -.0033 RRF -.0459 RTF .8673
SGB16031.9 R23 .0430 R13 -.8673
SG116020.4 SG2 608.1 THA 179.99

ORBIT DETERMINATION ACCURACY
ST 2983.0 SR 539.1 SS 522.6
CRT .0108 CRS .6598 CST -.7411
LSA 3008.4 MSA 640.9 SSA 30.2
EL1 2983.0 EL2 539.1 ALF .12

LAUNCH DATE DEC 23 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 12 1966

HELIOCENTRIC CONIC DISTANCE 896.884 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.427	GAL	-4.21	AZL	88.43	HCA	260.98	SMA	193.30	ECC	.24923	INC	1.5729
RP	207.43	LAP	-1.55	LOP	352.18	VP	24.353	GAP	-13.82	AZP	90.25	TAL	338.66	TAP	239.64	RCA	145.13	APO	241.48
RC	343.815	GL	13.36	GP	-4.20	ZAL	126.55	ZAP	23.45	ETS	168.72	ZAE	35.36	ETE	173.91	ZAC	86.94	ETC	255.81

V1 30.278 V2 26.408 CLP 23.09

PLANETOCENTRIC CONIC

C3 15.673 VHL 3.959 DLA -1.79 RAL 220.79 RAD 6567.6 VEL 11.707 PTH 2.06 VHP 7.052 DPA -8.89 RAP 192.72 ECC 1.2579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 9 4	2102.30	-16.69	34.50	77.94	113.21	20 44 6	1502.3	-13.41	27.36
90.00	7 44 30	4857.25	19.54	210.35	78.66	69.08	9 5 27	4257.3	16.52	202.97
100.00	21 29 35	1842.59	-17.64	14.96	77.50	114.53	22 0 17	1242.6	-14.19	7.87
100.00	9 6 41	4592.19	20.50	190.45	78.25	67.76	10 23 13	3992.2	17.30	183.11
110.00	22 35 55	1634.94	-20.17	357.87	76.18	118.20	23 3 10	1034.9	-16.25	350.95
110.00	10 16 50	4372.60	23.08	172.54	77.01	64.05	11 29 43	3772.6	19.40	165.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3716	TRA	6.9737	TC-15.8249	BAU	3.3163	SGT16101.3	SGR	610.9	SG3	178.1	ST	3099.5	SR	545.4	SS	511.7
RDE	.3740	RRA	.1528	RC3 .2234	FAU	.01789	RRT -.0278	RRF	-.0713	RTF	.8519	CRT	-.0544	CRS	.6832	CST	-.7632
FDE	-.4449	FRA	1.2399	FC3 -.9883	BSP	57401	SGB16112.9	R23	.0476	R13	-.8520	LSA	3124.5	MSA	634.6	SSA	29.2
BDE	.5272	BRA	6.9754	BC315.8265	FSP	579	SG116101.3	SG2	610.7	THA	179.94	EL1	3099.7	EL2	544.5	ALF	179.43

LAUNCH DATE DEC 23 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 14 1966

HELIOCENTRIC CONIC DISTANCE 901.151 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.436	GAL	-4.46	AZL	88.45	HCA	262.24	SMA	193.47	ECC	.25111	INC	1.5452
RP	207.54	LAP	-1.53	LOP	353.44	VP	24.351	GAP	-13.94	AZP	90.21	TAL	337.49	TAP	239.73	RCA	144.89	APO	242.06
RC	344.561	GL	12.85	GP	-4.13	ZAL	128.27	ZAP	23.13	ETS	168.72	ZAE	34.74	ETE	173.87	ZAC	87.21	ETC	255.82

V1 30.278 V2 26.395 CLP 22.78

PLANETOCENTRIC CONIC

C3 16.349 VHL 4.043 DLA -2.79 RAL 222.22 RAD 6567.7 VEL 11.736 PTH 2.07 VHP 7.141 DPA -9.22 RAP 193.63 ECC 1.2691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 22 12	2080.75	-16.11	33.18	79.83	113.60	20 56 53	1480.8	-12.78	26.09
90.00	7 42 43	4897.97	20.50	212.94	80.97	70.03	9 4 21	4298.0	17.60	205.47
100.00	21 42 14	1822.56	-17.07	13.74	79.38	114.92	22 12 37	1222.6	-13.57	6.70
100.00	9 5 22	4631.40	21.49	192.94	80.58	68.71	10 22 33	4031.4	18.41	185.51
110.00	22 47 30	1618.28	-19.63	356.88	78.02	118.56	23 14 28	1018.3	-15.67	350.00
110.00	10 16 36	4408.45	24.13	174.79	79.35	65.02	11 30 5	3808.4	20.56	167.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5017	TRA	7.3265	TC-15.3107	BAU	3.3468	SGT16181.6	SGR	613.9	SG3	164.3	ST	3219.8	SR	551.6	SS	498.4
RDE	.3868	RRA	.1458	RC3 .2268	FAU	.01451	RRT -.0514	RRF	-.0954	RTF	.8331	CRT	-.1116	CRS	.7052	CST	-.7802
FDE	-.4448	FRA	1.1860	FC3 -.7684	BSP	57671	SGB16193.2	R23	.0526	R13	-.8331	LSA	3244.1	MSA	628.1	SSA	28.3
BDE	.6335	BRA	7.3280	BC315.3123	FSP	529	SG116181.6	SG2	613.1	THA	179.89	EL1	3220.4	EL2	548.1	ALF	178.87

LAUNCH DATE DEC 23 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 16 1966

HELIOCENTRIC CONIC DISTANCE 905.405 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.445	GAL	-4.72	AZL	88.48	HCA	263.50	SMA	193.65	ECC	.25308	INC	1.5176
RP	207.67	LAP	-1.51	LOP	354.70	VP	24.347	GAP	-14.07	AZP	90.17	TAL	336.32	TAP	239.81	RCA	144.64	APO	242.65
RC	345.302	GL	12.33	GP	-4.06	ZAL	129.97	ZAP	22.83	ETS	168.71	ZAE	34.12	ETE	173.82	ZAC	87.49	ETC	255.82

V1 30.278 V2 26.380 CLP 22.48

PLANETOCENTRIC CONIC

C3 17.078 VHL 4.133 DLA -3.77 RAL 223.62 RAD 6567.7 VEL 11.767 PTH 2.08 VHP 7.232 DPA -9.55 RAP 194.54 ECC 1.2811

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 35 4	2060.47	-15.56	31.95	81.74	113.96	21 9 24	1460.5	-12.19	24.90
90.00	7 41 3	4938.29	21.42	215.55	83.33	71.02	9 3 21	4338.3	18.63	207.98
100.00	21 54 38	1803.76	-16.53	12.61	81.28	115.27	22 24 42	1203.8	-12.99	5.61
100.00	9 4 9	4670.24	22.43	195.44	82.94	69.70	10 21 59	4070.2	19.46	187.90
110.00	22 58 51	1602.76	-19.13	355.96	79.88	118.89	23 25 33	1002.8	-15.12	349.13
110.00	10 16 26	4443.99	25.13	177.07	81.74	66.03	11 30 30	3844.0	21.67	169.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6303	TRA	7.6874	TC-14.7967	BAU	3.3788	SGT16260.9	SGR	616.9	SG3	151.0	ST	3341.5	SR	557.8	SS	482.9
RDE	.4002	RRA	.1384	RC3 .2289	FAU	.01119	RRT -.0742	RRF	-.1182	RTF	.8099	CRT	-.1620	CRS	.7263	CST	-.7930
FDE	-.4422	FRA	1.1281	FC3 -.5670	BSP	57918	SGB16272.6	R23	.0582	R13	-.8099	LSA	3365.0	MSA	621.6	SSA	27.4
BDE	.7466	BRA	7.6886	BC314.7984	FSP	481	SG116260.9	SG2	615.2	THA	179.84	EL1	3342.8	EL2	550.2	ALF	178.41

LAUNCH DATE DEC 23 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 18 1966

HELIOCENTRIC CONIC DISTANCE 909.643 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.454	GAL	-4.98	AZL	88.51	HCA	264.75	SMA	193.82	ECC	.25514	INC	1.4902
RP	207.80	LAP	-1.48	LOP	355.95	VP	24.343	GAP	-14.20	AZP	90.14	TAL	335.13	TAP	239.88	RCA	144.37	APO	243.27
RC	346.039	GL	11.83	GP	-4.00	ZAL	131.62	ZAP	22.53	ETS	168.71	ZAE	33.51	ETE	173.77	ZAC	87.76	ETC	255.84

V1 30.278 V2 26.364 CLP 22.19

PLANETOCENTRIC CONIC

C3 17.865 VHL 4.227 DLA -4.71 RAL 225.00 RAD 6567.7 VEL 11.800 PTH 2.09 VHP 7.324 DPA -9.88 RAP 195.45 ECC 1.2940

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 47 39	2041.44	-15.03	30.81	83.67	114.29	21 21 40	1441.4	-11.62	23.78
90.00	7 39 28	4978.19	22.28	218.16	85.71	72.06	9 2 27	4378.2	19.62	210.49
100.00	22 6 47	1786.18	-16.02	11.56	83.19	115.58	22 36 33	1186.2	-12.44	4.59
100.00	9 3 2	4708.68	23.31	197.96	85.33	70.74	10 21 31	4108.7	20.47	190.31
110.00	23 9 57	1588.41	-18.65	355.12	81.76	119.18	23 36 25	988.4	-14.62	348.32
110.00	10 16 21	4479.21	26.08	179.36	84.15	67.08	11 31 0	3879.2	22.75	171.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7537	TRA	8.0580	TC-14.2814	BAU	3.4113	SGT16337.6	SGR	619.9	SG3	138.2	ST	3462.2	SR	563.9	SS	465.0
RDE	.4141	RRA	.1305	RC3 .2296	FAU	.00792	RRT -.0959	RRF	-.1388	RTF	.7812	CRT	-.2051	CRS	.7462	CST	-.8016
FDE	-.4367	FRA	1.0664	FC3 -.3837	BSP	58170	SGB16349.4	R23	.0641	R13	-.7812	LSA	3484.4	MSA	615.4	SSA	26.6
BDE	.8600	BRA	8.0591	BC314.2832	FSP	434	SG116337.7	SG2	617.1	THA	179.79	EL1	3464.1	EL2	551.6	ALF	178.04

LAUNCH DATE DEC 23 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 20 1966

HELIOCENTRIC CONIC DISTANCE 913.866 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.463	GAL	-5.25	AZL	88.54	HCA	266.01	SMA	193.99	ECC	.25728	INC	1.4630
RP	207.94	LAP	-1.46	LOP	357.21	VP	24.337	GAP	-14.34	AZP	90.10	TAL	333.94	TAP	239.94	RCA	144.08	APO	243.90
RC	346.771	GL	11.34	GP	-3.94	ZAL	133.24	ZAP	22.24	ETS	168.70	ZAE	32.91	ETE	173.72	ZAC	88.03	ETC	255.85

V1 30.278 V2 26.348 CLP 21.90

PLANETOCENTRIC CONIC

C3	18.711	VHL	4.326	DLA	-5.62	RAL	226.36	RAD	6567.8	VEL	11.836	PTH	2.10	VHP	7.418	DPA	-10.22	RAP	196.37

ECC 1.3079

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 59 58	2023.62	-14.52	29.74	85.62	114.58	21 33 42	1423.6	-11.09	22.75
90.00	7 38 0	5017.65	23.08	220.77	88.11	73.13	9 1 37	4417.6	20.55	213.01
100.00	22 18 40	1769.79	-15.53	10.58	85.13	115.87	22 48 9	1169.8	-11.93	3.65
100.00	9 2 0	4746.71	24.15	200.48	87.75	71.82	10 21 6	4146.7	21.44	192.73
110.00	23 20 49	1575.18	-18.21	354.35	83.66	119.44	23 47 4	975.2	-14.15	347.59
110.00	10 16 19	4514.08	26.99	181.67	86.60	68.18	11 31 34	3914.1	23.78	173.97

DIFFERENTIAL CORRECTIONS

TDE	-.8756	TRA	8.4366	TC-13.7705	BAU	3.4451	
RDE	.4286	RRA	.1223	RC3	.2293	FAU	.00471
FDE	-.4291	FRA	1.0005	FC3	-.2178	BSP	58393
BDE	.9748	BRA	8.4375	BC313.7724	FSP		388

MID-COURSE EXECUTION ACCURACY

SGT16412.0	SGR	623.0	SG3	126.2			
RRT	-.1168	RRF	-.1576	RTF	.7452		
SGB16423.8	R23	.0709	R13	-.7452			
SG116412.2	SG2	618.7	THA	179.75			

ORBIT DETERMINATION ACCURACY

ST	3580.6	SR	569.8	SS	445.3		
CRT	-.2431	CRS	.7659	CST	-.8068		
LSA	3601.6	MSA	609.7	SSA	25.8		
EL1	3583.4	EL2	552.3	ALF	177.73		

LAUNCH DATE DEC 23 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 22 1966

HELIOCENTRIC CONIC DISTANCE 918.071 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.472	GAL	-5.52	AZL	88.56	HCA	267.26	SMA	194.16	ECC	.25952	INC	1.4359
RP	208.09	LAP	-1.43	LOP	358.46	VP	24.331	GAP	-14.48	AZP	90.07	TAL	332.73	TAP	239.99	RCA	143.77	APO	244.55
RC	347.497	GL	10.86	GP	-3.88	ZAL	134.83	ZAP	21.96	ETS	168.70	ZAE	32.32	ETE	173.67	ZAC	88.30	ETC	255.88

V1 30.278 V2 26.331 CLP 21.63

PLANETOCENTRIC CONIC

C3	19.619	VHL	4.429	DLA	-6.50	RAL	227.70	RAD	6567.8	VEL	11.874	PTH	2.11	VHP	7.514	DPA	-10.57	RAP	197.30

ECC 1.3229

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 12 2	2007.00	-14.05	28.75	87.58	114.84	21 45 29	1407.0	-10.59	21.78
90.00	7 36 36	5056.66	23.83	223.38	90.54	74.23	9 0 53	4456.7	21.44	215.53
100.00	22 30 17	1754.58	-15.08	9.68	87.08	116.12	22 59 32	1154.6	-11.45	2.77
100.00	9 1 2	4784.32	24.92	203.00	90.19	72.93	10 20 47	4184.3	22.35	195.15
110.00	23 31 27	1563.07	-17.80	353.64	85.57	119.67	23 57 30	963.1	-13.72	346.91
110.00	10 16 22	4548.59	27.84	183.99	89.08	69.31	11 32 10	3948.6	24.77	176.17

DIFFERENTIAL CORRECTIONS

TDE	-.9939	TRA	8.8249	TC-13.2671	BAU	3.4804	
RDE	.4435	RRA	.1135	RC3	.2280	FAU	.00154
FDE	-.4198	FRA	.9304	FC3	-.0681	BSP	58585
BDE	1.0884	BRA	8.8257	BC313.2691	FSP		342

MID-COURSE EXECUTION ACCURACY

SGT16486.0	SGR	625.9	SG3	114.8			
RRT	-.1370	RRF	-.1739	RTF	.6995		
SGB16497.9	R23	.0787	R13	-.6995			
SG116486.3	SG2	620.0	THA	179.70			

ORBIT DETERMINATION ACCURACY

ST	3695.6	SR	575.5	SS	424.2		
CRT	-.2760	CRS	.7857	CST	-.8081		
LSA	3715.2	MSA	604.6	SSA	25.1		
EL1	3699.1	EL2	552.6	ALF	177.48		

LAUNCH DATE DEC 23 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 24 1966

HELIOCENTRIC CONIC DISTANCE 922.258 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.481	GAL	-5.80	AZL	88.59	HCA	268.51	SMA	194.33	ECC	.26186	INC	1.4088
RP	208.25	LAP	-1.41	LOP	359.71	VP	24.324	GAP	-14.63	AZP	90.04	TAL	331.52	TAP	240.03	RCA	143.45	APO	245.22
RC	348.218	GL	10.40	GP	-3.83	ZAL	136.38	ZAP	21.68	ETS	168.69	ZAE	31.74	ETE	173.61	ZAC	88.56	ETC	255.90

V1 30.278 V2 26.312 CLP 21.36

PLANETOCENTRIC CONIC

C3	20.594	VHL	4.538	DLA	-7.35	RAL	229.01	RAD	6567.8	VEL	11.915	PTH	2.12	VHP	7.611	DPA	-10.91	RAP	198.24

ECC 1.3389

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 23 50	1991.54	-13.61	27.83	89.56	115.07	21 57 2	1391.5	-10.12	20.89
90.00	7 35 18	5095.22	24.52	226.00	92.99	75.37	9 0 13	4495.2	22.27	218.05
100.00	22 41 39	1740.50	-14.65	8.85	89.04	116.35	23 10 40	1140.5	-11.00	1.97
100.00	9 0 10	4821.49	25.64	205.53	92.65	74.08	10 20 31	4221.5	23.21	197.58
110.00	23 41 51	1552.04	-17.43	353.01	87.49	119.88	24 7 43	952.0	-13.33	346.30
110.00	10 16 28	4582.72	28.64	186.33	91.58	70.48	11 32 50	3982.7	25.71	178.37

DIFFERENTIAL CORRECTIONS

TDE	-1.1093	TRA	9.2204	TC-12.7741	BAU	3.5175	
RDE	.4590	RRA	.1044	RC3	.2258	FAU	-.00156
FDE	-.4085	FRA	.8559	FC3	.0657	BSP	58741
BDE	1.2005	BRA	9.2210	BC312.7761	FSP		296

MID-COURSE EXECUTION ACCURACY

SGT16557.7	SGR	628.9	SG3	104.3			
RRT	-.1564	RRF	-.1870	RTF	.6415		
SGB16569.6	R23	.0876	R13	-.6415			
SG116558.0	SG2	621.1	THA	179.66			

ORBIT DETERMINATION ACCURACY

ST	3805.6	SR	580.9	SS	401.6		
CRT	-.3046	CRS	.8059	CST	-.8059		
LSA	3823.7	MSA	599.9	SSA	24.4		
EL1	3809.8	EL2	552.7	ALF	177.28		

LAUNCH DATE DEC 23 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 26 1966

HELIOCENTRIC CONIC DISTANCE 926.426 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.490	GAL	-6.08	AZL	88.62	HCA	269.76	SMA	194.51	ECC	.26430	INC	1.3819
RP	208.42	LAP	-1.38	LOP	.96	VP	24.316	GAP	-14.78	AZP	90.01	TAL	330.30	TAP	240.05	RCA	143.10	APO	245.91
RC	348.934	GL	9.94	GP	-3.77	ZAL	137.89	ZAP	21.42	ETS	168.68	ZAE	31.16	ETE	173.55	ZAC	88.83	ETC	255.93

V1 30.278 V2 26.293 CLP 21.10

PLANETOCENTRIC CONIC

C3	21.638	VHL	4.652	DLA	-8.17	RAL	230.31	RAD	6567.9	VEL	11.959	PTH	2.13	VHP	7.710	DPA	-11.26	RAP	199.18

ECC 1.3561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 35 23	1977.22	-13.19	26.98	91.54	115.28	22 8 20	1377.2	-9.68	20.07
90.00	7 34 4	5133.31	25.15	228.61	95.46	76.54	8 59 38	4533.3	23.05	220.57
100.00	22 52 46	1727.54	-14.26	8.09	91.01	116.55	23 21 34	1127.5	-10.58	1.23
100.00	8 59 22	4858.22	26.30	208.06	95.14	75.26	10 20 20	4258.2	24.02	200.00
110.00	23 52 0	1542.07	-17.09	352.43	89.43	120.06	24 17 42	942.1	-12.97	345.75
110.00	10 16 37	4616.46	29.38	188.67	94.10	71.69	11 33 34	4016.5	26.60	180.59

DIFFERENTIAL CORRECTIONS

TDE	-1.2214	TRA	9.6256	TC-12.2905	BAU	3.5559	
RDE	.4749	RRA	.0948	RC3	.2229	FAU	-.00463
FDE	-.3952	FRA	.7772	FC3	.1851	BSP	58891
BDE	1.3105	BRA	9.6261	BC312.2925	FSP		252

MID-COURSE EXECUTION ACCURACY

SGT16627.4	SGR	631.8	SG3	94.7			
RRT	-.1750	RRF	-.1948	RTF	.5677		
SGB16639.4	R23	.0968	R13	-.5677			
SG116627.8	SG2	622.0	THA	179.62			

ORBIT DETERMINATION ACCURACY

ST	3910.6	SR	586.1	SS	377.5		
CRT	-.3294	CRS	.8263	CST	-.8001		
LSA	3927.3	MSA	595.7	SSA	23.8		
EL1	3915.5	EL2	552.7	ALF	177.12		

LAUNCH DATE DEC 23 1964 FLIGHT TIME 432.00 ARRIVAL DATE FEB 28 1966

HELIOCENTRIC CONIC DISTANCE 930.574 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.499	GAL	-6.37	AZL	88.64	HCA	271.00	SMA	194.68	ECC	.26684	INC	1.3550
RP	208.59	LAP	-1.35	LOP	2.21	VP	24.306	GAP	-14.94	AZP	89.98	TAL	329.07	TAP	240.07	RCA	142.73	APO	246.63
RC	349.644	GL	9.50	GP	-3.72	ZAL	139.36	ZAP	21.16	ETS	168.67	ZAE	30.59	ETE	173.49	ZAC	89.09	ETC	255.96

PLANETOCENTRIC CONIC

C3	22.755	VHL	4.770	DLA	-8.96	RAL	231.58	RAD	6567.9	VEL	12.006	PTH	2.14	VHP	7.811	DPA	-11.61	RAP	200.13

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 46 40	1963.98	-12.81	26.20	93.54	115.47	22 19 24	1364.0	-9.27	19.31
90.00	7 32 56	5170.93	25.72	231.22	97.94	77.72	8 59 7	4570.9	23.77	223.09
100.00	23 3 38	1715.65	-13.90	7.39	92.99	116.73	23 32 14	1115.7	-10.20	.56
100.00	8 58 38	4894.49	26.90	210.59	97.63	76.46	10 20 13	4294.5	24.77	202.43
110.00	0 5 52	1533.12	-16.79	351.92	91.36	120.22	0 31 25	933.1	-12.64	345.26
110.00	10 16 50	4649.79	30.07	191.02	96.65	72.92	11 34 20	4049.8	27.44	182.82

DIFFERENTIAL CORRECTIONS

TDE	-1.3285	TRA	10.0412	TC	-11.8159	BAU	3.5951												
RDE	.4913	RRA	.0848	RC3	.2194	FAU	-.00767												
FDE	-.3805	FRA	.6947	FC3	.2919	BSP	59030												
BDE	1.4165	BRA	10.0415	BC3	11.8180	FSP	208												

MID-COURSE EXECUTION ACCURACY

SGT	16694.2	SGR	634.5	SG3	86.4														
RRT	-.1928	RRF	-.1959	RTF	.4735														
SGB	16706.3	R23	.1065	R13	-.4735														
SG1	16694.7	SG2	622.6	THA	179.58														

ORBIT DETERMINATION ACCURACY

ST	4009.7	SR	590.9	SS	352.7														
CRT	-.3505	CRS	.8476	CST	-.7896														
LSA	4024.9	MSA	592.2	SSA	23.2														
EL1	4015.1	EL2	552.7	ALF	176.99														

LAUNCH DATE DEC 23 1964 FLIGHT TIME 434.00 ARRIVAL DATE MAR 2 1966

HELIOCENTRIC CONIC DISTANCE 934.700 EARTH TO MARS

RL	147.14	LAL	-.00	LOL	91.21	VL	33.509	GAL	-6.66	AZL	88.67	HCA	272.25	SMA	194.85	ECC	.26948	INC	1.3281
RP	208.77	LAP	-1.33	LOP	3.46	VP	24.296	GAP	-15.10	AZP	89.95	TAL	327.83	TAP	240.08	RCA	142.34	APO	247.36
RC	350.348	GL	9.07	GP	-3.67	ZAL	140.80	ZAP	20.91	ETS	168.67	ZAE	30.03	ETE	173.42	ZAC	89.36	ETC	256.00

PLANETOCENTRIC CONIC

C3	23.949	VHL	4.894	DLA	-9.72	RAL	232.83	RAD	6568.0	VEL	12.055	PTH	2.15	VHP	7.913	DPA	-11.97	RAP	201.09

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 42	1951.80	-12.45	25.49	95.54	115.64	22 30 14	1351.8	-8.90	18.61
90.00	7 31 52	5208.07	26.23	233.82	100.42	78.93	8 58 40	4608.1	24.44	225.61
100.00	23 14 16	1704.81	-13.57	6.76	94.97	116.89	23 42 41	1104.8	-9.85	359.94
100.00	8 57 59	4930.30	27.45	213.11	100.14	77.68	10 20 10	4330.3	25.48	204.86
110.00	0 15 34	1525.17	-16.51	351.47	93.31	120.36	0 40 59	925.2	-12.36	344.82
110.00	10 17 7	4682.70	30.71	193.37	99.21	74.18	11 35 9	4082.7	28.23	185.05

DIFFERENTIAL CORRECTIONS

TDE	-1.4332	TRA	10.4662	TC	-11.3568	BAU	3.6368												
RDE	.5080	RRA	.0744	RC3	.2153	FAU	-.01065												
FDE	-.3643	FRA	.6079	FC3	.3851	BSP	59133												
BDE	1.5206	BRA	10.4665	BC3	11.3588	FSP	165												

MID-COURSE EXECUTION ACCURACY

SGT	16760.8	SGR	637.2	SG3	79.4														
RRT	-.2099	RRF	-.1886	RTF	.3571														
SGB	16773.0	R23	.1162	R13	-.3571														
SG1	16761.4	SG2	623.0	THA	179.54														

ORBIT DETERMINATION ACCURACY

ST	4103.3	SR	595.4	SS	327.2														
CRT	-.3689	CRS	.8700	CST	-.7741														
LSA	4117.2	MSA	589.0	SSA	22.6														
EL1	4109.3	EL2	552.6	ALF	176.88														

LAUNCH DATE DEC 24 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 343.280 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	34.957	GAL	3.98	AZL	88.99	HCA	105.37	SMA	228.03	ECC	.36064	INC	1.0081	V1	30.280
RP	242.74	LAP	.97	LOP	197.60	VP	22.616	GAP	20.83	AZP	90.27	TAL	15.08	TAP	120.45	RCA	145.79	APO	310.26	V2	22.611
RC	145.763	GL	6.69	GP	2.86	ZAL	61.49	ZAP	171.04	ETS	160.13	ZAE	152.44	ETE	4.27	ZAC	92.47	ETC	255.89	CLP	171.51

PLANETOCENTRIC CONIC

C3	27.743	VHL	5.267	DLA	16.45	RAL	157.94	RAD	6568.1	VEL	12.211	PTH	2.19	VHP	9.678	DPA	.08	RAP	190.02	ECC	1.4566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 28 35	2832.69	-28.27	84.21	31.30	91.62	14 15 48	2232.7	-27.75	75.59
90.00	5 55 39	4399.88	6.45	183.18	23.27	62.37	7 8 59	3799.9	2.70	176.50
100.00	14 59 11	2540.50	-29.77	62.65	31.23	92.89	15 41 32	1940.5	-29.05	53.92
100.00	7 7 44	4167.30	7.76	165.37	22.56	61.04	8 17 11	3567.3	3.84	158.77
110.00	16 27 55	2262.86	-33.66	41.20	30.86	96.32	17 5 38	1662.9	-32.42	32.18
110.00	7 55 29	4017.71	11.12	151.99	20.53	57.47	9 2 26	3417.7	6.75	145.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1797	TRA	-.7777	TC3	1.2881	BAU	.4779	SGT	1630.3	SGR	677.8	SG3	202.0	ST	331.5	SR	639.5	SS	242.0
RDE	-.5844	RRA	-.2056	RC3	.0305	FAU	.07041	RRT	.1132	RRF	-.1318	RTF	-.7693	CRT	-.4986	CRS	.9282	CST	-.6783
FDE	.2537	FRA	-.1551	FC3	-2.1973	BSP	5151	SGB	1765.6	R23	-.0270	R13	-.7701	LSA	704.5	MSA	277.8	SSA	62.9
BDE	.6114	BRA	.8045	BC3	1.2885	FSP	555	SG1	1632.4	SG2	672.6	THA	3.25	EL1	665.3	EL2	276.2	ALF	107.63

LAUNCH DATE DEC 24 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 345.912 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	34.847	GAL	4.10	AZL	89.01	HCA	106.29	SMA	225.05	ECC	.35265	INC	.9862	V1	30.280
RP	242.47	LAP	.95	LOP	198.52	VP	22.472	GAP	20.19	AZP	90.28	TAL	15.78	TAP	122.07	RCA	145.69	APO	304.42	V2	22.638
RC	148.041	GL	6.61	GP	2.94	ZAL	60.28	ZAP	170.39	ETS	160.94	ZAE	152.66	ETE	4.61	ZAC	92.61	ETC	255.89	CLP	170.85

PLANETOCENTRIC CONIC

C3	27.002	VHL	5.196	DLA	16.82	RAL	156.74	RAD	6568.1	VEL	12.181	PTH	2.19	VHP	9.433	DPA	.05	RAP	190.29	ECC	1.4444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 20 11	2830.84	-28.29	84.73	29.75	91.35	14 7 30	2239.8	-27.80	76.10
90.00	5 54 29	4379.26	5.79	182.01	21.73	62.23	7 7 28	3779.3	2.03	175.35
100.00	14 51 6	2546.65	-29.79	63.11	29.69	92.65	15 33 32	1946.6	-29.10	54.37
100.00	7 6 15	4147.69	7.11	164.27	21.01	60.89	8 15 22	3547.7	3.18	157.69
110.00	16 20 29	2266.99	-33.69	41.52	29.33	96.14	16 58 16	1667.0	-32.48	32.49
110.00	7 53 21	4000.11	10.47	151.04	18.97	57.27	9 0 1	3400.1	6.09	144.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1627	TRA	-.7467	TC3	1.3529	BAU	.4886	SGT	1658.0	SGR	677.2	SG3	213.3	ST	317.1	SR	640.2	SS	261.7
RDE	-.5773	RRA	-.1978	RC3	.0374	FAU	.07321	RRT	.1216	RRF	-.1413	RTF	-.7759	CRT	-.4753	CRS	.9214	CST	-.6825
FDE	.2768	FRA	-.2007	FC3	-2.3472	BSP	5267	SGB	1791.0	R23	-.0287	R13	-.7768	LSA	707.0	MSA	273.3	SSA	65.7
BDE	.5998	BRA	.7725	BC3	1.3534	FSP	591	SG1	1660.4	SG2	671.2	THA	3.40	EL1	661.4	EL2	270.0	ALF	105.98

LAUNCH DATE DEC 24 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 348.633 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	34.742	GAL	4.21	AZL	89.04	HCA	107.22	SMA	222.30	ECC	.34511	INC	.9640	V1	30.280
RP	242.20	LAP	.92	LOP	199.44	VP	22.336	GAP	19.55	AZP	90.29	TAL	16.48	TAP	123.70	RCA	145.58	APO	299.02	V2	22.664
RC	150.330	GL	6.52	GP	3.02	ZAL	59.09	ZAP	169.72	ETS	161.65	ZAE	152.92	ETE	4.97	ZAC	92.74	ETC	255.88	CLP	170.17

PLANETOCENTRIC CONIC

C3	26.332	VHL	5.132	DLA	17.18	RAL	155.54	RAD	6568.1	VEL	12.154	PTH	2.18	VHP	9.194	DPA	.02	RAP	190.56	ECC	1.4334

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 11 55	2846.97	-28.30	85.26	28.23	91.09	13 59 22	2247.0	-27.85	76.62
90.00	5 53 12	4359.67	5.17	180.91	20.22	62.12	7 5 52	3759.7	1.40	174.26
100.00	14 43 9	2552.77	-29.80	63.56	28.17	92.41	15 25 42	1952.8	-29.15	54.82
100.00	7 4 40	4129.10	6.49	163.24	19.50	60.76	8 13 29	3529.1	2.55	156.67
110.00	16 13 10	2271.16	-33.72	41.84	27.84	95.95	16 51 1	1671.2	-32.53	32.81
110.00	7 51 8	3983.48	9.86	150.14	17.45	57.10	8 57 32	3383.5	5.46	143.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1464	TRA	-.7158	TC3	1.4169	BAU	.4991	SGT	1685.6	SGR	676.4	SG3	225.2	ST	302.6	SR	640.7	SS	281.9
RDE	-.5707	RRA	-.1901	RC3	.0449	FAU	.07612	RRT	.1305	RRF	-.1516	RTF	-.7822	CRT	-.4505	CRS	.9143	CST	-.6830
FDE	.3002	FRA	-.2493	FC3	-2.5027	BSP	5375	SGB	1816.3	R23	-.0307	R13	-.7832	LSA	710.3	MSA	269.0	SSA	68.5
BDE	.5892	BRA	.7406	BC3	1.4177	FSP	629	SG1	1688.4	SG2	669.5	THA	3.56	EL1	657.9	EL2	263.1	ALF	104.36

LAUNCH DATE DEC 24 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 351.435 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	34.642	GAL	4.32	AZL	89.06	HCA	108.14	SMA	219.75	ECC	.33800	INC	.9416	V1	30.280
RP	241.93	LAP	.89	LOP	200.37	VP	22.208	GAP	18.92	AZP	90.29	TAL	17.18	TAP	125.33	RCA	145.47	APO	294.02	V2	22.692
RC	152.629	GL	6.43	GP	3.11	ZAL	57.90	ZAP	169.04	ETS	162.27	ZAE	153.23	ETE	5.36	ZAC	92.88	ETC	255.87	CLP	169.49

PLANETOCENTRIC CONIC

C3	25.727	VHL	5.072	DLA	17.51	RAL	154.36	RAD	6568.0	VEL	12.129	PTH	2.17	VHP	8.962	DPA	.00	RAP	190.81	ECC	1.4234

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 3 50	2853.99	-28.31	85.77	26.74	90.84	13 51 24	2254.0	-27.89	77.13
90.00	5 51 50	4341.14	4.58	179.87	18.76	62.03	7 4 11	3741.1	.80	173.22
100.00	14 35 22	2558.82	-29.82	64.01	26.70	92.17	15 18 1	1958.8	-29.20	55.26
100.00	7 2 59	4111.54	5.91	162.26	18.03	60.64	8 11 31	3511.5	1.95	155.71
110.00	16 5 59	2275.30	-33.75	42.16	26.38	95.76	16 43 55	1675.3	-32.59	33.12
110.00	7 48 51	3967.83	9.28	149.30	15.97	56.95	8 54 59	3367.8	4.86	143.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1301	TRA	-.6848	TC3	1.4791	BAU	.5091	SGT	1712.0	SGR	675.4	SG3	237.8	ST	287.8	SR	641.0	SS	302.6
RDE	-.5646	RRA	-.1823	RC3	.0531	FAU	.07921	RRT	.1403	RRF	-.1626	RTF	-.7881	CRT	-.4221	CRS	.9068	CST	-.6791
FDE	.3248	FRA	-.3020	FC3	-2.6654	BSP	5493	SGB	1840.5	R23	-.0325	R13	-.7891	LSA	714.2	MSA	265.0	SSA	71.2
BDE	.5794	BRA	.7087	BC3	1.4801	FSP	669	SG1	1715.1	SG2	667.6	THA	3.73	EL1	654.6	EL2	255.5	ALF	102.70

LAUNCH DATE DEC 24 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 354.312 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	34.547	GAL	4.42	AZL	89.08	HCA	109.07	SMA	217.38	ECC	.33128	INC	.9189	V1	30.280
RP	241.65	LAP	.87	LOP	201.30	VP	22.088	GAP	18.29	AZP	90.30	TAL	17.89	TAP	126.95	RCA	145.36	APO	289.39	V2	22.720
RC	154.936	GL	6.32	GP	3.20	ZAL	56.74	ZAP	168.35	ETS	162.82	ZAE	153.56	ETE	5.77	ZAC	93.02	ETC	255.86	CLP	168.79

PLANETOCENTRIC CONIC

C3	25.181	VHL	5.018	DLA	17.83	RAL	153.19	RAD	6568.0	VEL	12.106	PTH	2.17	VHP	8.737	DPA	-.01	RAP	191.06	ECC	1.4144

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 55 57	2860.85	-28.31	86.27	25.30	90.58	13 43 38	2260.9	-27.93	77.63
90.00	5 50 21	4323.69	4.02	178.89	17.34	61.95	7 2 25	3723.7	.24	172.25
100.00	14 27 47	2564.74	-29.84	64.45	25.26	91.94	15 10 32	1964.7	-29.25	55.70
100.00	7 1 13	4095.04	5.36	161.35	16.60	60.55	8 9 28	3495.0	1.39	154.80
110.00	15 58 59	2279.38	-33.78	42.47	24.96	95.58	16 36 59	1679.4	-32.64	33.42
110.00	7 46 30	3953.16	8.74	148.52	14.53	56.82	8 52 23	3353.2	4.31	142.23

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1147	TRA	-.6542	TC3	1.5400	BAU	.5189	SGT	1738.3	SGR	674.4	SG3	251.0	ST	273.3	SR	641.2	SS	323.5
RDE	-.5588	RRA	-.1745	RC3	.0619	FAU	.08246	RRT	.1507	RRF	-.1745	RTF	-.7937	CRT	-.3921	CRS	.8994	CST	-.6721
FDE	.3501	FRA	-.3580	FC3	-2.8350	BSP	5595	SGB	1864.6	R23	-.0347	R13	-.7949	LSA	718.8	MSA	261.5	SSA	73.7
BDE	.5705	BRA	.6771	BC3	1.5413	FSP	712	SG1	1741.8	SG2	665.4	THA	3.92	EL1	651.6	EL2	247.4	ALF	101.11

LAUNCH DATE DEC 24 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 357.256 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	34.456	GAL	4.53	AZL	89.10	HCA	110.00	SMA	215.17	ECC	.32495	INC	.8959	V1	30.280
RP	241.36	LAP	.84	LOP	202.22	VP	21.975	GAP	17.67	AZP	90.31	TAL	18.59	TAP	128.58	RCA	145.25	APO	285.09	V2	22.748
RC	157.250	GL	6.21	GP	3.30	ZAL	55.60	ZAP	167.64	ETS	163.30	ZAE	153.94	ETE	6.20	ZAC	93.17	ETC	255.86	CLP	168.09

PLANETOCENTRIC CONIC

C3	24.689	VHL	4.969	DLA	18.13	RAL	152.03	RAD	6568.0	VEL	12.086	PTH	2.16	VHP	8.517	DPA	-.01	RAP	191.30	ECC	1.4063

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 48 18	2867.49	-28.32	86.76	23.89	90.34	13 36 5	2267.5	-27.97	78.11
90.00	5 48 46	4302.34	3.50	177.97	15.95	61.88	7 0 33	3707.3	-.29	171.34
100.00	14 20 24	2570.46	-29.85	64.88	23.86	91.72	15 3 15	1970.5	-29.29	56.12
100.00	6 59 20	4079.60	4.84	160.49	15.21	60.47	8 7 20	3479.6	.87	153.95
110.00	15 52 11	2283.34	-33.81	42.78	23.57	95.40	16 30 14	1683.3	-32.69	33.72
110.00	7 44 3	3939.49	8.23	147.79	13.13	56.70	8 49 43	3339.5	3.79	141.51

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0998	TRA	-.6234	TC3	1.5986	BAU	.5282	SGT	1763.3	SGR	673.3	SG3	264.9	ST	258.9	SR	641.1	SS	344.7
RDE	-.5535	RRA	-.1667	RC3	.0714	FAU	.08586	RRT	.1619	RRF	-.1872	RTF	-.7990	CRT	-.3590	CRS	.8918	CST	-.6614
FDE	.3762	FRA	-.4184	FC3	-3.0108	BSP	5704	SGB	1887.4	R23	-.0371	R13	-.8003	LSA	724.1	MSA	258.6	SSA	76.0
BDE	.5624	BRA	.6453	BC3	1.6001	FSP	757	SG1	1767.2	SG2	662.9	THA	4.12	EL1	648.9	EL2	238.7	ALF	99.55

LAUNCH DATE DEC 24 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 360.263 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	34.370	GAL	4.63	AZL	89.13	HCA	110.93	SMA	213.11	ECC	.31897	INC	.8726	V1	30.280
RP	241.08	LAP	.82	LOP	203.16	VP	21.870	GAP	17.05	AZP	90.31	TAL	19.28	TAP	130.21	RCA	145.14	APO	281.09	V2	22.777
RC	159.568	GL	6.08	GP	3.40	ZAL	54.48	ZAP	166.92	ETS	163.74	ZAE	154.35	ETE	6.67	ZAC	93.31	ETC	255.85	CLP	167.36

PLANETOCENTRIC CONIC

C3	24.247	VHL	4.924	DLA	18.40	RAL	150.88	RAD	6568.0	VEL	12.068	PTH	2.16	VHP	8.303	DPA	-.01	RAP	191.54	ECC	1.3990

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 40 52	2873.88	-28.32	87.22	22.52	90.11	13 28 45	2273.9	-28.00	78.57
90.00	5 47 4	4292.08	3.01	177.12	14.61	61.83	6 58 36	3692.1	-.78	170.49
100.00	14 13 14	2575.97	-29.86	65.29	22.50	91.50	14 56 10	1976.0	-29.33	56.52
100.00	6 57 22	4065.22	4.36	159.70	13.86	60.40	8 5 7	3465.2	.38	153.16
110.00	15 45 33	2287.17	-33.83	43.08	22.22	95.22	16 23 40	1687.2	-32.74	34.01
110.00	7 41 33	3926.79	7.75	147.11	11.77	56.60	8 47 0	3326.8	3.30	140.84

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0975	TRA	-.5812	TC3	1.6746	BAU	.5435	SGT	1800.1	SGR	672.2	SG3	279.3	ST	247.1	SR	641.0	SS	366.6
RDE	-.5486	RRA	-.1588	RC3	.0814	FAU	.08941	RRT	.1641	RRF	-.2011	RTF	-.8093	CRT	-.3778	CRS	.8848	CST	-.6856
FDE	.4039	FRA	-.4818	FC3	-3.1922	BSP	5532	SGB	1921.5	R23	-.0481	R13	-.8108	LSA	732.5	MSA	252.2	SSA	78.7
BDE	.5572	BRA	.6025	BC3	1.6765	FSP	808	SG1	1804.0	SG2	661.6	THA	4.05	EL1	648.7	EL2	226.0	ALF	99.44

LAUNCH DATE DEC 24 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 363.327 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	34.287	GAL	4.73	AZL	89.15	HCA	111.86	SMA	211.20	ECC	.31333	INC	.8487	V1	30.280
RP	240.79	LAP	.79	LOP	204.09	VP	21.771	GAP	16.44	AZP	90.32	TAL	19.97	TAP	131.84	RCA	145.02	APO	277.37	V2	22.806
RC	161.890	GL	5.95	GP	3.50	ZAL	53.39	ZAP	166.19	ETS	164.13	ZAE	154.80	ETE	7.17	ZAC	93.46	ETC	255.85	CLP	166.63

PLANETOCENTRIC CONIC

C3	23.850	VHL	4.884	DLA	18.66	RAL	149.76	RAD	6568.0	VEL	12.051	PTH	2.15	VHP	8.095	DPA	.01	RAP	191.76	ECC	1.3925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 33 43	2879.87	-28.32	87.66	21.19	89.89	13 21 43	2279.9	-28.03	79.01
90.00	5 45 16	4277.98	2.55	176.33	13.31	61.79	6 56 34	3678.0	-1.24	169.70
100.00	14 6 21	2581.13	-29.87	65.67	21.17	91.30	14 49 22	1981.1	-29.37	56.90
100.00	6 55 18	4051.95	3.91	158.97	12.56	60.34	8 2 50	3451.9	-.07	152.44
110.00	15 39 10	2290.75	-33.85	43.35	20.91	95.06	16 17 21	1690.7	-32.78	34.28
110.00	7 38 59	3915.10	7.31	146.49	10.46	56.51	8 44 14	3315.1	2.86	140.23

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0782	TRA	-.5568	TC3	1.7194	BAU	.5490	SGT	1817.7	SGR	670.9	SG3	294.9	ST	231.8	SR	640.5	SS	387.3
RDE	-.5438	RRA	-.1507	RC3	.0924	FAU	.09324	RRT	.1819	RRF	-.2153	RTF	-.8114	CRT	-.3155	CRS	.8764	CST	-.6522
FDE	.4303	FRA	-.5518	FC3	-3.3848	BSP	5773	SGB	1937.6	R23	-.0462	R13	-.8130	LSA	737.2	MSA	253.3	SSA	80.1
BDE	.5494	BRA	.5769	BC3	1.7219	FSP	856	SG1	1822.4	SG2	658.0	THA	4.42	EL1	645.2	EL2	218.4	ALF	97.36

LAUNCH DATE DEC 24 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 366.444 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 34.209 GAL 4.82 AZL 89.18 HCA 112.80 SMA 209.41 ECC .30802 INC .8248 V1 30.280
RP 240.49 LAP .76 LOP 205.03 VP 21.678 GAP 15.84 AZP 90.32 TAL 20.66 TAP 133.46 RCA 144.91 APO 273.91 V2 22.836
RC 164.213 GL 5.81 GP 3.61 ZAL 52.32 ZAP 165.44 ETS 164.48 ZAE 155.28 ETE 7.72 ZAC 93.61 ETC 255.84 CLP 165.88

PLANETOCENTRIC CONIC

C3 23.493 VHL 4.847 DLA 18.89 RAL 148.66 RAD 6568.0 VEL 12.036 PTH 2.15 VHP 7.893 DPA .03 RAP 191.98 ECC 1.3866

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 26 50	2885.48	-28.32	88.07	19.90	89.68	13 14 56	2285.5	-28.06	79.42
90.00	5 43 21	4265.00	2.14	175.61	12.05	61.76	6 54 26	3665.0	-1.66	168.98
100.00	13 59 43	2585.96	-29.87	66.03	19.89	91.11	14 42 49	1986.0	-29.40	57.25
100.00	6 53 9	4039.75	3.50	158.29	11.30	60.29	8 0 29	3439.7	-.48	151.77
110.00	15 33 1	2294.09	-33.87	43.61	19.64	94.91	16 11 15	1694.1	-32.82	34.53
110.00	7 36 21	3904.38	6.91	145.92	9.19	56.44	8 41 25	3304.4	2.45	139.67

DIFFERENTIAL CORRECTIONS
TDE .0625 TRA -.5303 TC3 1.7663 BAU .5557
RDE -.5394 RRA -.1426 RC3 .1041 FAU .09724
FDE .4580 FRA -.6252 FC3-3.5833 BSP 5941
BDE .5430 BRA .5491 BC3 1.7694 FSP 909

MID-COURSE EXECUTION ACCURACY
SGT 1837.4 SGR 669.7 SG3 311.1
RRT .1981 RRF -.2308 RTF -.8146
SGB 1955.7 R23 -.0469 R13 -.8163
SG1 1842.9 SG2 654.5 THA 4.73

ORBIT DETERMINATION ACCURACY
ST 218.2 SR 639.9 SS 408.6
CRT -.2602 CRS .8687 CST -.6214
LSA 743.5 MSA 254.3 SSA 81.2
EL1 642.7 EL2 209.7 ALF 95.68

LAUNCH DATE DEC 24 1964 FLIGHT TIME 158.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 369.610 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 34.134 GAL 4.91 AZL 89.20 HCA 113.74 SMA 207.74 ECC .30301 INC .8003 V1 30.280
RP 240.19 LAP .73 LOP 205.96 VP 21.592 GAP 15.24 AZP 90.32 TAL 21.33 TAP 135.07 RCA 144.79 APO 270.68 V2 22.866
RC 166.536 GL 5.66 GP 3.73 ZAL 51.28 ZAP 164.67 ETS 164.79 ZAE 155.79 ETE 8.30 ZAC 93.76 ETC 255.83 CLP 165.12

PLANETOCENTRIC CONIC

C3 23.173 VHL 4.814 DLA 19.10 RAL 147.58 RAD 6567.9 VEL 12.023 PTH 2.15 VHP 7.697 DPA .06 RAP 192.18 ECC 1.3814

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 20 15	2890.66	-28.31	88.45	18.65	89.49	13 8 26	2290.7	-28.08	79.79
90.00	5 41 19	4253.01	1.75	174.94	10.83	61.73	6 52 12	3653.0	-2.04	168.32
100.00	13 53 22	2590.41	-29.88	66.36	18.65	90.94	14 36 32	1990.4	-29.43	57.58
100.00	6 50 54	4020.61	3.12	157.68	10.07	60.26	7 58 2	3428.6	-.86	151.16
110.00	15 27 6	2297.17	-33.89	43.85	18.41	94.77	16 5 23	1697.2	-32.86	34.77
110.00	7 33 40	3894.61	6.54	145.40	7.96	56.37	8 38 34	3294.6	2.08	139.16

DIFFERENTIAL CORRECTIONS
TDE .0492 TRA -.5025 TC3 1.8118 BAU .5625
RDE -.5352 RRA -.1343 RC3 .1166 FAU .10142
FDE .4865 FRA -.7036 FC3-3.7888 BSP 6070
BDE .5375 BRA .5201 BC3 1.8156 FSP 965

MID-COURSE EXECUTION ACCURACY
SGT 1856.6 SGR 668.6 SG3 328.2
RRT .2139 RRF -.2474 RTF -.8180
SGB 1973.3 R23 -.0490 R13 -.8199
SG1 1862.8 SG2 650.9 THA 5.02

ORBIT DETERMINATION ACCURACY
ST 205.5 SR 639.1 SS 429.9
CRT -.2092 CRS .8611 CST -.5920
LSA 750.5 MSA 255.8 SSA 81.9
EL1 640.7 EL2 200.4 ALF 94.27

LAUNCH DATE DEC 24 1964 FLIGHT TIME 160.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 372.821 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 34.063 GAL 5.00 AZL 89.22 HCA 114.68 SMA 206.17 ECC .29829 INC .7754 V1 30.280
RP 239.88 LAP .70 LOP 206.90 VP 21.512 GAP 14.65 AZP 90.32 TAL 22.00 TAP 136.68 RCA 144.67 APO 267.67 V2 22.897
RC 168.857 GL 5.51 GP 3.85 ZAL 50.27 ZAP 163.89 ETS 165.07 ZAE 156.34 ETE 8.94 ZAC 93.91 ETC 255.83 CLP 164.34

PLANETOCENTRIC CONIC

C3 22.888 VHL 4.784 DLA 19.29 RAL 146.52 RAD 6567.9 VEL 12.011 PTH 2.14 VHP 7.505 DPA .10 RAP 192.38 ECC 1.3767

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 13 59	2895.37	-28.31	88.80	17.44	89.32	13 2 14	2295.4	-28.10	80.14
90.00	5 39 11	4242.38	1.41	174.34	9.65	61.72	6 49 54	3642.4	-2.39	167.72
100.00	13 47 18	2594.44	-29.88	66.66	17.44	90.78	14 30 32	1994.4	-29.45	57.88
100.00	6 48 33	4018.54	2.78	157.13	8.89	60.23	7 55 32	3418.5	-1.20	150.60
110.00	15 21 25	2299.95	-33.90	44.07	17.22	94.64	15 59 45	1700.0	-32.89	34.98
110.00	7 30 55	3885.79	6.21	144.94	6.76	56.32	8 35 41	3285.8	1.74	138.70

DIFFERENTIAL CORRECTIONS
TDE .0379 TRA -.4740 TC3 1.8567 BAU .5695
RDE -.5313 RRA -.1258 RC3 .1298 FAU .10582
FDE .5154 FRA -.7868 FC3-4.0027 BSP 6173
BDE .5326 BRA .4904 BC3 1.8612 FSP 1025

MID-COURSE EXECUTION ACCURACY
SGT 1876.1 SGR 667.7 SG3 346.1
RRT .2298 RRF -.2652 RTF -.8217
SGB 1991.4 R23 -.0522 R13 -.8238
SG1 1883.2 SG2 647.4 THA 5.30

ORBIT DETERMINATION ACCURACY
ST 193.5 SR 638.1 SS 451.1
CRT -.1620 CRS .8534 CST -.5638
LSA 758.2 MSA 257.8 SSA 82.3
EL1 638.9 EL2 190.7 ALF 93.09

LAUNCH DATE DEC 24 1964 FLIGHT TIME 162.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 376.075 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.995 GAL 5.09 AZL 89.25 HCA 115.62 SMA 204.71 ECC .29384 INC .7500 V1 30.280
RP 239.58 LAP .68 LOP 207.85 VP 21.438 GAP 14.06 AZP 90.32 TAL 22.66 TAP 138.28 RCA 144.55 APO 264.86 V2 22.928
RC 171.174 GL 5.35 GP 3.97 ZAL 49.29 ZAP 163.09 ETS 165.33 ZAE 156.92 ETE 9.64 ZAC 94.06 ETC 255.82 CLP 163.55

PLANETOCENTRIC CONIC

C3 22.632 VHL 4.757 DLA 19.46 RAL 145.50 RAD 6567.9 VEL 12.000 PTH 2.14 VHP 7.319 DPA .15 RAP 192.57 ECC 1.3725

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 8 1	2899.56	-28.31	89.10	16.27	89.17	12 56 21	2299.6	-28.12	80.44
90.00	5 36 57	4232.73	1.10	173.81	8.51	61.70	6 47 29	3632.7	-2.70	167.18
100.00	13 41 32	2598.03	-29.89	66.92	16.28	90.64	14 24 50	1998.0	-29.48	58.14
100.00	6 46 7	4009.50	2.48	156.63	7.74	60.20	7 52 57	3409.5	-1.51	150.11
110.00	15 16 1	2302.40	-33.92	44.26	16.06	94.53	15 54 23	1702.4	-32.92	35.16
110.00	7 28 7	3877.89	5.91	144.52	5.61	56.27	8 32 45	3277.9	1.44	138.29

DIFFERENTIAL CORRECTIONS
TDE .0275 TRA -.4457 TC3 1.8997 BAU .5764
RDE -.5275 RRA -.1171 RC3 .1440 FAU .11049
FDE .5452 FRA -.8758 FC3-4.2263 BSP 6261
BDE .5283 BRA .4608 BC3 1.9051 FSP 1087

MID-COURSE EXECUTION ACCURACY
SGT 1895.3 SGR 667.0 SG3 365.1
RRT .2466 RRF -.2842 RTF -.8254
SGB 2009.3 R23 -.0558 R13 -.8277
SG1 1903.4 SG2 643.6 THA 5.60

ORBIT DETERMINATION ACCURACY
ST 182.2 SR 636.9 SS 472.5
CRT -.1135 CRS .8459 CST -.5328
LSA 766.4 MSA 260.7 SSA 82.3
EL1 637.3 EL2 181.0 ALF 92.02

LAUNCH DATE DEC 24 1964 FLIGHT TIME 164.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 379.368 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.931	GAL	5.17	AZL	89.28	HCA	116.57	SMA	203.33	ECC	.28965	INC	.7243	V1	30.280
RP	239.26	LAP	.65	LOP	208.79	VP	21.370	GAP	13.48	AZP	90.32	TAL	23.31	TAP	139.87	RCA	144.44	APO	262.23	V2	22.959
RC	173.485	GL	5.18	GP	4.10	ZAL	48.34	ZAP	162.27	ETS	165.56	ZAE	157.53	ETE	10.40	ZAC	94.22	ETC	255.82	CLP	162.73

PLANETOCENTRIC CONIC

C3	22.405	VHL	4.733	DLA	19.61	RAL	144.49	RAD	6567.9	VEL	11.991	PTH	2.14	VHP	7.137	DPA	.22	RAP	192.74	ECC	1.3687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 2 23	2903.21	-28.30	89.37	15.14	89.03	12 50 46	2303.2	-28.14	80.71
90.00	5 34 35	4224.18	.82	173.33	7.41	61.69	6 45 0	3624.2	-2.97	166.70
100.00	13 36 3	2601.13	-29.89	67.16	15.15	90.52	14 19 25	2001.1	-29.50	58.37
100.00	6 43 36	4001.50	2.21	156.19	6.64	60.18	7 50 17	3401.5	-1.78	149.67
110.00	15 10 52	2304.50	-33.93	44.42	14.94	94.43	15 49 17	1704.5	-32.94	35.32
110.00	7 25 16	3870.89	5.64	144.15	4.50	56.23	8 29 47	3270.9	1.17	137.93

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0183	TRA	-.4180	TC3	1.9386	BAU	.5826	SGT	1912.4	SGR	666.5	SG3	384.8	ST	171.7	SR	635.6
RDE	-.5239	RRA	-.1082	RC3	.1590	FAU	.11533	RRT	.2642	RRF	-.3043	RTF	-.8286	CRT	-.0652	CRS	.8385
FDE	.5753	FRA	-.9700	FC3	-4.4563	BSP	6333	SGB	2025.2	R23	-.0598	R13	-.8312	LSA	774.9	MSA	264.4
BDE	.5243	BRA	.4318	BC3	1.9451	FSP	1153	SG1	1921.5	SG2	639.7	THA	5.92	EL1	635.7	EL2	171.3

SS 493.6 CST -.5002 SSA 82.0 ALF 91.09

LAUNCH DATE DEC 24 1964 FLIGHT TIME 166.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 382.698 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.870	GAL	5.25	AZL	89.30	HCA	117.52	SMA	202.04	ECC	.28570	INC	.6980	V1	30.280
RP	238.95	LAP	.62	LOP	209.74	VP	21.306	GAP	12.91	AZP	90.32	TAL	23.94	TAP	141.46	RCA	144.32	APO	259.77	V2	22.991
RC	175.790	GL	5.00	GP	4.24	ZAL	47.42	ZAP	161.43	ETS	165.77	ZAE	158.17	ETE	11.24	ZAC	94.38	ETC	255.81	CLP	161.90

PLANETOCENTRIC CONIC

C3	22.203	VHL	4.712	DLA	19.74	RAL	143.52	RAD	6567.9	VEL	11.983	PTH	2.14	VHP	6.961	DPA	.30	RAP	192.91	ECC	1.3654

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 57 4	2906.29	-28.30	89.60	14.05	88.92	12 45 31	2306.3	-28.15	80.93
90.00	5 32 8	4216.70	.58	172.91	6.34	61.69	6 42 25	3616.7	-3.21	166.28
100.00	13 30 54	2603.73	-29.89	67.35	14.06	90.42	14 14 18	2003.7	-29.51	58.56
100.00	6 40 59	3994.50	1.97	155.81	5.57	60.17	7 47 34	3394.5	-2.02	149.28
110.00	15 6 0	2306.22	-33.94	44.55	13.86	94.36	15 44 26	1706.2	-32.96	35.45
110.00	7 22 23	3864.77	5.41	143.83	3.43	56.20	8 26 48	3264.8	.94	137.61

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0103	TRA	-.3913	TC3	1.9744	BAU	.5884	SGT	1928.1	SGR	666.3	SG3	405.6	ST	162.1	SR	634.0
RDE	-.5205	RRA	-.0990	RC3	.1749	FAU	.12044	RRT	.2828	RRF	-.3256	RTF	-.8315	CRT	-.0176	CRS	.8310
FDE	.6055	FRA	-1.0699	FC3	-4.6961	BSP	6415	SGB	2040.0	R23	-.0643	R13	-.8344	LSA	783.6	MSA	268.8
BDE	.5206	BRA	.4036	BC3	1.9821	FSP	1223	SG1	1938.4	SG2	635.7	THA	6.26	EL1	634.0	EL2	162.1

SS 514.4 CST -.4665 SSA 81.4 ALF 90.28

LAUNCH DATE DEC 24 1964 FLIGHT TIME 168.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 386.063 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.811	GAL	5.33	AZL	89.33	HCA	118.47	SMA	200.83	ECC	.28198	INC	.6712	V1	30.280
RP	238.63	LAP	.59	LOP	210.69	VP	21.249	GAP	12.35	AZP	90.32	TAL	24.57	TAP	143.03	RCA	144.20	APO	257.47	V2	23.024
RC	178.086	GL	4.82	GP	4.39	ZAL	46.53	ZAP	160.57	ETS	165.97	ZAE	158.84	ETE	12.17	ZAC	94.54	ETC	255.81	CLP	161.06

PLANETOCENTRIC CONIC

C3	22.024	VHL	4.693	DLA	19.85	RAL	142.58	RAD	6567.9	VEL	11.975	PTH	2.13	VHP	6.789	DPA	.38	RAP	193.06	ECC	1.3625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 52 6	2908.80	-28.29	89.78	13.00	88.83	12 40 35	2308.8	-28.16	81.12
90.00	5 29 34	4210.27	.37	172.55	5.32	61.69	6 39 44	3610.3	-3.42	165.92
100.00	13 26 3	2605.83	-29.89	67.50	13.01	90.34	14 9 29	2005.8	-29.52	58.72
100.00	6 38 18	3988.47	1.77	155.47	4.54	60.15	7 44 46	3388.5	-2.22	148.95
110.00	15 1 23	2307.57	-33.95	44.66	12.82	94.29	15 39 51	1707.6	-32.98	35.55
110.00	7 19 27	3859.50	5.21	143.55	2.40	56.17	8 23 47	3259.5	.73	137.33

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0090	TRA	-.3587	TC3	2.0178	BAU	.5968	SGT	1950.3	SGR	666.6	SG3	427.7	ST	151.2	SR	632.3
RDE	-.5171	RRA	-.0894	RC3	.1918	FAU	.12586	RRT	.2985	RRF	-.3480	RTF	-.8364	CRT	-.0188	CRS	.8231
FDE	.6354	FRA	-1.1775	FC3	-4.9475	BSP	6332	SGB	2061.1	R23	-.0723	R13	-.8396	LSA	792.5	MSA	272.2
BDE	.5171	BRA	.3697	BC3	2.0269	FSP	1294	SG1	1961.6	SG2	632.6	THA	6.50	EL1	632.3	EL2	151.2

SS 534.9 CST -.4693 SSA 80.9 ALF 90.27

LAUNCH DATE DEC 24 1964 FLIGHT TIME 170.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 389.459 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.756	GAL	5.41	AZL	89.36	HCA	119.42	SMA	199.70	ECC	.27848	INC	.6437	V1	30.280
RP	238.31	LAP	.56	LOP	211.64	VP	21.196	GAP	11.79	AZP	90.32	TAL	25.18	TAP	144.60	RCA	144.09	APO	255.31	V2	23.056
RC	180.373	GL	4.63	GP	4.54	ZAL	45.67	ZAP	159.70	ETS	166.14	ZAE	159.53	ETE	13.20	ZAC	94.71	ETC	255.80	CLP	160.19

PLANETOCENTRIC CONIC

C3	21.864	VHL	4.676	DLA	19.93	RAL	141.66	RAD	6567.9	VEL	11.968	PTH	2.13	VHP	6.623	DPA	.49	RAP	193.20	ECC	1.3598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 47 28	2910.66	-28.29	89.91	11.98	88.76	12 35 59	2310.7	-28.16	81.25
90.00	5 26 54	4204.89	.20	172.25	4.33	61.68	6 36 59	3604.9	-3.59	165.62
100.00	13 21 32	2607.35	-29.89	67.62	12.00	90.28	14 4 59	2007.4	-29.53	58.83
100.00	6 35 32	3983.43	1.59	155.20	3.55	60.15	7 41 55	3383.4	-2.39	148.68
110.00	14 57 4	2308.48	-33.95	44.73	11.81	94.25	15 35 32	1708.5	-32.99	35.62
110.00	7 16 30	3855.06	5.04	143.32	1.40	56.15	8 20 45	3255.1	.56	137.10

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.0028	TRA	-.3392	TC3	2.0368	BAU	.5985	SGT	1955.4	SGR	667.5	SG3	450.6	ST	144.5	SR	630.4
RDE	-.5138	RRA	-.0796	RC3	.2097	FAU	.13147	RRT	.3230	RRF	-.3720	RTF	-.8368	CRT	.0729	CRS	.8162
FDE	.6671	FRA	-1.2892	FC3	-5.2059	BSP	6532	SGB	2066.2	R23	-.0746	R13	-.8404	LSA	801.8	MSA	279.2
BDE	.5138	BRA	.3484	BC3	2.0476	FSP	1374	SG1	1968.6	SG2	627.5	THA	7.01	EL1	630.5	EL2	144.1

SS 555.8 CST -.3968 SSA 79.6 ALF 88.99

LAUNCH DATE DEC 24 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 392.885 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.703 GAL 5.48 AZL 89.38 HCA 120.37 SMA 198.64 ECC .27518 INC .6158 V1 30.280
RP 237.98 LAP .53 LOP 212.60 VP 21.148 GAP 11.24 AZP 90.31 TAL 25.77 TAP 146.15 RCA 143.98 APO 253.30 V2 23.089
RC 182.651 GL 4.44 GP 4.69 ZAL 44.85 ZAP 158.80 ETS 166.30 ZAE 160.25 ETE 14.35 ZAC 94.88 ETC 255.80 CLP 159.30

PLANETOCENTRIC CONIC

C3 21.722 VHL 4.661 DLA 20.00 RAL 140.78 RAD 6567.9 VEL 11.963 PTH 2.13 VHP 6.460 DPA .60 RAP 193.33 ECC 1.3575

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 43 11	2911.91	-28.29	90.01	11.00	88.71	12 31 43	2311.9	-28.17	81.34
90.00	5 24 8	4200.51	.06	172.01	3.37	61.68	6 34 9	3600.5	-3.73	165.37
100.00	13 17 20	2608.34	-29.89	67.69	11.02	90.24	14 0 48	2008.3	-29.54	58.90
100.00	6 32 41	3979.31	1.45	154.97	2.59	60.14	7 39 0	3379.3	-2.53	148.45
110.00	14 53 0	2309.00	-33.95	44.77	10.83	94.23	15 31 29	1709.0	-32.99	35.66
110.00	7 13 30	3851.42	4.91	143.13	.44	56.13	8 17 41	3251.4	.42	136.91

DIFFERENTIAL CORRECTIONS
TDE -.0084 TRA -.3151 TC3 2.0610 BAU .6022
RDE -.5106 RRA -.0694 RC3 .2286 FAU .13735
FDE .6991 FRA-1.4078 FC3-5.4738 BSP 6587
BDE .5107 BRA .3227 BC3 2.0737 FSP 1456

MID-COURSE EXECUTION ACCURACY
SGT 1965.0 SGR 669.1 SG3 474.5
RRT .3448 RRF -.3972 RTF -.8388
SGB 2075.7 R23 -.0805 R13 -.8428
SG1 1980.0 SG2 623.3 THA 7.44

ORBIT DETERMINATION ACCURACY
ST 136.8 SR 628.3 SS 576.6
CRT .1193 CRS .8094 CST -.3578
LSA 811.6 MSA 284.8 SSA 78.4
EL1 628.6 EL2 135.8 ALF 88.44

LAUNCH DATE DEC 24 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 396.341 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.653 GAL 5.55 AZL 89.41 HCA 121.33 SMA 197.63 ECC .27207 INC .5871 V1 30.280
RP 237.65 LAP .50 LOP 213.56 VP 21.104 GAP 10.70 AZP 90.31 TAL 26.35 TAP 147.68 RCA 143.86 APO 251.40 V2 23.123
RC 184.919 GL 4.24 GP 4.86 ZAL 44.06 ZAP 157.88 ETS 166.45 ZAE 161.00 ETE 15.63 ZAC 95.05 ETC 255.79 CLP 158.39

PLANETOCENTRIC CONIC

C3 21.597 VHL 4.647 DLA 20.05 RAL 139.92 RAD 6567.9 VEL 11.957 PTH 2.13 VHP 6.302 DPA .73 RAP 193.44 ECC 1.3554

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 39 14	2912.52	-28.29	90.05	10.06	88.69	12 27 47	2312.5	-28.17	81.39
90.00	5 21 17	4197.11	-.05	171.82	2.45	61.68	6 31 14	3597.1	-3.84	165.18
100.00	13 13 26	2608.76	-29.89	67.72	10.08	90.22	13 56 55	2008.8	-29.54	58.94
100.00	6 29 46	3976.10	1.35	154.80	1.67	60.14	7 36 2	3376.1	-2.64	148.27
110.00	14 49 13	2309.08	-33.95	44.78	9.89	94.22	15 27 43	1709.1	-33.00	35.67
110.00	7 10 28	3848.55	4.80	142.98	359.52	56.11	8 14 36	3248.5	.31	136.76

DIFFERENTIAL CORRECTIONS
TDE -.0126 TRA -.2916 TC3 2.0832 BAU .6058
RDE -.5074 RRA -.0587 RC3 .2487 FAU .14357
FDE .7307 FRA-1.5339 FC3-5.7550 BSP 6626
BDE .5076 BRA .2975 BC3 2.0980 FSP 1542

MID-COURSE EXECUTION ACCURACY
SGT 1973.8 SGR 671.4 SG3 499.9
RRT .3674 RRF -.4235 RTF -.8407
SGB 2084.9 R23 -.0870 R13 -.8452
SG1 1990.8 SG2 619.1 THA 7.89

ORBIT DETERMINATION ACCURACY
ST 129.6 SR 626.1 SS 597.0
CRT .1571 CRS .8023 CST -.3242
LSA 821.4 MSA 290.7 SSA 77.2
EL1 626.4 EL2 127.9 ALF 88.06

LAUNCH DATE DEC 24 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 399.823 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.605 GAL 5.61 AZL 89.44 HCA 122.29 SMA 196.69 ECC .26915 INC .5579 V1 30.280
RP 237.31 LAP .47 LOP 214.52 VP 21.065 GAP 10.16 AZP 90.30 TAL 26.92 TAP 149.21 RCA 143.75 APO 249.63 V2 23.157
RC 187.176 GL 4.03 GP 5.03 ZAL 43.30 ZAP 156.94 ETS 166.58 ZAE 161.76 ETE 17.08 ZAC 95.23 ETC 255.79 CLP 157.46

PLANETOCENTRIC CONIC

C3 21.487 VHL 4.635 DLA 20.08 RAL 139.10 RAD 6567.9 VEL 11.953 PTH 2.13 VHP 6.149 DPA .88 RAP 193.54 ECC 1.3536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 35 37	2912.50	-28.29	90.05	9.15	88.69	12 24 10	2312.5	-28.17	81.39
90.00	5 18 19	4194.66	-.13	171.68	1.56	61.68	6 28 14	3594.7	-3.92	165.05
100.00	13 9 51	2608.63	-29.89	67.71	9.17	90.23	13 53 20	2008.6	-29.54	58.93
100.00	6 26 46	3973.76	1.27	154.67	.78	60.13	7 33 0	3373.8	-2.72	148.15
110.00	14 45 42	2308.74	-33.95	44.75	8.98	94.24	15 24 11	1708.7	-32.99	35.64
110.00	7 7 24	3846.42	4.72	142.86	358.63	56.10	8 11 31	3246.4	.23	136.65

DIFFERENTIAL CORRECTIONS
TDE -.0083 TRA -.2621 TC3 2.1150 BAU .6125
RDE -.5042 RRA -.0474 RC3 .2703 FAU .15022
FDE .7592 FRA-1.6697 FC3-6.0525 BSP 6483
BDE .5042 BRA .2664 BC3 2.1322 FSP 1626

MID-COURSE EXECUTION ACCURACY
SGT 1991.0 SGR 674.6 SG3 526.9
RRT .3867 RRF -.4506 RTF -.8445
SGB 2102.1 R23 -.0969 R13 -.8496
SG1 2009.8 SG2 616.3 THA 8.25

ORBIT DETERMINATION ACCURACY
ST 119.5 SR 623.5 SS 615.7
CRT .1177 CRS .7938 CST -.3516
LSA 830.0 MSA 295.6 SSA 76.3
EL1 623.7 EL2 118.6 ALF 88.66

LAUNCH DATE DEC 24 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 403.330 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.559 GAL 5.67 AZL 89.47 HCA 123.26 SMA 195.81 ECC .26639 INC .5279 V1 30.280
RP 236.98 LAP .44 LOP 215.48 VP 21.031 GAP 9.63 AZP 90.29 TAL 27.46 TAP 150.72 RCA 143.65 APO 247.97 V2 23.191
RC 189.421 GL 3.82 GP 5.21 ZAL 42.57 ZAP 155.97 ETS 166.71 ZAE 162.55 ETE 18.71 ZAC 95.41 ETC 255.79 CLP 156.51

PLANETOCENTRIC CONIC

C3 21.389 VHL 4.625 DLA 20.08 RAL 138.31 RAD 6567.9 VEL 11.949 PTH 2.13 VHP 6.000 DPA 1.04 RAP 193.63 ECC 1.3520

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 32 21	2911.79	-28.29	90.00	8.28	88.72	12 20 53	2311.8	-28.17	81.33
90.00	5 15 16	4193.17	-.18	171.60	.71	61.68	6 25 9	3593.2	-3.97	164.96
100.00	13 6 36	2607.88	-29.89	67.66	8.30	90.26	13 50 4	2007.9	-29.54	58.87
100.00	6 23 42	3972.30	1.22	154.59	359.93	60.13	7 29 55	3372.3	-2.77	148.07
110.00	14 42 29	2307.92	-33.95	44.69	8.11	94.28	15 20 57	1707.9	-32.98	35.58
110.00	7 4 19	3845.02	4.66	142.79	357.78	56.10	8 8 24	3245.0	.18	136.58

DIFFERENTIAL CORRECTIONS
TDE -.0185 TRA -.2496 TC3 2.1132 BAU .6100
RDE -.5011 RRA -.0359 RC3 .2927 FAU .15688
FDE .7935 FRA-1.8068 FC3-6.3499 BSP 6707
BDE .5015 BRA .2521 BC3 2.1334 FSP 1727

MID-COURSE EXECUTION ACCURACY
SGT 1982.3 SGR 679.0 SG3 554.2
RRT .4153 RRF -.4793 RTF -.8430
SGB 2095.3 R23 -.1015 R13 -.8488
SG1 2004.3 SG2 610.9 THA 8.93

ORBIT DETERMINATION ACCURACY
ST 117.1 SR 621.1 SS 636.7
CRT .2214 CRS .7886 CST -.2625
LSA 841.2 MSA 302.8 SSA 74.6
EL1 621.6 EL2 114.1 ALF 87.53

LAUNCH DATE DEC 24 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 406.862 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.516	GAL	5.73	AZL	89.50	HCA	124.22	SMA	194.98	ECC	.26380	INC	.4971
RP	236.64	LAP	.41	LOP	216.45	VP	21.000	GAP	9.11	AZP	90.28	TAL	27.99	TAP	152.22	RCA	143.54	APO	246.41
RC	191.655	GL	3.60	GP	5.40	ZAL	41.88	ZAP	154.98	ETS	166.82	ZAE	163.35	ETE	20.57	ZAC	95.59	ETC	255.78

V1	30.280	V2	23.226	CLP	155.54														

PLANETOCENTRIC CONIC

C3	21.302	VHL	4.615	DLA	20.08	RAL	137.55	RAD	6567.9	VEL	11.945	PTH	2.13	VHP	5.855	DPA	1.21	RAP	193.70
ECC	1.3506																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 29 25	2910.44	-28.29	89.90	7.44	88.77	12 17 55	2310.4	-28.16	81.24
90.00	5 12 8	4192.56	-.20	171.57	359.88	61.68	6 22 0	3592.6	-3.99	164.93
100.00	13 3 39	2606.57	-29.89	67.56	7.45	90.31	13 47 6	2006.6	-29.53	58.77
100.00	6 20 35	3971.66	1.20	154.55	359.10	30.13	7 26 46	3371.7	-2.79	148.03
110.00	14 39 30	2306.68	-33.94	44.59	7.26	94.33	15 17 57	1706.7	-32.97	35.49
110.00	7 1 13	3844.32	4.64	142.75	356.96	56.09	8 5 17	3244.3	.15	136.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0197	TRA	-.2302	TC3	2.1226	BAU	.6112	SGT	1982.9	SGR	684.6	SG3	583.3	ST	111.3	SR	618.4	SS	656.5
RDE	-.4980	RRA	-.0237	RC3	.3166	FAU	.16399	RRT	.4400	RRF	-.5086	RTF	-.8436	CRT	.2395	CRS	.7822	CST	-.2413
FDE	.8253	FRA	-1.9547	FC3	-6.6646	BSP	6718	SGB	2097.8	R23	-.1101	R13	-.8503	LSA	851.6	MSA	308.6	SSA	73.4
BDE	.4984	BRA	.2314	BC3	2.1460	FSP	1826	SG1	2008.0	SG2	607.0	THA	9.51	EL1	619.0	EL2	107.9	ALF	87.45

LAUNCH DATE DEC 24 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 410.416 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.475	GAL	5.79	AZL	89.53	HCA	125.19	SMA	194.19	ECC	.26136	INC	.4656
RP	236.29	LAP	.38	LOP	217.42	VP	20.974	GAP	8.60	AZP	90.27	TAL	28.50	TAP	153.70	RCA	143.44	APO	244.95
RC	193.877	GL	3.37	GP	5.60	ZAL	41.22	ZAP	153.97	ETS	166.93	ZAE	164.16	ETE	22.69	ZAC	95.78	ETC	255.78

V1	30.280	V2	23.261	CLP	154.54														

PLANETOCENTRIC CONIC

C3	21.225	VHL	4.607	DLA	20.05	RAL	136.82	RAD	6567.9	VEL	11.942	PTH	2.13	VHP	5.714	DPA	1.41	RAP	193.76
ECC	1.3493																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 26 48	2908.43	-28.30	89.75	6.63	88.84	12 15 17	2308.4	-28.16	81.09
90.00	5 8 54	4192.82	-.19	171.58	359.09	61.68	6 18 47	3592.8	-3.98	164.94
100.00	13 1 0	2604.67	-29.89	67.42	6.64	90.38	13 44 25	2004.7	-29.52	58.63
100.00	6 17 23	3971.82	1.20	154.56	358.31	60.13	7 23 35	3371.8	-2.78	148.04
110.00	14 36 48	2304.97	-33.93	44.46	6.44	94.41	15 15 13	1705.0	-32.95	35.36
110.00	6 58 5	3844.29	4.64	142.75	356.17	56.09	8 2 9	3244.3	.15	136.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0201	TRA	-.2127	TC3	2.1278	BAU	.6115	SGT	1980.8	SGR	691.6	SG3	613.6	ST	105.9	SR	615.5	SS	676.1
RDE	-.4949	RRA	-.0109	RC3	.3420	FAU	.17142	RRT	.4652	RRF	-.5387	RTF	-.8438	CRT	.2505	CRS	.7760	CST	-.2256
FDE	.8570	FRA	-2.1096	FC3	-6.9917	BSP	6732	SGB	2098.1	R23	-.1195	R13	-.8515	LSA	862.1	MSA	314.1	SSA	72.1
BDE	.4953	BRA	.2130	BC3	2.1551	FSP	1932	SG1	2009.4	SG2	603.5	THA	10.15	EL1	616.1	EL2	102.5	ALF	87.46

LAUNCH DATE DEC 24 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 413.992 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.436	GAL	5.85	AZL	89.57	HCA	126.17	SMA	193.46	ECC	.25907	INC	.4332
RP	235.94	LAP	.35	LOP	218.39	VP	20.951	GAP	8.10	AZP	90.26	TAL	29.00	TAP	155.17	RCA	143.34	APO	243.57
RC	196.086	GL	3.13	GP	5.81	ZAL	40.58	ZAP	152.93	ETS	167.03	ZAE	164.98	ETE	25.14	ZAC	95.97	ETC	255.77

V1	30.280	V2	23.297	CLP	153.51														

PLANETOCENTRIC CONIC

C3	21.157	VHL	4.600	DLA	20.00	RAL	136.11	RAD	6567.9	VEL	11.939	PTH	2.12	VHP	5.577	DPA	1.62	RAP	193.79
ECC	1.3482																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 24 31	2905.77	-28.30	89.56	5.85	88.94	12 12 57	2305.8	-28.15	80.89
90.00	5 5 35	4193.94	-.16	171.64	358.33	61.68	6 15 29	3593.9	-3.94	165.01
100.00	12 58 40	2602.18	-29.89	67.23	5.86	90.48	13 42 2	2002.2	-29.50	58.45
100.00	6 14 7	3972.76	1.23	154.61	357.55	60.13	7 20 20	3372.8	-2.75	148.09
110.00	14 34 21	2302.80	-33.92	44.29	5.65	94.51	15 12 44	1702.8	-32.92	35.19
110.00	6 54 55	3844.90	4.66	142.79	355.42	56.10	7 59 0	3244.9	.18	136.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0178	TRA	-.1952	TC3	2.1311	BAU	.6118	SGT	1977.6	SGR	700.2	SG3	645.5	ST	99.9	SR	612.4	SS	694.7
RDE	-.4916	RRA	.0027	RC3	.3690	FAU	.17922	RRT	.4898	RRF	-.5691	RTF	-.8440	CRT	.2301	CRS	.7692	CST	-.2352
FDE	.8863	FRA	-2.2746	FC3	-7.3335	BSP	6697	SGB	2097.9	R23	-.1302	R13	-.8528	LSA	872.0	MSA	319.6	SSA	71.0
BDE	.4919	BRA	.1952	BC3	2.1628	FSP	2040	SG1	2010.1	SG2	600.6	THA	10.81	EL1	612.9	EL2	97.1	ALF	87.80

LAUNCH DATE DEC 24 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 417.590 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.399	GAL	5.90	AZL	89.60	HCA	127.14	SMA	192.76	ECC	.25690	INC	.3998
RP	235.59	LAP	.32	LOP	219.37	VP	20.932	GAP	7.60	AZP	90.24	TAL	29.48	TAP	156.62	RCA	143.24	APO	242.28
RC	198.280	GL	2.89	GP	6.03	ZAL	39.98	ZAP	151.86	ETS	167.12	ZAE	165.80	ETE	27.98	ZAC	96.17	ETC	255.77

V1	30.280	V2	23.333	CLP	152.46														

PLANETOCENTRIC CONIC

C3	21.097	VHL	4.593	DLA	19.94	RAL	135.44	RAD	6567.9	VEL	11.936	PTH	2.12	VHP	5.445	DPA	1.85	RAP	193.82
ECC	1.3472																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 22 32	2902.46	-28.30	89.31	5.10	89.06	12 10 55	2302.5	-28.13	80.65
90.00	5 2 11	4195.88	-.09	171.75	357.59	61.68	6 12 7	3595.9	-3.88	165.11
100.00	12 56 37	2599.12	-29.89	67.01	5.10	90.60	13 39 56	1999.1	-29.48	58.22
100.00	6 10 48	3974.45	1.29	154.70	356.82	60.13	7 17 3	3374.4	-2.69	148.18
110.00	14 32 10	2300.18	-33.91	44.09	4.89	94.63	15 10 30	1700.2	-32.89	34.99
110.00	6 51 45	3846.15	4.71	142.85	354.69	56.10	7 55 51	3246.2	.22	136.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0099	TRA	-.1750	TC3	2.1395	BAU	.6138	SGT	1979.1	SGR	710.6	SG3	679.6	ST	92.1	SR	608.9	SS	711.8
RDE	-.4880	RRA	.0171	RC3	.3981	FAU	.18757	RRT	.5127	RRF	-.5998	RTF	-.8451	CRT	.1377	CRS	.7609	CST	-.2968
FDE	.9114	FRA	-2.4510	FC3	-7.6971	BSP	6543	SGB	2102.8	R23	-.1427	R13	-.8552	LSA	880.7	MSA	324.7	SSA	70.0
BDE	.4881	BRA	.1758	BC3	2.1762	FSP	2145	SG1	2015.7	SG2	599.0	THA	11.46	EL1	609.1	EL2	91.2	ALF	88.78

LAUNCH DATE DEC 24 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 421.206 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.364 GAL 5.95 AZL 89.63 HCA 128.12 SMA 192.11 ECC .25487 INC .3655 V1 30.280
RP 235.24 LAP .29 LOP 220.34 VP 20.917 GAP 7.11 AZP 90.23 TAL 29.93 TAP 158.05 RCA 143.15 APO 241.07 V2 23.369
RC 200.460 GL 2.65 GP 6.27 ZAL 39.41 ZAP 150.76 ETS 167.21 ZAE 166.61 ETE 31.27 ZAC 96.37 ETC 255.76 CLP 151.38

PLANETOCENTRIC CONIC

C3 21.041 VHL 4.587 DLA 19.86 RAL 134.80 RAD 6567.9 VEL 11.934 PTH 2.12 VHP 5.316 DPA 2.10 RAP 193.82 ECC 1.3463

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 20 53	2898.45	-28.31	89.02	4.37	89.21	12 9 12	2298.4	-28.12	80.36
90.00	4 58 43	4198.62	-.01	171.90	356.88	61.68	6 8 41	3598.6	-3.79	165.27
100.00	12 54 52	2595.42	-29.88	66.73	4.38	90.74	13 38 7	1995.4	-29.46	57.95
100.00	6 7 26	3976.89	1.37	154.84	356.12	60.14	7 13 42	3376.9	-2.61	148.32
110.00	14 30 14	2297.05	-33.89	43.84	4.15	94.77	15 8 31	1697.1	-32.86	34.76
110.00	6 48 33	3848.02	4.78	142.95	354.00	56.11	7 52 41	3248.0	.29	136.73

DIFFERENTIAL CORRECTIONS
TDE -.0151 TRA -.1709 TC3 2.1161 BAU .6073
RDE -.4850 RRA .0318 RC3 .4279 FAU .19573
FDE .9468 FRA-2.6248 FC3-8.0530 BSP 6712
BDE .4853 BRA .1739 BC3 2.1589 FSP 2278

MID-COURSE EXECUTION ACCURACY
SGT 1954.7 SGR 723.1 SG3 713.2
RRT .5404 RRF -.6306 RTF -.8413
SGB 2084.1 R23 -.1535 R13 -.8532
SG1 1997.3 SG2 595.5 THA 12.43

ORBIT DETERMINATION ACCURACY
ST 91.6 SR 606.1 SS 732.3
CRT .2026 CRS .7580 CST -.2467
LSA 893.7 MSA 329.5 SSA 68.7
EL1 606.4 EL2 89.6 ALF 88.21

LAUNCH DATE DEC 24 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 424.841 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.331 GAL 5.99 AZL 89.67 HCA 129.10 SMA 191.50 ECC .25295 INC .3301 V1 30.280
RP 234.89 LAP .26 LOP 221.32 VP 20.905 GAP 6.63 AZP 90.21 TAL 30.37 TAP 159.47 RCA 143.06 APO 239.94 V2 23.405
RC 202.623 GL 2.39 GP 6.51 ZAL 38.87 ZAP 149.64 ETS 167.29 ZAE 167.39 ETE 35.11 ZAC 96.58 ETC 255.76 CLP 150.28

PLANETOCENTRIC CONIC

C3 20.992 VHL 4.582 DLA 19.76 RAL 134.18 RAD 6567.9 VEL 11.932 PTH 2.12 VHP 5.192 DPA 2.37 RAP 193.81 ECC 1.3455

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 19 32	2893.80	-28.31	88.68	3.68	89.38	12 7 46	2293.8	-28.10	80.02
90.00	4 55 9	4202.14	.11	172.10	356.20	61.68	6 5 12	3602.1	-3.68	165.47
100.00	12 53 24	2591.14	-29.88	66.41	3.67	90.91	13 36 35	1991.1	-29.43	57.64
100.00	6 3 59	3980.03	1.48	155.01	355.44	60.14	7 10 19	3380.0	-2.50	148.49
110.00	14 28 33	2293.46	-33.87	43.56	3.43	94.94	15 6 46	1693.5	-32.81	34.49
110.00	6 45 20	3850.48	4.87	143.08	353.33	56.12	7 49 30	3250.5	.39	136.86

DIFFERENTIAL CORRECTIONS
TDE -.0116 TRA -.1609 TC3 2.1035 BAU .6043
RDE -.4816 RRA .0477 RC3 .4601 FAU .20452
FDE .9754 FRA-2.8133 FC3-8.4348 BSP 6685
BDE .4817 BRA .1678 BC3 2.1532 FSP 2405

MID-COURSE EXECUTION ACCURACY
SGT 1939.4 SGR 737.9 SG3 749.2
RRT .5645 RRF -.6611 RTF -.8394
SGB 2075.0 R23 -.1670 R13 -.8533
SG1 1988.1 SG2 594.2 THA 13.33

ORBIT DETERMINATION ACCURACY
ST 87.6 SR 602.7 SS 750.5
CRT .1557 CRS .7526 CST -.2791
LSA 904.5 MSA 333.8 SSA 67.7
EL1 602.9 EL2 86.5 ALF 88.68

LAUNCH DATE DEC 24 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 428.495 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.300 GAL 6.04 AZL 89.71 HCA 130.08 SMA 190.92 ECC .25115 INC .2938 V1 30.280
RP 234.53 LAP .22 LOP 222.31 VP 20.896 GAP 6.16 AZP 90.19 TAL 30.79 TAP 160.87 RCA 142.97 APO 238.87 V2 23.442
RC 204.770 GL 2.13 GP 6.76 ZAL 38.36 ZAP 148.48 ETS 167.38 ZAE 168.13 ETE 39.61 ZAC 96.80 ETC 255.75 CLP 149.14

PLANETOCENTRIC CONIC

C3 20.947 VHL 4.577 DLA 19.65 RAL 133.59 RAD 6567.9 VEL 11.930 PTH 2.12 VHP 5.071 DPA 2.67 RAP 193.78 ECC 1.3447

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 18 30	2888.49	-28.31	88.29	3.00	89.57	12 6 38	2288.5	-28.07	79.64
90.00	4 51 31	4206.42	.25	172.34	355.55	61.68	6 1 38	3606.4	-3.54	165.71
100.00	12 52 13	2586.27	-29.87	66.05	2.99	91.10	13 35 19	1986.3	-29.40	57.28
100.00	6 0 29	3983.88	1.61	155.22	354.79	60.15	7 6 53	3383.9	-2.37	148.70
110.00	14 27 6	2289.38	-33.84	43.25	2.74	95.12	15 5 16	1689.4	-32.76	34.18
110.00	6 42 5	3853.52	4.99	143.24	352.69	56.14	7 46 18	3253.5	.51	137.02

DIFFERENTIAL CORRECTIONS
TDE -.0067 TRA -.1530 TC3 2.0861 BAU .6004
RDE -.4781 RRA .0645 RC3 .4943 FAU .21366
FDE 1.0021 FRA-3.0106 FC3-8.8305 BSP 6639
BDE .4781 BRA .1660 BC3 2.1438 FSP 2535

MID-COURSE EXECUTION ACCURACY
SGT 1920.3 SGR 755.1 SG3 786.8
RRT .5872 RRF -.6909 RTF -.8367
SGB 2063.5 R23 -.1818 R13 -.8531
SG1 1976.1 SG2 594.0 THA 14.32

ORBIT DETERMINATION ACCURACY
ST 84.1 SR 599.2 SS 768.2
CRT .0838 CRS .7472 CST -.3313
LSA 915.2 MSA 337.8 SSA 66.7
EL1 599.2 EL2 83.8 ALF 89.31

LAUNCH DATE DEC 24 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 432.166 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.270 GAL 6.08 AZL 89.74 HCA 131.07 SMA 190.38 ECC .24945 INC .2561 V1 30.280
RP 234.17 LAP .19 LOP 223.29 VP 20.890 GAP 5.69 AZP 90.17 TAL 31.19 TAP 162.26 RCA 142.89 APO 237.87 V2 23.479
RC 206.900 GL 1.85 GP 7.03 ZAL 37.87 ZAP 147.30 ETS 167.46 ZAE 168.80 ETE 44.85 ZAC 97.02 ETC 255.75 CLP 147.98

PLANETOCENTRIC CONIC

C3 20.905 VHL 4.572 DLA 19.51 RAL 133.03 RAD 6567.8 VEL 11.928 PTH 2.12 VHP 4.954 DPA 2.98 RAP 193.73 ECC 1.3441

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 17 44	2882.52	-28.32	87.86	2.35	89.79	12 5 47	2282.5	-28.05	79.20
90.00	4 47 48	4211.45	.41	172.62	354.92	61.69	5 58 0	3611.4	-3.38	165.99
100.00	12 51 18	2580.79	-29.87	65.64	2.33	91.32	13 34 19	1980.8	-29.36	56.87
100.00	5 56 55	3988.40	1.76	155.47	354.16	60.15	7 3 24	3388.4	-2.22	148.95
110.00	14 25 54	2284.82	-33.82	42.90	2.06	95.33	15 3 59	1684.8	-32.71	33.83
110.00	6 38 49	3857.14	5.12	143.43	352.07	56.16	7 43 6	3257.1	.64	137.21

DIFFERENTIAL CORRECTIONS
TDE .0008 TRA -.1458 TC3 2.0673 BAU .5965
RDE -.4742 RRA .0824 RC3 .5309 FAU .22325
FDE 1.0250 FRA-3.2184 FC3-9.2453 BSP 6541
BDE .4742 BRA .1675 BC3 2.1344 FSP 2667

MID-COURSE EXECUTION ACCURACY
SGT 1900.4 SGR 775.2 SG3 826.2
RRT .6082 RRF -.7200 RTF -.8338
SGB 2052.4 R23 -.1979 R13 -.8532
SG1 1964.2 SG2 595.3 THA 15.38

ORBIT DETERMINATION ACCURACY
ST 81.2 SR 595.4 SS 784.9
CRT -.0352 CRS .7413 CST -.4135
LSA 925.3 MSA 341.5 SSA 65.8
EL1 595.4 EL2 81.2 ALF 90.28

LAUNCH DATE DEC 24 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 435.853 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.242	GAL	6.11	AZL	89.78	HCA	132.06	SMA	189.87	ECC	.24785	INC	.2170
RP	233.80	LAP	.16	LOP	224.28	VP	20.888	GAP	5.24	AZP	90.15	TAL	31.56	TAP	163.62	RCA	142.81	APO	236.93
RC	209.011	GL	1.57	GP	7.31	ZAL	37.42	ZAP	146.08	ETS	167.53	ZAE	169.39	ETE	50.92	ZAC	97.25	ETC	255.75

V1	30.280	V2	23.517	CLP	146.78														

PLANETOCENTRIC CONIC

C3	20.867	VHL	4.568	DLA	19.36	RAL	132.50	RAD	6567.8	VEL	11.927	PTH	2.12	VHP	4.842	DPA	3.32	RAP	193.66

ECC	1.3434	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	11 17 17	2875.87	-28.32	87.37	1.72	90.03	12 5 12	2275.9	-28.01	78.72							
		90.00	4 44 1	4217.20	.59	172.94	354.31	61.69	5 54 18	3617.2	-3.20	166.31							
		100.00	12 50 40	2574.70	-29.86	65.19	1.70	91.55	13 33 35	1974.7	-29.32	56.43							
		100.00	5 53 18	3993.61	1.94	155.76	353.56	60.16	6 59 52	3393.6	-2.05	149.24							
		110.00	14 24 57	2279.74	-33.78	42.50	1.41	95.56	15 2 57	1679.7	-32.64	33.45							
		110.00	6 35 31	3861.32	5.28	143.65	351.48	56.18	7 39 52	3261.3	.80	137.43							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0055	TRA	-.1449	TC3	2.0360	BAU	.5898	SGT	1870.1	SGR	798.1	SG3	866.2	ST	80.6	SR	591.8	SS	802.5
RDE	-.4706	RRA	.1011	RC3	.5693	FAU	.23296	RRT	.6281	RRF	-.7479	RTF	-.8288	CRT	-.1155	CRS	.7377	CST	-.4741
FDE	1.0512	FRA	-3.4302	FC3	-9.6654	BSP	6517	SGB	2033.3	R23	-.2151	R13	-.8520	LSA	937.0	MSA	344.4	SSA	64.8
BDE	.4706	BRA	.1767	BC3	2.1141	FSP	2813	SG1	1943.5	SG2	597.6	THA	16.62	EL1	591.9	EL2	80.1	ALF	90.92

LAUNCH DATE DEC 24 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 439.557 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.215	GAL	6.15	AZL	89.82	HCA	133.05	SMA	189.39	ECC	.24634	INC	.1768
RP	233.44	LAP	.13	LOP	225.28	VP	20.888	GAP	4.79	AZP	90.12	TAL	31.92	TAP	164.98	RCA	142.74	APO	236.04
RC	211.104	GL	1.28	GP	7.61	ZAL	36.99	ZAP	144.83	ETS	167.61	ZAE	169.86	ETE	57.85	ZAC	97.49	ETC	255.74

V1	30.280	V2	23.555	CLP	145.56														

PLANETOCENTRIC CONIC

C3	20.830	VHL	4.564	DLA	19.19	RAL	131.99	RAD	6567.8	VEL	11.925	PTH	2.12	VHP	4.733	DPA	3.69	RAP	193.57

ECC	1.3428	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	11 17 6	2868.56	-28.32	86.83	1.11	90.30	12 4 54	2268.6	-27.97	78.19							
		90.00	4 40 8	4223.67	.80	173.30	353.73	61.69	5 50 32	3623.7	-2.99	166.67							
		100.00	12 50 18	2567.99	-29.84	64.69	1.08	91.82	13 33 6	1968.0	-29.27	55.93							
		100.00	5 49 37	3999.47	2.14	156.08	352.98	60.18	6 56 16	3399.5	-1.85	149.56							
		110.00	14 24 13	2274.16	-33.74	42.07	.77	95.81	15 2 8	1674.2	-32.57	33.03							
		110.00	6 32 11	3866.07	5.46	143.90	350.92	56.20	7 36 37	3266.1	.98	137.67							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0129	TRA	-.1447	TC3	2.0029	BAU	.5831	SGT	1838.4	SGR	824.2	SG3	908.0	ST	81.2	SR	588.0	SS	818.9
RDE	-.4666	RRA	.1211	RC3	.6103	FAU	.24309	RRT	.6454	RRF	-.7744	RTF	-.8232	CRT	-.2384	CRS	.7333	CST	-.5577
FDE	1.0723	FRA	-3.6529	FC3	-10.1035	BSP	6441	SGB	2014.7	R23	-.2334	R13	-.8512	LSA	947.8	MSA	347.1	SSA	64.0
BDE	.4668	BRA	.1886	BC3	2.0938	FSP	2960	SG1	1922.6	SG2	602.0	THA	17.96	EL1	588.3	EL2	78.9	ALF	91.92

LAUNCH DATE DEC 24 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 443.277 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.190	GAL	6.18	AZL	89.86	HCA	134.05	SMA	188.94	ECC	.24492	INC	.1351
RP	233.07	LAP	.10	LOP	226.27	VP	20.891	GAP	4.35	AZP	90.09	TAL	32.26	TAP	166.31	RCA	142.66	APO	235.22
RC	213.179	GL	.98	GP	7.92	ZAL	36.60	ZAP	143.55	ETS	167.69	ZAE	170.17	ETE	65.58	ZAC	97.73	ETC	255.74

V1	30.280	V2	23.593	CLP	144.30														

PLANETOCENTRIC CONIC

C3	20.795	VHL	4.560	DLA	19.01	RAL	131.51	RAD	6567.8	VEL	11.924	PTH	2.12	VHP	4.628	DPA	4.08	RAP	193.47

ECC	1.3422	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	11 17 12	2860.57	-28.31	86.25	.52	90.60	12 4 53	2260.6	-27.93	77.61							
		90.00	4 36 11	4230.85	1.03	173.70	353.17	61.70	5 46 41	3630.8	-2.76	167.07							
		100.00	12 50 12	2560.66	-29.83	64.15	.48	92.10	13 32 53	1960.7	-29.22	55.40							
		100.00	5 45 51	4006.00	2.36	156.44	352.43	60.19	6 52 37	3406.0	-1.63	149.92							
		110.00	14 23 44	2268.05	-33.70	41.60	.15	96.09	15 1 32	1668.1	-32.49	32.57							
		110.00	6 28 49	3871.37	5.66	144.18	350.38	56.23	7 33 21	3271.4	1.19	137.95							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0222	TRA	-.1466	TC3	1.9660	BAU	.5760	SGT	1803.8	SGR	853.8	SG3	951.4	ST	84.2	SR	584.0	SS	834.5
RDE	-.4624	RRA	.1423	RC3	.6540	FAU	.25360	RRT	.6600	RRF	-.7993	RTF	-.8167	CRT	-.3771	CRS	.7288	CST	-.6439
FDE	1.0896	FRA	-3.8850	FC3	-10.5577	BSP	6339	SGB	1995.7	R23	-.2527	R13	-.8504	LSA	958.3	MSA	349.4	SSA	63.2
BDE	.4629	BRA	.2044	BC3	2.0719	FSP	3112	SG1	1900.5	SG2	608.8	THA	19.42	EL1	584.9	EL2	77.9	ALF	93.17

LAUNCH DATE DEC 24 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 447.011 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.167	GAL	6.21	AZL	89.91	HCA	135.05	SMA	188.52	ECC	.24358	INC	.0915
RP	232.70	LAP	.07	LOP	227.27	VP	20.897	GAP	3.92	AZP	90.07	TAL	32.58	TAP	167.63	RCA	142.60	APO	234.44
RC	215.236	GL	.67	GP	8.24	ZAL	36.22	ZAP	142.23	ETS	167.77	ZAE	170.29	ETE	73.91	ZAC	97.99	ETC	255.74

V1	30.280	V2	23.631	CLP	143.01														

PLANETOCENTRIC CONIC

C3	20.761	VHL	4.556	DLA	18.80	RAL	131.05	RAD	6567.8	VEL	11.922	PTH	2.12	VHP	4.526	DPA	4.49	RAP	193.34

ECC	1.3417	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	11 17 35	2851.89	-28.30	85.62	359.94	90.91	12 5 7	2251.9	-27.88	76.98							
		90.00	4 32 8	4238.74	1.29	174.14	352.62	61.71	5 42 47	3638.7	-2.50	167.51							
		100.00	12 50 22	2552.69	-29.80	63.56	359.89	92.41	13 32 55	1952.7	-29.15	54.81							
		100.00	5 42 2	4013.18	2.60	156.83	351.90	60.21	6 48 55	3413.2	-1.38	150.31							
		110.00	14 23 28	2261.41	-33.65	41.09	359.55	96.39	15 1 9	1661.4	-32.40	32.08							
		110.00	6 25 25	3877.22	5.88	144.49	349.86	56.27	7 30 2	3277.2	1.41	138.26							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0312	TRA	-.1529	TC3	1.9213	BAU	.5676	SGT	1763.1	SGR	887.0	SG3	995.8	ST	89.5	SR	579.9	SS	849.8
RDE	-.4580	RRA	.1648	RC3	.7003	FAU	.26435	RRT	.6716	RRF	-.8226	RTF	-.8081	CRT	-.4932	CRS	.7252	CST	-.7139
FDE	1.1049	FRA	-4.1235	FC3	-11.0236	BSP	6256	SGB	1973.6	R23	-.2729	R13	-.8493	LSA	969.1	MSA	351.3	SSA	62.4
BDE	.4590	BRA	.2248	BC3	2.0450	FSP	3271	SG1	1874.3	SG2	618.2	THA	21.07	EL1	581.6	EL2	77.6	ALF	94.43

LAUNCH DATE DEC 24 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 450.760 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.144	GAL	6.24	AZL	89.95	HCA	136.05	SMA	188.12	ECC	.24232	INC	.0464
RP	232.32	LAP	.03	LOP	228.27	VP	20.905	GAP	3.49	AZP	90.03	TAL	32.88	TAP	168.93	RCA	142.54	APO	233.71
RC	217.275	GL	.34	GP	8.59	ZAL	35.88	ZAP	140.88	ETS	167.85	ZAE	170.20	ETE	82.53	ZAC	98.25	ETC	255.73

V1	30.280	V2	23.670	CLP	141.68														

PLANETOCENTRIC CONIC

C3	20.727	VHL	4.553	DLA	18.57	RAL	130.61	RAD	6567.8	VEL	11.921	PTH	2.12	VHP	4.429	DPA	4.94	RAP	193.19
ECC	1.3411																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 18 14	2842.52	-28.29	84.93	359.38	91.26	12 5 37	2242.5	-27.82	76.30
90.00	4 28 0	4247.33	1.57	174.62	352.10	61.72	5 38 47	3647.3	-2.23	167.99
100.00	12 50 47	2544.07	-29.78	62.92	359.32	92.75	13 33 11	1944.1	-29.08	54.18
100.00	5 38 8	4021.02	2.87	157.26	351.38	60.23	6 45 9	3421.0	-1.12	150.74
110.00	14 23 26	2254.21	-33.60	40.53	358.95	96.71	15 1 0	1654.2	-32.30	31.54
110.00	6 21 59	3883.64	6.13	144.82	349.36	56.30	7 26 42	3283.6	1.66	138.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0408	TRA	-.1622	TC3	1.8704	BAU	.5584	SGT	1717.4	SGR	924.1	SG3	1041.4	ST	97.1	SR	575.9	SS	864.8
RDE	-.4534	RRA	.1886	RC3	.7494	FAU	.27533	RRT	.6798	RRF	-.8440	RTF	-.7977	CRT	-.5922	CRS	.7224	CST	-.7688
FDE	1.1184	FRA	-4.3688	FC	-11.5000	BSP	6159	SGB	1950.3	R23	-.2931	R13	-.8483	LSA	980.3	MSA	352.5	SSA	61.7
BDE	.4553	BRA	.2488	BC3	2.0150	FSP	3435	SG1	1845.5	SG2	630.7	THA	22.92	EL1	578.8	EL2	77.8	ALF	95.81

LAUNCH DATE DEC 24 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 454.523 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.123	GAL	6.26	AZL	90.00	HCA	137.06	SMA	187.75	ECC	.24113	INC	.0000
RP	231.95	LAP	.00	LOP	229.28	VP	20.916	GAP	3.08	AZP	90.00	TAL	33.16	TAP	170.22	RCA	142.48	APO	233.02
RC	219.295	GL	.00	GP	8.95	ZAL	35.56	ZAP	139.49	ETS	167.94	ZAE	169.87	ETE	91.04	ZAC	98.52	ETC	255.73

V1	30.280	V2	23.709	CLP	140.33														

PLANETOCENTRIC CONIC

C3	20.694	VHL	4.549	DLA	18.33	RAL	130.20	RAD	6567.8	VEL	11.919	PTH	2.12	VHP	4.335	DPA	5.41	RAP	193.03
ECC	1.3406																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 19 10	2832.45	-28.27	84.19	358.84	91.63	12 6 22	2232.4	-27.75	75.57
90.00	4 23 46	4256.64	1.87	175.14	351.60	61.74	5 34 43	3656.6	-1.93	168.51
100.00	12 51 28	2534.79	-29.75	62.23	358.77	93.11	13 33 43	1934.8	-29.00	53.50
100.00	5 34 9	4029.53	3.15	157.73	350.89	60.26	6 41 19	3429.5	-.83	151.21
110.00	14 23 37	2246.45	-33.53	39.93	358.37	97.06	15 1 4	1646.4	-32.19	30.96
110.00	6 18 29	3890.63	6.39	145.19	348.88	56.35	7 23 20	3290.6	1.92	138.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0520	TRA	-.1743	TC3	1.8146	BAU	.5489	SGT	1668.4	SGR	965.2	SG3	1088.4	ST	107.5	SR	571.5	SS	878.5
RDE	-.4484	RRA	.2140	RC3	.8018	FAU	.28666	RRT	.6841	RRF	-.8636	RTF	-.7852	CRT	-.6808	CRS	.7189	CST	-.8101
FDE	1.1243	FRA	-4.6239	FC	-11.9926	BSP	6046	SGB	1927.5	R23	-.3130	R13	-.8479	LSA	990.5	MSA	353.8	SSA	60.9
BDE	.4514	BRA	.2760	BC3	1.9839	FSP	3600	SG1	1815.7	SG2	646.9	THA	24.98	EL1	576.3	EL2	78.1	ALF	97.44

LAUNCH DATE DEC 24 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 458.300 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.103	GAL	6.28	AZL	90.05	HCA	138.07	SMA	187.40	ECC	.24000	INC	.0464
RP	231.57	LAP	-.03	LOP	230.29	VP	20.929	GAP	2.67	AZP	89.96	TAL	33.42	TAP	171.48	RCA	142.43	APO	232.38
RC	221.297	GL	-.35	GP	9.33	ZAL	35.27	ZAP	138.07	ETS	168.03	ZAE	169.32	ETE	99.08	ZAC	98.81	ETC	255.73

V1	30.280	V2	23.748	CLP	138.93														

PLANETOCENTRIC CONIC

C3	20.660	VHL	4.545	DLA	18.06	RAL	129.81	RAD	6567.8	VEL	11.918	PTH	2.12	VHP	4.246	DPA	5.91	RAP	192.84
ECC	1.3400																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 20 21	2821.64	-28.25	83.40	358.30	92.02	12 7 23	2221.6	-27.67	74.79
90.00	4 19 27	4266.67	2.19	175.70	351.12	61.76	5 30 34	3666.7	-1.60	169.07
100.00	12 52 24	2524.82	-29.71	61.49	358.22	93.49	13 34 29	1924.8	-28.91	52.78
100.00	5 30 6	4038.72	3.46	158.24	350.41	60.29	6 37 24	3438.7	-.52	151.71
110.00	14 24 2	2238.10	-33.46	39.29	357.80	97.43	15 1 21	1638.1	-32.07	30.34
110.00	6 14 56	3898.21	6.68	145.59	348.43	56.40	7 19 54	3298.2	2.21	139.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0636	TRA	-.1901	TC3	1.7524	BAU	.5389	SGT	1614.9	SGR	1010.7	SG3	1136.4	ST	120.1	SR	567.1	SS	891.8
RDE	-.4431	RRA	.2409	RC3	.8574	FAU	.29819	RRT	.6840	RRF	-.8813	RTF	-.7698	CRT	-.7474	CRS	.7163	CST	-.8374
FDE	1.1272	FRA	-4.8848	FC	-12.4951	BSP	5931	SGB	1905.1	R23	-.3317	R13	-.8480	LSA	1001.0	MSA	354.5	SSA	60.2
BDE	.4476	BRA	.3068	BC3	1.9509	FSP	3771	SG1	1784.4	SG2	667.2	THA	27.30	EL1	574.3	EL2	78.8	ALF	99.17

LAUNCH DATE DEC 24 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 462.090 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.085	GAL	6.30	AZL	90.10	HCA	139.08	SMA	187.08	ECC	.23894	INC	.0987
RP	231.20	LAP	-.06	LOP	231.30	VP	20.944	GAP	2.27	AZP	89.92	TAL	33.66	TAP	172.74	RCA	142.38	APO	231.78
RC	223.281	GL	-.72	GP	9.72	ZAL	35.01	ZAP	136.61	ETS	168.12	ZAE	168.56	ETE	106.40	ZAC	99.11	ETC	255.73

V1	30.280	V2	23.788	CLP	137.50														

PLANETOCENTRIC CONIC

C3	20.626	VHL	4.542	DLA	17.77	RAL	129.44	RAD	6567.8	VEL	11.917	PTH	2.12	VHP	4.160	DPA	6.45	RAP	192.63
ECC	1.3395																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 21 49	2810.10	-28.22	82.56	357.78	92.44	12 8 39	2210.1	-27.58	73.95
90.00	4 15 1	4277.43	2.54	176.30	350.66	61.79	5 26 19	3677.4	-1.26	169.67
100.00	12 53 35	2514.16	-29.66	60.70	357.69	93.91	13 35 29	1914.2	-28.80	52.00
100.00	5 25 56	4048.59	3.80	158.78	349.96	60.33	6 33 25	3448.6	-.18	152.25
110.00	14 24 41	2229.14	-33.38	38.61	357.24	97.83	15 1 50	1629.1	-31.94	29.67
110.00	6 11 20	3906.38	6.98	146.03	347.99	56.45	7 16 26	3306.4	2.53	139.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0759	TRA	-.2095	TC3	1.6834	BAU	.5285	SGT	1557.0	SGR	1060.6	SG3	1185.2	ST	134.9	SR	562.6	SS	904.3
RDE	-.4374	RRA	.2694	RC3	.9165	FAU	.30990	RRT	.6788	RRF	-.8972	RTF	-.7508	CRT	-.7983	CRS	.7140	CST	-.8544
FDE	1.1243	FRA	-5.1516	FC	-13.0073	BSP	5821	SGB	1883.9	R23	-.3481	R13	-.8492	LSA	1011.4	MSA	355.0	SSA	59.5
BDE	.4439	BRA	.3413	BC3	1.9167	FSP	3946	SG1	1752.2	SG2	692.0	THA	29.95	EL1	573.0	EL2	79.8	ALF	101.05

LAUNCH DATE DEC 24 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 465.893 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.067	GAL	6.32	AZL	90.15	HCA	140.09	SMA	186.77	ECC	.23794	INC	.1521	V1	30.280
RP	230.82	LAP	-.10	LOP	232.32	VP	20.962	GAP	1.88	AZP	89.88	TAL	33.88	TAP	173.97	RCA	142.33	APO	231.21	V2	23.827
RC	225.247	GL	-1.10	GP	10.14	ZAL	34.77	ZAP	135.12	ETS	168.23	ZAE	167.60	ETE	112.87	ZAC	99.42	ETC	255.73	CLP	136.04

PLANETOCENTRIC CONIC

C3	20.592	VHL	4.538	DLA	17.46	RAL	129.08	RAD	6567.8	VEL	11.915	PTH	2.12	VHP	4.078	DPA	7.01	RAP	192.40	ECC	1.3389

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 23 33	2797.78	-28.18	81.66	357.26	92.89	12 10 11	2197.8	-27.48	73.07
90.00	4 10 29	4288.94	2.91	176.94	350.21	61.82	5 21 58	3688.9	-.88	170.31
100.00	12 55 2	2502.77	-29.60	59.86	357.16	94.35	13 36 44	1902.8	-28.69	51.18
100.00	5 21 41	4059.18	4.15	159.36	349.52	60.37	6 29 20	3459.2	.18	152.83
110.00	14 25 33	2219.55	-33.29	37.87	356.68	98.26	15 2 33	1619.5	-31.79	28.97
110.00	6 7 39	3915.17	7.31	146.49	347.57	56.52	7 12 54	3315.2	2.86	140.24

DIFFERENTIAL CORRECTIONS

TDE	.0888	TRA	-.2329	TC3	1.6070	BAU	.5180
RDE	-.4312	RRA	.2997	RC3	.9790	FAU	.32170
FDE	1.1151	FRA	-5.4229	FC-13	.5250	BSP	5721
BDE	.4402	BRA	.3795	BC3	1.8818	FSP	4127

MID-COURSE EXECUTION ACCURACY

SGT	1494.9	SGR	1115.0	SG3	1234.6		
RRT	.6675	RRF	-.9114	RTF	-.7271		
SGB	1864.9	R23	-.3609	R13	-.8520		
SG1	1719.6	SG2	721.8	THA	32.99		

ORBIT DETERMINATION ACCURACY

ST	151.8	SR	557.9	SS	915.8		
CRT	-.8370	CRS	.7121	CST	-.8642		
LSA	1021.5	MSA	355.2	SSA	58.8		
EL1	572.5	EL2	80.9	ALF	103.09		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 469.709 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.051	GAL	6.33	AZL	90.21	HCA	141.11	SMA	186.49	ECC	.23699	INC	.2077	V1	30.280
RP	230.43	LAP	-.13	LOP	233.34	VP	20.982	GAP	1.49	AZP	89.84	TAL	34.08	TAP	175.19	RCA	142.29	APO	230.69	V2	23.867
RC	227.193	GL	-1.51	GP	10.58	ZAL	34.56	ZAP	133.59	ETS	168.34	ZAE	166.48	ETE	118.50	ZAC	99.74	ETC	255.73	CLP	134.54

PLANETOCENTRIC CONIC

C3	20.556	VHL	4.534	DLA	17.13	RAL	128.75	RAD	6567.8	VEL	11.914	PTH	2.12	VHP	4.000	DPA	7.61	RAP	192.16	ECC	1.3383

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 25 33	2784.67	-28.13	80.71	356.75	93.37	12 11 57	2184.7	-27.37	72.12
90.00	4 5 49	4301.23	3.30	177.63	349.78	61.86	5 17 30	3701.2	-.49	171.00
100.00	12 56 44	2490.62	-29.54	58.96	356.64	94.82	13 38 14	1890.6	-28.56	50.30
100.00	5 17 19	4070.51	4.53	159.99	349.10	60.42	6 25 10	3470.5	.56	153.45
110.00	14 26 39	2209.29	-33.19	37.09	356.13	98.71	15 3 28	1609.3	-31.63	28.21
110.00	6 3 54	3924.61	7.67	146.99	347.17	56.59	7 9 18	3324.6	3.22	140.73

DIFFERENTIAL CORRECTIONS

TDE	.1023	TRA	-.2598	TC3	1.5246	BAU	.5080
RDE	-.4245	RRA	.3319	RC3	1.0454	FAU	.33362
FDE	1.0990	FRA	-5.7003	FC-14	.0502	BSP	5620
BDE	.4366	BRA	.4215	BC3	1.8486	FSP	4305

MID-COURSE EXECUTION ACCURACY

SGT	1430.4	SGR	1174.3	SG3	1284.6		
RRT	.6492	RRF	-.9239	RTF	-.6980		
SGB	1850.7	R23	-.3680	R13	-.8572		
SG1	1689.0	SG2	756.5	THA	36.50		

ORBIT DETERMINATION ACCURACY

ST	170.5	SR	553.1	SS	926.7		
CRT	-.8670	CRS	.7105	CST	-.8682		
LSA	1031.5	MSA	355.4	SSA	58.1		
EL1	572.9	EL2	82.0	ALF	105.28		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 473.537 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.036	GAL	6.35	AZL	90.27	HCA	142.13	SMA	186.22	ECC	.23610	INC	.2663	V1	30.280
RP	230.05	LAP	-.16	LOP	234.36	VP	21.003	GAP	1.11	AZP	89.79	TAL	34.26	TAP	176.39	RCA	142.26	APO	230.19	V2	23.907
RC	229.120	GL	-1.93	GP	11.05	ZAL	34.37	ZAP	132.03	ETS	168.46	ZAE	165.20	ETE	123.33	ZAC	100.08	ETC	255.73	CLP	133.01

PLANETOCENTRIC CONIC

C3	20.520	VHL	4.530	DLA	16.77	RAL	128.43	RAD	6567.8	VEL	11.912	PTH	2.12	VHP	3.927	DPA	8.24	RAP	191.89	ECC	1.3377

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 27 49	2770.73	-28.07	79.69	356.25	93.87	12 14 0	2170.7	-27.24	71.12
90.00	4 1 2	4314.32	3.72	178.36	349.37	61.91	5 12 56	3714.3	-.06	171.73
100.00	12 58 41	2477.69	-29.46	58.01	356.12	95.31	13 39 59	1877.7	-28.41	49.36
100.00	5 12 51	4082.60	4.94	160.66	348.69	60.48	6 20 53	3482.6	.97	154.12
110.00	14 27 58	2198.34	-33.07	36.26	355.58	99.19	15 4 37	1598.3	-31.45	27.41
110.00	6 0 3	3934.72	8.05	147.53	346.78	56.66	7 5 37	3334.7	3.61	141.26

DIFFERENTIAL CORRECTIONS

TDE	.1160	TRA	-.2912	TC3	1.4345	BAU	.4986
RDE	-.4171	RRA	.3660	RC3	1.1158	FAU	.34554
FDE	1.0752	FRA	-5.9791	FC-14	.5780	BSP	5540
BDE	.4330	BRA	.4677	BC3	1.8174	FSP	4487

MID-COURSE EXECUTION ACCURACY

SGT	1363.3	SGR	1238.6	SG3	1334.8		
RRT	.6221	RRF	-.9348	RTF	-.6613		
SGB	1841.9	R23	-.3672	R13	-.8657		
SG1	1661.1	SG2	795.9	THA	40.61		

ORBIT DETERMINATION ACCURACY

ST	190.7	SR	548.0	SS	936.6		
CRT	-.8897	CRS	.7094	CST	-.8691		
LSA	1041.3	MSA	355.4	SSA	57.3		
EL1	574.3	EL2	83.1	ALF	107.58		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 477.377 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.021	GAL	6.36	AZL	90.33	HCA	143.16	SMA	185.98	ECC	.23525	INC	.3278	V1	30.280
RP	229.67	LAP	-.20	LOP	235.38	VP	21.027	GAP	.74	AZP	89.74	TAL	34.42	TAP	177.58	RCA	142.23	APO	229.73	V2	23.948
RC	231.027	GL	-2.38	GP	11.53	ZAL	34.22	ZAP	130.42	ETS	168.59	ZAE	163.81	ETE	127.48	ZAC	100.44	ETC	255.73	CLP	131.44

PLANETOCENTRIC CONIC

C3	20.484	VHL	4.526	DLA	16.38	RAL	128.13	RAD	6567.8	VEL	11.911	PTH	2.12	VHP	3.857	DPA	8.91	RAP	191.61	ECC	1.3371

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 30 22	2755.93	-28.00	78.61	355.75	94.41	12 16 18	2155.9	-27.09	70.07
90.00	3 56 6	4328.27	4.17	179.15	348.97	61.97	5 8 14	3728.3	.39	172.51
100.00	13 0 55	2463.93	-29.37	57.00	355.61	95.84	13 41 58	1863.9	-28.25	48.37
100.00	5 8 14	4095.50	5.37	161.37	348.31	60.55	6 16 29	3495.5	1.41	154.83
110.00	14 29 32	2186.65	-32.94	35.37	355.04	99.70	15 5 58	1586.7	-31.25	26.55
110.00	5 56 6	3945.54	8.45	148.11	346.42	56.75	7 1 51	3345.5	4.02	141.83

DIFFERENTIAL CORRECTIONS

TDE	.1301	TRA	-.3267	TC3	1.3372	BAU	.4903
RDE	-.4090	RRA	.4021	RC3	1.1904	FAU	.35742
FDE	1.0428	FRA	-6.2596	FC-15	.1065	BSP	5488
BDE	.4292	BRA	.5181	BC3	1.7903	FSP	4670

MID-COURSE EXECUTION ACCURACY

SGT	1295.4	SGR	1308.0	SG3	1384.9		
RRT	.5844	RRF	-.9444	RTF	-.6151		
SGB	1840.9	R23	-.3553	R13	-.8785		
SG1	1638.5	SG2	839.1	THA	45.47		

ORBIT DETERMINATION ACCURACY

ST	212.6	SR	542.7	SS	945.6		
CRT	-.9077	CRS	.7087	CST	-.8673		
LSA	1050.8	MSA	355.4	SSA	56.5		
EL1	576.8	EL2	83.9	ALF	110.01		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 220.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 481.230 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.008 GAL 6.36 AZL 90.39 HCA 144.19 SMA 185.75 ECC .23445 INC .3922 V1 30.280
RP 229.28 LAP -.23 LOP 236.41 VP 21.052 GAP .38 AZP 89.68 TAL 34.57 TAP 178.75 RCA 142.20 APO 229.30 V2 23.988
RC 232.913 GL -2.85 GP 12.05 ZAL 34.09 ZAP 128.79 ETS 168.74 ZAE 162.30 ETE 131.03 ZAC 100.81 ETC 255.73 CLP 129.83

PLANETOCENTRIC CONIC

C3 20.446 VHL 4.522 DLA 15.96 RAL 127.85 RAD 6567.8 VEL 11.909 PTH 2.12 VHP 3.791 DPA 9.61 RAP 191.32 ECC 1.3365

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 33 11	2740.22	-27.91	77.47	355.25	94.98	12 18 51	2140.2	-26.93	68.94
90.00	3 51 0	4343.10	4.64	179.98	348.59	62.03	5 3 23	3743.1	.86	173.33
100.00	13 3 24	2449.30	-29.26	55.92	355.09	96.39	13 44 13	1849.3	-28.07	47.32
100.00	5 3 28	4109.25	5.83	162.13	347.93	60.63	6 11 58	3509.3	1.88	155.58
110.00	14 31 19	2174.20	-32.79	34.43	354.49	100.24	15 7 34	1574.2	-31.03	25.65
110.00	5 52 2	3957.12	8.88	148.73	346.07	56.85	6 57 59	3357.1	4.46	142.43

DIFFERENTIAL CORRECTIONS
TDE .1447 TRA -.3662 TC3 1.2327 BAU .4837
RDE -.3999 RRA .4406 RC3 1.2696 FAU .36924
FDE .9981 FRA-6.5436 FC-15.6344 BSP 5468
BDE .4253 BRA .5729 BC3 1.7696 FSP 4849

MID-COURSE EXECUTION ACCURACY
SGT 1228.5 SGR 1382.9 SG3 1435.1
RRT .5337 RRF -.9527 RTF -.5571
SGB 1849.8 R23 -.3285 R13 -.8961
SG1 1624.7 SG2 884.2 THA 51.27

ORBIT DETERMINATION ACCURACY
ST 236.0 SR 537.0 SS 953.5
CRT -.9231 CRS .7078 CST -.8622
LSA 1059.9 MSA 355.9 SSA 55.6
EL1 580.5 EL2 83.9 ALF 112.58

LAUNCH DATE DEC 24 1964 FLIGHT TIME 222.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 485.094 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.996 GAL 6.37 AZL 90.46 HCA 145.22 SMA 185.54 ECC .23369 INC .4601 V1 30.280
RP 228.89 LAP -.26 LOP 237.45 VP 21.079 GAP .03 AZP 89.62 TAL 34.69 TAP 179.91 RCA 142.18 APO 228.89 V2 24.029
RC 234.778 GL -3.34 GP 12.58 ZAL 33.98 ZAP 127.12 ETS 168.89 ZAE 160.70 ETE 134.08 ZAC 101.21 ETC 255.74 CLP 128.19

PLANETOCENTRIC CONIC

C3 20.408 VHL 4.518 DLA 15.52 RAL 127.58 RAD 6567.8 VEL 11.908 PTH 2.12 VHP 3.730 DPA 10.35 RAP 191.00 ECC 1.3359

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 36 18	2723.56	-27.81	76.26	354.75	95.57	12 21 41	2123.6	-26.74	67.76
90.00	3 45 44	4358.88	5.15	180.86	348.22	62.12	4 58 23	3758.9	1.37	174.21
100.00	13 6 9	2433.76	-29.14	54.78	354.58	96.98	13 46 43	1833.8	-27.87	46.21
100.00	4 58 34	4123.91	6.32	162.95	347.58	60.72	6 7 18	3523.9	2.37	156.39
110.00	14 33 21	2160.92	-32.63	33.43	353.95	100.81	15 9 22	1560.9	-30.79	24.69
110.00	5 47 51	3969.51	9.34	149.39	345.73	56.97	6 54 1	3369.5	4.93	143.08

DIFFERENTIAL CORRECTIONS
TDE .1584 TRA -.4109 TC3 1.1195 BAU .4791
RDE -.3901 RRA .4811 RC3 1.3529 FAU .38072
FDE .9471 FRA-6.8221 FC-16.1506 BSP 5497
BDE .4211 BRA .6327 BC3 1.7560 FSP 5027

MID-COURSE EXECUTION ACCURACY
SGT 1164.4 SGR 1462.9 SG3 1484.0
RRT .4664 RRF -.9599 RTF -.4830
SGB 1869.8 R23 -.2839 R13 -.9178
SG1 1622.9 SG2 928.5 THA 58.13

ORBIT DETERMINATION ACCURACY
ST 260.0 SR 531.3 SS 961.0
CRT -.9347 CRS .7084 CST -.8579
LSA 1069.4 MSA 356.0 SSA 54.7
EL1 585.5 EL2 83.9 ALF 115.13

LAUNCH DATE DEC 24 1964 FLIGHT TIME 224.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 488.969 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.984 GAL 6.37 AZL 90.53 HCA 146.26 SMA 185.34 ECC .23296 INC .5325 V1 30.280
RP 228.51 LAP -.30 LOP 238.48 VP 21.108 GAP -.32 AZP 89.56 TAL 34.80 TAP 181.05 RCA 142.16 APO 228.52 V2 24.070
RC 236.623 GL -3.87 GP 13.15 ZAL 33.91 ZAP 125.42 ETS 169.07 ZAE 159.01 ETE 136.72 ZAC 101.62 ETC 255.74 CLP 126.52

PLANETOCENTRIC CONIC

C3 20.370 VHL 4.513 DLA 15.04 RAL 127.32 RAD 6567.8 VEL 11.906 PTH 2.12 VHP 3.673 DPA 11.13 RAP 190.68 ECC 1.3352

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 39 42	2705.88	-27.68	74.99	354.25	96.20	12 24 48	2105.9	-26.54	66.51
90.00	3 40 17	4375.67	5.68	181.81	347.87	62.21	4 53 13	3775.7	1.92	175.15
100.00	13 9 12	2417.25	-29.00	53.58	354.07	97.60	13 49 29	1817.2	-27.64	45.03
100.00	4 53 28	4139.54	6.84	163.82	347.23	60.83	6 2 28	3539.5	2.90	157.24
110.00	14 35 38	2146.78	-32.44	32.37	353.40	101.41	15 11 25	1546.8	-30.53	23.67
110.00	5 43 31	3982.77	9.83	150.10	345.41	57.10	6 49 54	3382.8	5.43	143.78

DIFFERENTIAL CORRECTIONS
TDE .1726 TRA -.4594 TC3 .9990 BAU .4775
RDE -.3791 RRA .5242 RC3 1.4409 FAU .39188
FDE .8834 FRA-7.1003 FC-16.6548 BSP 5580
BDE .4165 BRA .6970 BC3 1.7533 FSP 5205

MID-COURSE EXECUTION ACCURACY
SGT 1107.2 SGR 1548.6 SG3 1531.9
RRT .3799 RRF -.9660 RTF -.3910
SGB 1903.7 R23 -.2204 R13 -.9409
SG1 1639.6 SG2 967.3 THA 65.99

ORBIT DETERMINATION ACCURACY
ST 285.6 SR 525.2 SS 967.8
CRT -.9456 CRS .7093 CST -.8506
LSA 1078.8 MSA 356.8 SSA 53.7
EL1 592.1 EL2 82.4 ALF 117.79

LAUNCH DATE DEC 24 1964 FLIGHT TIME 226.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 492.855 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.973 GAL 6.37 AZL 90.61 HCA 147.30 SMA 185.16 ECC .23228 INC .6084 V1 30.280
RP 228.12 LAP -.33 LOP 239.52 VP 21.138 GAP -.66 AZP 89.49 TAL 34.89 TAP 182.18 RCA 142.15 APO 228.17 V2 24.111
RC 238.446 GL -4.43 GP 13.75 ZAL 33.86 ZAP 123.68 ETS 169.26 ZAE 157.25 ETE 139.01 ZAC 102.06 ETC 255.75 CLP 124.82

PLANETOCENTRIC CONIC

C3 20.333 VHL 4.509 DLA 14.52 RAL 127.08 RAD 6567.8 VEL 11.904 PTH 2.12 VHP 3.620 DPA 11.94 RAP 190.34 ECC 1.3346

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 43 24	2687.12	-27.54	73.63	353.75	96.87	12 28 11	2087.1	-26.30	65.18
90.00	3 34 37	4393.55	6.25	182.82	347.53	62.32	4 47 51	3793.6	2.49	176.15
100.00	13 12 32	2399.70	-28.83	52.30	353.55	98.25	13 52 31	1799.7	-27.39	43.79
100.00	4 48 11	4156.21	7.39	164.75	346.91	60.95	5 57 27	3556.2	3.46	158.16
110.00	14 38 11	2131.71	-32.23	31.24	352.85	102.05	15 13 42	1531.7	-30.24	22.59
110.00	5 39 2	3996.96	10.36	150.87	345.11	57.24	6 45 38	3397.0	5.97	144.53

DIFFERENTIAL CORRECTIONS
TDE .1864 TRA -.5125 TC3 .8714 BAU .4797
RDE -.3665 RRA .5700 RC3 1.5345 FAU .40284
FDE .8048 FRA-7.3749 FC-17.1521 BSP 5716
BDE .4112 BRA .7665 BC3 1.7646 FSP 5369

MID-COURSE EXECUTION ACCURACY
SGT 1061.3 SGR 1640.6 SG3 1579.1
RRT .2722 RRF -.9713 RTF -.2785
SGB 1954.0 R23 -.1442 R13 -.9607
SG1 1680.5 SG2 997.0 THA 74.40

ORBIT DETERMINATION ACCURACY
ST 312.1 SR 518.7 SS 973.8
CRT -.9554 CRS .7105 CST -.8412
LSA 1087.9 MSA 358.4 SSA 52.5
EL1 600.0 EL2 79.7 ALF 120.49

LAUNCH DATE DEC 24 1964 FLIGHT TIME 228.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 496.753 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.964 GAL 6.36 AZL 90.69 HCA 148.34 SMA 184.99 ECC .23163 INC .6896 V1 30.280
RP 227.73 LAP -.36 LOP 240.56 VP 21.169 GAP -.99 AZP 89.41 TAL 34.96 TAP 183.29 RCA 142.14 APO 227.84 V2 24.152
RC 240.240 GL -5.02 GP 14.38 ZAL 33.85 ZAP 121.92 ETS 169.47 ZAE 155.42 ETE 141.01 ZAC 102.52 ETC 255.76 CLP 123.08

PLANETOCENTRIC CONIC

C3 20.297 VHL 4.505 DLA 13.97 RAL 126.84 RAD 6567.8 VEL 11.903 PTH 2.11 VHP 3.571 DPA 12.80 RAP 189.99 ECC 1.3340

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 47 26	2667.22	-27.37	72.20	353.24	97.56	12 31 53	2067.2	-26.04	63.79
90.00	3 28 44	4412.60	6.85	183.90	347.21	62.46	4 42 16	3812.6	3.10	177.21
100.00	13 16 10	2381.05	-28.64	50.94	353.03	98.94	13 55 51	1781.0	-27.11	42.48
100.00	4 42 41	4174.00	7.98	165.74	346.60	61.10	5 52 15	3574.0	4.06	159.14
110.00	14 40 59	2115.65	-32.00	30.04	352.29	102.72	15 16 15	1515.6	-29.92	21.45
110.00	5 34 21	4012.17	10.92	151.69	344.83	57.40	6 41 13	3412.2	6.54	145.33

DIFFERENTIAL CORRECTIONS
TDE .1993 TRA -.5707 TC3 .7348 BAU .4857
RDE -.3527 RRA .6182 RC3 1.6321 FAU .41302
FDE .7154 FRA-7.6402 FC-17.6170 BSP 5933
BDE .4051 BRA .8414 BC3 1.7899 FSP 5533

MID-COURSE EXECUTION ACCURACY
SGT 1030.5 SGR 1737.9 SG3 1623.4
RRT .1418 RRF -.9758 RTF -.1440
SGB 2020.4 R23 -.0664 R13 -.9736
SG1 1747.2 SG2 1014.7 THA 82.73

ORBIT DETERMINATION ACCURACY
ST 339.1 SR 512.0 SS 979.6
CRT -.9638 CRS .7131 CST -.8316
LSA 1097.4 MSA 360.3 SSA 51.1
EL1 609.4 EL2 76.0 ALF 123.13

LAUNCH DATE DEC 24 1964 FLIGHT TIME 230.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 500.663 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.955 GAL 6.36 AZL 90.78 HCA 149.38 SMA 184.84 ECC .23102 INC .7756 V1 30.280
RP 227.34 LAP -.39 LOP 241.61 VP 21.203 GAP -1.32 AZP 89.33 TAL 35.01 TAP 184.40 RCA 142.14 APO 227.54 V2 24.193
RC 242.030 GL -5.65 GP 15.04 ZAL 33.87 ZAP 120.12 ETS 169.70 ZAE 153.52 ETE 142.78 ZAC 103.01 ETC 255.77 CLP 121.31

PLANETOCENTRIC CONIC

C3 20.283 VHL 4.501 DLA 13.37 RAL 126.62 RAD 6567.8 VEL 11.901 PTH 2.11 VHP 3.528 DPA 13.70 RAP 189.64 ECC 1.3335

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 51 46	2646.11	-27.17	70.69	352.73	98.30	12 35 52	2046.1	-25.74	62.31
90.00	3 22 35	4432.92	7.48	185.05	346.91	62.61	4 36 28	3832.9	3.76	178.35
100.00	13 20 6	2361.24	-28.42	49.51	352.50	99.67	13 59 27	1761.2	-26.80	41.09
100.00	4 36 56	4193.03	8.60	166.81	346.30	61.26	5 46 49	3593.0	4.70	160.19
110.00	14 44 3	2098.54	-31.74	28.78	351.72	103.43	15 19 2	1498.5	-29.56	20.24
110.00	5 29 28	4028.49	11.51	152.58	344.56	57.59	6 36 37	3428.5	7.16	146.20

DIFFERENTIAL CORRECTIONS
TDE .2193 TRA -.6254 TC3 .6071 BAU .5000
RDE -.3328 RRA .6733 RC3 1.7428 FAU .42458
FDE .5669 FRA-7.9388 FC-18.1400 BSP 6109
BDE .3986 BRA .9189 BC3 1.8455 FSP 5595

MID-COURSE EXECUTION ACCURACY
SGT 1022.8 SGR 1848.6 SG3 1673.4
RRT .0098 RRF -.9798 RTF -.0114
SGB 2112.7 R23 -.0025 R13 -.9798
SG1 1848.7 SG2 1022.7 THA 89.55

ORBIT DETERMINATION ACCURACY
ST 372.1 SR 501.5 SS 986.2
CRT -.9772 CRS .7100 CST -.7959
LSA 1105.4 MSA 371.9 SSA 48.9
EL1 621.2 EL2 63.8 ALF 126.39

LAUNCH DATE DEC 24 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 504.582 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.946 GAL 6.35 AZL 90.87 HCA 150.43 SMA 184.70 ECC .23043 INC .8675 V1 30.280
RP 226.95 LAP -.43 LOP 242.66 VP 21.237 GAP -1.64 AZP 89.25 TAL 35.04 TAP 185.48 RCA 142.14 APO 227.26 V2 24.235
RC 243.792 GL -6.33 GP 15.74 ZAL 33.92 ZAP 118.31 ETS 169.95 ZAE 151.57 ETE 144.34 ZAC 103.53 ETC 255.77 CLP 119.52

PLANETOCENTRIC CONIC

C3 20.231 VHL 4.498 DLA 12.73 RAL 126.40 RAD 6567.8 VEL 11.900 PTH 2.11 VHP 3.488 DPA 14.63 RAP 189.28 ECC 1.3330

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 56 28	2623.63	-26.94	69.08	352.21	99.07	12 40 12	2023.6	-25.41	60.75
90.00	3 16 9	4454.64	8.16	186.28	346.62	62.79	4 30 23	3854.6	4.45	179.57
100.00	13 24 23	2340.11	-28.17	47.99	351.97	100.43	14 3 23	1740.1	-26.44	39.62
100.00	4 30 55	4213.40	9.27	167.96	346.03	61.45	5 41 8	3613.4	5.39	161.32
110.00	14 47 26	2080.24	-31.44	27.44	351.15	104.17	15 22 6	1480.2	-29.17	18.96
110.00	5 24 21	4046.03	12.15	153.54	344.31	57.80	6 31 47	3446.0	7.81	147.13

DIFFERENTIAL CORRECTIONS
TDE .2268 TRA -.6965 TC3 .4481 BAU .5145
RDE -.3163 RRA .7262 RC3 1.8486 FAU .43274
FDE .4615 FRA-8.1694 FC-18.5182 BSP 6523
BDE .3892 BRA 1.0062 BC3 1.9021 FSP 5767

MID-COURSE EXECUTION ACCURACY
SGT 1036.0 SGR 1956.2 SG3 1709.9
RRT -.1523 RRF -.9830 RTF .1541
SGB 2213.7 R23 .0520 R13 -.9816
SG1 1965.0 SG2 1019.4 THA 96.32

ORBIT DETERMINATION ACCURACY
ST 397.6 SR 495.7 SS 992.3
CRT -.9814 CRS .7183 CST -.7924
LSA 1116.8 MSA 372.8 SSA 47.5
EL1 632.6 EL2 59.8 ALF 128.62

LAUNCH DATE DEC 24 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 508.511 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.939 GAL 6.34 AZL 90.97 HCA 151.49 SMA 184.57 ECC .22987 INC .9661 V1 30.280
RP 226.56 LAP -.46 LOP 243.72 VP 21.273 GAP -1.95 AZP 89.15 TAL 35.06 TAP 186.55 RCA 142.14 APO 227.00 V2 24.277
RC 245.534 GL -7.05 GP 16.47 ZAL 34.01 ZAP 116.47 ETS 170.23 ZAE 149.56 ETE 145.73 ZAC 104.08 ETC 255.78 CLP 117.69

PLANETOCENTRIC CONIC

C3 20.203 VHL 4.495 DLA 12.03 RAL 126.19 RAD 6567.8 VEL 11.899 PTH 2.11 VHP 3.454 DPA 15.62 RAP 188.92 ECC 1.3325

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 1 32	2599.71	-26.67	67.38	351.68	99.88	12 44 51	1999.7	-25.03	59.10
90.00	3 9 23	4477.90	8.88	187.61	346.35	63.00	4 24 1	3877.9	5.19	180.88
100.00	13 29 0	2317.59	-27.89	46.38	351.42	101.23	14 7 38	1717.6	-26.05	38.06
100.00	4 24 36	4235.25	9.98	169.19	345.77	61.68	5 35 11	3635.3	6.12	162.53
110.00	14 51 6	2060.69	-31.10	26.01	350.56	104.95	15 25 27	1460.7	-28.74	17.61
110.00	5 18 59	4064.92	12.84	154.58	344.08	58.04	6 26 44	3464.9	8.52	148.14

DIFFERENTIAL CORRECTIONS
TDE .2339 TRA -.7713 TC3 .2842 BAU .5350
RDE -.2968 RRA .7826 RC3 1.9602 FAU .44022
FDE .3346 FRA-8.3901 FC-18.8640 BSP 6995
BDE .3779 BRA 1.0988 BC3 1.9807 FSP 5916

MID-COURSE EXECUTION ACCURACY
SGT 1079.3 SGR 2070.9 SG3 1743.8
RRT -.3078 RRF -.9857 RTF .3116
SGB 2335.3 R23 .0904 R13 -.9816
SG1 2105.6 SG2 1010.0 THA 101.89

ORBIT DETERMINATION ACCURACY
ST 424.2 SR 489.5 SS 998.9
CRT -.9859 CRS .7276 CST -.7837
LSA 1128.7 MSA 375.9 SSA 45.8
EL1 645.5 EL2 53.8 ALF 130.85

LAUNCH DATE DEC 24 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 512.451 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.932 GAL 6.33 AZL 91.07 HCA 152.54 SMA 184.46 ECC .22934 INC 1.0717 V1 30.280
RP 226.17 LAP -.49 LOP 244.77 VP 21.310 GAP -2.25 AZP 89.05 TAL 35.06 TAP 187.61 RCA 142.15 APO 226.76 V2 24.318
RC 247.256 GL -7.83 GP 17.25 ZAL 34.14 ZAP 114.61 ETS 170.53 ZAE 147.51 ETE 146.97 ZAC 104.67 ETC 255.79 CLP 115.85

PLANETOCENTRIC CONIC

C3 20.181 VHL 4.492 DLA 11.28 RAL 125.98 RAD 6567.8 VEL 11.898 PTH 2.11 VHP 3.425 DPA 16.64 RAP 188.57 ECC 1.3321

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 6 59	2574.23	-26.36	65.58	351.14	100.73	12 49 53	1974.2	-24.61	57.35
90.00	3 2 16	4502.86	9.65	189.04	346.10	63.25	4 17 19	3902.9	5.99	182.28
100.00	13 34 0	2293.58	-27.55	44.67	350.87	102.07	14 12 14	1693.6	-25.61	36.41
100.00	4 17 56	4258.76	10.73	170.53	345.53	61.93	5 28 54	3658.8	6.90	163.84
110.00	14 55 6	2039.79	-30.73	24.50	349.97	105.77	15 29 6	1439.8	-28.26	16.17
110.00	5 13 19	4085.30	13.57	155.70	343.87	58.32	6 21 24	3485.3	9.28	149.23

DIFFERENTIAL CORRECTIONS
TDE .2399 TRA -.8501 TC3 .1142 BAU .5614
RDE -.2744 RRA .8429 RC3 2.0776 FAU .44679
FDE .1876 FRA-8.5997 FC-19.1666 BSP 7529
BDE .3644 BRA 1.1971 BC3 2.0807 FSP 6042

MID-COURSE EXECUTION ACCURACY
SGT 1151.7 SGR 2192.8 SG3 1774.2
RRT -.4464 RRF -.9880 RTF .4512
SGB 2476.9 R23 .1160 R13 -.9812
SG1 2267.5 SG2 996.6 THA 106.46

ORBIT DETERMINATION ACCURACY
ST 451.2 SR 483.5 SS 1007.0
CRT -.9899 CRS .7391 CST -.7713
LSA 1142.1 MSA 381.0 SSA 43.8
EL1 659.7 EL2 46.8 ALF 133.00

LAUNCH DATE DEC 24 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 516.401 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.926 GAL 6.32 AZL 91.19 HCA 153.61 SMA 184.35 ECC .22883 INC 1.1856 V1 30.280
RP 225.78 LAP -.53 LOP 245.83 VP 21.348 GAP -2.55 AZP 88.94 TAL 35.05 TAP 188.65 RCA 142.17 APO 226.54 V2 24.360
RC 248.959 GL -8.67 GP 18.07 ZAL 34.31 ZAP 112.73 ETS 170.87 ZAE 145.41 ETE 148.10 ZAC 105.30 ETC 255.80 CLP 113.98

PLANETOCENTRIC CONIC

C3 20.167 VHL 4.491 DLA 10.46 RAL 125.77 RAD 6567.8 VEL 11.897 PTH 2.11 VHP 3.401 DPA 17.72 RAP 188.22 ECC 1.3319

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 12 51	2547.05	-26.00	63.67	350.58	101.63	12 55 18	1947.0	-24.14	55.50
90.00	2 54 44	4529.71	10.47	190.59	345.87	63.54	4 10 14	3929.7	6.83	183.80
100.00	13 39 24	2267.92	-27.18	42.86	350.30	102.95	14 17 12	1667.9	-25.12	34.66
100.00	4 10 53	4284.07	11.54	171.97	345.32	62.23	5 22 17	3684.1	7.73	165.25
110.00	14 59 27	2017.40	-30.30	22.89	349.36	106.64	15 33 5	1417.4	-27.73	14.65
110.00	5 7 19	4107.35	14.35	156.93	343.68	58.64	6 15 46	3507.4	10.10	150.41

DIFFERENTIAL CORRECTIONS
TDE .2437 TRA -.9334 TC3 -.0617 BAU .5935
RDE -.2484 RRA .9071 RC3 2.2003 FAU .45223
FDE .0204 FRA-8.7918 FC-19.4139 BSP 8127
BDE .3480 BRA 1.3016 BC3 2.2012 FSP 6145

MID-COURSE EXECUTION ACCURACY
SGT 1251.6 SGR 2321.8 SG3 1800.3
RRT -.5621 RRF -.9899 RTF .5671
SGB 2637.7 R23 .1321 R13 -.9812
SG1 2448.2 SG2 981.8 THA 110.25

ORBIT DETERMINATION ACCURACY
ST 478.2 SR 478.1 SS 1017.2
CRT -.9924 CRS .7537 CST -.7564
LSA 1157.5 MSA 388.0 SSA 41.6
EL1 675.0 EL2 41.6 ALF 135.01

LAUNCH DATE DEC 24 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 520.361 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.920 GAL 6.30 AZL 91.31 HCA 154.67 SMA 184.26 ECC .22835 INC 1.3088 V1 30.280
RP 225.38 LAP -.56 LOP 246.90 VP 21.387 GAP -2.84 AZP 88.82 TAL 35.01 TAP 189.68 RCA 142.18 APO 226.33 V2 24.402
RC 250.643 GL -9.58 GP 18.94 ZAL 34.53 ZAP 110.85 ETS 171.23 ZAE 143.28 ETE 149.12 ZAC 105.98 ETC 255.81 CLP 112.10

PLANETOCENTRIC CONIC

C3 20.163 VHL 4.490 DLA 9.58 RAL 125.56 RAD 6567.8 VEL 11.897 PTH 2.11 VHP 3.382 DPA 18.84 RAP 187.89 ECC 1.3318

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 19 10	2517.98	-25.59	61.65	350.02	102.56	13 1 8	1918.0	-23.60	53.54
90.00	2 46 45	4558.68	11.34	192.27	345.67	63.88	4 2 44	3958.7	7.74	185.44
100.00	13 45 13	2240.45	-26.74	40.93	349.72	103.88	14 22 34	1640.5	-24.57	32.81
100.00	4 3 23	4311.44	12.40	173.55	345.13	62.58	5 15 15	3711.4	8.63	166.79
110.00	15 4 10	1993.38	-29.82	21.19	348.73	107.54	15 37 24	1393.4	-27.13	13.03
110.00	5 0 55	4131.27	15.19	158.27	343.52	59.01	6 9 47	3531.3	10.98	151.71

DIFFERENTIAL CORRECTIONS
TDE .2452 TRA-1.0214 TC3 -.2435 BAU .6309
RDE -.2186 RRA .9752 RC3 2.3278 FAU .45632
FDE -.1651 FRA-8.9616 FC-19.5933 BSP 8795
BDE .3285 BRA 1.4122 BC3 2.3405 FSP 6229

MID-COURSE EXECUTION ACCURACY
SGT 1375.8 SGR 2457.8 SG3 1820.9
RRT -.6543 RRF -.9916 RTF .6591
SGB 2816.6 R23 .1416 R13 -.9815
SG1 2645.6 SG2 966.5 THA 113.43

ORBIT DETERMINATION ACCURACY
ST 505.1 SR 474.4 SS 1030.1
CRT -.9923 CRS .7722 CST -.7396
LSA 1175.8 MSA 396.7 SSA 39.1
EL1 691.7 EL2 42.9 ALF 136.81

LAUNCH DATE DEC 24 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 524.332 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.915 GAL 6.28 AZL 91.44 HCA 155.74 SMA 184.18 ECC .22789 INC 1.4426 V1 30.280
RP 224.99 LAP -.59 LOP 247.97 VP 21.428 GAP -3.12 AZP 88.68 TAL 34.96 TAP 190.70 RCA 142.21 APO 226.15 V2 24.444
RC 252.307 GL -10.57 GP 19.87 ZAL 34.81 ZAP 108.95 ETS 171.63 ZAE 141.11 ETE 150.05 ZAC 106.70 ETC 255.82 CLP 110.20

PLANETOCENTRIC CONIC

C3 20.172 VHL 4.491 DLA 8.62 RAL 125.35 RAD 6567.8 VEL 11.898 PTH 2.11 VHP 3.369 DPA 20.02 RAP 187.58 ECC 1.3320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 25 59	2486.85	-25.11	59.49	349.44	103.54	13 7 26	1886.8	-23.00	51.46
90.00	2 38 14	4590.03	12.28	194.10	345.50	64.28	3 54 44	3990.0	8.72	187.23
100.00	13 51 30	2211.00	-26.24	38.88	349.12	104.85	14 28 21	1611.0	-23.95	30.84
100.00	3 55 24	4341.12	13.33	175.26	344.97	62.99	5 7 45	3741.1	9.60	168.46
110.00	15 9 18	1967.58	-29.28	19.38	348.10	108.49	15 42 5	1367.6	-26.47	11.31
110.00	4 54 6	4157.30	16.10	159.74	343.39	59.43	6 3 23	3557.3	11.93	153.12

DIFFERENTIAL CORRECTIONS
TDE .2427 TRA-1.1146 TC3 -.4313 BAU .6736
RDE -.1846 RRA 1.0478 RC3 2.4602 FAU .45896
FDE -.3681 FRA-9.1071 FC-19.6977 BSP 9523
BDE .3049 BRA 1.5298 BC3 2.4977 FSP 6289

MID-COURSE EXECUTION ACCURACY
SGT 1521.3 SGR 2601.3 SG3 1835.6
RRT -.7261 RRF -.9930 RTF .7305
SGB 3013.5 R23 .1463 R13 -.9822
SG1 2859.2 SG2 951.7 THA 116.12

ORBIT DETERMINATION ACCURACY
ST 531.2 SR 473.6 SS 1046.7
CRT -.9884 CRS .7953 CST -.7234
LSA 1198.2 MSA 406.3 SSA 36.6
EL1 709.6 EL2 53.9 ALF 138.32

LAUNCH DATE DEC 24 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 528.312 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.911 GAL 6.26 AZL 91.59 HCA 156.81 SMA 184.10 ECC .22745 INC 1.5885 V1 30.280
RP 224.60 LAP -.63 LOP 249.04 VP 21.469 GAP -3.40 AZP 88.54 TAL 34.90 TAP 191.71 RCA 142.23 APO 225.98 V2 24.486
RC 253.951 GL -11.64 GP 20.85 ZAL 35.14 ZAP 107.05 ETS 172.06 ZAE 138.90 ETE 150.91 ZAC 107.48 ETC 255.82 CLP 108.29

PLANETOCENTRIC CONIC

C3 20.199 VHL 4.494 DLA 7.56 RAL 125.13 RAD 6567.8 VEL 11.899 PTH 2.11 VHP 3.362 DPA 21.25 RAP 187.29 ECC 1.3324

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 33 20	2453.42	-24.56	57.20	348.85	104.56	13 14 13	1853.4	-22.32	49.24
90.00	2 29 8	4624.10	13.28	196.10	345.36	64.76	3 46 12	4024.1	9.77	189.18
100.00	13 58 18	2179.34	-25.67	36.70	348.52	105.86	14 34 38	1579.3	-23.25	28.74
100.00	3 46 50	4373.41	14.32	177.15	344.84	63.48	4 59 43	3773.4	10.64	170.29
110.00	15 14 51	1939.79	-28.66	17.45	347.45	109.48	15 47 11	1339.8	-25.74	9.49
110.00	4 46 47	4185.72	17.08	161.36	343.30	59.93	5 56 32	3585.7	12.95	154.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2372 TRA-1.2121 TC3 -.6220 BAU .7212 SGT 1683.4 SGR 2753.5 SG3 1844.4 ST 557.1 SR 477.1 SS 1069.2
RDE -.1447 RRA 1.1260 RC3 2.5974 FAU .46008 RRT -.7806 RRF -.9941 RTF .7844 CRT -.9785 CRS .8227 CST -.7048
FDE -.5949 FRA-9.2318 FC-19.7192 BSP 10305 SGB 3227.3 R23 .1478 R13 -.9832 LSA 1226.7 MSA 418.7 SSA 33.8
BDE .2779 BRA 1.6544 BC3 2.6708 FSP 6315 SG1 3087.9 SG2 938.1 THA 118.37 EL1 729.7 EL2 75.2 ALF 139.52

LAUNCH DATE DEC 24 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 532.304 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.907 GAL 6.24 AZL 91.75 HCA 157.88 SMA 184.04 ECC .22702 INC 1.7482 V1 30.280
RP 224.21 LAP -.66 LOP 250.12 VP 21.511 GAP -3.67 AZP 88.38 TAL 34.82 TAP 192.70 RCA 142.26 APO 225.82 V2 24.527
RC 255.576 GL -12.81 GP 21.90 ZAL 35.54 ZAP 105.16 ETS 172.53 ZAE 136.67 ETE 151.71 ZAC 108.33 ETC 255.82 CLP 106.37

PLANETOCENTRIC CONIC

C3 20.249 VHL 4.500 DLA 6.41 RAL 124.89 RAD 6567.8 VEL 11.901 PTH 2.11 VHP 3.362 DPA 22.53 RAP 187.04 ECC 1.3332

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 41 16	2417.44	-23.92	54.76	348.25	105.63	13 21 34	1817.4	-21.54	46.89
90.00	2 19 19	4661.25	14.34	198.31	345.27	65.32	3 37 1	4061.2	10.90	191.33
100.00	14 5 40	2145.24	-25.02	34.38	347.90	106.92	14 41 25	1545.2	-22.46	26.52
100.00	3 37 37	4408.68	15.38	179.23	344.76	64.05	4 51 5	3808.7	11.77	172.31
110.00	15 20 53	1909.82	-27.96	15.39	346.78	110.51	15 52 43	1309.8	-24.92	7.55
110.00	4 38 53	4216.87	18.13	163.17	343.25	60.51	5 49 9	3616.9	14.07	156.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2291 TRA-1.3120 TC3 -.8115 BAU .7753 SGT 1856.0 SGR 2922.8 SG3 1851.8 ST 583.0 SR 487.4 SS 1104.3
RDE -.0943 RRA 1.2138 RC3 2.7465 FAU .46083 RRT -.8212 RRF -.9951 RTF .8240 CRT -.9569 CRS .8548 CST -.6774
FDE -.8726 FRA-9.3557 FC-19.7027 BSP 11072 SGB 3462.3 R23 .1467 R13 -.9843 LSA 1266.7 MSA 437.8 SSA 30.6
BDE .2477 BRA 1.7874 BC3 2.8639 FSP 6245 SG1 3335.6 SG2 928.0 THA 120.11 EL1 752.0 EL2 109.7 ALF 140.33

LAUNCH DATE DEC 24 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 536.303 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.904 GAL 6.21 AZL 91.92 HCA 158.96 SMA 183.99 ECC .22662 INC 1.9238 V1 30.280
RP 223.82 LAP -.69 LOP 251.20 VP 21.554 GAP -3.93 AZP 88.20 TAL 34.72 TAP 193.68 RCA 142.29 APO 225.69 V2 24.569
RC 257.180 GL -14.10 GP 23.01 ZAL 36.02 ZAP 103.27 ETS 173.05 ZAE 134.41 ETE 152.44 ZAC 109.24 ETC 255.81 CLP 104.44

PLANETOCENTRIC CONIC

C3 20.327 VHL 4.509 DLA 5.15 RAL 124.65 RAD 6567.8 VEL 11.904 PTH 2.12 VHP 3.369 DPA 23.88 RAP 186.83 ECC 1.3345

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 49 54	2378.56	-23.18	52.14	347.64	106.73	13 29 32	1778.6	-20.67	44 37
90.00	2 8 43	4701.96	15.49	200.75	345.22	65.99	3 27 5	4102.0	12.11	193.70
100.00	14 13 40	2108.36	-24.27	31.90	347.27	108.01	14 48 48	1508.4	-21.58	24.14
100.00	3 27 38	4447.40	16.52	181.54	344.73	64.73	4 41 45	3847.4	12.98	174.54
110.00	15 27 29	1877.36	-27.17	13.20	346.11	111.59	15 58 46	1277.4	-23.99	5.48
110.00	4 30 19	4251.15	19.27	165.18	343.25	61.20	5 41 10	3651.2	15.28	158.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2104 TRA-1.4229 TC3-1.0138 BAU .8309 SGT 2050.3 SGR 3086.4 SG3 1841.1 ST 607.4 SR 507.2 SS 1136.0
RDE -.0435 RRA 1.3011 RC3 2.8848 FAU .45722 RRT -.8545 RRF -.9959 RTF .8570 CRT -.9356 CRS .8864 CST -.6728
FDE-1.1161 FRA-9.3963 FC-19.4734 BSP 11991 SGB 3705.3 R23 .1448 R13 -.9854 LSA 1310.2 MSA 446.4 SSA 28.0
BDE .2148 BRA 1.9281 BC3 3.0578 FSP 6254 SG1 3590.4 SG2 915.6 THA 121.90 EL1 778.9 EL2 139.6 ALF 140.48

LAUNCH DATE DEC 24 1964 FLIGHT TIME 250.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 540.311 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.902 GAL 6.18 AZL 92.12 HCA 160.04 SMA 183.95 ECC .22623 INC 2.1186 V1 30.280
RP 223.44 LAP -.72 LOP 252.28 VP 21.598 GAP -4.19 AZP 88.01 TAL 34.61 TAP 194.65 RCA 142.33 APO 225.56 V2 24.611
RC 258.763 GL -15.51 GP 24.21 ZAL 36.58 ZAP 101.40 ETS 173.61 ZAE 132.14 ETE 153.13 ZAC 110.23 ETC 255.79 CLP 102.51

PLANETOCENTRIC CONIC

C3 20.442 VHL 4.521 DLA 3.76 RAL 124.38 RAD 6567.8 VEL 11.909 PTH 2.12 VHP 3.384 DPA 25.30 RAP 186.67 ECC 1.3364

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 59 17	2336.43	-22.33	49.35	347.02	107.88	13 38 13	1736.4	-19.67	41.68
90.00	1 57 11	4746.81	16.71	203.48	345.24	66.80	3 16 18	4146.8	13.43	196.34
100.00	14 22 23	2068.38	-23.40	29.25	346.63	109.15	14 56 51	1468.4	-20.57	21.59
100.00	3 16 46	4490.09	17.74	184.12	344.76	65.54	4 31 36	3890.1	14.29	177.03
110.00	15 34 40	1842.14	-26.27	10.87	345.42	112.71	16 5 22	1242.1	-22.96	3.27
110.00	4 20 58	4289.09	20.50	167.43	343.33	62.03	5 32 27	3689.1	16.59	160.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1864 TRA-1.5382 TC3-1.2142 BAU .8904 SGT 2253.3 SGR 3257.7 SG3 1821.1 ST 632.7 SR 538.1 SS 1174.1
RDE .0152 RRA 1.3949 RC3 3.0233 FAU .45137 RRT -.8797 RRF -.9966 RTF .8819 CRT -.9094 CRS .9160 CST -.6708
FDE-1.3741 FRA-9.3984 FC-19.1155 BSP 12986 SGB 3961.1 R23 .1418 R13 -.9865 LSA 1363.8 MSA 455.9 SSA 25.4
BDE .1870 BRA 2.0765 BC3 3.2580 FSP 6237 SG1 3856.3 SG2 905.1 THA 123.40 EL1 812.1 EL2 174.4 ALF 140.07

LAUNCH DATE DEC 24 1964 FLIGHT TIME 252.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 544.328 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.900 GAL 6.15 AZL 92.34 HCA 161.13 SMA 183.91 ECC .22586 INC 2.3352 V1 30.280
RP 223.05 LAP -.75 LOP 253.37 VP 21.642 GAP -4.44 AZP 87.79 TAL 34.48 TAP 195.61 RCA 142.37 APO 225.45 V2 24.653
RC 260.326 GL -17.07 GP 25.50 ZAL 37.25 ZAP 99.55 ETS 174.22 ZAE 129.84 ETE 153.77 ZAC 111.32 ETC 255.76 CLP 100.59

PLANETOCENTRIC CONIC

C3 20.607 VHL 4.539 DLA 2.23 RAL 124.08 RAD 6567.8 VEL 11.916 PTH 2.12 VHP 3.408 DPA 26.79 RAP 186.58 ECC 1.3391

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 9 32	2290.59	-21.34	46.35	346.40	109.07	13 47 43	1690.6	-18.54	38.80
90.00	1 44 32	4796.48	18.01	206.54	345.34	67.78	3 4 29	4196.5	14.84	199.30
100.00	14 31 55	2024.87	-22.40	26.40	345.99	110.33	15 5 40	1424.9	-19.43	18.87
100.00	3 4 51	4537.43	19.05	187.03	344.88	66.52	4 20 28	3937.4	15.71	179.83
110.00	15 42 32	1803.81	-25.23	8.36	344.73	113.86	16 12 36	1203.8	-21.79	.90
110.00	4 10 43	4331.25	21.82	169.99	343.49	63.01	5 22 54	3731.2	18.03	162.91

DIFFERENTIAL CORRECTIONS
TDE .1533 TRA-1.6610 TC3-1.4153 BAU .9525
RDE .0806 RRA 1.4935 RC3 3.1543 FAU .44229
FDE-1.6277 FRA-9.3418 FC-18.5815 BSP 14085
BDE .1732 BRA 2.2337 BC3 3.4573 FSP 6225

MID-COURSE EXECUTION ACCURACY
SGT 2467.9 SGR 3430.8 SG3 1787.6
RRT -.8997 RRF -.9972 RTF .9016
SGB 4226.2 R23 .1383 R13 -.9876
SG1 4130.4 SG2 894.6 THA 124.78

ORBIT DETERMINATION ACCURACY
ST 659.6 SR 581.4 SS 1214.4
CRT -.8862 CRS .9409 CST -.6801
LSA 1426.5 MSA 461.0 SSA 22.9
EL1 854.3 EL2 208.0 ALF 139.06

LAUNCH DATE DEC 24 1964 FLIGHT TIME 254.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 548.358 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.898 GAL 6.12 AZL 92.58 HCA 162.22 SMA 183.88 ECC .22551 INC 2.5782 V1 30.280
RP 222.66 LAP -.79 LOP 254.46 VP 21.687 GAP -4.69 AZP 87.54 TAL 34.34 TAP 196.55 RCA 142.42 APO 225.35 V2 24.695
RC 261.869 GL -18.81 GP 26.89 ZAL 38.04 ZAP 97.73 ETS 174.88 ZAE 127.53 ETE 154.38 ZAC 112.50 ETC 255.72 CLP 98.67

PLANETOCENTRIC CONIC

C3 20.837 VHL 4.565 DLA .53 RAL 123.74 RAD 6567.8 VEL 11.925 PTH 2.12 VHP 3.442 DPA 28.36 RAP 186.56 ECC 1.3429

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 20 47	2240.57	-20.19	43.13	345.80	110.29	13 58 8	1640.6	-17.25	35.70
90.00	1 30 35	4851.82	19.40	210.01	345.54	68.96	2 51 27	4251.8	16.37	202.64
100.00	14 42 23	1977.40	-21.24	23.35	345.37	111.54	15 15 20	1377.4	-18.13	15.94
100.00	2 51 41	4590.23	20.45	190.33	345.10	67.71	4 8 11	3990.2	17.25	183.00
110.00	15 51 11	1762.02	-24.06	5.69	344.05	115.05	16 20 33	1162.0	-20.48	358.37
110.00	3 59 22	4378.37	23.25	172.90	343.75	64.20	5 12 20	3778.4	19.59	165.68

DIFFERENTIAL CORRECTIONS
TDE .1149 TRA-1.7859 TC3-1.6027 BAU 1.0239
RDE .1717 RRA 1.6154 RC3 3.3077 FAU .43441
FDE-1.9752 FRA-9.3248 FC-18.0486 BSP 14988
BDE .2066 BRA 2.4081 BC3 3.6755 FSP 6004

MID-COURSE EXECUTION ACCURACY
SGT 2680.9 SGR 3643.7 SG3 1759.4
RRT -.9145 RRF -.9977 RTF .9157
SGB 4523.7 R23 .1337 R13 -.9887
SG1 4435.0 SG2 891.3 THA 125.59

ORBIT DETERMINATION ACCURACY
ST 689.2 SR 651.7 SS 1286.8
CRT -.8504 CRS .9629 CST -.6793
LSA 1525.6 MSA 477.0 SSA 20.0
EL1 912.5 EL2 258.9 ALF 136.88

LAUNCH DATE DEC 24 1964 FLIGHT TIME 256.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 552.394 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.897 GAL 6.09 AZL 92.85 HCA 163.31 SMA 183.86 ECC .22517 INC 2.8530 V1 30.280
RP 222.28 LAP -.82 LOP 255.55 VP 21.733 GAP -4.93 AZP 87.27 TAL 34.18 TAP 197.49 RCA 142.46 APO 225.26 V2 24.737
RC 263.392 GL -20.73 GP 28.39 ZAL 38.97 ZAP 95.95 ETS 175.61 ZAE 125.20 ETE 154.96 ZAC 113.80 ETC 255.66 CLP 96.77

PLANETOCENTRIC CONIC

C3 21.152 VHL 4.599 DLA -1.36 RAL 123.35 RAD 6567.9 VEL 11.939 PTH 2.12 VHP 3.488 DPA 30.03 RAP 186.65 ECC 1.3481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 33 15	2185.63	-18.86	39.66	345.21	111.53	14 9 41	1585.6	-15.77	32.34
90.00	1 15 3	4913.97	20.87	213.97	345.87	70.42	2 36 57	4314.0	18.01	206.46
100.00	14 53 58	1925.28	-19.90	20.06	344.76	112.77	15 26 3	1325.3	-16.65	12.78
100.00	2 37 2	4649.55	21.93	194.11	345.45	69.17	3 54 31	4049.5	18.90	186.62
110.00	16 0 45	1716.20	-22.71	2.82	343.39	116.27	16 29 22	1116.2	-18.99	355.65
110.00	3 46 44	4431.40	24.78	176.26	344.16	65.66	5 0 35	3831.4	21.28	168.86

DIFFERENTIAL CORRECTIONS
TDE .0642 TRA-1.9203 TC3-1.7857 BAU 1.0961
RDE .2706 RRA 1.7416 RC3 3.4404 FAU .42181
FDE-2.2874 FRA-9.2167 FC-17.2644 BSP 16071
BDE .2781 BRA 2.5924 BC3 3.8762 FSP 5838

MID-COURSE EXECUTION ACCURACY
SGT 2903.5 SGR 3852.0 SG3 1711.1
RRT -.9267 RRF -.9981 RTF .9276
SGB 4823.8 R23 .1292 R13 -.9897
SG1 4741.6 SG2 886.6 THA 126.41

ORBIT DETERMINATION ACCURACY
ST 724.0 SR 739.3 SS 1355.0
CRT -.8316 CRS .9774 CST -.6970
LSA 1634.6 MSA 484.5 SSA 17.5
EL1 990.3 EL2 300.2 ALF 134.28

LAUNCH DATE DEC 24 1964 FLIGHT TIME 258.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 556.440 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.896 GAL 6.05 AZL 93.17 HCA 164.41 SMA 183.85 ECC .22484 INC 3.1660 V1 30.280
RP 221.89 LAP -.85 LOP 256.65 VP 21.780 GAP -5.16 AZP 86.95 TAL 34.01 TAP 198.41 RCA 142.51 APO 225.19 V2 24.779
RC 264.895 GL -22.89 GP 30.02 ZAL 40.07 ZAP 94.22 ETS 176.40 ZAE 122.87 ETE 155.51 ZAC 115.23 ETC 255.58 CLP 94.88

PLANETOCENTRIC CONIC

C3 21.581 VHL 4.646 DLA -3.47 RAL 122.91 RAD 6567.9 VEL 11.957 PTH 2.13 VHP 3.547 DPA 31.79 RAP 186.85 ECC 1.3552

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 47 10	2124.95	-17.30	35.88	344.67	112.77	14 22 35	1524.9	-14.06	28.70
90.00	0 57 35	4984.32	22.41	218.56	346.37	72.22	2 20 39	4384.3	19.77	210.88
100.00	15 6 53	1867.78	-18.35	16.50	344.20	114.02	15 38 1	1267.8	-14.95	9.35
100.00	2 20 33	4716.72	23.49	198.49	345.98	70.97	3 39 9	4116.7	20.68	190.82
110.00	16 11 25	1665.78	-21.15	359.73	342.76	117.50	16 39 10	1065.8	-17.30	352.72
110.00	3 32 31	4491.48	26.41	180.17	344.76	67.46	4 47 22	3891.5	23.12	172.55

DIFFERENTIAL CORRECTIONS
TDE .0011 TRA-2.0632 TC3-1.9560 BAU 1.1731
RDE .3892 RRA 1.8834 RC3 3.5646 FAU .40670
FDE-2.6104 FRA-9.0641 FC-16.3150 BSP 17164
BDE .3892 BRA 2.7936 BC3 4.0660 FSP 5616

MID-COURSE EXECUTION ACCURACY
SGT 3130.8 SGR 4076.2 SG3 1652.0
RRT -.9365 RRF -.9984 RTF .9371
SGB 5139.8 R23 .1245 R13 -.9906
SG1 5063.2 SG2 883.9 THA 127.05

ORBIT DETERMINATION ACCURACY
ST 766.7 SR 853.1 SS 1433.0
CRT -.8236 CRS .9869 CST -.7225
LSA 1768.7 MSA 490.6 SSA 15.2
EL1 1095.9 EL2 338.5 ALF 131.30

LAUNCH DATE DEC 24 1964 FLIGHT TIME 260.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 560.494 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.896 GAL 6.01 AZL 93.53 HCA 165.51 SMA 183.85 ECC .22453 INC 3.5267 V1 30.280
RP 221.51 LAP -.88 LOP 257.76 VP 21.827 GAP -5.39 AZP 86.59 TAL 33.82 TAP 199.33 RCA 142.57 APO 225.12 V2 24.820
RC 266.379 GL -25.31 GP 31.80 ZAL 41.37 ZAP 92.56 ETS 177.26 ZAE 120.53 ETE 156.03 ZAC 116.81 ETC 255.46 CLP 93.01

PLANETOCENTRIC CONIC

C3 22.165 VHL 4.708 DLA -5.83 RAL 122.38 RAD 6567.9 VEL 11.981 PTH 2.14 VHP 3.624 DPA 33.66 RAP 187.20 ECC 1.3648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 2 52	2057.43	-15.47	31.77	344.22	114.02	14 37 10	1457.4	-12.10	24.72
90.00	0 37 41	5064.75	23.98	223.93	347.09	74.47	2 2 6	4464.8	21.62	216.06
100.00	15 21 27	1803.93	-16.53	12.62	343.71	115.26	15 51 31	1203.9	-13.00	5.62
100.00	2 1 47	4793.48	25.10	203.62	346.73	73.21	3 21 41	4193.5	22.56	195.74
110.00	16 23 23	1610.08	-19.36	356.39	342.19	118.74	16 50 13	1010.1	-15.38	349.54
110.00	3 16 21	4560.12	28.11	184.78	345.60	69.70	4 32 21	3960.1	25.09	176.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0755 TRA-2.2155 TC3-2.1060 BAU 1.2531 SGT 3359.5 SGR 4309.1 SG3 1577.6 ST 820.4 SR 992.5 SS 1512.9
RDE .5283 RRA 2.0407 RC3 3.6671 FAU .38805 RRT -.9445 RRF -.9987 RTF .9448 CRT -.8280 CRS .9926 CST -.7546
FDE-2.9201 FRA-8.8455 FC-15.1564 BSP 18348 SGB 5463.9 R23 .1199 R13 -.9915 LSA 1924.2 MSA 494.2 SSA 13.1
BDE .5337 BRA 3.0121 BC3 4.2288 FSP 5368 SG1 5392.2 SG2 882.3 THA 127.54 EL1 1233.3 EL2 370.2 ALF 128.49

LAUNCH DATE DEC 24 1964 FLIGHT TIME 262.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 564.557 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.896 GAL 5.97 AZL 93.95 HCA 166.61 SMA 183.85 ECC .22423 INC 3.9465 V1 30.280
RP 221.13 LAP -.91 LOP 258.86 VP 21.874 GAP -5.61 AZP 86.16 TAL 33.62 TAP 200.23 RCA 142.63 APO 225.07 V2 24.862
RC 267.844 GL -28.03 GP 33.75 ZAL 42.90 ZAP 90.97 ETS 178.19 ZAE 118.19 ETE 156.54 ZAC 118.56 ETC 255.30 CLP 91.17

PLANETOCENTRIC CONIC

C3 22.964 VHL 4.792 DLA -8.48 RAL 121.75 RAD 6567.9 VEL 12.014 PTH 2.14 VHP 3.721 DPA 35.66 RAP 187.72 ECC 1.3779

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 20 53	1981.59	-13.32	27.24	343.88	115.22	14 53 54	1381.6	-9.81	20.32
90.00	0 14 40	5157.79	25.52	230.31	348.09	77.30	1 40 38	4557.8	23.52	222.21
100.00	15 38 6	1732.44	-14.41	8.38	343.34	116.48	16 6 59	1132.4	-10.74	1.51
100.00	1 40 7	4882.17	26.70	209.72	347.78	76.04	3 1 30	4282.2	24.52	201.60
110.00	16 36 58	1548.13	-17.30	352.78	341.73	119.95	17 2 46	948.1	-13.18	346.08
110.00	2 57 45	4639.25	29.86	190.27	346.77	72.53	4 15 4	4039.2	27.18	182.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1699 TRA-2.3805 TC3-2.2313 BAU 1.3391 SGT 3591.1 SGR 4562.7 SG3 1491.1 ST 889.2 SR 1165.6 SS 1598.4
RDE .6984 RRA 2.2225 RC3 3.7479 FAU .36663 RRT -.9510 RRF -.9989 RTF .9511 CRT -.8417 CRS .9960 CST -.7903
FDE-3.2277 FRA-8.5752 FC-13.8217 BSP 19504 SGB 5806.4 R23 .1151 R13 -.9923 LSA 2111.3 MSA 496.5 SSA 11.2
BDE .7188 BRA 3.2568 BC3 4.3619 FSP 5049 SG1 5739.0 SG2 882.4 THA 127.87 EL1 1411.4 EL2 396.5 ALF 125.99

LAUNCH DATE DEC 24 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 568.627 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.896 GAL 5.93 AZL 94.44 HCA 167.71 SMA 183.86 ECC .22394 INC 4.4422 V1 30.280
RP 220.75 LAP -.94 LOP 259.97 VP 21.922 GAP -5.83 AZP 85.66 TAL 33.41 TAP 201.12 RCA 142.68 APO 225.03 V2 24.903
RC 269.292 GL -31.10 GP 35.89 ZAL 44.70 ZAP 89.48 ETS 179.21 ZAE 115.85 ETE 157.02 ZAC 120.51 ETC 255.09 CLP 89.36

PLANETOCENTRIC CONIC

C3 24.067 VHL 4.906 DLA -11.46 RAL 120.99 RAD 6568.0 VEL 12.060 PTH 2.16 VHP 3.845 DPA 37.80 RAP 188.46 ECC 1.3961

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 41 57	1895.25	-10.76	22.19	343.76	116.35	15 13 33	1295.2	-7.13	15.39
90.00	23 43 35	5267.04	26.93	237.99	349.43	80.91	25 11 23	4667.0	25.40	229.66
100.00	15 57 31	1651.49	-11.90	3.68	343.16	117.62	16 25 2	1051.5	-8.11	356.94
100.00	1 14 39	4986.03	28.20	217.08	349.18	79.64	2 37 45	4386.0	26.48	208.70
110.00	16 52 39	1478.80	-14.90	348.84	341.43	121.13	17 17 18	878.8	-10.67	342.30
110.00	2 36 0	4731.48	31.56	196.92	348.35	76.12	3 54 52	4131.5	29.33	188.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2821 TRA-2.5590 TC3-2.3190 BAU 1.4288 SGT 3819.0 SGR 4826.8 SG3 1387.4 ST 974.8 SR 1369.5 SS 1676.5
RDE .9015 RRA 2.4295 RC3 3.7871 FAU .34131 RRT -.9564 RRF -.9991 RTF .9562 CRT -.8608 CRS .9978 CST -.8254
FDE-3.4983 FRA-8.2241 FC-12.2778 BSP 20762 SGB 6154.9 R23 .1105 R13 -.9930 LSA 2321.3 MSA 497.8 SSA 9.5
BDE .9446 BRA 3.5286 BC3 4.4407 FSP 4696 SG1 6091.1 SG2 883.7 THA 128.06 EL1 1628.4 EL2 417.2 ALF 124.03

LAUNCH DATE DEC 24 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 572.705 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.897 GAL 5.89 AZL 95.04 HCA 168.82 SMA 183.87 ECC .22366 INC 5.0361 V1 30.280
RP 220.37 LAP -.97 LOP 261.09 VP 21.970 GAP -6.04 AZP 85.06 TAL 33.19 TAP 202.01 RCA 142.75 APO 225.00 V2 24.945
RC 270.721 GL -34.59 GP 38.24 ZAL 46.83 ZAP 88.12 ETS 180.30 ZAE 113.51 ETE 157.49 ZAC 122.67 ETC 254.81 CLP 87.60

PLANETOCENTRIC CONIC

C3 25.610 VHL 5.061 DLA -14.83 RAL 120.06 RAD 6568.0 VEL 12.124 PTH 2.17 VHP 4.004 DPA 40.08 RAP 189.47 ECC 1.4215

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 7 24	1794.87	-7.67	16.43	343.96	117.34	15 37 19	1194.9	-3.95	9.73
90.00	23 10 41	5398.01	27.99	247.43	351.16	85.52	24 40 39	4798.0	27.07	238.88
100.00	16 20 44	1558.23	-8.91	358.37	343.29	118.65	16 46 43	958.2	-5.01	351.75
100.00	0 43 57	5109.88	29.38	226.09	351.01	84.24	2 9 7	4509.9	28.27	217.46
110.00	17 11 7	1400.43	-12.10	344.50	341.39	122.22	17 34 27	800.4	-7.76	338.09
110.00	2 10 4	4840.45	33.05	205.06	350.45	80.73	3 30 44	4240.4	31.42	196.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4189 TRA-2.7583 TC3-2.3648 BAU 1.5268 SGT 4048.4 SGR 5115.4 SG3 1269.8 ST 1081.3 SR 1612.8 SS 1746.4
RDE 1.1530 RRA 2.6759 RC3 3.7806 FAU .31288 RRT -.9610 RRF -.9992 RTF .9606 CRT -.8821 CRS .9988 CST -.8582
FDE-3.7332 FRA-7.8034 FC-10.5768 BSP 21961 SGB 6523.6 R23 .1058 R13 -.9936 LSA 2563.5 MSA 498.5 SSA 8.0
BDE 1.2268 BRA 3.8430 BC3 4.4593 FSP 4271 SG1 6463.1 SG2 886.1 THA 128.10 EL1 1892.7 EL2 434.0 ALF 122.52

LAUNCH DATE DEC 24 1964 FLIGHT TIME 268.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 576.790 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.899 GAL 5.84 AZL 95.76 HCA 169.93 SMA 183.89 ECC .22340 INC 5.7618 V1 30.280
RP 220.00 LAP -1.01 LOP 262.21 VP 22.019 GAP -6.24 AZP 84.33 TAL 32.95 TAP 202.88 RCA 142.81 APO 224.98 V2 24.986
RC 272.134 GL -38.54 GP 40.84 ZAL 49.34 ZAP 86.90 ETS 181.47 ZAE 111.20 ETE 157.95 ZAC 125.08 ETC 254.43 CLP 85.90

PLANETOCENTRIC CONIC

C3 27.815 VHL 5.274 DLA -18.62 RAL 118.88 RAD 6568.1 VEL 12.214 PTH 2.19 VHP 4.210 DPA 42.51 RAP 190.83 ECC 1.4578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 39 41	1673.63	-3.83	9.60	344.71	118.08	16 7 35	1073.6	-.04	2.96
90.00	22 29 2	5560.23	28.28	259.27	353.24	91.45	24 1 42	4960.2	28.18	250.61
100.00	16 49 47	1447.46	-5.24	352.20	343.93	119.47	17 13 54	847.5	-1.27	345.65
100.00	0 5 33	5261.64	29.89	237.33	353.26	90.13	1 33 15	4661.6	29.59	228.54
110.00	17 33 32	1310.35	-8.78	339.63	341.76	123.17	17 55 23	710.3	-4.35	333.34
110.00	1 38 17	4971.51	34.04	215.16	353.13	86.62	3 1 9	4371.5	33.19	206.02

DIFFERENTIAL CORRECTIONS
TDE -.5772 TRA-2.9794 TC3-2.3490 BAU 1.6301
RDE 1.4577 RRA 2.9666 RC3 3.7012 FAU .28027
FDE-3.8829 FRA-7.2794 FC3-8.7232 BSP 23312
BDE 1.5678 BRA 4.2044 BC3 4.3837 FSP 3813

MID-COURSE EXECUTION ACCURACY
SGT 4265.8 SGR 5414.3 SG3 1133.4
RRT -.9647 RRF -.9994 RTF .9640
SGB 6892.9 R23 .1015 R13 -.9942
SG1 6835.2 SG2 889.9 THA 128.00

ORBIT DETERMINATION ACCURACY
ST 1203.5 SR 1887.5 SS 1787.3
CRT -.9011 CRS .9993 CST -.8846
LSA 2820.4 MSA 500.4 SSA 6.7
EL1 2193.0 EL2 449.1 ALF 121.34

LAUNCH DATE DEC 24 1964 FLIGHT TIME 270.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 580.881 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.900 GAL 5.80 AZL 96.67 HCA 171.04 SMA 183.92 ECC .22316 INC 6.6686 V1 30.280
RP 219.62 LAP -1.04 LOP 263.33 VP 22.068 GAP -6.44 AZP 83.41 TAL 32.70 TAP 203.75 RCA 142.88 APO 224.97 V2 25.027
RC 273.529 GL -43.01 GP 43.70 ZAL 52.27 ZAP 85.87 ETS 182.71 ZAE 108.92 ETE 158.38 ZAC 127.75 ETC 253.93 CLP 84.28

PLANETOCENTRIC CONIC

C3 31.053 VHL 5.572 DLA -22.87 RAL 117.38 RAD 6568.2 VEL 12.346 PTH 2.23 VHP 4.484 DPA 45.09 RAP 192.62 ECC 1.5110

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 56	1514.11	1.31	.69	346.48	118.29	16 50 10	914.1	5.09	354.04
90.00	21 31 49	5774.87	26.93	274.81	355.33	99.10	23 8 4	5174.9	27.91	266.28
100.00	17 29 3	1307.16	-.50	344.48	345.47	119.89	17 50 50	707.2	3.48	337.95
100.00	23 10 23	5457.05	28.98	251.77	355.67	97.66	24 41 20	4857.0	29.74	243.05
110.00	18 2 8	1203.42	-4.76	333.97	342.82	123.89	18 22 12	603.4	-.27	327.75
110.00	0 57 43	5133.56	33.97	227.80	356.27	94.09	2 23 16	4533.6	34.16	218.56

DIFFERENTIAL CORRECTIONS
TDE -.7624 TRA-3.2339 TC3-2.2658 BAU 1.7444
RDE 1.8358 RRA 3.3239 RC3 3.5388 FAU .24413
FDE-3.9260 FRA-6.6524 FC3-6.8063 BSP 24646
BDE 1.9878 BRA 4.6375 BC3 4.2020 FSP 3291

MID-COURSE EXECUTION ACCURACY
SGT 4473.8 SGR 5733.9 SG3 981.1
RRT -.9678 RRF -.9994 RTF .9667
SGB 7272.7 R23 .0976 R13 -.9947
SG1 7217.4 SG2 895.0 THA 127.74

ORBIT DETERMINATION ACCURACY
ST 1338.8 SR 2194.4 SS 1788.2
CRT -.9168 CRS .9996 CST -.9050
LSA 3090.5 MSA 504.0 SSA 5.5
EL1 2528.3 EL2 464.0 ALF 120.35

LAUNCH DATE DEC 24 1964 FLIGHT TIME 272.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 584.975 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.902 GAL 5.75 AZL 97.83 HCA 172.16 SMA 183.96 ECC .22293 INC 7.8340 V1 30.280
RP 219.25 LAP -1.07 LOP 264.45 VP 22.117 GAP -6.64 AZP 82.24 TAL 32.45 TAP 204.60 RCA 142.95 APO 224.96 V2 25.067
RC 274.906 GL -48.06 GP 46.83 ZAL 55.67 ZAP 85.06 ETS 183.98 ZAE 106.70 ETE 158.78 ZAC 130.71 ETC 253.27 CLP 82.77

PLANETOCENTRIC CONIC

C3 35.984 VHL 5.999 DLA -27.63 RAL 115.42 RAD 6568.4 VEL 12.544 PTH 2.27 VHP 4.854 DPA 47.79 RAP 194.95 ECC 1.5922

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 55 58	1215.29	10.73	343.79	351.15	116.36	18 16 13	615.3	14.19	336.81
90.00	19 45 7	859.97	20.40	322.21	355.45	110.07	19 59 27	260.0	22.95	314.47
100.00	18 34 35	1090.48	6.80	332.54	349.05	119.18	18 52 45	490.5	10.64	325.85
100.00	21 49 11	5748.05	24.61	272.23	357.00	107.53	23 24 59	5148.0	26.77	264.10
110.00	18 42 17	1066.30	.48	326.80	345.15	124.18	19 0 3	466.3	4.96	320.58
110.00	0 1 54	5345.00	31.77	243.87	359.24	103.34	1 30 59	4745.0	33.27	234.97

DIFFERENTIAL CORRECTIONS
TDE -.9756 TRA-3.5375 TC3-2.1101 BAU 1.8778
RDE 2.3108 RRA 3.7806 RC3 3.2839 FAU .20504
FDE-3.8221 FRA-5.9119 FC3-4.9330 BSP 25825
BDE 2.5083 BRA 5.1775 BC3 3.9034 FSP 2701

MID-COURSE EXECUTION ACCURACY
SGT 4671.5 SGR 6083.4 SG3 815.0
RRT -.9704 RRF -.9995 RTF .9689
SGB 7670.1 R23 .0939 R13 -.9951
SG1 7616.9 SG2 901.7 THA 127.30

ORBIT DETERMINATION ACCURACY
ST 1477.6 SR 2526.0 SS 1730.0
CRT -.9283 CRS .9997 CST -.9193
LSA 3360.9 MSA 510.9 SSA 4.6
EL1 2886.7 EL2 480.7 ALF 119.40

LAUNCH DATE DEC 24 1964 FLIGHT TIME 302.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 648.086 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 32.965 GAL 4.67 AZL 81.23 HCA 189.68 SMA 185.01 ECC .21969 INC 8.7664 V1 30.280
RP 214.08 LAP -1.47 LOP 281.79 VP 22.858 GAP -8.94 AZP 98.64 TAL 26.42 TAP 216.10 RCA 144.37 APO 225.65 V2 25.644
RC 293.566 GL 54.79 GP -39.12 ZAL 63.12 ZAP 68.30 ETS 160.16 ZAE 90.68 ETE 179.17 ZAC 46.10 ETC 253.33 CLP 61.53

PLANETOCENTRIC CONIC

C3 37.555 VHL 6.128 DLA 67.50 RAL 168.43 RAD 6568.5 VEL 12.607 PTH 2.29 VHP 4.682 DPA -27.64 RAP 148.88 ECC 1.6181

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
10.60	9 11 5	4290.27	-53.97	243.41	132.04	15.99	10 22 36	3690.3	-61.59	239.21
10.60	0 19 19	4894.59	-13.71	251.64	9.48	9.60	1 40 54	4294.6	-21.60	250.62
20.60	7 37 25	4374.08	-45.08	232.00	97.49	26.02	8 50 19	3774.1	-52.14	226.70
20.60	2 33 10	4775.65	-19.74	242.68	33.59	19.22	3 52 46	4175.7	-27.26	240.14
25.77	5 16 27	4560.62	-31.53	232.78	63.72	26.68	6 32 27	3960.6	-38.60	228.61
154.23	15 31 31	2824.28	-31.52	85.83	63.70	26.68	16 18 35	2224.3	-38.59	81.67

DIFFERENTIAL CORRECTIONS
TDE 7.6864 TRA -.3788 TC3-3.7488 BAU 2.2198
RDE 3.6642 RRA .1489 RC3-2.3439 FAU .22660
FDE 7.1205 FRA .3710 FC3-5.2237 BSP 32851
BDE 8.5151 BRA .4070 BC3 4.4212 FSP 2930

MID-COURSE EXECUTION ACCURACY
SGT 8579.7 SGR 4485.7 SG3 801.9
RRT .9739 RRF .9976 RTF .9597
SGB 9681.6 R23 .2303 R13 .9720
SG1 9639.1 SG2 905.9 THA 27.25

ORBIT DETERMINATION ACCURACY
ST 7193.1 SR 3428.6 SS 2696.2
CRT .9975 CRS-1.0000 CST -.9968
LSA 8407.6 MSA 277.4 SSA 5.9
EL1 7965.4 EL2 218.7 ALF 25.45

LAUNCH DATE DEC 24 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 652.320 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	32.971	GAL	4.59	AZL	82.06	HCA	190.85	SMA	185.11	ECC	.21958	INC	7.9430	V1	30.280
RP	213.77	LAP	-1.49	LOP	282.97	VP	22.906	GAP	-9.07	AZP	97.80	TAL	25.95	TAP	216.80	RCA	144.46	APO	225.76	V2	25.679
RC	294.693	GL	52.02	GP	-35.99	ZAL	61.78	ZAP	66.17	ETS	160.39	ZAE	89.25	ETE	178.18	ZAC	49.05	ETC	254.16	CLP	60.04

PLANETOCENTRIC CONIC

C3	33.200	VHL	5.762	DLA	64.83	RAL	165.59	RAD	6568.3	VEL	12.433	PTH	2.25	VHP	4.495	DPA	-24.72	RAP	150.16	ECC	1.5464

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
28.89	5 12 11	4518.96	-32.65	228.38	58.07	30.35	6 27 30	3919.0	-39.45	223.57
151.11	15 13 6	2803.69	-32.64	84.89	58.06	30.34	15 59 50	2203.7	-39.44	80.08
28.89	5 12 11	4518.96	-32.65	228.38	58.07	30.35	6 27 30	3919.0	-39.45	223.57
151.11	15 13 6	2803.69	-32.64	84.89	58.06	30.34	15 59 50	2203.7	-39.44	80.08
28.89	5 12 11	4518.96	-32.65	228.38	58.07	30.35	6 27 30	3919.0	-39.45	223.57
151.11	15 13 6	2803.69	-32.64	84.89	58.06	30.34	15 59 50	2203.7	-39.44	80.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	7.1828	TRA	-.5598	TC3	-4.2730	BAU	2.1693	SGT	8773.5	SGR	4140.7	SG3	891.8	ST	7154.7	SR	3106.4	SS	2815.9
RDE	3.1225	RRA	.0754	RC3	-2.3724	FAU	.24391	RRT	.9747	RRF	.9975	RTF	.9616	CRT	.9974	CRS	-1.0000	CST	-.9968
FDE	7.2857	FRA	.2477	FC3	-6.3603	BSP	33237	SGB	9701.5	R23	.2306	R13	.9717	LSA	8288.2	MSA	273.2	SSA	6.8
BDE	7.8322	BRA	.5649	BC3	4.8874	FSP	3288	SG1	9665.0	SG2	840.9	THA	24.90	EL1	7797.3	EL2	205.5	ALF	23.43

LAUNCH DATE DEC 24 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 656.570 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	32.977	GAL	4.50	AZL	82.72	HCA	192.03	SMA	185.21	ECC	.21949	INC	7.2774	V1	30.280
RP	213.46	LAP	-1.51	LOP	284.16	VP	22.954	GAP	-9.19	AZP	97.12	TAL	25.46	TAP	217.49	RCA	144.56	APO	225.87	V2	25.714
RC	295.805	GL	49.56	GP	-33.19	ZAL	60.72	ZAP	64.19	ETS	160.69	ZAE	87.79	ETE	177.36	ZAC	51.72	ETC	254.80	CLP	58.65

PLANETOCENTRIC CONIC

C3	29.935	VHL	5.471	DLA	62.40	RAL	163.65	RAD	6568.2	VEL	12.301	PTH	2.22	VHP	4.366	DPA	-22.12	RAP	151.30	ECC	1.4927

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
31.76	5 11 13	4481.85	-33.37	224.22	53.52	33.70	6 25 55	3881.9	-39.90	218.86
148.24	14 58 35	2788.73	-33.36	84.03	53.50	33.69	15 45 4	2188.7	-39.89	78.67
31.76	5 11 13	4481.85	-33.37	224.22	53.52	33.70	6 25 55	3881.9	-39.90	218.86
148.24	14 58 35	2788.73	-33.36	84.03	53.50	33.69	15 45 4	2188.7	-39.89	78.67
31.76	5 11 13	4481.85	-33.37	224.22	53.52	33.70	6 25 55	3881.9	-39.90	218.86
148.24	14 58 35	2788.73	-33.36	84.03	53.50	33.69	15 45 4	2188.7	-39.89	78.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	6.7575	TRA	-.7181	TC3	-4.8065	BAU	2.1474	SGT	8965.1	SGR	3826.0	SG3	963.8	ST	7095.0	SR	2798.3	SS	2859.7
RDE	2.6711	RRA	.0151	RC3	-2.3853	FAU	.25859	RRT	.9757	RRF	.9973	RTF	.9631	CRT	.9974	CRS	-1.0000	CST	-.9970
FDE	7.2353	FRA	.0943	FC3	-7.4786	BSP	33175	SGB	9747.4	R23	.2305	R13	.9713	LSA	8141.1	MSA	262.2	SSA	7.8
BDE	7.2662	BRA	.7183	BC3	5.3658	FSP	3483	SG1	9716.6	SG2	773.6	THA	22.76	EL1	7624.5	EL2	188.8	ALF	21.49

LAUNCH DATE DEC 24 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 660.828 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	32.983	GAL	4.42	AZL	83.27	HCA	193.22	SMA	185.32	ECC	.21940	INC	6.7278	V1	30.280
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.001	GAP	-9.31	AZP	96.55	TAL	24.96	TAP	218.18	RCA	144.66	APO	225.98	V2	25.748
RC	296.904	GL	47.39	GP	-30.69	ZAL	59.88	ZAP	62.35	ETS	161.04	ZAE	86.33	ETE	176.70	ZAC	54.12	ETC	255.30	CLP	57.34

PLANETOCENTRIC CONIC

C3	27.401	VHL	5.235	DLA	60.19	RAL	162.31	RAD	6568.1	VEL	12.197	PTH	2.19	VHP	4.277	DPA	-19.80	RAP	152.33	ECC	1.4510

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.38	5 12 18	4448.34	-33.80	220.34	49.77	36.74	6 26 27	3848.3	-40.06	214.52
145.62	14 46 48	2778.05	-33.79	83.29	49.76	36.73	15 33 6	2178.1	-40.05	77.46
34.38	5 12 18	4448.34	-33.80	220.34	49.77	36.74	6 26 27	3848.3	-40.06	214.52
145.62	14 46 48	2778.05	-33.79	83.29	49.76	36.73	15 33 6	2178.1	-40.05	77.46
34.38	5 12 18	4448.34	-33.80	220.34	49.77	36.74	6 26 27	3848.3	-40.06	214.52
145.62	14 46 48	2778.05	-33.79	83.29	49.76	36.73	15 33 6	2178.1	-40.05	77.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	6.4126	TRA	-.8406	TC3	-5.3253	BAU	2.1345	SGT	9152.8	SGR	3537.6	SG3	1018.6	ST	7042.9	SR	2527.8	SS	2865.4
RDE	2.3084	RRA	-.0188	RC3	-2.3648	FAU	.26860	RRT	.9764	RRF	.9969	RTF	.9640	CRT	.9972	CRS	-1.0000	CST	-.9970
FDE	7.0806	FRA	-.0231	FC3	-8.4863	BSP	33366	SGB	9812.7	R23	.2309	R13	.9708	LSA	8008.6	MSA	255.7	SSA	8.8
BDE	6.8154	BRA	.8408	BC3	5.8267	FSP	3641	SG1	9786.6	SG2	715.3	THA	20.79	EL1	7480.7	EL2	176.5	ALF	19.70

LAUNCH DATE DEC 24 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 665.095 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	32.989	GAL	4.33	AZL	83.73	HCA	194.41	SMA	185.43	ECC	.21931	INC	6.2661	V1	30.280
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.048	GAP	-9.42	AZP	96.07	TAL	24.44	TAP	218.85	RCA	144.76	APO	226.10	V2	25.782
RC	297.989	GL	45.46	GP	-28.46	ZAL	59.25	ZAP	60.63	ETS	161.42	ZAE	84.88	ETE	176.16	ZAC	56.28	ETC	255.69	CLP	56.10

PLANETOCENTRIC CONIC

C3	25.377	VHL	5.038	DLA	58.18	RAL	161.40	RAD	6568.0	VEL	12.114	PTH	2.17	VHP	4.217	DPA	-17.75	RAP	153.26	ECC	1.4176

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.79	5 14 53	4417.63	-34.01	216.72	46.67	39.49	6 28 31	3817.6	-40.01	210.50
143.21	14 37 0	2770.74	-34.00	82.67	46.65	39.49	15 23 10	2170.7	-40.00	76.46
36.79	5 14 53	4417.63	-34.01	216.72	46.67	39.49	6 28 31	3817.6	-40.01	210.50
143.21	14 37 0	2770.74	-34.00	82.67	46.65	39.49	15 23 10	2170.7	-40.00	76.46
36.79	5 14 53	4417.63	-34.01	216.72	46.67	39.49	6 28 31	3817.6	-40.01	210.50
143.21	14 37 0	2770.74	-34.00	82.67	46.65	39.49	15 23 10	2170.7	-40.00	76.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	6.1283	TRA	-.9365	TC3	-5.8313	BAU	2.1294	SGT	9337.1	SGR	3274.2	SG3	1058.7	ST	6998.6	SR	2291.2	SS	2843.9
RDE	2.0134	RRA	-.0367	RC3	-2.3214	FAU	.27487	RRT	.9768	RRF	.9964	RTF	.9645	CRT	.9971	CRS	-1.0000	CST	-.9969
FDE	6.8580	FRA	-.1103	FC3	-9.3769	BSP	33681	SGB	9894.5	R23	.2311	R13	.9701	LSA	7890.2	MSA	251.1	SSA	9.9
BDE	6.4506	BRA	.9373	BC3	6.2764	FSP	3756	SG1	9872.3	SG2	663.1	THA	19.00	EL1	7362.2	EL2	166.5	ALF	18.09

LAUNCH DATE DEC 24 1964 FLIGHT TIME 312.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 669.371 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	32.996	GAL	4.23	AZL	84.13	HCA	195.60	SMA	185.54	ECC	.21924	INC	5.8723	V1	30.280
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.094	GAP	-9.53	AZP	95.66	TAL	23.91	TAP	219.52	RCA	144.86	APO	226.22	V2	25.815
RC	299.061	GL	43.73	GP	-26.46	ZAL	58.79	ZAP	59.02	ETS	161.81	ZAE	83.45	ETE	175.72	ZAC	58.23	ETC	256.00	CLP	54.90

PLANETOCENTRIC CONIC

C3	23.722	VHL	4.870	DLA	56.35	RAL	160.82	RAD	6568.0	VEL	12.046	PTH	2.15	VHP	4.179	DPA	-15.93	RAP	154.12	ECC	1.3904

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.01	5 18 31	4389.19	-34.07	213.34	44.08	41.99	6 31 40	3789.2	-39.82	206.79
140.99	14 28 43	2766.03	-34.06	82.18	44.06	41.98	15 14 49	2166.0	-39.81	75.63
39.01	5 18 31	4389.19	-34.07	213.34	44.08	41.99	6 31 40	3789.2	-39.82	206.79
140.99	14 28 43	2766.03	-34.06	82.18	44.06	41.98	15 14 49	2166.0	-39.81	75.63
39.01	5 18 31	4389.19	-34.07	213.34	44.08	41.99	6 31 40	3789.2	-39.82	206.79
140.99	14 28 43	2766.03	-34.06	82.18	44.06	41.98	15 14 49	2166.0	-39.81	75.63

DIFFERENTIAL CORRECTIONS

TDE	5.8863	TRA	-1.0143	TC3	-6.3337	BAU	2.1332	SGT	9521.0	SGR	3035.3
RDE	1.7700	RRA	-.0449	RC3	-2.2652	FAU	.27848	RRT	.9771	RRF	.9958
FDE	6.5892	FRA	-.1735	FC	-10.1632	BSP	33984	SGB	9993.1	R23	.2306
BDE	6.1467	BRA	1.0152	BC3	6.7266	FSP	3822	SG1	9974.1	SG2	616.8

MID-COURSE EXECUTION ACCURACY

SG3	1086.8	RTF	.9648	THA	17.37

ORBIT DETERMINATION ACCURACY

ST	6957.1	SR	2083.4	SS	2801.3
CRT	.9968	CRS	-1.0000	CST	-.9968
LSA	7780.0	MSA	247.8	SSA	10.9
EL1	7260.7	EL2	158.3	ALF	16.63

LAUNCH DATE DEC 24 1964 FLIGHT TIME 314.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 673.654 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.002	GAL	4.14	AZL	84.47	HCA	196.80	SMA	185.65	ECC	.21917	INC	5.5325	V1	30.280
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.140	GAP	-9.64	AZP	95.30	TAL	23.37	TAP	220.17	RCA	144.96	APO	226.35	V2	25.847
RC	300.120	GL	42.18	GP	-24.67	ZAL	58.49	ZAP	57.51	ETS	162.19	ZAE	82.04	ETE	175.36	ZAC	59.98	ETC	256.24	CLP	53.76

PLANETOCENTRIC CONIC

C3	22.338	VHL	4.726	DLA	54.65	RAL	160.49	RAD	6567.9	VEL	11.988	PTH	2.14	VHP	4.158	DPA	-14.32	RAP	154.92	ECC	1.3676

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.08	5 22 57	4362.53	-34.01	210.17	41.91	44.26	6 35 39	3762.5	-39.53	203.35
138.92	14 21 37	2763.42	-34.00	81.80	41.89	44.25	15 7 40	2163.4	-39.52	74.99
41.08	5 22 57	4362.53	-34.01	210.17	41.91	44.26	6 35 39	3762.5	-39.53	203.35
138.92	14 21 37	2763.42	-34.00	81.80	41.89	44.25	15 7 40	2163.4	-39.52	74.99
41.08	5 22 57	4362.53	-34.01	210.17	41.91	44.26	6 35 39	3762.5	-39.53	203.35
138.92	14 21 37	2763.42	-34.00	81.80	41.89	44.25	15 7 40	2163.4	-39.52	74.99

DIFFERENTIAL CORRECTIONS

TDE	5.6822	TRA	-1.0718	TC3	-6.8231	BAU	2.1406	SGT	9700.1	SGR	2817.0
RDE	1.5685	RRA	-.0450	RC3	-2.1965	FAU	.27945	RRT	.9772	RRF	.9949
FDE	6.2988	FRA	-.2075	FC	-10.8302	BSP	34430	SGB	10100.8	R23	.2295
BDE	5.8947	BRA	1.0727	BC3	7.1680	FSP	3867	SG1	10084.4	SG2	575.8

MID-COURSE EXECUTION ACCURACY

SG3	1104.1	RTF	.9649	THA	15.90

ORBIT DETERMINATION ACCURACY

ST	6923.9	SR	1902.7	SS	2746.0
CRT	.9966	CRS	-1.0000	CST	-.9967
LSA	7683.8	MSA	245.7	SSA	12.0
EL1	7179.0	EL2	151.7	ALF	15.32

LAUNCH DATE DEC 24 1964 FLIGHT TIME 316.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 677.946 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.009	GAL	4.04	AZL	84.76	HCA	198.00	SMA	185.77	ECC	.21912	INC	5.2360	V1	30.280
RP	212.01	LAP	-1.62	LOP	290.16	VP	23.186	GAP	-9.74	AZP	94.98	TAL	22.81	TAP	220.82	RCA	145.06	APO	226.48	V2	25.879
RC	301.167	GL	40.78	GP	-23.06	ZAL	58.33	ZAP	56.08	ETS	162.57	ZAE	80.66	ETE	175.07	ZAC	61.57	ETC	256.44	CLP	52.66

PLANETOCENTRIC CONIC

C3	21.161	VHL	4.600	DLA	53.09	RAL	160.35	RAD	6567.9	VEL	11.939	PTH	2.12	VHP	4.150	DPA	-12.89	RAP	155.68	ECC	1.3483

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.02	5 28 0	4337.28	-33.87	207.19	40.09	46.33	6 40 17	3737.3	-39.17	200.15
136.98	14 15 27	2762.52	-33.86	81.53	40.08	46.32	15 1 30	2162.5	-39.16	74.49
43.02	5 28 0	4337.28	-33.87	207.19	40.09	46.33	6 40 17	3737.3	-39.17	200.15
136.98	14 15 27	2762.52	-33.86	81.53	40.08	46.32	15 1 30	2162.5	-39.16	74.49
43.02	5 28 0	4337.28	-33.87	207.19	40.09	46.33	6 40 17	3737.3	-39.17	200.15
136.98	14 15 27	2762.52	-33.86	81.53	40.08	46.32	15 1 30	2162.5	-39.16	74.49

DIFFERENTIAL CORRECTIONS

TDE	5.5067	TRA	-1.1133	TC3	-7.3052	BAU	2.1520	SGT	9876.5	SGR	2618.4
RDE	1.3999	RRA	-.0400	RC3	-2.1213	FAU	.27852	RRT	.9771	RRF	.9939
FDE	5.9971	FRA	-.2188	FC	-11.3947	BSP	34918	SGB	10217.7	R23	.2274
BDE	5.6819	BRA	1.1141	BC3	7.6069	FSP	3884	SG1	10203.4	SG2	539.7

MID-COURSE EXECUTION ACCURACY

SG3	1112.9	RTF	.9648	THA	14.56

ORBIT DETERMINATION ACCURACY

ST	6896.6	SR	1744.8	SS	2681.4
CRT	.9963	CRS	-1.0000	CST	-.9965
LSA	7598.5	MSA	244.2	SSA	13.1
EL1	7112.4	EL2	146.1	ALF	14.15

LAUNCH DATE DEC 24 1964 FLIGHT TIME 318.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 682.245 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.016	GAL	3.94	AZL	85.03	HCA	199.21	SMA	185.89	ECC	.21908	INC	4.9747	V1	30.280
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.230	GAP	-9.84	AZP	94.70	TAL	22.25	TAP	221.45	RCA	145.17	APO	226.61	V2	25.911
RC	302.203	GL	39.52	GP	-21.62	ZAL	58.30	ZAP	54.73	ETS	162.93	ZAE	79.30	ETE	174.83	ZAC	63.01	ETC	256.59	CLP	51.60

PLANETOCENTRIC CONIC

C3	20.144	VHL	4.488	DLA	51.64	RAL	160.37	RAD	6567.8	VEL	11.896	PTH	2.11	VHP	4.153	DPA	-11.62	RAP	156.40	ECC	1.3315

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.83	5 33 34	4313.14	-33.66	204.37	38.57	48.22	6 45 28	3713.1	-38.76	197.14
135.17	14 10 3	2763.07	-33.65	81.36	38.56	48.21	14 56 7	2163.1	-38.75	74.13
44.83	5 33 34	4313.14	-33.66	204.37	38.57	48.22	6 45 28	3713.1	-38.76	197.14
135.17	14 10 3	2763.07	-33.65	81.36	38.56	48.21	14 56 7	2163.1	-38.75	74.13
44.83	5 33 34	4313.14	-33.66	204.37	38.57	48.22	6 45 28	3713.1	-38.76	197.14
135.17	14 10 3	2763.07	-33.65	81.36	38.56	48.21	14 56 7	2163.1	-38.75	74.13

DIFFERENTIAL CORRECTIONS

TDE	5.3484	TRA	-1.1463	TC3	-7.7895	BAU	2.1688	SGT	10053.2	SGR	2438.7
RDE	1.2562	RRA	-.0335	RC3	-2.0453	FAU	.27647	RRT	.9769	RRF	.9927
FDE	5.6847	FRA	-.2200	FC	-11.8822	BSP	35315	SGB	10344.7	R23	.2241
BDE	5.4939	BRA	1.1467	BC3	8.0536	FSP	3861	SG1	10332.3	SG2	507.6

MID-COURSE EXECUTION ACCURACY

SG3	1115.3	RTF	.9647	THA	13.36

ORBIT DETERMINATION ACCURACY

ST	6867.5	SR	1604.8	SS	2606.9
CRT	.9959	CRS	-.9999	CST	-.9963
LSA	7514.9	MSA	242.4	SSA	14.2
EL1	7051.1	EL2	141.1	ALF	13.11

LAUNCH DATE DEC 24 1964 FLIGHT TIME 320.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 686.552 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.023	GAL	3.84	AZL	85.26	HCA	200.42	SMA	186.01	ECC	.21905	INC	4.7428
RP	211.47	LAP	-1.65	LOP	292.57	VP	23.275	GAP	-9.94	AZP	94.45	TAL	21.66	TAP	222.08	RCA	145.27	APO	226.76
RC	303.228	GL	38.38	GP	-20.31	ZAL	58.37	ZAP	53.45	ETS	163.28	ZAE	77.96	ETE	174.63	ZAC	64.32	ETC	256.72

V1	30.280	V2	25.941	CLP	50.57														

PLANETOCENTRIC CONIC

C3	19.252	VHL	4.388	DLA	50.28	RAL	160.53	RAD	6567.8	VEL	11.859	PTH	2.10	VHP	4.164	DPA	-10.49	RAP	157.10
ECC	1.3168																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.55	5 39 35	4289.91	-33.41	201.70	37.30	49.96	6 51 5	3689.9	-38.32	194.31
133.45	14 5 19	2764.80	-33.40	81.28	37.29	49.95	14 51 23	2164.8	-38.31	73.89
46.55	5 39 35	4289.91	-33.41	201.70	37.30	49.96	6 51 5	3689.9	-38.32	194.31
133.45	14 5 19	2764.80	-33.40	81.28	37.29	49.95	14 51 23	2164.8	-38.31	73.89
46.55	5 39 35	4289.91	-33.41	201.70	37.30	49.96	6 51 5	3689.9	-38.32	194.31
133.45	14 5 19	2764.80	-33.40	81.28	37.29	49.95	14 51 23	2164.8	-38.31	73.89

DIFFERENTIAL CORRECTIONS

TDE	5.2129	TRA	-1.1623	TC3	-8.2622	BAU	2.1858
RDE	1.1356	RRA	-.0230	RC3	-1.9645	FAU	.27283
FDE	5.3840	FRA	-.1953	FC	-12.2689	BSP	35860
BDE	5.3351	BRA	1.1626	BC3	8.4925	FSP	3839

MID-COURSE EXECUTION ACCURACY

SGT	10224.7	SGR	2274.4	SG3	1111.5		
RRT	.9763	RRF	.9913	RTF	.9645		
SGB	10474.6	R23	.2198	R13	.9667		
SG1	10463.6	SG2	480.7	THA	12.28		

ORBIT DETERMINATION ACCURACY

ST	6847.8	SR	1483.9	SS	2532.2
CRT	.9955	CRS	-.9999	CST	-.9961
LSA	7446.3	MSA	242.3	SSA	15.2
EL1	7005.3	EL2	137.3	ALF	12.18

LAUNCH DATE DEC 24 1964 FLIGHT TIME 322.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 690.865 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.030	GAL	3.74	AZL	85.46	HCA	201.63	SMA	186.13	ECC	.21903	INC	4.5352
RP	211.20	LAP	-1.67	LOP	293.79	VP	23.318	GAP	-10.04	AZP	94.22	TAL	21.07	TAP	222.70	RCA	145.37	APO	226.90
RC	304.242	GL	37.34	GP	-19.13	ZAL	58.54	ZAP	52.22	ETS	163.62	ZAE	76.66	ETE	174.47	ZAC	65.53	ETC	256.82

V1	30.280	V2	25.971	CLP	49.58														

PLANETOCENTRIC CONIC

C3	18.461	VHL	4.297	DLA	49.00	RAL	160.80	RAD	6567.7	VEL	11.826	PTH	2.09	VHP	4.181	DPA	-9.48	RAP	157.77
ECC	1.3038																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.18	5 46 0	4267.34	-33.12	199.14	36.26	51.57	6 57 7	3667.3	-37.85	191.62
131.82	14 1 5	2767.62	-33.11	81.28	36.25	51.56	14 47 12	2167.6	-37.84	73.77
48.18	5 46 0	4267.34	-33.12	199.14	36.26	51.57	6 57 7	3667.3	-37.85	191.62
131.82	14 1 5	2767.62	-33.11	81.28	36.25	51.56	14 47 12	2167.6	-37.84	73.77
48.18	5 46 0	4267.34	-33.12	199.14	36.26	51.57	6 57 7	3667.3	-37.85	191.62
131.82	14 1 5	2767.62	-33.11	81.28	36.25	51.56	14 47 12	2167.6	-37.84	73.77

DIFFERENTIAL CORRECTIONS

TDE	5.0910	TRA	-1.1676	TC3	-8.7316	BAU	2.2045
RDE	1.0320	RRA	-.0114	RC3	-1.8832	FAU	.26826
FDE	5.0875	FRA	-.1577	FC	-12.5806	BSP	36411
BDE	5.1945	BRA	1.1676	BC3	8.9323	FSP	3801

MID-COURSE EXECUTION ACCURACY

SGT	10393.2	SGR	2124.5	SG3	1103.1		
RRT	.9755	RRF	.9895	RTF	.9641		
SGB	10608.1	R23	.2144	R13	.9660		
SG1	10598.2	SG2	457.9	THA	11.30		

ORBIT DETERMINATION ACCURACY

ST	6829.9	SR	1377.1	SS	2453.9
CRT	.9951	CRS	-.9999	CST	-.9958
LSA	7382.8	MSA	242.4	SSA	16.3
EL1	6966.0	EL2	134.0	ALF	11.35

LAUNCH DATE DEC 24 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 695.186 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.038	GAL	3.63	AZL	85.65	HCA	202.84	SMA	186.26	ECC	.21902	INC	4.3481
RP	210.95	LAP	-1.69	LOP	295.01	VP	23.361	GAP	-10.13	AZP	94.01	TAL	20.46	TAP	223.30	RCA	145.47	APO	227.05
RC	305.247	GL	36.39	GP	-18.05	ZAL	58.81	ZAP	51.06	ETS	163.94	ZAE	75.38	ETE	174.35	ZAC	66.63	ETC	256.89

V1	30.280	V2	26.001	CLP	48.62														

PLANETOCENTRIC CONIC

C3	17.752	VHL	4.213	DLA	47.79	RAL	161.17	RAD	6567.7	VEL	11.796	PTH	2.09	VHP	4.204	DPA	-8.59	RAP	158.43
ECC	1.2921																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.74	5 52 47	4245.25	-32.81	196.68	35.40	53.07	7 3 32	3645.2	-37.36	189.05
130.26	13 57 16	2771.42	-32.80	81.37	35.39	53.06	14 43 28	2171.4	-37.35	73.74
49.74	5 52 47	4245.25	-32.81	196.68	35.40	53.07	7 3 32	3645.2	-37.36	189.05
130.26	13 57 16	2771.42	-32.80	81.37	35.39	53.06	14 43 28	2171.4	-37.35	73.74
49.74	5 52 47	4245.25	-32.81	196.68	35.40	53.07	7 3 32	3645.2	-37.36	189.05
130.26	13 57 16	2771.42	-32.80	81.37	35.39	53.06	14 43 28	2171.4	-37.35	73.74

DIFFERENTIAL CORRECTIONS

TDE	4.9766	TRA	-1.1671	TC3	-9.2069	BAU	2.2266
RDE	.9420	RRA	-.0001	RC3	-1.8047	FAU	.26327
FDE	4.7945	FRA	-.1167	FC	-12.8394	BSP	36889
BDE	5.0649	BRA	1.1671	BC3	9.3821	FSP	3742

MID-COURSE EXECUTION ACCURACY

SGT	10562.7	SGR	1988.3	SG3	1091.6		
RRT	.9746	RRF	.9874	RTF	.9638		
SGB	10748.2	R23	.2075	R13	.9654		
SG1	10739.3	SG2	438.4	THA	10.41		

ORBIT DETERMINATION ACCURACY

ST	6808.6	SR	1281.8	SS	2371.4
CRT	.9946	CRS	-.9998	CST	-.9955
LSA	7318.7	MSA	242.2	SSA	17.3
EL1	6926.9	EL2	131.1	ALF	10.61

LAUNCH DATE DEC 24 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 699.512 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.045	GAL	3.53	AZL	85.82	HCA	204.06	SMA	186.39	ECC	.21902	INC	4.1786
RP	210.70	LAP	-1.70	LOP	296.23	VP	23.404	GAP	-10.22	AZP	93.82	TAL	19.84	TAP	223.90	RCA	145.56	APO	227.21
RC	306.243	GL	35.52	GP	-17.07	ZAL	59.16	ZAP	49.94	ETS	164.24	ZAE	74.12	ETE	174.24	ZAC	67.64	ETC	256.95

V1	30.280	V2	26.029	CLP	47.69		

PLANETOCENTRIC CONIC

C3	17.110	VHL	4.136	DLA	46.64	RAL	161.64	RAD	6567.7	VEL	11.768	PTH	2.08	VHP	4.232	DPA	-7.80	RAP	159.08
ECC	1.2816																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
51.25	5 59 54	4223.51	-32.47	194.29	34.72	54.47	7 10 18	3623.5	-36.86	186.57
128.75	13 53 50	2776.11	-32.46	81.52	34.71	54.46	14 40 6	2176.1	-36.85	73.81
51.25	5 59 54	4223.51	-32.47	194.29	34.72	54.47	7 10 18	3623.5	-36.86	186.57
128.75	13 53 50	2776.11	-32.46	81.52	34.71	54.46	14 40 6	2176.1	-36.85	73.81
51.25	5 59 54	4223.51	-32.47	194.29	34.72	54.47	7 10 18	3623.5	-36.86	186.57
128.75	13 53 50	2776.11	-32.46	81.52	34.71	54.46	14 40 6	2176.1	-36.85	73.81

DIFFERENTIAL CORRECTIONS

TDE	4.8718	TRA	-1.1555	TC3	-9.6793	BAU	2.2490
RDE	.8640	RRA	.0122	RC3	-1.7263	FAU	.25757
FDE	4.5125	FRA	-.0628	FC	-13.0325	BSP	37409
BDE	4.9478	BRA	1.1555	BC3	9.8320	FSP	3680

MID-COURSE EXECUTION ACCURACY

SGT	10728.2	SGR	1863.4	SG3	1076.8		
RRT	.9732	RRF	.9850	RTF	.9634		
SGB	10888.8	R23	.1998	R13	.9647		
SG1	10880.6	SG2	422.8	THA	9.61		

ORBIT DETERMINATION ACCURACY

ST	6788.6	SR	1197.6	SS	2288.5
CRT	.9940	CRS	-.9998	CST	-.9952
LSA	7259.3	MSA	242.7	SSA	18.4
EL1	6892.2	EL2	128.7	ALF	9.95

LAUNCH DATE DEC 24 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 703.846 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.052	GAL	3.42	AZL	85.98	HCA	205.28	SMA	186.52	ECC	.21904	INC	4.0241
RP	210.46	LAP	-1.72	LOP	297.45	VP	23.445	GAP	-10.31	AZP	93.64	TAL	19.21	TAP	224.49	RCA	145.66	APO	227.37
RC	307.229	GL	34.72	GP	-16.18	ZAL	59.59	ZAP	48.88	ETS	164.52	ZAE	72.89	ETE	174.16	ZAC	68.58	ETC	256.99

V1	30.280	V2	26.057	CLP	46.78

PLANETOCENTRIC CONIC

C3	16.525	VHL	4.065	DLA	45.54	RAL	162.18	RAD	6567.7	VEL	11.743	PTH	2.07	VHP	4.264	DPA	-7.10	RAP	159.72
ECC	1.2720																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.71	6 7 24	4201.88	-32.11	191.97	34.18	55.78	7 17 26	3601.9	-36.35	184.17
127.29	13 50 39	2781.75	-32.10	81.76	34.17	55.77	14 37 1	2181.8	-36.34	73.96
52.71	6 7 24	4201.88	-32.11	191.97	34.18	55.78	7 17 26	3601.9	-36.35	184.17
127.29	13 50 39	2781.75	-32.10	81.76	34.17	55.77	14 37 1	2181.8	-36.34	73.96
52.71	6 7 24	4201.88	-32.11	191.97	34.18	55.78	7 17 26	3601.9	-36.35	184.17
127.29	13 50 39	2781.75	-32.10	81.76	34.17	55.77	14 37 1	2181.8	-36.34	73.96

DIFFERENTIAL CORRECTIONS

TDE	4.7740	TRA	-1.1369	TC	-10.1540	BAU	2.2727
RDE	.7961	RRA	.0241	RC3	-1.6498	FAU	.25150
FDE	4.2415	FRA	-.0050	FC	-13.1758	BSP	37900
BDE	4.8399	BRA	1.1372	BC3	10.2872	FSP	3606

MID-COURSE EXECUTION ACCURACY

SGT	10893.2	SGR	1749.5	SG3	1059.9		
RRT	.9714	RRF	.9821	RTF	.9630		
SGB	11032.8	R23	.1908	R13	.9641		
SG1	11025.2	SG2	410.3	THA	8.88		

ORBIT DETERMINATION ACCURACY

ST	6768.1	SR	1122.9	SS	2205.4
CRT	.9934	CRS	-.9997	CST	-.9948
LSA	7202.2	NSA	243.3	SSA	19.4
EL1	6859.4	EL2	126.6	ALF	9.36

LAUNCH DATE DEC 24 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 708.185 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.060	GAL	3.30	AZL	86.12	HCA	206.50	SMA	186.65	ECC	.21908	INC	3.8827
RP	210.22	LAP	-1.73	LOP	298.68	VP	23.486	GAP	-10.40	AZP	93.48	TAL	18.56	TAP	225.07	RCA	145.76	APO	227.54
RC	308.206	GL	33.98	GP	-15.35	ZAL	60.10	ZAP	47.85	ETS	164.80	ZAE	71.69	ETE	174.09	ZAC	69.46	ETC	257.02

V1	30.280	V2	26.085	CLP	45.90

PLANETOCENTRIC CONIC

C3	15.989	VHL	3.999	DLA	44.49	RAL	162.79	RAD	6567.6	VEL	11.721	PTH	2.07	VHP	4.299	DPA	-6.48	RAP	160.35
ECC	1.2631																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.13	6 15 14	4180.31	-31.74	189.69	33.77	57.02	7 24 55	3580.3	-35.83	181.83
125.87	13 47 43	2788.26	-31.73	82.07	33.76	57.01	14 34 11	2188.3	-35.82	74.21
54.13	6 15 14	4180.31	-31.74	189.69	33.77	57.02	7 24 55	3580.3	-35.83	181.83
125.87	13 47 43	2788.26	-31.73	82.07	33.76	57.01	14 34 11	2188.3	-35.82	74.21
54.13	6 15 14	4180.31	-31.74	189.69	33.77	57.02	7 24 55	3580.3	-35.83	181.83
125.87	13 47 43	2788.26	-31.73	82.07	33.76	57.01	14 34 11	2188.3	-35.82	74.21

DIFFERENTIAL CORRECTIONS

TDE	4.6829	TRA	-1.1077	TC	-10.6260	BAU	2.2962
RDE	.7366	RRA	.0364	RC3	-1.5751	FAU	.24511
FDE	3.9811	FRA	.0609	FC	-13.2722	BSP	38426
BDE	4.7405	BRA	1.1083	BC3	10.7421	FSP	3528

MID-COURSE EXECUTION ACCURACY

SGT	11053.9	SGR	1645.0	SG3	1041.2		
RRT	.9692	RRF	.9786	RTF	.9624		
SGB	11175.6	R23	.1811	R13	.9634		
SG1	11168.4	SG2	400.8	THA	8.22		

ORBIT DETERMINATION ACCURACY

ST	6748.1	SR	1056.4	SS	2122.1
CRT	.9928	CRS	-.9997	CST	-.9943
LSA	7148.2	NSA	244.1	SSA	20.4
EL1	6829.2	EL2	124.8	ALF	8.84

LAUNCH DATE DEC 24 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 712.531 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.068	GAL	3.19	AZL	86.25	HCA	207.73	SMA	186.78	ECC	.21913	INC	3.7527
RP	209.99	LAP	-1.75	LOP	299.90	VP	23.526	GAP	-10.48	AZP	93.32	TAL	17.90	TAP	225.63	RCA	145.85	APO	227.71
RC	309.174	GL	33.30	GP	-14.60	ZAL	60.68	ZAP	46.87	ETS	165.05	ZAE	70.51	ETE	174.04	ZAC	70.27	ETC	257.03

V1	30.280	V2	26.111	CLP	45.05

PLANETOCENTRIC CONIC

C3	15.493	VHL	3.936	DLA	43.47	RAL	163.47	RAD	6567.6	VEL	11.699	PTH	2.06	VHP	4.337	DPA	-5.94	RAP	160.99
ECC	1.2550																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.53	6 23 27	4158.64	-31.35	187.44	33.49	58.20	7 32 45	3558.6	-35.30	179.52
124.47	13 44 56	2795.68	-31.34	82.45	33.48	58.19	14 31 32	2195.7	-35.29	74.53
55.53	6 23 27	4158.64	-31.35	187.44	33.49	58.20	7 32 45	3558.6	-35.30	179.52
124.47	13 44 56	2795.68	-31.34	82.45	33.48	58.19	14 31 32	2195.7	-35.29	74.53
55.53	6 23 27	4158.64	-31.35	187.44	33.49	58.20	7 32 45	3558.6	-35.30	179.52
124.47	13 44 56	2795.68	-31.34	82.45	33.48	58.19	14 31 32	2195.7	-35.29	74.53

DIFFERENTIAL CORRECTIONS

TDE	4.5962	TRA	-1.0703	TC	-11.0981	BAU	2.3197
RDE	.6842	RRA	.0485	RC3	-1.5016	FAU	.23838
FDE	3.7322	FRA	.1314	FC	-13.3204	BSP	38971
BDE	4.6469	BRA	1.0714	BC3	11.1992	FSP	3450

MID-COURSE EXECUTION ACCURACY

SGT	11211.6	SGR	1548.8	SG3	1020.6		
RRT	.9665	RRF	.9747	RTF	.9619		
SGB	11318.1	R23	.1708	R13	.9627		
SG1	11311.2	SG2	394.1	THA	7.61		

ORBIT DETERMINATION ACCURACY

ST	6726.4	SR	997.0	SS	2039.3
CRT	.9922	CRS	-.9996	CST	-.9937
LSA	7094.9	NSA	245.4	SSA	21.4
EL1	6798.8	EL2	123.2	ALF	8.37

LAUNCH DATE DEC 24 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 716.882 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.076	GAL	3.07	AZL	86.37	HCA	208.96	SMA	186.92	ECC	.21919	INC	3.6325
RP	209.77	LAP	-1.76	LOP	301.14	VP	23.566	GAP	-10.56	AZP	93.18	TAL	17.23	TAP	226.19	RCA	145.95	APO	227.89
RC	310.132	GL	32.66	GP	-13.91	ZAL	61.32	ZAP	45.92	ETS	165.29	ZAE	69.36	ETE	174.01	ZAC	71.03	ETC	257.04

V1	30.280	V2	26.137	CLP	44.22

PLANETOCENTRIC CONIC

C3	15.034	VHL	3.877	DLA	42.47	RAL	164.22	RAD	6567.6	VEL	11.680	PTH	2.05	VHP	4.377	DPA	-5.46	RAP	161.62
ECC	1.2474																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.91	6 32 1	4136.74	-30.95	185.20	33.32	59.32	7 40 58	3536.7	-34.76	177.25
123.09	13 42 17	2804.05	-30.93	82.90	33.31	59.31	14 29 1	2204.1	-34.75	74.95
56.91	6 32 1	4136.74	-30.95	185.20	33.32	59.32	7 40 58	3536.7	-34.76	177.25
123.09	13 42 17	2804.05	-30.93	82.90	33.31	59.31	14 29 1	2204.1	-34.75	74.95
56.91	6 32 1	4136.74	-30.95	185.20	33.32	59.32	7 40 58	3536.7	-34.76	177.25
123.09	13 42 17	2804.05	-30.93	82.90	33.31	59.31	14 29 1	2204.1	-34.75	74.95

DIFFERENTIAL CORRECTIONS

TDE	4.5125	TRA	-1.0253	TC	-11.5734	BAU	2.3438
RDE	.6379	RRA	.0602	RC3	-1.4307	FAU	.23159
FDE	3.4939	FRA	.2049	FC	-13.3362	BSP	39524
BDE	4.5574	BRA	1.0271	BC3	11.6615	FSP	3370

MID-COURSE EXECUTION ACCURACY

SGT	11368.0	SGR	1460.8	SG3	999.3		
RRT	.9632	RRF	.9700	RTF	.9613		
SGB	11461.5	R23	.1601	R13	.9620		
SG1	11454.8	SG2	389.9	THA	7.06		

ORBIT DETERMINATION ACCURACY

ST	6702.0	SR	943.9	SS	1956.7
CRT	.9915	CRS	-.9996	CST	-.9931
LSA	7041.0	NSA	246.9	SSA	22.4
EL1	6767.1	EL2	121.7	ALF	7.95

LAUNCH DATE DEC 24 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 721.236 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.083	GAL	2.95	AZL	86.48	HCA	210.19	SMA	187.05	ECC	.21927	INC	3.5212	V1	30.280
RP	209.55	LAP	-1.77	LOP	302.37	VP	23.604	GAP	-10.64	AZP	93.04	TAL	16.55	TAP	226.74	RCA	146.04	APO	228.07	V2	26.162
RC	311.080	GL	32.07	GP	-13.27	ZAL	62.03	ZAP	45.00	ETS	165.52	ZAE	68.23	ETE	173.98	ZAC	71.74	ETC	257.04	CLP	43.41

PLANETOCENTRIC CONIC

C3	14.606	VHL	3.822	DLA	41.50	RAL	165.02	RAD	6567.6	VEL	11.662	PTH	2.05	VHP	4.420	DPA	-5.03	RAP	162.26	ECC	1.2404

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.29	6 41 3	4114.36	-30.53	182.97	33.25	60.39	7 49 37	3514.4	-34.21	174.97
121.71	13 39 40	2813.55	-30.51	83.45	33.24	60.38	14 26 34	2213.5	-34.20	75.46
58.29	6 41 3	4114.36	-30.53	182.97	33.25	60.39	7 49 37	3514.4	-34.21	174.97
121.71	13 39 40	2813.55	-30.51	83.45	33.24	60.38	14 26 34	2213.5	-34.20	75.46
58.29	6 41 3	4114.36	-30.53	182.97	33.25	60.39	7 49 37	3514.4	-34.21	174.97
121.71	13 39 40	2813.55	-30.51	83.45	33.24	60.38	14 26 34	2213.5	-34.20	75.46

DIFFERENTIAL CORRECTIONS

TDE	4.4526	TRA	-.9519	TC-11.9925	BAU	2.3565	
RDE	.6003	RRA	.0755	RC3-1.3499	FAU	.22289	
FDE	3.2975	FRA	.3146	FC-13.2117	BSP	40564	
BDE	4.4929	BRA	.9549	BC312.0682	FSP	3353	

MID-COURSE EXECUTION ACCURACY

SGT11498.5	SGR	1377.5	SG3	973.0			
RRT	.9582	RRF	.9647	RTF	.9605		
SGB11580.7	R23	.1512	R13	.9611			
SG111574.1	SG2	391.3	THA	6.56			

ORBIT DETERMINATION ACCURACY

ST	6705.5	SR	901.7	SS	1892.9		
CRT	.9908	CRS	-.9996	CST	-.9922		
LSA	7021.1	MSA	253.0	SSA	22.8		
EL1	6764.8	EL2	121.0	ALF	7.59		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 725.599 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.091	GAL	2.83	AZL	86.58	HCA	211.43	SMA	187.19	ECC	.21938	INC	3.4175	V1	30.280
RP	209.34	LAP	-1.78	LOP	303.61	VP	23.642	GAP	-10.72	AZP	92.92	TAL	15.85	TAP	227.28	RCA	146.13	APO	228.26	V2	26.186
RC	312.019	GL	31.51	GP	-12.67	ZAL	62.80	ZAP	44.12	ETS	165.74	ZAE	67.12	ETE	173.96	ZAC	72.41	ETC	257.03	CLP	42.62

PLANETOCENTRIC CONIC

C3	14.206	VHL	3.769	DLA	40.55	RAL	165.87	RAD	6567.6	VEL	11.644	PTH	2.04	VHP	4.465	DPA	-4.67	RAP	162.90	ECC	1.2338

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.66	6 50 30	4091.44	-30.09	180.71	33.27	61.42	7 58 41	3491.4	-33.65	172.69
120.34	13 37 2	2824.20	-30.08	84.09	33.26	61.41	14 24 6	2224.2	-33.64	76.06
59.66	6 50 30	4091.44	-30.09	180.71	33.27	61.42	7 58 41	3491.4	-33.65	172.69
120.34	13 37 2	2824.20	-30.08	84.09	33.26	61.41	14 24 6	2224.2	-33.64	76.06
59.66	6 50 30	4091.44	-30.09	180.71	33.27	61.42	7 58 41	3491.4	-33.65	172.69
120.34	13 37 2	2824.20	-30.08	84.09	33.26	61.41	14 24 6	2224.2	-33.64	76.06

DIFFERENTIAL CORRECTIONS

TDE	4.3619	TRA	-.9019	TC-12.4966	BAU	2.3860	
RDE	.5616	RRA	.0846	RC3-1.2883	FAU	.21676	
FDE	3.0634	FRA	.3751	FC-13.2092	BSP	40858	
BDE	4.3979	BRA	.9059	BC312.5628	FSP	3235	

MID-COURSE EXECUTION ACCURACY

SGT11660.4	SGR	1304.1	SG3	952.0			
RRT	.9538	RRF	.9585	RTF	.9599		
SGB11733.1	R23	.1396	R13	.9604			
SG111726.6	SG2	389.4	THA	6.10			

ORBIT DETERMINATION ACCURACY

ST	6658.8	SR	855.8	SS	1802.2		
CRT	.9901	CRS	-.9995	CST	-.9914		
LSA	6946.6	MSA	252.9	SSA	24.0		
EL1	6712.5	EL2	119.3	ALF	7.25		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 729.967 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.099	GAL	2.71	AZL	86.68	HCA	212.67	SMA	187.33	ECC	.21949	INC	3.3207	V1	30.280
RP	209.14	LAP	-1.79	LOP	304.85	VP	23.679	GAP	-10.80	AZP	92.80	TAL	15.14	TAP	227.81	RCA	146.21	APO	228.45	V2	26.209
RC	312.950	GL	30.99	GP	-12.13	ZAL	63.64	ZAP	43.26	ETS	165.94	ZAE	66.03	ETE	173.94	ZAC	73.05	ETC	257.01	CLP	41.86

PLANETOCENTRIC CONIC

C3	13.833	VHL	3.719	DLA	39.62	RAL	166.78	RAD	6567.5	VEL	11.628	PTH	2.04	VHP	4.512	DPA	-4.35	RAP	163.55	ECC	1.2277

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.05	7 0 27	4067.74	-29.64	178.43	33.37	62.41	8 8 15	3467.7	-33.08	170.38
118.95	13 34 20	2836.17	-29.63	84.82	33.37	62.40	14 21 36	2236.2	-33.07	76.78
61.05	7 0 27	4067.74	-29.64	178.43	33.37	62.41	8 8 15	3467.7	-33.08	170.38
118.95	13 34 20	2836.17	-29.63	84.82	33.37	62.40	14 21 36	2236.2	-33.07	76.78
61.05	7 0 27	4067.74	-29.64	178.43	33.37	62.41	8 8 15	3467.7	-33.08	170.38
118.95	13 34 20	2836.17	-29.63	84.82	33.37	62.40	14 21 36	2236.2	-33.07	76.78

DIFFERENTIAL CORRECTIONS

TDE	4.2759	TRA	-.8414	TC-12.9927	BAU	2.4134	
RDE	.5277	RRA	.0939	RC3-1.2262	FAU	.21027	
FDE	2.8461	FRA	.4417	FC-13.1600	BSP	41229	
BDE	4.3083	BRA	.8466	BC313.0504	FSP	3129	

MID-COURSE EXECUTION ACCURACY

SGT11816.3	SGR	1236.1	SG3	929.9			
RRT	.9485	RRF	.9515	RTF	.9593		
SGB11880.8	R23	.1282	R13	.9598			
SG111874.4	SG2	389.8	THA	5.67			

ORBIT DETERMINATION ACCURACY

ST	6612.8	SR	815.3	SS	1716.0		
CRT	.9894	CRS	-.9994	CST	-.9904		
LSA	6875.6	MSA	253.7	SSA	25.0		
EL1	6661.8	EL2	117.7	ALF	6.96		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 342.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 734.339 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.107	GAL	2.58	AZL	86.77	HCA	213.90	SMA	187.47	ECC	.21963	INC	3.2301	V1	30.280
RP	208.94	LAP	-1.80	LOP	306.09	VP	23.716	GAP	-10.87	AZP	92.68	TAL	14.42	TAP	228.33	RCA	146.30	APO	228.65	V2	26.232
RC	313.871	GL	30.50	GP	-11.62	ZAL	64.53	ZAP	42.44	ETS	166.13	ZAE	64.96	ETE	173.94	ZAC	73.65	ETC	256.99	CLP	41.11

PLANETOCENTRIC CONIC

C3	13.483	VHL	3.672	DLA	38.69	RAL	167.74	RAD	6567.5	VEL	11.613	PTH	2.03	VHP	4.560	DPA	-4.08	RAP	164.20	ECC	1.2219

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.46	7 10 57	4043.07	-29.17	176.09	33.56	63.37	8 18 20	3443.1	-32.49	168.02
117.54	13 31 28	2849.64	-29.16	85.67	33.56	63.36	14 18 58	2249.6	-32.48	77.61
62.46	7 10 57	4043.07	-29.17	176.09	33.56	63.37	8 18 20	3443.1	-32.49	168.02
117.54	13 31 28	2849.64	-29.16	85.67	33.56	63.36	14 18 58	2249.6	-32.48	77.61
62.46	7 10 57	4043.07	-29.17	176.09	33.56	63.37	8 18 20	3443.1	-32.49	168.02
117.54	13 31 28	2849.64	-29.16	85.67	33.56	63.36	14 18 58	2249.6	-32.48	77.61

DIFFERENTIAL CORRECTIONS

TDE	4.1935	TRA	-.7711	TC-13.4812	BAU	2.4390	
RDE	.4977	RRA	.1032	RC3-1.1640	FAU	.20352	
FDE	2.6428	FRA	.5116	FC-13.0685	BSP	41675	
BDE	4.2230	BRA	.7779	BC313.5313	FSP	3033	

MID-COURSE EXECUTION ACCURACY

SGT11967.0	SGR	1173.2	SG3	906.8			
RRT	.9421	RRF	.9435	RTF	.9588		
SGB12024.3	R23	.1171	R13	.9591			
SG112018.0	SG2	391.8	THA	5.28			

ORBIT DETERMINATION ACCURACY

ST	6566.6	SR	779.4	SS	1633.1		
CRT	.9887	CRS	-.9993	CST	-.9893		
LSA	6806.6	MSA	255.0	SSA	26.0		
EL1	6611.7	EL2	116.1	ALF	6.70		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 344.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 738.715 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.116 GAL 2.45 AZL 86.85 HCA 215.15 SMA 187.62 ECC .21979 INC 3.1450 V1 30.280
RP 208.76 LAP -1.81 LOP 307.33 VP 23.751 GAP -10.95 AZP 92.57 TAL 13.69 TAP 228.83 RCA 146.38 APO 228.85 V2 26.254
RC 314.784 GL 30.03 GP -11.14 ZAL 65.48 ZAP 41.63 ETS 166.31 ZAE 63.91 ETE 173.93 ZAC 74.22 ETC 256.97 CLP 40.38

PLANETOCENTRIC CONIC

C3 13.154 VHL 3.627 DLA 37.77 RAL 168.74 RAD 6567.5 VEL 11.599 PTH 2.03 VHP 4.610 DPA -3.85 RAP 164.85 ECC 1.2165

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.89	7 22 4	4017.12	-28.69	173.67	33.83	64.31	8 29 1	3417.1	-31.89	165.60
116.11	13 28 21	2864.89	-28.67	86.66	33.82	64.29	14 16 6	2264.9	-31.88	78.58
63.89	7 22 4	4017.12	-28.69	173.67	33.83	64.31	8 29 1	3417.1	-31.89	165.60
116.11	13 28 21	2864.89	-28.67	86.66	33.82	64.29	14 16 6	2264.9	-31.88	78.58
63.89	7 22 4	4017.12	-28.69	173.67	33.83	64.31	8 29 1	3417.1	-31.89	165.60
116.11	13 28 21	2864.89	-28.67	86.66	33.82	64.29	14 16 6	2264.9	-31.88	78.58

DIFFERENTIAL CORRECTIONS
TDE 4.1109 TRA -.6932 TC-13.9710 BAU 2.4645
RDE .4706 RRA .1123 RC3-1.1035 FAU .19681
FDE 2.4487 FRA .5824 FC-12.9534 BSP 42133
BDE 4.1377 BRA .7022 BC314.0145 FSP 2937

MID-COURSE EXECUTION ACCURACY
SGT12115.9 SGR 1115.3 SG3 883.7
RRT .9347 RRF .9344 RTF .9581
SGB12167.1 RZ3 .1066 RZ3 .9585
SG112160.7 SG2 395.1 THA 4.92

ORBIT DETERMINATION ACCURACY
ST 6514.6 SR 746.9 SS 1551.0
CRT .9881 CRS -.9992 CST -.9879
LSA 6733.2 MSA 256.8 SSA 27.0
EL1 6556.3 EL2 114.4 ALF 6.47

LAUNCH DATE DEC 24 1964 FLIGHT TIME 346.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 743.096 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.124 GAL 2.32 AZL 86.94 HCA 216.39 SMA 187.76 ECC .21997 INC 3.0649 V1 30.280
RP 208.58 LAP -1.82 LOP 308.58 VP 23.786 GAP -11.02 AZP 92.47 TAL 12.94 TAP 229.33 RCA 146.46 APO 229.06 V2 26.274
RC 315.690 GL 29.59 GP -10.70 ZAL 66.49 ZAP 40.86 ETS 166.48 ZAE 62.88 ETE 173.93 ZAC 74.76 ETC 256.94 CLP 39.67

PLANETOCENTRIC CONIC

C3 12.846 VHL 3.584 DLA 36.84 RAL 169.79 RAD 6567.5 VEL 11.586 PTH 2.03 VHP 4.661 DPA -3.66 RAP 165.51 ECC 1.2114

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.37	7 33 53	3989.68	-28.18	171.17	34.17	65.21	8 40 23	3389.7	-31.27	163.08
114.63	13 24 56	2882.10	-28.17	87.79	34.17	65.20	14 12 58	2282.1	-31.26	79.71
65.37	7 33 53	3989.68	-28.18	171.17	34.17	65.21	8 40 23	3389.7	-31.27	163.08
114.63	13 24 56	2882.10	-28.17	87.79	34.17	65.20	14 12 58	2282.1	-31.26	79.71
65.37	7 33 53	3989.68	-28.18	171.17	34.17	65.21	8 40 23	3389.7	-31.27	163.08
114.63	13 24 56	2882.10	-28.17	87.79	34.17	65.20	14 12 58	2282.1	-31.26	79.71

DIFFERENTIAL CORRECTIONS
TDE 4.0279 TRA -.6069 TC-14.4570 BAU 2.4894
RDE .4463 RRA .1210 RC3-1.0441 FAU .19013
FDE 2.2634 FRA .6539 FC-12.8134 BSP 42622
BDE 4.0526 BRA .6188 BC314.4954 FSP 2848

MID-COURSE EXECUTION ACCURACY
SGT12261.2 SGR 1061.9 SG3 860.4
RRT .9261 RRF .9241 RTF .9575
SGB12307.1 RZ3 .0966 RZ3 .9577
SG112300.6 SG2 399.4 THA 4.59

ORBIT DETERMINATION ACCURACY
ST 6456.8 SR 717.4 SS 1469.8
CRT .9875 CRS -.9990 CST -.9862
LSA 6655.7 MSA 258.9 SSA 27.9
EL1 6495.6 EL2 112.6 ALF 6.26

LAUNCH DATE DEC 24 1964 FLIGHT TIME 348.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 747.481 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.132 GAL 2.19 AZL 87.01 HCA 217.64 SMA 187.91 ECC .22017 INC 2.9892 V1 30.280
RP 208.40 LAP -1.82 LOP 309.82 VP 23.819 GAP -11.09 AZP 92.37 TAL 12.18 TAP 229.82 RCA 146.54 APO 229.28 V2 26.294
RC 316.588 GL 29.16 GP -10.29 ZAL 67.55 ZAP 40.11 ETS 166.63 ZAE 61.87 ETE 173.94 ZAC 75.28 ETC 256.91 CLP 38.98

PLANETOCENTRIC CONIC

C3 12.557 VHL 3.544 DLA 35.92 RAL 170.89 RAD 6567.5 VEL 11.573 PTH 2.02 VHP 4.713 DPA -3.50 RAP 166.18 ECC 1.2067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.91	7 46 32	3960.24	-27.65	168.53	34.59	66.10	8 52 32	3360.2	-30.63	160.45
113.09	13 21 0	2901.81	-27.64	89.10	34.58	66.08	14 9 22	2301.8	-30.62	81.02
66.91	7 46 32	3960.24	-27.65	168.53	34.59	66.10	8 52 32	3360.2	-30.63	160.45
113.09	13 21 0	2901.81	-27.64	89.10	34.58	66.08	14 9 22	2301.8	-30.62	81.02
66.91	7 46 32	3960.24	-27.65	168.53	34.59	66.10	8 52 32	3360.2	-30.63	160.45
113.09	13 21 0	2901.81	-27.64	89.10	34.58	66.08	14 9 22	2301.8	-30.62	81.02

DIFFERENTIAL CORRECTIONS
TDE 3.9454 TRA -.5128 TC-14.9372 BAU 2.5130
RDE .4245 RRA .1295 RC3 -.9848 FAU .18330
FDE 2.0892 FRA .7256 FC-12.6377 BSP 43127
BDE 3.9682 BRA .5289 BC314.9697 FSP 2761

MID-COURSE EXECUTION ACCURACY
SGT12402.1 SGR 1012.5 SG3 836.5
RRT .9160 RRF .9125 RTF .9568
SGB12443.4 RZ3 .0875 RZ3 .9570
SG112436.8 SG2 404.9 THA 4.28

ORBIT DETERMINATION ACCURACY
ST 6394.6 SR 691.0 SS 1391.2
CRT .9870 CRS -.9987 CST -.9842
LSA 6575.3 MSA 261.5 SSA 28.7
EL1 6430.9 EL2 110.6 ALF 6.09

LAUNCH DATE DEC 24 1964 FLIGHT TIME 350.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 751.869 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.140 GAL 2.05 AZL 87.08 HCA 218.89 SMA 188.05 ECC .22039 INC 2.9174 V1 30.280
RP 208.24 LAP -1.83 LOP 311.07 VP 23.852 GAP -11.16 AZP 92.27 TAL 11.41 TAP 230.29 RCA 146.61 APO 229.50 V2 26.314
RC 317.480 GL 28.74 GP -9.90 ZAL 68.67 ZAP 39.37 ETS 166.78 ZAE 60.88 ETE 173.94 ZAC 75.77 ETC 256.87 CLP 38.31

PLANETOCENTRIC CONIC

C3 12.287 VHL 3.505 DLA 34.99 RAL 172.02 RAD 6567.5 VEL 11.562 PTH 2.02 VHP 4.767 DPA -3.38 RAP 166.86 ECC 1.2022

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.53	8 0 8	3928.42	-27.10	165.74	35.07	66.97	9 5 37	3328.4	-29.97	157.65
111.47	13 16 29	2924.37	-27.09	90.62	35.06	66.95	14 5 13	2324.4	-29.96	82.54
68.53	8 0 8	3928.42	-27.10	165.74	35.07	66.97	9 5 37	3328.4	-29.97	157.65
111.47	13 16 29	2924.37	-27.09	90.62	35.06	66.95	14 5 13	2324.4	-29.96	82.54
68.53	8 0 8	3928.42	-27.10	165.74	35.07	66.97	9 5 37	3328.4	-29.97	157.65
111.47	13 16 29	2924.37	-27.09	90.62	35.06	66.95	14 5 13	2324.4	-29.96	82.54

DIFFERENTIAL CORRECTIONS
TDE 3.8575 TRA -.4144 TC-15.4235 BAU 2.5380
RDE .4044 RRA .1373 RC3 -.9279 FAU .17674
FDE 1.9194 FRA .7931 FC-12.4535 BSP 43562
BDE 3.8786 BRA .4366 BC315.4514 FSP 2671

MID-COURSE EXECUTION ACCURACY
SGT12544.0 SGR 967.1 SG3 813.1
RRT .9048 RRF .8995 RTF .9561
SGB12581.3 RZ3 .0788 RZ3 .9563
SG112574.6 SG2 410.9 THA 3.99

ORBIT DETERMINATION ACCURACY
ST 6318.6 SR 666.5 SS 1311.3
CRT .9865 CRS -.9982 CST -.9817
LSA 6482.1 MSA 264.0 SSA 29.7
EL1 6352.7 EL2 108.4 ALF 5.94

LAUNCH DATE DEC 24 1964 FLIGHT TIME 352.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 756.260 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.149	GAL	1.91	AZL	87.15	HCA	220.14	SMA	188.20	ECC	.22064	INC	2.8495	V1	30.280
RP	208.08	LAP	-1.84	LOP	312.33	VP	23.884	GAP	-11.23	AZP	92.18	TAL	10.62	TAP	230.76	RCA	146.68	APO	229.73	V2	26.332
RC	318.367	GL	28.34	GP	-9.54	ZAL	69.85	ZAP	38.66	ETS	166.92	ZAE	59.90	ETE	173.95	ZAC	76.25	ETC	256.83	CLP	37.65

PLANETOCENTRIC CONIC

C3	12.034	VHL	3.469	DLA	34.06	RAL	173.20	RAD	6567.5	VEL	11.551	PTH	2.02	VHP	4.821	DPA	-3.29	RAP	167.54	ECC	1.1980

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.24	8 14 56	3893.40	-26.53	162.72	35.61	67.82	9 19 49	3293.4	-29.30	154.64
109.76	13 11 5	2950.60	-26.52	92.41	35.61	67.80	14 0 15	2350.6	-29.29	84.34
70.24	8 14 56	3893.40	-26.53	162.72	35.61	67.82	9 19 49	3293.4	-29.30	154.64
109.76	13 11 5	2950.60	-26.52	92.41	35.61	67.80	14 0 15	2350.6	-29.29	84.34
110.00	13 34 52	2878.10	-28.29	87.53	36.38	69.96	14 22 50	2278.1	-30.75	79.19
110.00	12 50 19	3013.89	-24.79	96.53	34.78	65.67	13 40 33	2413.9	-27.85	88.70

DIFFERENTIAL CORRECTIONS

TDE	3.7710	TRA	-.3061	TC-15.8976	BAU	2.5615	
RDE	.3866	RRA	.1449	RC3 -.8716	FAU	.17020	
FDE	1.7606	FRA	.8614	FC-12.2441	BSP	44086	
BDE	3.7908	BRA	.3387	BC315.9215	FSP	2589	

MID-COURSE EXECUTION ACCURACY

SGT12681.6	SGR	925.7	SG3	789.8			
RRT	.8920	RRF	.8851	RTF	.9554		
SGB12715.3	R23	.0708	R13	.9556			
SG112708.5	SG2	417.5	THA	3.73			

ORBIT DETERMINATION ACCURACY

ST	6239.9	SR	644.6	SS	1234.8		
CRT	.9863	CRS	-.9975	CST	-.9787		
LSA	6387.8	MSA	267.1	SSA	30.5		
EL1	6272.2	EL2	106.0	ALF	5.82		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 760.655 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.157	GAL	1.77	AZL	87.22	HCA	221.39	SMA	188.35	ECC	.22091	INC	2.7848	V1	30.280
RP	207.93	LAP	-1.84	LOP	313.58	VP	23.914	GAP	-11.30	AZP	92.09	TAL	9.83	TAP	231.22	RCA	146.74	APO	229.96	V2	26.349
RC	319.247	GL	27.95	GP	-9.20	ZAL	71.08	ZAP	37.97	ETS	167.05	ZAE	58.94	ETE	173.96	ZAC	76.71	ETC	256.79	CLP	37.01

PLANETOCENTRIC CONIC

C3	11.799	VHL	3.435	DLA	33.11	RAL	174.42	RAD	6567.4	VEL	11.541	PTH	2.01	VHP	4.877	DPA	-3.22	RAP	168.23	ECC	1.1942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.08	8 31 9	3854.35	-25.93	159.43	36.23	68.65	9 35 24	3254.4	-28.59	151.36
107.92	13 4 34	2981.35	-25.92	94.53	36.22	68.64	13 54 15	2381.3	-28.59	86.46
72.08	8 31 9	3854.35	-25.93	159.43	36.23	68.65	9 35 24	3254.4	-28.59	151.36
107.92	13 4 34	2981.35	-25.92	94.53	36.22	68.64	13 54 15	2381.3	-28.59	86.46
110.00	14 22 7	2743.20	-31.06	78.01	38.14	74.96	15 7 50	2143.2	-32.81	69.23
110.00	12 12 47	3140.50	-21.00	104.41	33.78	62.39	13 5 7	2540.5	-24.53	97.04

DIFFERENTIAL CORRECTIONS

TDE	3.6803	TRA	-.1928	TC-16.3706	BAU	2.5855	
RDE	.3702	RRA	.1518	RC3 -.8169	FAU	.16382	
FDE	1.6070	FRA	.9253	FC-12.0203	BSP	44547	
BDE	3.6989	BRA	.2454	BC316.3910	FSP	2503	

MID-COURSE EXECUTION ACCURACY

SGT12818.6	SGR	887.5	SG3	766.8			
RRT	.8778	RRF	.8692	RTF	.9547		
SGB12849.3	R23	.0631	R13	.9549			
SG112842.3	SG2	424.4	THA	3.48			

ORBIT DETERMINATION ACCURACY

ST	6149.2	SR	624.4	SS	1158.0		
CRT	.9861	CRS	-.9963	CST	-.9749		
LSA	6282.5	MSA	270.2	SSA	31.4		
EL1	6179.9	EL2	103.2	ALF	5.72		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 765.051 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.166	GAL	1.63	AZL	87.28	HCA	222.64	SMA	188.50	ECC	.22121	INC	2.7232	V1	30.280
RP	207.79	LAP	-1.84	LOP	314.83	VP	23.944	GAP	-11.37	AZP	92.00	TAL	9.02	TAP	231.66	RCA	146.80	APO	230.20	V2	26.366
RC	320.122	GL	27.57	GP	-8.88	ZAL	72.37	ZAP	37.30	ETS	167.18	ZAE	57.99	ETE	173.97	ZAC	77.15	ETC	256.75	CLP	36.38

PLANETOCENTRIC CONIC

C3	11.581	VHL	3.403	DLA	32.15	RAL	175.68	RAD	6567.4	VEL	11.531	PTH	2.01	VHP	4.934	DPA	-3.19	RAP	168.93	ECC	1.1906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.09	8 49 19	3809.67	-25.31	155.74	36.90	69.48	9 52 48	3209.7	-27.87	147.68
105.91	12 56 25	3018.23	-25.30	97.10	36.90	69.46	13 46 44	2418.2	-27.86	89.04
74.09	8 49 19	3809.67	-25.31	155.74	36.90	69.48	9 52 48	3209.7	-27.87	147.68
105.91	12 56 25	3018.23	-25.30	97.10	36.90	69.46	13 46 44	2418.2	-27.86	89.04
110.00	14 51 14	2663.25	-32.33	72.12	39.22	78.23	15 35 37	2063.3	-33.61	63.12
110.00	11 53 41	3212.65	-18.67	108.70	33.59	60.83	12 47 14	2612.6	-22.41	101.57

DIFFERENTIAL CORRECTIONS

TDE	3.6004	TRA	-.0590	TC-16.7881	BAU	2.6019	
RDE	.3566	RRA	.1595	RC3 -.7579	FAU	.15671	
FDE	1.4738	FRA	1.0007	FC-11.7148	BSP	45335	
BDE	3.6180	BRA	.1701	BC316.8052	FSP	2447	

MID-COURSE EXECUTION ACCURACY

SGT12935.2	SGR	852.7	SG3	741.7			
RRT	.8609	RRF	.8516	RTF	.9538		
SGB12963.3	R23	.0581	R13	.9539			
SG112956.0	SG2	433.1	THA	3.25			

ORBIT DETERMINATION ACCURACY

ST	6071.5	SR	608.0	SS	1092.7		
CRT	.9863	CRS	-.9946	CST	-.9704		
LSA	6192.8	MSA	275.3	SSA	31.9		
EL1	6101.1	EL2	99.9	ALF	5.64		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 769.453 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.174	GAL	1.48	AZL	87.34	HCA	223.90	SMA	188.66	ECC	.22154	INC	2.6644	V1	30.280
RP	207.66	LAP	-1.85	LOP	316.09	VP	23.973	GAP	-11.44	AZP	91.92	TAL	8.19	TAP	232.09	RCA	146.86	APO	230.45	V2	26.381
RC	320.992	GL	27.19	GP	-8.58	ZAL	73.71	ZAP	36.65	ETS	167.29	ZAE	57.06	ETE	173.98	ZAC	77.58	ETC	256.70	CLP	35.77

PLANETOCENTRIC CONIC

C3	11.381	VHL	3.374	DLA	31.18	RAL	176.97	RAD	6567.4	VEL	11.523	PTH	2.01	VHP	4.992	DPA	-3.17	RAP	169.63	ECC	1.1873

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.37	9 10 5	3757.08	-24.66	151.49	37.64	70.29	10 12 42	3157.1	-27.12	143.44
103.63	12 45 57	3063.56	-24.65	100.27	37.63	70.27	13 37 1	2463.6	-27.11	92.22
76.37	9 10 5	3757.08	-24.66	151.49	37.64	70.29	10 12 42	3157.1	-27.12	143.44
103.63	12 45 57	3063.56	-24.65	100.27	37.63	70.27	13 37 1	2463.6	-27.11	92.22
110.00	15 15 18	2598.63	-33.12	67.25	40.11	81.01	15 58 36	1998.6	-34.01	58.12
110.00	11 39 54	3270.01	-16.73	112.02	33.70	59.75	12 34 24	2670.0	-20.62	105.06

DIFFERENTIAL CORRECTIONS

TDE	3.4906	TRA	.0548	TC-17.2863	BAU	2.6323	
RDE	.3420	RRA	.1644	RC3 -.7090	FAU	.15118	
FDE	1.3206	FRA	1.0456	FC-11.5007	BSP	45492	
BDE	3.5074	BRA	.1733	BC317.3008	FSP	2337	

MID-COURSE EXECUTION ACCURACY

SGT13083.8	SGR	820.2	SG3	720.5			
RRT	.8440	RRF	.8321	RTF	.9533		
SGB13109.5	R23	.0495	R13	.9534			
SG113102.1	SG2	439.2	THA	3.03			

ORBIT DETERMINATION ACCURACY

ST	5938.9	SR	589.2	SS	1009.0		
CRT	.9864	CRS	-.9918	CST	-.9644		
LSA	6046.3	MSA	277.0	SSA	33.1		
EL1	5967.3	EL2	96.3	ALF	5.59		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 773.855 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.183	GAL	1.33	AZL	87.39	HCA	225.16	SMA	188.81	ECC	.22189	INC	2.6081
RP	207.54	LAP	-1.85	LOP	317.35	VP	24.001	GAP	-11.51	AZP	91.84	TAL	7.36	TAP	232.52	RCA	146.91	APO	230.70
RC	321.856	GL	26.82	GP	-8.30	ZAL	75.10	ZAP	36.02	ETS	167.40	ZAE	56.15	ETE	173.99	ZAC	77.99	ETC	256.66

V1 30.280 V2 26.396 CLP 35.17

PLANETOCENTRIC CONIC

C3	11.197	VHL	3.346	DLA	30.19	RAL	178.29	RAD	6567.4	VEL	11.515	PTH	2.01	VHP	5.051	DPA	-3.19	RAP	170.35

ECC 1.1843

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.06	9 34 58	3691.62	-23.98	146.32	38.44	71.09	10 36 30	3091.6	-26.34	138.29
100.94	12 31 38	3122.29	-23.97	104.41	38.43	71.07	13 23 40	2522.3	-26.33	96.38
79.06	9 34 58	3691.62	-23.98	146.32	38.44	71.09	10 36 30	3091.6	-26.34	138.29
100.94	12 31 38	3122.29	-23.97	104.41	38.43	71.07	13 23 40	2522.3	-26.33	96.38
110.00	15 36 46	2542.00	-33.64	62.91	40.92	83.53	16 19 8	1942.0	-34.17	53.70
110.00	11 29 1	3319.91	-15.00	114.85	34.00	58.92	12 24 21	2719.9	-19.01	108.03

DIFFERENTIAL CORRECTIONS

TDE	3.3907	TRA	.1891	TC	-17.7272	BAU	2.6554
RDE	.3298	RRA	.1701	RC3	-.6564	FAU	.14504
FDE	1.1854	FRA	1.1022	FC	-11.2145	BSP	45952
BDE	3.4067	BRA	.2544	BC	317.7393	FSP	2258

MID-COURSE EXECUTION ACCURACY

SGT	13213.4	SGR	790.8	SG3	697.7		
RRT	.8246	RRF	.8110	RTF	.9525		
SGB	13237.0	R23	.0436	R13	.9526		
SG1	13229.5	SG2	446.9	THA	2.83		

ORBIT DETERMINATION ACCURACY

ST	5817.7	SR	573.8	SS	935.8		
CRT	.9869	CRS	-.9876	CST	-.9568		
LSA	5913.6	MSA	281.2	SSA	34.0		
EL1	5845.2	EL2	92.3	ALF	5.56		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 778.259 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.191	GAL	1.18	AZL	87.45	HCA	226.42	SMA	188.96	ECC	.22227	INC	2.5542
RP	207.42	LAP	-1.85	LOP	318.61	VP	24.028	GAP	-11.57	AZP	91.76	TAL	6.51	TAP	232.93	RCA	146.96	APO	230.96
RC	322.714	GL	26.44	GP	-8.04	ZAL	76.55	ZAP	35.40	ETS	167.50	ZAE	55.25	ETE	174.00	ZAC	78.40	ETC	256.61

V1 30.280 V2 26.409 CLP 34.59

PLANETOCENTRIC CONIC

C3	11.031	VHL	3.321	DLA	29.19	RAL	179.65	RAD	6567.4	VEL	11.507	PTH	2.00	VHP	5.110	DPA	-3.22	RAP	171.07

ECC 1.1815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.62	10 7 52	3600.63	-23.28	139.32	39.30	71.88	11 7 52	3000.6	-25.54	131.31
97.38	12 9 35	3207.11	-23.27	110.44	39.29	71.86	13 3 2	2607.1	-25.53	102.43
100.00	13 24 36	2966.58	-27.09	93.83	40.48	76.85	14 14 2	2366.6	-28.63	85.36
100.00	11 35 32	3316.39	-19.56	117.03	37.80	66.94	12 30 48	2716.4	-22.52	109.48
110.00	15 56 37	2490.45	-33.96	58.92	41.69	85.87	16 38 7	1890.5	-34.16	49.68
110.00	11 20 0	3365.29	-13.39	117.38	34.46	58.25	12 16 5	2765.3	-17.49	110.67

DIFFERENTIAL CORRECTIONS

TDE	3.2803	TRA	.3308	TC	-18.1547	BAU	2.6787
RDE	.3189	RRA	.1754	RC3	-.6054	FAU	.13913
FDE	1.0594	FRA	1.1560	FC	-10.9198	BSP	46422
BDE	3.3037	BRA	.3744	BC	318.1648	FSP	2179

MID-COURSE EXECUTION ACCURACY

SGT	13342.8	SGR	764.6	SG3	675.7		
RRT	.8035	RRF	.7883	RTF	.9518		
SGB	13364.7	R23	.0380	R13	.9519		
SG1	13357.0	SG2	454.7	THA	2.64		

ORBIT DETERMINATION ACCURACY

ST	5687.6	SR	560.1	SS	867.1		
CRT	.9876	CRS	-.9813	CST	-.9472		
LSA	5773.4	MSA	285.6	SSA	34.8		
EL1	5714.5	EL2	87.6	ALF	5.56		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 782.665 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.200	GAL	1.03	AZL	87.50	HCA	227.68	SMA	189.12	ECC	.22269	INC	2.5024
RP	207.31	LAP	-1.85	LOP	319.87	VP	24.054	GAP	-11.64	AZP	91.69	TAL	5.65	TAP	233.33	RCA	147.00	APO	231.23
RC	323.566	GL	26.06	GP	-7.79	ZAL	78.04	ZAP	34.79	ETS	167.59	ZAE	54.36	ETE	174.01	ZAC	78.79	ETC	256.56

V1 30.280 V2 26.422 CLP 34.02

PLANETOCENTRIC CONIC

C3	10.882	VHL	3.299	DLA	28.16	RAL	181.04	RAD	6567.4	VEL	11.501	PTH	2.00	VHP	5.171	DPA	-3.27	RAP	171.79

ECC 1.1791

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 40 18	3316.59	-24.27	118.79	40.76	74.95	12 35 35	2716.6	-26.10	110.61
90.00	10 48 14	3485.58	-20.83	129.98	39.60	70.37	11 46 19	2885.6	-23.32	122.19
100.00	14 0 51	2863.47	-28.47	86.48	41.78	80.48	14 48 34	2263.5	-29.49	77.82
100.00	11 10 22	3413.93	-16.85	123.00	37.87	64.94	12 7 16	2813.9	-20.09	115.71
110.00	16 15 22	2442.45	-34.14	55.18	42.45	88.08	16 56 4	1842.4	-34.03	45.94
110.00	11 12 21	3407.72	-11.86	119.71	35.05	57.70	12 9 9	2807.7	-16.04	113.10

DIFFERENTIAL CORRECTIONS

TDE	3.1818	TRA	.4768	TC	-18.5628	BAU	2.7017
RDE	.3092	RRA	.1801	RC3	-.5547	FAU	.13323
FDE	.9379	FRA	1.2039	FC	-10.5998	BSP	46866
BDE	3.1968	BRA	.5096	BC	318.5710	FSP	2103

MID-COURSE EXECUTION ACCURACY

SGT	13468.7	SGR	740.4	SG3	653.4		
RRT	.7805	RRF	.7637	RTF	.9511		
SGB	13489.1	R23	.0327	R13	.9512		
SG1	13481.1	SG2	462.4	THA	2.46		

ORBIT DETERMINATION ACCURACY

ST	5545.9	SR	547.6	SS	799.7		
CRT	.9885	CRS	-.9722	CST	-.9349		
LSA	5622.4	MSA	290.1	SSA	35.7		
EL1	5572.3	EL2	82.4	ALF	5.58		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 787.072 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.209	GAL	.87	AZL	87.55	HCA	228.94	SMA	189.27	ECC	.22313	INC	2.4526
RP	207.21	LAP	-1.85	LOP	321.13	VP	24.079	GAP	-11.71	AZP	91.61	TAL	4.78	TAP	233.72	RCA	147.04	APO	231.51
RC	324.413	GL	25.68	GP	-7.55	ZAL	79.59	ZAP	34.21	ETS	167.68	ZAE	53.49	ETE	174.02	ZAC	79.17	ETC	256.51

V1 30.280 V2 26.434 CLP 33.46

PLANETOCENTRIC CONIC

C3	10.750	VHL	3.279	DLA	27.12	RAL	182.46	RAD	6567.4	VEL	11.495	PTH	2.00	VHP	5.232	DPA	-3.35	RAP	172.53

ECC 1.1769

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 32 12	3162.57	-26.57	108.11	42.44	79.83	13 24 55	2562.6	-27.70	99.62
90.00	10 7 39	3634.64	-17.14	139.36	39.43	67.11	11 8 14	3034.6	-20.09	131.93
100.00	14 29 3	2785.89	-29.21	80.83	42.88	83.37	15 15 29	2185.9	-29.82	72.08
100.00	10 53 30	3486.55	-14.71	127.33	38.27	63.68	11 51 36	2886.6	-18.13	120.20
110.00	16 33 18	2397.07	-34.18	51.64	43.21	90.17	17 13 16	1797.1	-33.78	42.41
110.00	11 5 44	3448.14	-10.38	121.91	35.76	57.25	12 3 12	2848.1	-14.62	115.38

DIFFERENTIAL CORRECTIONS

TDE	3.0727	TRA	.6326	TC	-18.9532	BAU	2.7250
RDE	.3005	RRA	.1845	RC3	-.5058	FAU	.12761
FDE	.8233	FRA	1.2516	FC	-10.2764	BSP	47335
BDE	3.0874	BRA	.6590	BC	318.9599	FSP	2030

MID-COURSE EXECUTION ACCURACY

SGT	13595.8	SGR	719.1	SG3	632.1		
RRT	.7561	RRF	.7377	RTF	.9504		
SGB	13614.8	R23	.0278	R13	.9505		
SG1	13606.7	SG2	470.2	THA	2.29		

ORBIT DETERMINATION ACCURACY

ST	5395.3	SR	536.4	SS	736.5		
CRT	.9897	CRS	-.9586	CST	-.9187		
LSA	5463.6	MSA	295.6	SSA	36.5		
EL1	5421.4	EL2	76.5	ALF	5.62		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 791.480 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.218	GAL	.71	AZL	87.60	HCA	230.20	SMA	189.43	ECC	.22361	INC	2.4047	V1	30.280
RP	207.12	LAP	-1.85	LOP	322.40	VP	24.103	GAP	-11.78	AZP	91.54	TAL	3.89	TAP	234.09	RCA	147.07	APO	231.79	V2	26.444
RC	325.253	GL	25.30	GP	-7.33	ZAL	81.18	ZAP	33.63	ETS	167.76	ZAE	52.63	ETE	174.03	ZAC	79.54	ETC	256.47	CLP	32.92

PLANETOCENTRIC CONIC

C3	10.637	VHL	3.261	DLA	26.05	RAL	183.91	RAD	6567.4	VEL	11.490	PTH	2.00	VHP	5.295	DPA	-3.44	RAP	173.27	ECC	1.1751		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 4 53	3070.44	-27.51	101.53	43.67	82.99	13 56 4	2470.4	-28.19	92.93
90.00	9 46 31	3722.46	-14.74	144.69	39.82	65.54	10 48 33	3122.5	-17.92	137.45
100.00	14 53 39	2719.79	-29.63	75.96	43.91	85.89	15 38 59	2119.8	-29.89	67.17
100.00	10 40 26	3548.35	-12.81	130.94	38.86	62.76	11 39 34	2948.3	-16.36	123.95
110.00	16 50 39	2353.73	-34.12	48.25	44.00	92.17	17 29 53	1753.7	-33.44	39.08
110.00	10 59 56	3487.17	-8.93	124.01	36.57	56.87	11 58 3	2887.2	-13.23	117.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.9594	TRA	.7929	TC-19.3142	BAU	2.7474	SGT13716.9	SGR	699.1	SG3	609.8	ST	5233.4	SR	526.2	SS	675.2
RDE	.2928	RRA	.1882	RC3 -.4564	FAU	.12187	RRT	.7295	RRF	.7094	RTF	.9497	CRT	.9910	CRS	-.9390	CST	-.8975
FDE	.7125	FRA	1.2919	FC3-9.9191	BSP	47765	SGB13734.7	R23	.0230	R13	.9497	LSA	5294.3	MSA	301.0	SSA	37.4
BDE	2.9739	BRA	.8149	BC319.3196	FSP	1949	SG113726.4	SG2	477.8	THA	2.13	EL1	5259.3	EL2	70.0	ALF	5.69

LAUNCH DATE DEC 24 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 795.888 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.226	GAL	.55	AZL	87.64	HCA	231.46	SMA	189.59	ECC	.22412	INC	2.3584	V1	30.280
RP	207.04	LAP	-1.84	LOP	323.66	VP	24.125	GAP	-11.84	AZP	91.47	TAL	3.00	TAP	234.46	RCA	147.10	APO	232.08	V2	26.454
RC	326.088	GL	24.90	GP	-7.12	ZAL	82.82	ZAP	33.07	ETS	167.84	ZAE	51.78	ETE	174.04	ZAC	79.90	ETC	256.42	CLP	32.39

PLANETOCENTRIC CONIC

C3	10.542	VHL	3.247	DLA	24.97	RAL	185.38	RAD	6567.4	VEL	11.486	PTH	2.00	VHP	5.358	DPA	-3.55	RAP	174.02	ECC	1.1735		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 32 6	2995.96	-28.01	96.14	44.79	85.65	14 22 2	2396.0	-28.32	87.49
90.00	9 31 3	3793.31	-12.70	148.89	40.45	64.48	10 34 17	3193.3	-16.03	141.80
100.00	15 16 9	2660.52	-29.84	71.57	44.90	88.20	16 0 29	2060.5	-29.77	62.77
100.00	10 29 42	3603.98	-11.06	134.14	39.60	62.05	11 29 46	3004.0	-14.71	127.25
110.00	17 7 32	2312.04	-33.97	45.01	44.81	94.09	17 46 4	1712.0	-33.03	35.89
110.00	10 54 48	3525.23	-7.51	126.04	37.47	56.55	11 53 34	2925.2	-11.86	119.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.8407	TRA	.9600	TC-19.6508	BAU	2.7702	SGT13836.9	SGR	681.2	SG3	588.0	ST	5058.6	SR	517.0	SS	617.7
RDE	.2860	RRA	.1915	RC3 -.4085	FAU	.11633	RRT	.7014	RRF	.6794	RTF	.9489	CRT	.9925	CRS	-.9103	CST	-.8692
FDE	.6060	FRA	1.3288	FC3-9.5528	BSP	48191	SGB13853.7	R23	.0182	R13	.9489	LSA	5112.9	MSA	307.3	SSA	38.2
BDE	2.8551	BRA	.9789	BC319.6551	FSP	1875	SG113845.2	SG2	485.3	THA	1.98	EL1	5084.5	EL2	62.9	ALF	5.79

LAUNCH DATE DEC 24 1964 FLIGHT TIME 372.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 808.296 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.235	GAL	.38	AZL	87.69	HCA	232.73	SMA	189.75	ECC	.22467	INC	2.3137	V1	30.280
RP	206.96	LAP	-1.84	LOP	324.93	VP	24.147	GAP	-11.91	AZP	91.40	TAL	2.09	TAP	234.82	RCA	147.12	APO	232.38	V2	26.463
RC	326.917	GL	24.50	GP	-6.92	ZAL	84.51	ZAP	32.53	ETS	167.91	ZAE	50.94	ETE	174.05	ZAC	80.26	ETC	256.37	CLP	31.87

PLANETOCENTRIC CONIC

C3	10.467	VHL	3.235	DLA	23.86	RAL	186.88	RAD	6567.4	VEL	11.483	PTH	2.00	VHP	5.422	DPA	-3.67	RAP	174.78	ECC	1.1723		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 56 26	2930.83	-28.25	91.39	45.87	88.02	14 45 17	2330.8	-28.23	82.72
90.00	9 18 40	3855.53	-10.85	152.52	41.23	63.68	10 22 55	3255.5	-14.30	145.54
100.00	15 37 13	2605.91	-29.89	67.51	45.90	90.33	16 20 38	2005.9	-29.52	58.72
100.00	10 20 35	3655.68	-9.39	137.07	40.47	61.49	11 21 30	3055.7	-13.13	130.27
110.00	17 24 2	2271.72	-33.73	41.88	45.65	95.92	18 1 53	1671.7	-32.54	32.85
110.00	10 50 15	3562.63	-6.10	128.02	38.46	56.30	11 49 37	2962.6	-10.49	121.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.7190	TRA	1.1367	TC-19.9623	BAU	2.7938	SGT13959.6	SGR	666.1	SG3	567.9	ST	4875.8	SR	509.0	SS	567.0
RDE	.2802	RRA	.1949	RC3 -.3627	FAU	.11112	RRT	.6723	RRF	.6488	RTF	.9478	CRT	.9940	CRS	-.8689	CST	-.8308
FDE	.5052	FRA	1.3690	FC3-9.1912	BSP	48646	SGB13975.5	R23	.0145	R13	.9478	LSA	4924.7	MSA	316.2	SSA	39.0
BDE	2.7334	BRA	1.1533	BC319.9656	FSP	1807	SG113966.8	SG2	492.8	THA	1.84	EL1	4902.0	EL2	55.5	ALF	5.92

LAUNCH DATE DEC 24 1964 FLIGHT TIME 374.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 804.704 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.244	GAL	.21	AZL	87.73	HCA	233.99	SMA	189.91	ECC	.22526	INC	2.2705	V1	30.280
RP	206.89	LAP	-1.84	LOP	326.20	VP	24.168	GAP	-11.98	AZP	91.34	TAL	1.17	TAP	235.16	RCA	147.13	APO	232.68	V2	26.471
RC	327.742	GL	24.09	GP	-6.73	ZAL	86.24	ZAP	32.00	ETS	167.97	ZAE	50.12	ETE	174.05	ZAC	80.61	ETC	256.33	CLP	31.36

PLANETOCENTRIC CONIC

C3	10.411	VHL	3.227	DLA	22.74	RAL	188.39	RAD	6567.4	VEL	11.480	PTH	2.00	VHP	5.487	DPA	-3.81	RAP	175.54	ECC	1.1713		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 18 57	2871.68	-28.32	87.06	46.94	90.19	15 6 49	2271.7	-27.99	78.41
90.00	9 8 16	3912.51	-9.11	155.80	42.15	63.07	10 13 28	3312.5	-12.65	148.92
100.00	15 57 15	2554.72	-29.81	63.71	46.90	92.33	16 39 50	1954.7	-29.17	54.96
100.00	10 12 39	3704.70	-7.79	139.83	41.44	61.05	11 14 23	3104.7	-11.59	133.10
110.00	17 40 13	2232.58	-33.41	38.87	46.53	97.68	18 17 26	1632.6	-31.99	29.93
110.00	10 46 10	3599.60	-4.70	129.96	39.54	56.10	11 46 10	2999.6	-9.12	123.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.5950	TRA	1.3163	TC-20.2294	BAU	2.8159	SGT14073.8	SGR	651.2	SG3	545.7	ST	4686.8	SR	501.6	SS	519.0
RDE	.2751	RRA	.1969	RC3 -.3165	FAU	.10572	RRT	.6413	RRF	.6146	RTF	.9471	CRT	.9953	CRS	-.8118	CST	-.7817
FDE	.4074	FRA	1.3920	FC3-8.7916	BSP	49044	SGB14088.9	R23	.0084	R13	.9471	LSA	4730.9	MSA	323.4	SSA	39.7
BDE	2.6096	BRA	1.3310	BC320.2318	FSP	1726	SG114080.0	SG2	499.4	THA	1.70	EL1	4713.4	EL2	48.2	ALF	6.08

LAUNCH DATE DEC 24 1964 FLIGHT TIME 376.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 809.111 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.253 GAL .04 AZL 87.77 HCA 235.26 SMA 190.07 ECC .22588 INC 2.2285 V1 30.280
RP 206.84 LAP -1.83 LOP 327.46 VP 24.187 GAP -12.05 AZP 91.27 TAL .23 TAP 235.49 RCA 147.13 APO 233.00 V2 26.477
RC 328.562 GL 23.67 GP -6.55 ZAL 88.00 ZAP 31.48 ETS 168.03 ZAE 49.30 ETE 174.06 ZAC 80.95 ETC 256.28 CLP 30.86

PLANETOCENTRIC CONIC

C3 10.375 VHL 3.221 DLA 21.59 RAL 189.93 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 5.552 DPA -3.97 RAP 176.32 ECC 1.1707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 12	2816.79	-28.24	83.05	48.02	92.20	15 27 8	2216.8	-27.63	74.44
90.00	8 59 17	3966.01	-7.44	158.86	43.17	62.60	10 5 23	3366.0	-11.06	152.04
100.00	16 16 31	2506.19	-29.62	60.11	47.94	94.22	16 58 17	1906.2	-28.72	51.42
100.00	10 5 39	3751.84	-6.22	142.45	42.51	60.70	11 8 10	3151.8	-10.08	135.79
110.00	17 56 9	2194.49	-33.03	35.96	47.46	99.36	18 32 43	1594.5	-31.38	27.13
110.00	10 42 30	3636.31	-3.30	131.89	40.70	55.96	11 43 6	3036.3	-7.75	125.62

DIFFERENTIAL CORRECTIONS
TDE 2.4667 TRA 1.4748 TC-20.4608 BAU 2.8383
RDE .2715 RRA .1951 RC3 -.2737 FAU .10088
FDE .3237 FRA 1.3574 FC3-8.4181 BSP 49309
BDE 2.4816 BRA 1.4876 BC320.4626 FSP 1623

MID-COURSE EXECUTION ACCURACY
SGT14175.7 SGR 635.4 SG3 521.9
RRT .6103 RRF .5742 RTF .9499
SGB14189.9 R23 -.0079 R13 .9499
SG114181.0 SG2 503.2 THA 1.57

ORBIT DETERMINATION ACCURACY
ST 4486.2 SR 495.9 SS 471.3
CRT .9963 CRS -.7519 CST -.7376
LSA 4526.8 MSA 317.4 SSA 40.5
EL1 4513.3 EL2 42.4 ALF 6.28

LAUNCH DATE DEC 24 1964 FLIGHT TIME 378.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 813.517 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.262 GAL -.13 AZL 87.81 HCA 236.53 SMA 190.23 ECC .22655 INC 2.1879 V1 30.280
RP 206.79 LAP -1.82 LOP 328.73 VP 24.206 GAP -12.12 AZP 91.21 TAL 359.28 TAP 235.81 RCA 147.13 APO 233.32 V2 26.483
RC 329.378 GL 23.24 GP -6.37 ZAL 89.81 ZAP 30.97 ETS 168.09 ZAE 48.50 ETE 174.06 ZAC 81.28 ETC 256.24 CLP 30.37

PLANETOCENTRIC CONIC

C3 10.360 VHL 3.219 DLA 20.43 RAL 191.49 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 5.619 DPA -4.14 RAP 177.10 ECC 1.1705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 29	2765.14	-28.05	79.28	49.13	94.08	15 46 34	2165.1	-27.19	70.72
90.00	8 51 24	4017.09	-5.83	161.74	44.29	62.24	9 58 21	3417.1	-9.50	154.99
100.00	16 35 10	2459.83	-29.34	56.69	49.00	95.99	17 16 10	1859.8	-28.20	48.08
100.00	9 59 24	3797.63	-4.69	144.99	43.67	60.44	11 2 41	3197.6	-8.59	138.37
110.00	18 11 51	2157.34	-32.58	33.16	48.44	100.96	18 47 49	1557.3	-30.73	24.43
110.00	10 39 12	3672.88	-1.91	133.80	41.94	55.86	11 40 25	3072.9	-6.38	127.56

DIFFERENTIAL CORRECTIONS
TDE 2.3434 TRA 1.7049 TC-20.6373 BAU 2.8586
RDE .2693 RRA .2014 RC3 -.2265 FAU .09503
FDE .2514 FRA 1.4539 FC3-7.9407 BSP 50163
BDE 2.3589 BRA 1.7167 BC320.6385 FSP 1637

MID-COURSE EXECUTION ACCURACY
SGT14296.4 SGR 630.4 SG3 503.5
RRT .5743 RRF .5490 RTF .9449
SGB14310.3 R23 .0068 R13 .9449
SG114301.0 SG2 515.9 THA 1.45

ORBIT DETERMINATION ACCURACY
ST 4301.6 SR 492.9 SS 463.2
CRT .9965 CRS -.6598 CST -.6659
LSA 4340.6 MSA 344.7 SSA 41.1
EL1 4329.6 EL2 41.2 ALF 6.51

LAUNCH DATE DEC 24 1964 FLIGHT TIME 380.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 817.921 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.271 GAL -.31 AZL 87.85 HCA 237.80 SMA 190.39 ECC .22725 INC 2.1484 V1 30.280
RP 206.75 LAP -1.82 LOP 330.00 VP 24.223 GAP -12.19 AZP 91.15 TAL 358.33 TAP 236.12 RCA 147.12 APO 233.66 V2 26.488
RC 330.190 GL 22.79 GP -6.21 ZAL 91.65 ZAP 30.48 ETS 168.14 ZAE 47.71 ETE 174.06 ZAC 81.62 ETC 256.20 CLP 29.90

PLANETOCENTRIC CONIC

C3 10.367 VHL 3.220 DLA 19.25 RAL 193.06 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 5.687 DPA -4.32 RAP 177.88 ECC 1.1706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 20 3	2716.09	-27.76	75.72	50.27	95.84	16 5 19	2116.1	-26.66	67.23
90.00	8 44 22	4066.42	-4.26	164.52	45.51	61.98	9 52 8	3466.4	-7.98	157.81
100.00	16 53 19	2415.31	-28.98	53.43	50.10	97.67	17 33 34	1815.3	-27.61	44.90
100.00	9 53 46	3842.43	-3.18	147.46	44.92	60.26	10 57 49	3242.4	-7.12	140.88
110.00	18 27 21	2121.09	-32.08	30.45	49.46	102.49	19 2 43	1521.1	-30.03	21.84
110.00	10 36 13	3709.41	-.51	135.71	43.25	55.82	11 38 3	3109.4	-4.99	129.49

DIFFERENTIAL CORRECTIONS
TDE 2.2117 TRA 1.9097 TC-20.7852 BAU 2.8810
RDE .2673 RRA .2028 RC3 -.1845 FAU .09000
FDE .1756 FRA 1.4764 FC3-7.5159 BSP 50436
BDE 2.2278 BRA 1.9205 BC320.7860 FSP 1544

MID-COURSE EXECUTION ACCURACY
SGT14408.5 SGR 621.7 SG3 483.1
RRT .5401 RRF .5142 RTF .9437
SGB14421.9 R23 .0045 R13 .9437
SG114412.4 SG2 523.1 THA 1.34

ORBIT DETERMINATION ACCURACY
ST 4100.8 SR 489.3 SS 443.7
CRT .9954 CRS -.5541 CST -.5911
LSA 4138.0 MSA 357.9 SSA 41.6
EL1 4129.7 EL2 46.6 ALF 6.77

LAUNCH DATE DEC 24 1964 FLIGHT TIME 382.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 822.324 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.280 GAL -.49 AZL 87.89 HCA 239.06 SMA 190.55 ECC .22800 INC 2.1099 V1 30.280
RP 206.71 LAP -1.81 LOP 331.27 VP 24.240 GAP -12.26 AZP 91.09 TAL 357.35 TAP 236.42 RCA 147.10 APO 234.00 V2 26.492
RC 331.000 GL 22.33 GP -6.06 ZAL 93.52 ZAP 30.00 ETS 168.18 ZAE 46.93 ETE 174.06 ZAC 81.94 ETC 256.15 CLP 29.43

PLANETOCENTRIC CONIC

C3 10.397 VHL 3.224 DLA 18.06 RAL 194.64 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 5.755 DPA -4.51 RAP 178.68 ECC 1.1711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 39 0	2669.20	-27.39	72.34	51.44	97.50	16 23 29	2069.2	-26.07	63.93
90.00	8 38 2	4114.46	-2.72	167.21	46.81	61.80	9 46 36	3514.5	-6.47	160.53
100.00	17 11 2	2372.39	-28.55	50.32	51.25	99.26	17 50 35	1772.4	-26.97	41.87
100.00	9 48 40	3886.50	-1.69	149.88	46.24	60.15	10 53 27	3286.5	-5.65	143.33
110.00	18 42 40	2085.68	-31.53	27.84	50.54	103.95	19 17 26	1485.7	-29.29	19.34
110.00	10 33 31	3745.97	.89	137.61	44.63	55.83	11 35 57	3146.0	-3.60	131.40

DIFFERENTIAL CORRECTIONS
TDE 2.0768 TRA 2.1218 TC-20.8924 BAU 2.9041
RDE .2663 RRA .2040 RC3 -.1455 FAU .08538
FDE .1063 FRA 1.4983 FC3-7.1095 BSP 50879
BDE 2.0938 BRA 2.1316 BC320.8929 FSP 1486

MID-COURSE EXECUTION ACCURACY
SGT14521.5 SGR 614.9 SG3 464.5
RRT .5065 RRF .4802 RTF .9425
SGB14534.6 R23 .0026 R13 .9425
SG114524.9 SG2 530.1 THA 1.23

ORBIT DETERMINATION ACCURACY
ST 3898.3 SR 486.9 SS 433.6
CRT .9924 CRS -.4378 CST -.5154
LSA 3934.6 MSA 373.6 SSA 42.1
EL1 3928.2 EL2 59.4 ALF 7.07

LAUNCH DATE DEC 24 1964 FLIGHT TIME 384.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 826.724 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.289	GAL	-.68	AZL	87.93	HCA	240.33	SMA	190.71	ECC	.22880	INC	2.0725
RP	206.69	LAP	-1.80	LOP	332.54	VP	24.255	GAP	-12.34	AZP	91.03	TAL	356.37	TAP	236.70	RCA	147.08	APO	234.35
RC	331.806	GL	21.86	GP	-5.91	ZAL	95.41	ZAP	29.53	ETS	168.22	ZAE	46.16	ETE	174.06	ZAC	82.26	ETC	256.11

V1	30.280	V2	26.494	CLP	28.98														

PLANETOCENTRIC CONIC

C3	10.450	VHL	3.233	DLA	16.85	RAL	196.23	RAD	6567.4	VEL	11.482	PTH	2.00	VHP	5.824	DPA	-4.72	RAP	179.48
ECC	1.1720																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 26	2624.20	-26.95	69.12	52.66	99.05	16 41 10	2024.2	-25.42	60.79
90.00	8 32 17	4161.52	-1.20	169.84	48.20	61.71	9 41 38	3561.5	-4.98	163.19
100.00	17 28 23	2330.92	-28.06	47.33	52.44	100.76	18 7 14	1730.9	-26.29	38.98
100.00	9 44 1	3930.03	-.22	152.27	47.65	60.11	10 49 32	3330.0	-4.19	145.74
110.00	18 57 49	2051.11	-30.93	25.32	51.67	105.33	19 32 0	1451.1	-28.52	16.95
110.00	10 31 5	3782.61	2.29	139.52	46.08	55.88	11 34 8	3182.6	-2.21	133.32

DIFFERENTIAL CORRECTIONS

TDE	1.9382	TRA	2.3390	TC-20.9481	BAU	2.9267	
RDE	.2659	RRA	.2043	RC3 -.1072	FAU	.08067	
FDE	.0363	FRA	1.5084	FC3-6.6825	BSP	51330	
BDE	1.9564	BRA	2.3479	BC320.9484	FSP	1425	

MID-COURSE EXECUTION ACCURACY

SGT14628.7	SGR	608.3	SG3	444.6	
RRT	.4716	RRF	.4431	RTF	.9411
SGB14641.3	R23	-.0015	R13	.9411	
SG114631.5	SG2	536.3	THA	1.12	

ORBIT DETERMINATION ACCURACY

ST	3695.3	SR	484.7	SS	427.9
CRT	.9866	CRS	-.3050	CST	-.4337
LSA	3730.7	MSA	391.1	SSA	42.4
EL1	3726.1	EL2	78.4	ALF	7.38

LAUNCH DATE DEC 24 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 831.121 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.297	GAL	-.86	AZL	87.96	HCA	241.60	SMA	190.88	ECC	.22964	INC	2.0360
RP	206.68	LAP	-1.79	LOP	333.81	VP	24.269	GAP	-12.41	AZP	90.97	TAL	355.38	TAP	236.98	RCA	147.04	APO	234.71
RC	332.609	GL	21.38	GP	-5.77	ZAL	97.33	ZAP	29.07	ETS	168.26	ZAE	45.40	ETE	174.06	ZAC	82.58	ETC	256.08

V1	30.280	V2	26.496	CLP	28.54														

PLANETOCENTRIC CONIC

C3	10.528	VHL	3.245	DLA	15.63	RAL	197.83	RAD	6567.4	VEL	11.486	PTH	2.00	VHP	5.894	DPA	-4.94	RAP	180.28
ECC	1.1733																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 27	2580.87	-26.44	66.05	53.92	100.51	16 58 27	1980.9	-24.72	57.80
90.00	8 27 2	4207.85	.29	172.42	49.66	61.68	9 37 10	3607.8	-3.50	165.79
100.00	17 45 24	2290.79	-27.52	44.47	53.68	102.17	18 23 34	1690.8	-25.56	36.22
100.00	9 39 46	3973.16	1.25	154.63	49.13	60.13	10 45 59	3373.2	-2.74	148.11
110.00	19 12 47	2017.38	-30.30	22.89	52.86	106.64	19 46 24	1417.4	-27.72	14.65
110.00	10 28 52	3819.34	3.69	141.44	47.61	55.99	11 32 32	3219.3	-.80	135.24

DIFFERENTIAL CORRECTIONS

TDE	1.7985	TRA	2.5663	TC-20.9515	BAU	2.9490	
RDE	.2664	RRA	.2044	RC3 -.0707	FAU	.07604	
FDE	-.0266	FRA	1.5191	FC3-6.2530	BSP	51750	
BDE	1.8181	BRA	2.5744	BC320.9516	FSP	1361	

MID-COURSE EXECUTION ACCURACY

SGT14733.9	SGR	603.2	SG3	425.3	
RRT	.4367	RRF	.4069	RTF	.9394
SGB14746.3	R23	-.0044	R13	.9394	
SG114736.3	SG2	542.6	THA	1.03	

ORBIT DETERMINATION ACCURACY

ST	3499.3	SR	483.6	SS	430.7
CRT	.9768	CRS	-.1760	CST	-.3649
LSA	3534.5	MSA	411.9	SSA	42.5
EL1	3531.0	EL2	102.6	ALF	7.70

LAUNCH DATE DEC 24 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 835.514 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.306	GAL	-1.05	AZL	88.00	HCA	242.87	SMA	191.04	ECC	.23053	INC	2.0003
RP	206.67	LAP	-1.78	LOP	335.08	VP	24.282	GAP	-12.49	AZP	90.91	TAL	354.37	TAP	237.24	RCA	147.00	APO	235.08
RC	333.409	GL	20.88	GP	-5.63	ZAL	99.27	ZAP	28.62	ETS	168.30	ZAE	44.65	ETE	174.05	ZAC	82.89	ETC	256.04

V1	30.280	V2	26.497	CLP	28.10														

PLANETOCENTRIC CONIC

C3	10.632	VHL	3.261	DLA	14.41	RAL	199.43	RAD	6567.4	VEL	11.490	PTH	2.00	VHP	5.966	DPA	-5.16	RAP	181.10
ECC	1.1750																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 4	2539.09	-25.89	63.12	55.22	101.88	17 15 23	1939.1	-23.99	54.96
90.00	8 22 13	4253.63	1.77	174.97	51.19	61.73	9 33 7	3653.6	-2.02	168.34
100.00	18 2 6	2251.93	-26.93	41.73	54.96	103.50	18 39 38	1651.9	-24.80	33.58
100.00	9 35 52	4015.99	2.70	156.99	50.68	60.22	10 42 48	3416.0	-1.29	150.46
110.00	19 27 35	1984.48	-29.64	20.56	54.10	107.87	20 0 39	1384.5	-26.91	12.44
110.00	10 26 52	3856.20	5.09	143.38	49.19	56.15	11 31 9	3256.2	.61	137.16

DIFFERENTIAL CORRECTIONS

TDE	1.6581	TRA	2.7997	TC-20.9039	BAU	2.9712	
RDE	.2679	RRA	.2040	RC3 -.0357	FAU	.07144	
FDE	-.0829	FRA	1.5238	FC3-5.8176	BSP	52198	
BDE	1.6796	BRA	2.8071	BC320.9039	FSP	1300	

MID-COURSE EXECUTION ACCURACY

SGT14836.3	SGR	599.2	SG3	405.8	
RRT	.4014	RRF	.3706	RTF	.9377
SGB14848.4	R23	-.0069	R13	.9377	
SG114838.3	SG2	548.7	THA	.93	

ORBIT DETERMINATION ACCURACY

ST	3313.3	SR	483.6	SS	438.0
CRT	.9616	CRS	-.0574	CST	-.3147
LSA	3348.6	MSA	434.3	SSA	42.4
EL1	3345.8	EL2	131.4	ALF	8.00

LAUNCH DATE DEC 24 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 839.903 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.315	GAL	-1.25	AZL	88.03	HCA	244.14	SMA	191.21	ECC	.23147	INC	1.9654
RP	206.67	LAP	-1.77	LOP	336.35	VP	24.294	GAP	-12.57	AZP	90.86	TAL	353.35	TAP	237.49	RCA	146.95	APO	235.47
RC	334.204	GL	20.38	GP	-5.51	ZAL	101.22	ZAP	28.18	ETS	168.33	ZAE	43.91	ETE	174.05	ZAC	83.20	ETC	256.01

V1	30.280	V2	26.497	CLP	27.68														

PLANETOCENTRIC CONIC

C3	10.762	VHL	3.280	DLA	13.18	RAL	201.04	RAD	6567.4	VEL	11.496	PTH	2.00	VHP	6.038	DPA	-5.40	RAP	181.92
ECC	1.1771																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 19	2498.76	-25.30	60.31	56.58	103.17	17 31 58	1898.8	-23.23	52.25
90.00	8 17 46	4298.88	3.23	177.50	52.80	61.85	9 29 25	3698.9	-.56	170.87
100.00	18 18 31	2214.30	-26.30	39.11	56.30	104.74	18 55 26	1614.3	-24.02	31.06
100.00	9 32 15	4058.58	4.13	159.33	52.30	60.37	10 39 54	3458.6	.16	152.80
110.00	19 42 12	1952.46	-28.95	18.32	55.40	109.03	20 14 45	1352.5	-26.08	10.32
110.00	10 25 4	3893.18	6.49	145.33	50.84	56.36	11 29 57	3293.2	2.02	139.09

DIFFERENTIAL CORRECTIONS

TDE	1.5146	TRA	3.0407	TC-20.8113	BAU	2.9942	
RDE	.2702	RRA	.2032	RC3 -.0032	FAU	.06704	
FDE	-.1355	FRA	1.5274	FC3-5.3929	BSP	52606	
BDE	1.5385	BRA	3.0475	BC320.8113	FSP	1240	

MID-COURSE EXECUTION ACCURACY

SGT14939.5	SGR	596.3	SG3	387.2	
RRT	.3666	RRF	.3349	RTF	.9355
SGB14951.4	R23	-.0092	R13	.9355	
SG114941.1	SG2	554.7	THA	.84	

ORBIT DETERMINATION ACCURACY

ST	3137.3	SR	484.4	SS	449.6
CRT	.9392	CRS	.0520	CST	-.2820
LSA	3172.7	MSA	460.3	SSA	42.2
EL1	3170.2	EL2	164.6	ALF	8.27

LAUNCH DATE DEC 24 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 844.288 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.324	GAL	-1.45	AZL	88.07	HCA	245.41	SMA	191.37	ECC	.23247	INC	1.9314	V1	30.280
RP	206.68	LAP	-1.76	LOP	337.62	VP	24.305	GAP	-12.65	AZP	90.80	TAL	352.32	TAP	237.73	RCA	146.88	APO	235.86	V2	26.495
RC	334.996	GL	19.86	GP	-5.38	ZAL	103.18	ZAP	27.75	ETS	168.35	ZAE	43.18	ETE	174.04	ZAC	83.51	ETC	255.97	CLP	27.26

PLANETOCENTRIC CONIC

C3	10.920	VHL	3.304	DLA	11.95	RAL	202.65	RAD	6567.4	VEL	11.503	PTH	2.00	VHP	6.111	DPA	-5.65	RAP	182.74	ECC	1.1797

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 15	2459.81	-24.66	57.64	57.98	104.37	17 48 15	1859.8	-22.45	49.67
90.00	8 13 40	4343.79	4.66	180.02	54.47	62.04	9 26 4	3743.8	.89	173.37
100.00	18 34 41	2177.86	-25.65	36.60	57.69	105.91	19 10 59	1577.9	-23.22	28.65
100.00	9 28 56	4100.97	5.56	161.67	53.98	60.58	10 37 17	3501.0	1.60	155.13
110.00	19 56 40	1921.32	-28.24	16.18	56.75	110.12	20 28 41	1321.3	-25.23	8.29
110.00	10 23 26	3930.28	7.88	147.30	52.56	56.63	11 28 56	3330.3	3.44	141.03

DIFFERENTIAL CORRECTIONS

TDE	1.3718	TRA	3.2901	TC-20.6666	BAU	3.0170	
RDE	.2734	RRA	.2020	RC3 .0273	FAU	.06268	
FDE	-.1815	FRA	1.5266	FC3-4.9695	BSP	53032	
BDE	1.3988	BRA	3.2963	BC320.6666	FSP	1181	

MID-COURSE EXECUTION ACCURACY

SGT15040.3	SGR	594.3	SG3	368.7			
RRT .3321	RRF	.2998	RTF	.9332			
SGB15052.0	R23	-.0111	R13	.9332			
SG115041.6	SG2	560.5	THA	.75			

ORBIT DETERMINATION ACCURACY

ST	2980.8	SR	486.0	SS	462.5
CRT	.9078	CRS	.1456	CST	-.2726
LSA	3016.0	MSA	487.6	SSA	41.8
EL1	3013.4	EL2	201.7	ALF	8.46

LAUNCH DATE DEC 24 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 848.668 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.333	GAL	-1.65	AZL	88.10	HCA	246.68	SMA	191.54	ECC	.23351	INC	1.8979	V1	30.280
RP	206.70	LAP	-1.74	LOP	338.89	VP	24.315	GAP	-12.73	AZP	90.75	TAL	351.28	TAP	237.96	RCA	146.81	APO	236.27	V2	26.493
RC	335.784	GL	19.34	GP	-5.27	ZAL	105.15	ZAP	27.33	ETS	168.38	ZAE	42.45	ETE	174.03	ZAC	83.81	ETC	255.95	CLP	26.86

PLANETOCENTRIC CONIC

C3	11.107	VHL	3.333	DLA	10.71	RAL	204.25	RAD	6567.4	VEL	11.511	PTH	2.00	VHP	6.185	DPA	-5.90	RAP	183.58	ECC	1.1828

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 53	2422.21	-24.01	55.08	59.44	105.49	18 4 15	1822.2	-21.65	47.20
90.00	8 9 51	4388.37	6.08	182.53	56.21	62.29	9 22 59	3788.4	2.32	175.86
100.00	18 50 34	2142.62	-24.97	34.21	59.13	107.00	19 26 17	1542.6	-22.40	26.35
100.00	9 25 51	4143.19	6.96	164.02	55.73	60.86	10 34 54	3543.2	3.02	157.45
110.00	20 10 56	1891.11	-27.51	14.13	58.15	111.14	20 42 28	1291.1	-24.39	6.35
110.00	10 21 57	3967.47	9.27	149.28	54.33	56.95	11 28 5	3367.5	4.85	142.98

DIFFERENTIAL CORRECTIONS

TDE	1.2269	TRA	3.5466	TC-20.4717	BAU	3.0398	
RDE	.2773	RRA	.2004	RC3 .0558	FAU	.05838	
FDE	-.2247	FRA	1.5212	FC3-4.5504	BSP	53446	
BDE	1.2579	BRA	3.5522	BC320.4718	FSP	1125	

MID-COURSE EXECUTION ACCURACY

SGT15137.6	SGR	593.0	SG3	350.2			
RRT .2978	RRF	.2646	RTF	.9303			
SGB15149.2	R23	-.0135	R13	.9303			
SG115138.7	SG2	566.0	THA	.67			

ORBIT DETERMINATION ACCURACY

ST	2843.0	SR	488.3	SS	476.5
CRT	.8653	CRS	.2305	CST	-.2796
LSA	2877.3	MSA	517.0	SSA	41.2
EL1	2874.4	EL2	242.1	ALF	8.51

LAUNCH DATE DEC 24 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 853.043 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.343	GAL	-1.85	AZL	88.13	HCA	247.95	SMA	191.71	ECC	.23462	INC	1.8651	V1	30.280
RP	206.73	LAP	-1.73	LOP	340.16	VP	24.324	GAP	-12.82	AZP	90.70	TAL	350.23	TAP	238.17	RCA	146.73	APO	236.68	V2	26.490
RC	336.567	GL	18.80	GP	-5.16	ZAL	107.12	ZAP	26.92	ETS	168.40	ZAE	41.74	ETE	174.01	ZAC	84.11	ETC	255.92	CLP	26.46

PLANETOCENTRIC CONIC

C3	11.324	VHL	3.365	DLA	9.49	RAL	205.85	RAD	6567.4	VEL	11.520	PTH	2.01	VHP	6.260	DPA	-6.16	RAP	184.42	ECC	1.1864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 12	2385.93	-23.32	52.64	60.94	106.53	18 19 58	1785.9	-20.84	44.85
90.00	8 6 18	4432.66	7.48	185.03	58.01	62.61	9 20 10	3832.7	3.75	178.34
100.00	19 6 12	2108.56	-24.27	31.92	60.61	108.01	19 41 21	1508.6	-21.58	24.15
100.00	9 22 59	4185.26	8.35	166.37	57.54	61.19	10 32 44	3585.3	4.44	159.76
110.00	20 25 2	1861.85	-26.78	12.17	59.60	112.09	20 56 4	1261.8	-23.54	4.50
110.00	10 20 38	4004.74	10.64	151.29	56.16	57.32	11 27 23	3404.7	6.26	144.94

DIFFERENTIAL CORRECTIONS

TDE	1.0818	TRA	3.8105	TC-20.2317	BAU	3.0630	
RDE	.2821	RRA	.1983	RC3 .0820	FAU	.05418	
FDE	-.2630	FRA	1.5121	FC3-4.1422	BSP	53844	
BDE	1.1180	BRA	3.8156	BC320.2318	FSP	1069	

MID-COURSE EXECUTION ACCURACY

SGT15233.9	SGR	592.4	SG3	332.2			
RRT .2642	RRF	.2302	RTF	.9271			
SGB15245.4	R23	-.0156	R13	.9271			
SG115234.7	SG2	571.3	THA	.59			

ORBIT DETERMINATION ACCURACY

ST	2730.0	SR	491.2	SS	490.0
CRT	.8103	CRS	.3030	CST	-.3051
LSA	2763.0	MSA	546.5	SSA	40.4
EL1	2759.2	EL2	284.8	ALF	8.39

LAUNCH DATE DEC 24 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 857.411 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.352	GAL	-2.06	AZL	88.17	HCA	249.21	SMA	191.87	ECC	.23578	INC	1.8329	V1	30.280
RP	206.77	LAP	-1.71	LOP	341.43	VP	24.332	GAP	-12.90	AZP	90.65	TAL	349.16	TAP	238.38	RCA	146.63	APO	237.11	V2	26.485
RC	337.346	GL	18.26	GP	-5.05	ZAL	109.08	ZAP	26.52	ETS	168.42	ZAE	41.04	ETE	174.00	ZAC	84.41	ETC	255.89	CLP	26.07

PLANETOCENTRIC CONIC

C3	11.574	VHL	3.402	DLA	8.27	RAL	207.45	RAD	6567.4	VEL	11.531	PTH	2.01	VHP	6.336	DPA	-6.43	RAP	185.26	ECC	1.1905

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 14	2350.96	-22.63	50.31	62.48	107.49	18 35 25	1751.0	-20.02	42.61
90.00	8 2 59	4476.69	8.85	187.54	59.88	62.99	9 17 36	3876.7	5.15	180.81
100.00	19 21 35	2075.70	-23.56	29.73	62.15	108.95	19 56 10	1475.7	-20.76	22.06
100.00	9 20 20	4227.18	9.72	168.73	59.41	61.59	10 30 47	3627.2	5.85	162.08
110.00	20 38 57	1833.58	-26.04	10.30	61.10	112.97	21 9 30	1233.6	-22.70	2.74
110.00	10 19 27	4042.06	12.01	153.32	58.05	57.75	11 26 49	3442.1	7.67	146.92

DIFFERENTIAL CORRECTIONS

TDE	.9373	TRA	4.0831	TC-19.9454	BAU	3.0862	
RDE	.2878	RRA	.1958	RC3 .1059	FAU	.05006	
FDE	-.2966	FRA	1.4996	FC3-3.7444	BSP	54273	
BDE	.9805	BRA	4.0878	BC319.9456	FSP	1015	

MID-COURSE EXECUTION ACCURACY

SGT15328.0	SGR	592.5	SG3	314.5			
RRT .2315	RRF	.1968	RTF	.9233			
SGB15339.5	R23	-.0177	R13	.9233			
SG115328.7	SG2	576.4	THA	.51			

ORBIT DETERMINATION ACCURACY

ST	2646.4	SR	494.8	SS	502.2
CRT	.7426	CRS	.3651	CST	-.3454
LSA	2677.4	MSA	574.5	SSA	39.5
EL1	2672.1	EL2	328.2	ALF	8.03

LAUNCH DATE DEC 24 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 861.773 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.361	GAL	-2.27	AZL	88.20	HCA	250.48	SMA	192.04	ECC	.23700	INC	1.8013
RP	206.81	LAP	-1.70	LOP	342.70	VP	24.338	GAP	-12.99	AZP	90.60	TAL	348.09	TAP	238.57	RCA	146.53	APO	237.55
RC	338.120	GL	17.72	GP	-4.95	ZAL	111.04	ZAP	26.13	ETS	168.43	ZAE	40.34	ETE	173.98	ZAC	84.70	ETC	255.87

V1	30.280	V2	26.480	CLP	25.69														

PLANETOCENTRIC CONIC

C3	11.857	VHL	3.443	DLA	7.06	RAL	209.03	RAD	6567.5	VEL	11.543	PTH	2.01	VHP	6.413	DPA	-6.71	RAP	186.11

ECC	1.1951														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 59	2317.30	-21.92	48.09	64.07	108.39	18 50 36	1717.3	-19.21	40.47
90.00	7 59 53	4520.45	10.19	190.06	61.80	63.44	9 15 14	3920.5	6.54	183.28
100.00	19 36 42	2044.06	-22.85	27.65	63.73	109.82	20 10 46	1444.1	-19.94	20.07
100.00	9 17 51	4268.93	11.06	171.11	61.34	62.05	10 29 0	3668.9	7.23	164.41
110.00	20 52 40	1806.35	-25.30	8.53	62.65	113.79	21 22 46	1206.3	-21.87	1.06
110.00	10 18 23	4079.40	13.36	155.37	59.99	58.24	11 26 23	3479.4	9.06	148.91

DIFFERENTIAL CORRECTIONS

TDE	.7924	TRA	4.3629	TC-19.6194	BAU	3.1100	
RDE	.2941	RRA	.1928	RC3 .1274	FAU	.04606	
FDE	-.3274	FRA	1.4824	FC3-3.3635	BSP	54690	
BDE	.8452	BRA	4.3671	BC319.6199	FSP	961	

MID-COURSE EXECUTION ACCURACY

SGT15420.9	SGR	593.0	SG3	297.3			
RRT	.1995	RRF	.1635	RTF	.9189		
SGB15432.3	R23	-.0206	R13	.9189			
SG115421.4	SG2	581.1	THA	.44			

ORBIT DETERMINATION ACCURACY

ST	2592.1	SR	498.9	SS	513.1		
CRT	.6627	CRS	.4210	CST	-.3941		
LSA	2620.9	MSA	600.3	SSA	38.5		
EL1	2613.5	EL2	370.5	ALF	7.42		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 866.127 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.370	GAL	-2.49	AZL	88.23	HCA	251.75	SMA	192.21	ECC	.23829	INC	1.7702
RP	206.87	LAP	-1.68	LOP	343.96	VP	24.344	GAP	-13.09	AZP	90.55	TAL	347.00	TAP	238.75	RCA	146.41	APO	238.01
RC	338.890	GL	17.17	GP	-4.85	ZAL	112.99	ZAP	25.75	ETS	168.45	ZAE	39.66	ETE	173.96	ZAC	84.99	ETC	255.85

V1	30.280	V2	26.474	CLP	25.32		

PLANETOCENTRIC CONIC

C3	12.175	VHL	3.489	DLA	5.86	RAL	210.61	RAD	6567.5	VEL	11.557	PTH	2.02	VHP	6.491	DPA	-7.00	RAP	186.97

ECC	1.2004										

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 27 27	2284.95	-21.21	45.99	65.71	109.21	19 5 32	1684.9	-18.40	38.44
90.00	7 57 0	4563.95	11.50	192.58	63.77	63.95	9 13 4	3964.0	7.91	185.74
100.00	19 51 34	2013.63	-22.13	25.68	65.35	110.63	20 25 8	1413.6	-19.12	18.17
100.00	9 15 34	4310.50	12.37	173.49	63.33	62.57	10 27 24	3710.5	8.60	166.73
110.00	21 6 10	1780.17	-24.57	6.84	64.25	114.54	21 35 50	1180.2	-21.05	359.47
110.00	10 17 27	4116.72	14.68	157.45	61.99	58.78	11 26 4	3516.7	10.44	150.92

DIFFERENTIAL CORRECTIONS

TDE	.6473	TRA	4.6491	TC-19.2620	BAU	3.1352	
RDE	.3013	RRA	.1894	RC3 -.1465	FAU	.04216	
FDE	-.3533	FRA	1.4617	FC3-2.9979	BSP	55048	
BDE	.7140	BRA	4.6530	BC319.2625	FSP	907	

MID-COURSE EXECUTION ACCURACY

SGT15514.7	SGR	594.1	SG3	280.4			
RRT	.1682	RRF	.1314	RTF	.9139		
SGB15526.1	R23	-.0229	R13	.9139			
SG115515.0	SG2	585.6	THA	.37			

ORBIT DETERMINATION ACCURACY

ST	2567.7	SR	503.6	SS	521.5		
CRT	.5728	CRS	.4684	CST	-.4504		
LSA	2594.5	MSA	621.0	SSA	37.4		
EL1	2584.3	EL2	410.1	ALF	6.58		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 404.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 870.473 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.379	GAL	-2.71	AZL	88.26	HCA	253.01	SMA	192.38	ECC	.23963	INC	1.7395
RP	206.93	LAP	-1.66	LOP	345.23	VP	24.348	GAP	-13.18	AZP	90.51	TAL	345.90	TAP	238.92	RCA	146.28	APO	238.48
RC	339.657	GL	16.62	GP	-4.76	ZAL	114.92	ZAP	25.38	ETS	168.46	ZAE	38.98	ETE	173.93	ZAC	85.28	ETC	255.84

V1	30.280	V2	26.466	CLP	24.96						

PLANETOCENTRIC CONIC

C3	12.529	VHL	3.540	DLA	4.68	RAL	212.17	RAD	6567.5	VEL	11.572	PTH	2.02	VHP	6.571	DPA	-7.29	RAP	187.84

ECC	1.2062										

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 39	2253.91	-20.50	43.99	67.39	109.97	19 20 13	1653.9	-17.60	36.52
90.00	7 54 17	4607.18	12.78	195.11	65.81	64.52	9 11 4	4007.2	9.25	188.21
100.00	20 6 11	1984.45	-21.42	23.80	67.02	111.37	20 39 16	1384.4	-18.32	16.37
100.00	9 13 25	4351.87	13.66	175.89	65.36	63.15	10 25 57	3751.9	9.95	169.07
110.00	21 19 28	1755.09	-23.86	5.25	65.88	115.24	21 48 43	1155.1	-20.26	357.96
110.00	10 16 38	4154.00	15.99	159.55	64.04	59.38	11 25 52	3554.0	11.81	152.94

DIFFERENTIAL CORRECTIONS

TDE	.5046	TRA	4.9453	TC-18.8618	BAU	3.1595	
RDE	.3092	RRA	.1855	RC3 .1636	FAU	.03827	
FDE	-.3749	FRA	1.4368	FC3-2.6447	BSP	55450	
BDE	.5918	BRA	4.9488	BC318.8625	FSP	856	

MID-COURSE EXECUTION ACCURACY

SGT15603.5	SGR	595.6	SG3	263.7			
RRT	.1380	RRF	.1003	RTF	.9079		
SGB15614.9	R23	-.0253	R13	.9079			
SG115603.8	SG2	589.9	THA	.30			

ORBIT DETERMINATION ACCURACY

ST	2575.5	SR	508.7	SS	526.9		
CRT	.4772	CRS	.5098	CST	-.5077		
LSA	2600.8	MSA	636.0	SSA	36.3		
EL1	2587.3	EL2	445.0	ALF	5.55		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 406.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 874.810 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.388	GAL	-2.94	AZL	88.29	HCA	254.28	SMA	192.55	ECC	.24105	INC	1.7093
RP	207.00	LAP	-1.65	LOP	346.50	VP	24.351	GAP	-13.28	AZP	90.46	TAL	344.79	TAP	239.07	RCA	146.13	APO	238.96
RC	340.420	GL	16.06	GP	-4.67	ZAL	116.84	ZAP	25.02	ETS	168.47	ZAE	38.31	ETE	173.91	ZAC	85.57	ETC	255.82

V1	30.280	V2	26.458	CLP	24.61		

PLANETOCENTRIC CONIC

C3	12.922	VHL	3.595	DLA	3.51	RAL	213.72	RAD	6567.5	VEL	11.589	PTH	2.03	VHP	6.651	DPA	-7.59	RAP	188.71

ECC	1.2127										

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 34	2224.19	-19.80	42.09	69.11	110.67	19 34 38	1624.2	-16.81	34.69
90.00	7 51 44	4650.13	14.03	197.65	67.89	65.15	9 9 14	4050.1	10.56	190.69
100.00	20 20 33	1956.52	-20.71	22.03	68.73	112.05	20 53 9	1356.5	-17.54	14.67
100.00	9 11 26	4393.03	14.91	178.31	67.45	63.79	10 24 39	3793.0	11.27	171.41
110.00	21 32 34	1731.13	-23.15	3.75	67.56	115.88	22 1 25	1131.1	-19.48	356.53
110.00	10 15 54	4191.18	17.26	161.68	66.14	60.03	11 25 46	3591.2	13.15	154.98

DIFFERENTIAL CORRECTIONS

TDE	.3623	TRA	5.2495	TC-18.4364	BAU	3.1850	
RDE	.3179	RRA	.1812	RC3 .1783	FAU	.03452	
FDE	-.3932	FRA	1.4081	FC3-2.3129	BSP	55821	
BDE	.4820	BRA	5.2526	BC318.4373	FSP	803	

MID-COURSE EXECUTION ACCURACY

SGT15693.6	SGR	597.5	SG3	247.6			
RRT	.1087	RRF	.0701	RTF	.9011		
SGB15705.0	R23	-.0282	R13	.9010			
SG115693.8	SG2	593.9	THA	.24			

ORBIT DETERMINATION ACCURACY

ST	2610.8	SR	514.1	SS	529.9		
CRT	.3795	CRS	.5467	CST	-.5626		
LSA	2635.1	MSA	645.6	SSA	35.2		
EL1	2618.3	EL2	474.3	ALF	4.42		

LAUNCH DATE DEC 24 1964 FLIGHT TIME 408.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 879.138 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.397 GAL -3.17 AZL 88.32 HCA 255.54 SMA 192.72 ECC .24253 INC 1.6794 V1 30.280
RP 207.08 LAP -1.63 LOP 347.76 VP 24.354 GAP -13.38 AZP 90.42 TAL 343.68 TAP 239.22 RCA 145.98 APO 239.46 V2 26.449
RC 341.179 GL 15.51 GP -4.58 ZAL 118.73 ZAP 24.66 ETS 168.47 ZAE 37.65 ETE 173.88 ZAC 85.85 ETC 255.82 CLP 24.26

PLANETOCENTRIC CONIC

C3 13.354 VHL 3.654 DLA 2.37 RAL 215.26 RAD 6567.5 VEL 11.608 PTH 2.03 VHP 6.733 DPA -7.89 RAP 189.58 ECC 1.2198

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 12	2195.79	-19.11	40.29	70.86	111.30	19 48 48	1595.8	-16.04	32.96
90.00	7 49 20	4692.77	15.23	200.20	70.02	65.84	9 7 33	4092.8	11.84	193.16
100.00	20 34 39	1929.85	-20.02	20.35	70.47	112.67	21 6 49	1329.9	-16.78	13.05
100.00	9 9 35	4433.94	16.13	180.74	69.59	64.48	10 23 29	3833.9	12.56	173.76
110.00	21 45 26	1708.31	-22.47	2.33	69.27	116.47	22 13 54	1108.3	-18.73	355.19
110.00	10 15 17	4228.24	18.51	163.83	68.29	60.74	11 25 45	3628.2	14.47	157.04

DIFFERENTIAL CORRECTIONS
TDE .2209 TRA 5.5603 TC-17.9851 BAU 3.2112
RDE .3273 RRA .1765 RC3 .1909 FAU .03082
FDE -.4080 FRA 1.3754 FC3-1.9982 BSP 56176
BDE .3949 BRA 5.5631 BC317.9861 FSP 753

MID-COURSE EXECUTION ACCURACY
SGT15780.9 SGR 599.6 SG3 231.8
RRT .0803 RRF .0407 RTF .8928
SGB15792.3 R23 -.0311 R13 .8928
SG115781.0 SG2 597.7 THA .17

ORBIT DETERMINATION ACCURACY
ST 2669.7 SR 519.9 SS 530.1
CRT .2835 CRS .5799 CST -.6127
LSA 2693.5 MSA 649.9 SSA 34.0
EL1 2673.9 EL2 497.8 ALF 3.27

LAUNCH DATE DEC 24 1964 FLIGHT TIME 410.00 ARRIVAL DATE FEB 7 1966

HELIOCENTRIC CONIC DISTANCE 883.457 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.406 GAL -3.40 AZL 88.35 HCA 256.81 SMA 192.89 ECC .24409 INC 1.6500 V1 30.280
RP 207.17 LAP -1.61 LOP 349.03 VP 24.355 GAP -13.49 AZP 90.38 TAL 342.55 TAP 239.35 RCA 145.80 APO 239.97 V2 26.438
RC 341.936 GL 14.96 GP -4.50 ZAL 120.60 ZAP 24.32 ETS 168.48 ZAE 37.00 ETE 173.85 ZAC 86.14 ETC 255.81 CLP 23.92

PLANETOCENTRIC CONIC

C3 13.830 VHL 3.719 DLA 1.25 RAL 216.78 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 6.816 DPA -8.20 RAP 190.47 ECC 1.2276

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 34	2168.71	-18.43	38.60	72.65	111.89	20 2 43	1568.7	-15.30	31.32
90.00	7 47 5	4735.10	16.39	202.76	72.19	66.58	9 6 1	4135.1	13.09	195.65
100.00	20 48 29	1904.45	-19.35	18.76	72.25	113.24	21 20 14	1304.5	-16.04	11.53
100.00	9 7 51	4474.59	17.30	183.18	71.77	65.24	10 22 26	3874.6	13.82	176.12
110.00	21 58 4	1686.66	-21.80	1.00	71.02	117.00	22 26 11	1086.7	-18.01	353.92
110.00	10 14 46	4265.15	19.73	166.00	70.49	61.50	11 25 51	3665.1	15.77	159.12

DIFFERENTIAL CORRECTIONS
TDE .0815 TRA 5.8799 TC-17.5115 BAU 3.2379
RDE .3375 RRA .1713 RC3 .2015 FAU .02720
FDE -.4191 FRA 1.3393 FC3-1.7030 BSP 56522
BDE .3471 BRA 5.8824 BC317.5127 FSP 703

MID-COURSE EXECUTION ACCURACY
SGT15866.9 SGR 602.0 SG3 216.5
RRT .0529 RRF .0128 RTF .8831
SGB15878.3 R23 -.0340 R13 .8831
SG115866.9 SG2 601.2 THA .12

ORBIT DETERMINATION ACCURACY
ST 2749.2 SR 525.9 SS 527.3
CRT .1928 CRS .6091 CST -.6568
LSA 2773.0 MSA 649.9 SSA 32.9
EL1 2751.2 EL2 515.7 ALF 2.19

LAUNCH DATE DEC 24 1964 FLIGHT TIME 412.00 ARRIVAL DATE FEB 9 1966

HELIOCENTRIC CONIC DISTANCE 887.764 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.415 GAL -3.64 AZL 88.38 HCA 258.07 SMA 193.06 ECC .24572 INC 1.6208 V1 30.280
RP 207.27 LAP -1.59 LOP 350.29 VP 24.355 GAP -13.60 AZP 90.34 TAL 341.41 TAP 239.48 RCA 145.62 APO 240.49 V2 26.427
RC 342.690 GL 14.42 GP -4.42 ZAL 122.43 ZAP 23.98 ETS 168.48 ZAE 36.35 ETE 173.81 ZAC 86.42 ETC 255.81 CLP 23.59

PLANETOCENTRIC CONIC

C3 14.349 VHL 3.788 DLA .16 RAL 218.28 RAD 6567.6 VEL 11.650 PTH 2.05 VHP 6.901 DPA -8.52 RAP 191.36 ECC 1.2361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 39	2142.96	-17.77	37.00	74.47	112.42	20 16 22	1543.0	-14.58	29.78
90.00	7 44 59	4777.08	17.51	205.34	74.41	67.39	9 4 36	4177.1	14.30	198.14
100.00	21 2 4	1880.33	-18.69	17.27	74.06	113.76	21 33 24	1280.3	-15.32	10.10
100.00	9 6 15	4514.94	18.43	185.64	74.00	66.04	10 21 30	3914.9	15.04	178.49
110.00	22 10 29	1666.19	-21.17	359.75	72.80	117.49	22 38 15	1066.2	-17.32	352.74
110.00	10 14 19	4301.85	20.90	168.20	72.73	62.32	11 26 1	3701.9	17.03	161.21

DIFFERENTIAL CORRECTIONS
TDE -.0557 TRA 6.2069 TC-17.0225 BAU 3.2657
RDE .3482 RRA .1656 RC3 .2101 FAU .02368
FDE -.4275 FRA 1.2980 FC3-1.4285 BSP 56851
BDE .3527 BRA 6.2091 BC317.0238 FSP 653

MID-COURSE EXECUTION ACCURACY
SGT15951.8 SGR 604.6 SG3 201.6
RRT .0264 RRF -.0149 RTF .8717
SGB15963.3 R23 -.0380 R13 .8717
SG115951.8 SG2 604.4 THA .06

ORBIT DETERMINATION ACCURACY
ST 2844.2 SR 532.1 SS 521.9
CRT .1094 CRS .6366 CST -.6933
LSA 2868.0 MSA 647.1 SSA 31.8
EL1 2844.8 EL2 528.8 ALF 1.21

LAUNCH DATE DEC 24 1964 FLIGHT TIME 414.00 ARRIVAL DATE FEB 11 1966

HELIOCENTRIC CONIC DISTANCE 892.059 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.424 GAL -3.88 AZL 88.41 HCA 259.33 SMA 193.23 ECC .24743 INC 1.5920 V1 30.280
RP 207.37 LAP -1.56 LOP 351.55 VP 24.354 GAP -13.71 AZP 90.30 TAL 340.26 TAP 239.59 RCA 145.42 APO 241.04 V2 26.415
RC 343.441 GL 13.88 GP -4.35 ZAL 124.24 ZAP 23.65 ETS 168.48 ZAE 35.71 ETE 173.78 ZAC 86.70 ETC 255.81 CLP 23.27

PLANETOCENTRIC CONIC

C3 14.914 VHL 3.862 DLA -.91 RAL 219.76 RAD 6567.6 VEL 11.675 PTH 2.05 VHP 6.986 DPA -8.84 RAP 192.25 ECC 1.2455

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 54 27	2118.52	-17.13	35.49	76.33	112.90	20 29 46	1518.5	-13.88	28.32
90.00	7 43 0	4818.71	18.58	207.92	76.68	68.24	9 3 18	4218.7	15.46	200.64
100.00	21 15 23	1857.49	-18.06	15.87	75.90	114.23	21 46 20	1257.5	-14.64	8.75
100.00	9 4 45	4554.98	19.52	188.12	76.27	66.90	10 20 40	3955.0	16.23	180.87
110.00	22 22 39	1646.89	-20.55	358.59	74.61	117.93	22 50 6	1046.9	-16.66	351.63
110.00	10 13 58	4338.34	22.04	170.42	75.01	63.18	11 26 16	3738.3	18.26	163.32

DIFFERENTIAL CORRECTIONS
TDE -.1903 TRA 6.5436 TC-16.5182 BAU 3.2939
RDE .3597 RRA .1596 RC3 .2170 FAU .02020
FDE -.4328 FRA 1.2536 FC3-1.1725 BSP 57172
BDE .4069 BRA 6.5456 BC316.5196 FSP 604

MID-COURSE EXECUTION ACCURACY
SGT16035.2 SGR 607.4 SG3 187.2
RRT .0010 RRF -.0411 RTF .8578
SGB16046.7 R23 -.0419 R13 .8578
SG116035.2 SG2 607.4 THA .00

ORBIT DETERMINATION ACCURACY
ST 2951.4 SR 538.4 SS 513.7
CRT .0342 CRS .6616 CST -.7234
LSA 2975.1 MSA 642.4 SSA 30.7
EL1 2951.5 EL2 538.0 ALF .37

LAUNCH DATE DEC 24 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 13 1966

HELIOCENTRIC CONIC DISTANCE 896.343 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.433 GAL -4.13 AZL 88.44 HCA 260.59 SMA 193.40 ECC .24921 INC 1.5634 V1 30.280
RP 207.48 LAP -1.54 LOP 352.81 VP 24.353 GAP -13.83 AZP 90.26 TAL 339.10 TAP 239.69 RCA 145.20 APO 241.60 V2 26.402
RC 344.188 GL 13.35 GP -4.27 ZAL 126.02 ZAP 23.33 ETS 168.48 ZAE 35.09 ETE 173.74 ZAC 86.98 ETC 255.81 CLP 22.96

PLANETOCENTRIC CONIC

C3 15.529 VHL 3.941 DLA -1.95 RAL 221.22 RAD 6567.6 VEL 11.701 PTH 2.06 VHP 7.073 DPA -9.16 RAP 193.15 ECC 1.2556

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 59	2095.39	-16.51	34.07	78.21	113.34	20 42 55	1495.4	-13.21	26.95
90.00	7 41 7	4859.97	19.60	210.52	78.98	69.15	9 2 7	4260.0	16.59	203.14
100.00	21 28 26	1835.92	-17.45	14.55	77.77	114.66	21 59 2	1235.9	-13.98	7.48
100.00	9 3 22	4594.67	20.56	190.61	78.57	67.81	10 19 57	3994.7	17.38	183.26
110.00	22 34 36	1628.79	-19.97	357.51	76.44	118.33	23 1 45	1028.8	-16.03	350.60
110.00	10 13 42	4374.57	23.13	172.66	77.34	64.10	11 26 36	3774.6	19.46	165.45

DIFFERENTIAL CORRECTIONS
TDE -.3229 TRA 6.8874 TC-16.0067 BAU 3.3234
RDE .3718 RRA .1530 RC3 .2221 FAU .01680
FDE -.4352 FRA 1.2046 FC3 -.9367 BSP 57470
BDE .4924 BRA 6.8891 BC316.0082 FSP 556

MID-COURSE EXECUTION ACCURACY
SGT16117.2 SGR 610.2 SG3 173.2
RRT -.0236 RRF -.0664 RTF .8411
SGB16128.7 R23 .0465 R13 -.8411
SG116117.2 SG2 610.1 THA 179.95

ORBIT DETERMINATION ACCURACY
ST 3065.8 SR 544.7 SS 503.0
CRT -.0329 CRS .6850 CST -.7474
LSA 3089.1 MSA 636.5 SSA 29.7
EL1 3065.9 EL2 544.4 ALF 179.65

LAUNCH DATE DEC 24 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 15 1966

HELIOCENTRIC CONIC DISTANCE 900.613 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.442 GAL -4.38 AZL 88.46 HCA 261.85 SMA 193.57 ECC .25108 INC 1.5351 V1 30.280
RP 207.61 LAP -1.52 LOP 354.07 VP 24.350 GAP -13.95 AZP 90.22 TAL 337.93 TAP 239.78 RCA 144.97 APO 242.17 V2 26.387
RC 344.932 GL 12.83 GP -4.20 ZAL 127.77 ZAP 23.02 ETS 168.48 ZAE 34.47 ETE 173.69 ZAC 87.25 ETC 255.82 CLP 22.66

PLANETOCENTRIC CONIC

C3 16.194 VHL 4.024 DLA -2.95 RAL 222.66 RAD 6567.6 VEL 11.729 PTH 2.07 VHP 7.162 DPA -9.49 RAP 194.06 ECC 1.2665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 21 15	2073.56	-15.92	32.75	80.11	113.73	20 55 48	1473.6	-12.57	25.66
90.00	7 39 22	4900.82	20.57	213.13	81.31	70.10	9 1 3	4300.8	17.67	205.65
100.00	21 41 13	1815.61	-16.87	13.33	79.66	115.05	22 11 28	1215.6	-13.36	6.30
100.00	9 2 5	4634.01	21.55	193.11	80.92	68.77	10 19 19	4034.0	18.48	185.67
110.00	22 46 18	1611.88	-19.42	356.50	78.30	118.70	23 13 10	1011.9	-15.44	349.64
110.00	10 13 30	4410.51	24.18	174.93	79.70	65.07	11 27 0	3810.5	20.62	167.59

DIFFERENTIAL CORRECTIONS
TDE -.4520 TRA 7.2407 TC-15.4870 BAU 3.3533
RDE .3845 RRA .1461 RC3 .2258 FAU .01344
FDE -.4347 FRA 1.1519 FC3 -.7184 BSP 57767
BDE .5934 BRA 7.2421 BC315.4887 FSP 508

MID-COURSE EXECUTION ACCURACY
SGT16197.0 SGR 613.2 SG3 159.6
RRT -.0471 RRF -.0900 RTF .8206
SGB16208.6 R23 .0513 R13 -.8206
SG116197.0 SG2 612.6 THA 179.90

ORBIT DETERMINATION ACCURACY
ST 3185.1 SR 551.0 SS 489.6
CRT -.0917 CRS .7067 CST -.7660
LSA 3207.8 MSA 630.2 SSA 28.7
EL1 3185.5 EL2 548.6 ALF 179.06

LAUNCH DATE DEC 24 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 17 1966

HELIOCENTRIC CONIC DISTANCE 904.869 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.452 GAL -4.63 AZL 88.49 HCA 263.11 SMA 193.74 ECC .25303 INC 1.5069 V1 30.280
RP 207.74 LAP -1.50 LOP 355.33 VP 24.346 GAP -14.07 AZP 90.18 TAL 336.75 TAP 239.86 RCA 144.72 APO 242.77 V2 26.372
RC 345.671 GL 12.31 GP -4.14 ZAL 129.48 ZAP 22.72 ETS 168.48 ZAE 33.85 ETE 173.65 ZAC 87.53 ETC 255.83 CLP 22.36

PLANETOCENTRIC CONIC

C3 16.913 VHL 4.113 DLA -3.93 RAL 224.08 RAD 6567.7 VEL 11.760 PTH 2.08 VHP 7.251 DPA -9.82 RAP 194.97 ECC 1.2783

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 34 14	2053.01	-15.35	31.50	82.04	114.09	21 8 27	1453.0	-11.97	24.46
90.00	7 37 43	4941.27	21.49	215.74	83.68	71.10	9 0 4	4341.3	18.71	208.17
100.00	21 53 44	1796.56	-16.32	12.18	81.57	115.40	22 23 41	1196.6	-12.77	5.19
100.00	9 0 54	4672.96	22.49	195.62	83.30	69.78	10 18 47	4073.0	19.54	188.07
110.00	22 57 45	1596.13	-18.91	355.57	80.18	119.02	23 24 21	996.1	-14.89	348.76
110.00	10 13 22	4446.15	25.19	177.21	82.10	66.09	11 27 28	3846.1	21.74	169.75

DIFFERENTIAL CORRECTIONS
TDE -.5796 TRA 7.6011 TC-14.9684 BAU 3.3850
RDE .3978 RRA .1387 RC3 .2280 FAU .01016
FDE -.4318 FRA 1.0951 FC3 -.5198 BSP 58011
BDE .7029 BRA 7.6024 BC314.9701 FSP 461

MID-COURSE EXECUTION ACCURACY
SGT16275.8 SGR 616.3 SG3 146.7
RRT -.0699 RRF -.1123 RTF .7954
SGB16287.5 R23 .0567 R13 -.7954
SG116275.9 SG2 614.8 THA 179.85

ORBIT DETERMINATION ACCURACY
ST 3305.9 SR 557.3 SS 474.1
CRT -.1436 CRS .7276 CST -.7801
LSA 3327.8 MSA 623.8 SSA 27.8
EL1 3306.9 EL2 551.3 ALF 178.57

LAUNCH DATE DEC 24 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 19 1966

HELIOCENTRIC CONIC DISTANCE 909.110 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.461 GAL -4.89 AZL 88.52 HCA 264.36 SMA 193.92 ECC .25507 INC 1.4789 V1 30.280
RP 207.87 LAP -1.47 LOP 356.58 VP 24.341 GAP -14.20 AZP 90.15 TAL 335.56 TAP 239.92 RCA 144.45 APO 243.38 V2 26.356
RC 346.405 GL 11.81 GP -4.07 ZAL 131.15 ZAP 22.42 ETS 168.47 ZAE 33.25 ETE 173.60 ZAC 87.80 ETC 255.85 CLP 22.07

PLANETOCENTRIC CONIC

C3 17.689 VHL 4.206 DLA -4.88 RAL 225.48 RAD 6567.7 VEL 11.793 PTH 2.09 VHP 7.343 DPA -10.16 RAP 195.89 ECC 1.2911

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 46 57	2033.73	-14.81	30.34	83.99	114.41	21 20 50	1433.7	-11.39	23.33
90.00	7 36 10	4981.29	22.34	218.36	86.08	72.14	8 59 11	4381.3	19.69	210.69
100.00	22 5 59	1778.73	-15.80	11.12	83.51	115.71	22 35 38	1178.7	-12.21	4.16
100.00	8 59 48	4711.52	23.38	198.14	85.70	70.82	10 18 20	4111.5	20.55	190.49
110.00	23 8 58	1581.56	-18.42	354.72	82.08	119.32	23 35 20	981.6	-14.38	347.94
110.00	10 13 19	4481.46	26.14	179.51	84.53	67.15	11 28 0	3881.5	22.82	171.93

DIFFERENTIAL CORRECTIONS
TDE -.7036 TRA 7.9707 TC-14.4509 BAU 3.4178
RDE .4116 RRA .1308 RC3 .2290 FAU .00694
FDE -.4268 FRA 1.0341 FC3 -.3395 BSP 58248
BDE .8152 BRA 7.9717 BC314.4527 FSP 414

MID-COURSE EXECUTION ACCURACY
SGT16353.6 SGR 619.3 SG3 134.4
RRT -.0918 RRF -.1331 RTF .7642
SGB16365.4 R23 .0631 R13 -.7642
SG116353.7 SG2 616.7 THA 179.80

ORBIT DETERMINATION ACCURACY
ST 3426.5 SR 563.4 SS 456.7
CRT -.1887 CRS .7481 CST -.7895
LSA 3447.4 MSA 617.8 SSA 27.0
EL1 3428.2 EL2 553.0 ALF 178.18

LAUNCH DATE DEC 24 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 21 1966

HELIOCENTRIC CONIC DISTANCE 913.335 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.470 GAL -5.16 AZL 88.55 HCA 265.61 SMA 194.09 ECC .25719 INC 1.4512 V1 30.280
RP 208.02 LAP -1.45 LOP 357.84 VP 24.335 GAP -14.34 AZP 90.11 TAL 334.36 TAP 239.98 RCA 144.17 APO 244.01 V2 26.339
RC 347.135 GL 11.31 GP -4.01 ZAL 132.79 ZAP 22.14 ETS 168.47 ZAE 32.65 ETE 173.55 ZAC 88.07 ETC 255.86 CLP 21.79

PLANETOCENTRIC CONIC

C3 18.523 VHL 4.304 DLA -5.80 RAL 226.86 RAD 6567.7 VEL 11.828 PTH 2.09 VHP 7.436 DPA -10.50 RAP 196.82 ECC 1.3048

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 59 23	2015.67	-14.30	29.27	85.95	114.70	21 32 59	1415.7	-10.85	22.29
90.00	7 34 42	5020.87	23.15	220.98	88.50	73.22	8 58 23	4420.9	20.63	213.22
100.00	22 17 59	1762.12	-15.30	10.13	85.46	115.99	22 47 21	1162.1	-11.68	3.21
100.00	8 58 48	4749.66	24.21	200.67	88.14	71.91	10 17 57	4149.7	21.51	192.92
110.00	23 19 57	1568.13	-17.97	353.94	83.99	119.58	23 46 5	968.1	-13.90	347.19
110.00	10 13 19	4516.41	27.05	181.82	87.00	68.25	11 28 36	3916.4	23.85	174.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.8238 TRA 8.3488 TC-13.9355 BAU 3.4515 SGT16428.4 SGR 622.4 SG3 122.6 ST 3544.6 SR 569.4 SS 437.0
RDE .4261 RRA .1225 RC3 .2289 FAU .00374 RRT -.1128 RRF -.1513 RTF .7248 CRT -.2276 CRS .7679 CST -.7951
FDE -.4192 FRA .9689 FC3 -.1750 BSP 58468 SGB16440.2 R23 .0698 R13 -.7248 LSA 3564.3 MSA 612.2 SSA 26.2
BDE .9275 BRA 8.3497 BC313.9374 FSP 368 SG116428.6 SG2 618.4 THA 179.75 EL1 3547.1 EL2 554.0 ALF 177.85

LAUNCH DATE DEC 24 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 23 1966

HELIOCENTRIC CONIC DISTANCE 917.543 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.479 GAL -5.43 AZL 88.58 HCA 266.87 SMA 194.26 ECC .25941 INC 1.4235 V1 30.280
RP 208.17 LAP -1.42 LOP 359.09 VP 24.329 GAP -14.48 AZP 90.08 TAL 333.16 TAP 240.02 RCA 143.87 APO 244.66 V2 26.322
RC 347.858 GL 10.83 GP -3.95 ZAL 134.39 ZAP 21.86 ETS 168.46 ZAE 32.06 ETE 173.49 ZAC 88.34 ETC 255.89 CLP 21.52

PLANETOCENTRIC CONIC

C3 19.420 VHL 4.407 DLA -6.68 RAL 228.21 RAD 6567.8 VEL 11.866 PTH 2.10 VHP 7.530 DPA -10.84 RAP 197.75 ECC 1.3196

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 11 34	1998.83	-13.82	28.26	87.93	114.96	21 44 53	1398.8	-10.34	21.31
90.00	7 33 20	5060.00	23.89	223.61	90.95	74.33	8 57 40	4460.0	21.51	215.75
100.00	22 29 43	1746.70	-14.84	9.22	87.42	116.25	22 58 50	1146.7	-11.20	2.32
100.00	8 57 52	4787.37	24.98	203.21	90.60	73.03	10 17 40	4187.4	22.42	195.35
110.00	23 30 41	1555.84	-17.56	353.23	85.92	119.81	23 56 37	955.8	-13.46	346.51
110.00	10 13 24	4550.99	27.90	184.15	89.49	69.39	11 29 15	3951.0	24.84	176.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.9410 TRA 8.7362 TC-13.4266 BAU 3.4865 SGT16502.1 SGR 625.4 SG3 111.7 ST 3659.7 SR 575.1 SS 416.0
RDE .4410 RRA .1138 RC3 .2277 FAU .00062 RRT -.1330 RRF -.1667 RTF .6754 CRT -.2614 CRS .7878 CST -.7969
FDE -.4098 FRA .9000 FC3 -.0277 BSP 58659 SGB16513.9 R23 .0775 R13 -.6754 LSA 3678.0 MSA 607.1 SSA 25.4
BDE 1.0392 BRA 8.7369 BC313.4285 FSP 324 SG116502.3 SG2 619.9 THA 179.71 EL1 3662.8 EL2 554.6 ALF 177.59

LAUNCH DATE DEC 24 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 25 1966

HELIOCENTRIC CONIC DISTANCE 921.733 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.488 GAL -5.71 AZL 88.60 HCA 268.12 SMA 194.44 ECC .26173 INC 1.3960 V1 30.280
RP 208.33 LAP -1.40 LOP .34 VP 24.321 GAP -14.62 AZP 90.05 TAL 331.94 TAP 240.06 RCA 143.55 APO 245.33 V2 26.303
RC 348.577 GL 10.36 GP -3.89 ZAL 135.95 ZAP 21.59 ETS 168.46 ZAE 31.48 ETE 173.43 ZAC 88.61 ETC 255.91 CLP 21.25

PLANETOCENTRIC CONIC

C3 20.383 VHL 4.515 DLA -7.54 RAL 229.55 RAD 6567.8 VEL 11.906 PTH 2.12 VHP 7.627 DPA -11.18 RAP 198.69 ECC 1.3354

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 23 28	1983.17	-13.37	27.33	89.92	115.20	21 56 31	1383.2	-9.86	20.41
90.00	7 32 4	5098.67	24.58	226.24	93.42	75.48	8 57 2	4498.7	22.34	218.28
100.00	22 41 12	1732.44	-14.41	8.38	89.40	116.48	23 10 4	1132.4	-10.74	1.51
100.00	8 57 1	4824.63	25.70	205.75	93.08	74.18	10 17 26	4224.6	23.28	197.78
110.00	23 41 10	1544.64	-17.18	352.58	87.85	120.02	24 6 55	944.6	-13.06	345.89
110.00	10 13 32	4585.19	28.69	186.50	92.01	70.57	11 29 57	3985.2	25.77	178.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.0553 TRA 9.1310 TC-12.9272 BAU 3.5232 SGT16573.3 SGR 628.4 SG3 101.7 ST 3770.1 SR 580.6 SS 393.4
RDE .4564 RRA .1047 RC3 .2256 FAU-.00246 RRT -.1524 RRF -.1783 RTF .6126 CRT -.2909 CRS .8080 CST -.7950
FDE -.3984 FRA .8266 FC3 .1045 BSP 58834 SGB16585.2 R23 .0859 R13 -.6126 LSA 3787.0 MSA 602.4 SSA 24.7
BDE 1.1498 BRA 9.1316 BC312.9291 FSP 279 SG116573.6 SG2 621.1 THA 179.67 EL1 3773.9 EL2 554.9 ALF 177.38

LAUNCH DATE DEC 24 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 27 1966

HELIOCENTRIC CONIC DISTANCE 925.904 EARTH TO MARS

RL 147.13 LAL -.00 LOL 92.22 VL 33.497 GAL -5.99 AZL 88.63 HCA 269.36 SMA 194.61 ECC .26414 INC 1.3685 V1 30.280
RP 208.50 LAP -1.37 LOP 1.59 VP 24.312 GAP -14.77 AZP 90.02 TAL 330.72 TAP 240.08 RCA 143.21 APO 246.02 V2 26.283
RC 349.289 GL 9.90 GP -3.84 ZAL 137.48 ZAP 21.33 ETS 168.45 ZAE 30.90 ETE 173.37 ZAC 88.88 ETC 255.95 CLP 20.99

PLANETOCENTRIC CONIC

C3 21.414 VHL 4.628 DLA -8.36 RAL 230.86 RAD 6567.9 VEL 11.950 PTH 2.13 VHP 7.725 DPA -11.53 RAP 199.64 ECC 1.3524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 35 7	1968.66	-12.94	26.48	91.92	115.41	22 7 56	1368.7	-9.42	19.57
90.00	7 30 52	5136.86	25.20	228.86	95.90	76.65	8 56 29	4536.9	23.12	220.81
100.00	22 52 25	1719.30	-14.01	7.61	91.39	116.68	23 21 4	1119.3	-10.32	.76
100.00	8 56 15	4861.45	26.36	208.28	95.58	75.36	10 17 17	4261.4	24.09	200.22
110.00	23 51 26	1534.53	-16.83	352.00	89.80	120.20	24 17 0	934.5	-12.70	345.34
110.00	10 13 44	4618.99	29.44	188.85	94.55	71.78	11 30 43	4019.0	26.66	180.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.1647 TRA 9.5377 TC-12.4343 BAU 3.5603 SGT16642.7 SGR 631.3 SG3 92.6 ST 3875.6 SR 585.9 SS 369.8
RDE .4723 RRA .0951 RC3 .2228 FAU-.00550 RRT -.1709 RRF -.1849 RTF .5330 CRT -.3160 CRS .8288 CST -.7885
FDE -.3856 FRA .7491 FC3 .2225 BSP 59015 SGB16654.6 R23 .0951 R13 -.5330 LSA 3891.2 MSA 598.5 SSA 24.1
BDE 1.2568 BRA 9.5381 BC312.4363 FSP 235 SG116643.0 SG2 622.0 THA 179.63 EL1 3880.1 EL2 555.2 ALF 177.21

LAUNCH DATE DEC 24 1964 FLIGHT TIME 432.00 ARRIVAL DATE MAR 1 1966

HELIOCENTRIC CONIC DISTANCE 930.055 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.506	GAL	-6.28	AZL	88.66	HCA	270.61	SMA	194.79	ECC	.26666	INC	1.3411	V1	30.280
RP	208.68	LAP	-1.34	LOP	2.83	VP	24.303	GAP	-14.93	AZP	89.99	TAL	329.49	TAP	240.10	RCA	142.84	APO	246.73	V2	26.263
RC	349.997	GL	9.46	GP	-3.78	ZAL	138.97	ZAP	21.07	ETS	168.45	ZAE	30.34	ETE	173.30	ZAC	89.14	ETC	255.98	CLP	20.74

PLANETOCENTRIC CONIC

C3	22.518	VHL	4.745	DLA	-9.15	RAL	232.14	RAD	6567.9	VEL	11.996	PTH	2.14	VHP	7.824	DPA	-11.88	RAP	200.59	ECC	1.3706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 46 31	1955.26	-12.55	25.69	93.94	115.59	22 19 6	1355.3	-9.00	18.81
90.00	7 29 45	5174.57	25.77	231.47	98.39	77.84	8 55 59	4574.6	23.84	223.34
100.00	23 3 23	1707.26	-13.64	6.90	93.38	116.86	23 31 50	1107.3	-9.93	.08
100.00	8 55 34	4897.79	26.96	210.82	98.09	76.57	10 17 11	4297.8	24.84	202.66
110.00	0 5 23	1525.45	-16.52	351.48	91.76	120.36	0 30 48	925.5	-12.37	344.84
110.00	10 13 59	4652.37	30.12	191.20	97.11	73.02	11 31 32	4052.4	27.50	182.99

DIFFERENTIAL CORRECTIONS

TDE	-1.2710	TRA	9.9509	TC	-11.9577	BAU	3.6004
RDE	.4886	RRA	.0851	RC3	.2193	FAU	-.00851
FDE	-.3711	FRA	.6676	FC3	.3270	BSP	59120
BDE	1.3617	BRA	9.9513	BC3	11.9598	FSP	192

MID-COURSE EXECUTION ACCURACY

SGT	16710.7	SGR	634.2	SG3	84.8		
RRT	-.1888	RRF	-.1843	RTF	.4329		
SGB	16722.8	R23	.1043	R13	-.4329		
SG1	16711.2	SG2	622.8	THA	179.59		

ORBIT DETERMINATION ACCURACY

ST	3975.0	SR	590.8	SS	345.2
CRT	-.3379	CRS	.8505	CST	-.7776
LSA	3989.3	MSA	594.9	SSA	23.5
EL1	3980.1	EL2	555.3	ALF	177.07

LAUNCH DATE DEC 24 1964 FLIGHT TIME 434.00 ARRIVAL DATE MAR 3 1966

HELIOCENTRIC CONIC DISTANCE 934.184 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	92.22	VL	33.515	GAL	-6.58	AZL	88.69	HCA	271.85	SMA	194.96	ECC	.26928	INC	1.3137	V1	30.280
RP	208.86	LAP	-1.31	LOP	4.08	VP	24.292	GAP	-15.09	AZP	89.96	TAL	328.25	TAP	240.10	RCA	142.46	APO	247.46	V2	26.241
RC	350.699	GL	9.02	GP	-3.73	ZAL	140.42	ZAP	20.82	ETS	168.44	ZAE	29.78	ETE	173.23	ZAC	89.40	ETC	256.02	CLP	20.50

PLANETOCENTRIC CONIC

C3	23.697	VHL	4.868	DLA	-9.91	RAL	233.41	RAD	6568.0	VEL	12.045	PTH	2.15	VHP	7.926	DPA	-12.23	RAP	201.55	ECC	1.3900

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 39	1942.93	-12.19	24.97	95.95	115.76	22 30 2	1342.9	-8.62	18.10
90.00	7 28 42	5211.79	26.28	234.08	100.89	79.05	8 55 34	4611.8	24.50	225.86
100.00	23 14 6	1696.28	-13.30	6.26	95.39	117.02	23 42 22	1096.3	-9.57	359.46
100.00	8 54 56	4933.67	27.50	213.35	100.61	77.79	10 17 10	4333.7	25.54	205.09
110.00	0 15 10	1517.39	-16.24	351.02	93.72	120.50	0 40 27	917.4	-12.07	344.40
110.00	10 14 18	4685.33	30.75	193.56	99.69	74.29	11 32 23	4085.3	28.29	185.23

DIFFERENTIAL CORRECTIONS

TDE	-1.3736	TRA	10.3750	TC	-11.4912	BAU	3.6412
RDE	.5053	RRA	.0747	RC3	.2153	FAU	-.01147
FDE	-.3550	FRA	.5818	FC3	.4192	BSP	59222
BDE	1.4636	BRA	10.3753	BC3	11.4932	FSP	150

MID-COURSE EXECUTION ACCURACY

SGT	16776.3	SGR	636.9	SG3	78.4		
RRT	-.2059	RRF	-.1744	RTF	.3103		
SGB	16788.4	R23	.1129	R13	-.3103		
SG1	16776.8	SG2	623.2	THA	179.55		

ORBIT DETERMINATION ACCURACY

ST	4068.9	SR	595.4	SS	319.9
CRT	-.3566	CRS	.8731	CST	-.7612
LSA	4081.9	MSA	591.7	SSA	22.9
EL1	4074.6	EL2	555.5	ALF	176.96

LAUNCH DATE DEC 25 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 341.586 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 34.901 GAL 4.32 AZL 89.01 HCA 104.81 SMA 226.48 ECC .35742 INC .9923 V1 30.281
RP 242.60 LAP .96 LOP 198.06 VP 22.541 GAP 20.56 AZP 90.25 TAL 16.49 TAP 121.30 RCA 145.53 APO 307.43 V2 22.624
RC 146.900 GL 6.53 GP 2.93 ZAL 59.27 ZAP 170.68 ETS 160.43 ZAE 152.58 ETE 4.51 ZAC 92.56 ETC 255.89 CLP 171.14

PLANETOCENTRIC CONIC

C3 28.091 VHL 5.300 DLA 16.75 RAL 156.71 RAD 6568.1 VEL 12.226 PTH 2.20 VHP 9.574 DPA .11 RAP 190.14 ECC 1.4623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 16 54	2846.78	-28.30	85.24	30.45	91.10	14 4 21	2246.8	-27.84	76.61
90.00	5 49 41	4392.01	6.20	182.73	22.28	62.31	7 2 53	3792.0	2.44	176.06
100.00	14 47 45	2553.79	-29.81	63.64	30.39	92.37	15 30 19	1953.8	-29.16	54.89
100.00	7 1 31	4160.23	7.53	164.97	21.56	60.99	8 10 51	3560.2	3.60	158.38
110.00	16 17 0	2274.56	-33.75	42.10	30.06	95.80	16 54 55	1674.6	-32.58	33.06
110.00	7 48 46	4012.22	10.92	151.70	19.51	57.40	8 55 38	3412.2	6.54	145.34

DIFFERENTIAL CORRECTIONS
TDE .1649 TRA -.7446 TC3 1.2874 BAU .4837
RDE -.5925 RRA -.2025 RC3 .0347 FAU .07173
FDE .2752 FRA -.2192 FC3-2.2107 BSP 5087
BDE .6150 BRA .7716 BC3 1.2879 FSP 565

MID-COURSE EXECUTION ACCURACY
SGT 1612.6 SGR 681.1 SG3 205.2
RRT .1168 RRF -.1362 RTF -.7668
SGB 1750.6 R23 -.0278 R13 -.7677
SG1 1615.0 SG2 675.4 THA 3.42

ORBIT DETERMINATION ACCURACY
ST 311.5 SR 644.2 SS 260.2
CRT -.4826 CRS .9156 CST -.7028
LSA 709.4 MSA 268.7 SSA 64.8
EL1 664.9 EL2 264.3 ALF 105.67

LAUNCH DATE DEC 25 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 344.264 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 34.793 GAL 4.43 AZL 89.03 HCA 105.74 SMA 223.60 ECC .34963 INC .9701 V1 30.281
RP 242.34 LAP .93 LOP 198.98 VP 22.400 GAP 19.92 AZP 90.26 TAL 17.20 TAP 122.94 RCA 145.42 APO 301.78 V2 22.651
RC 149.184 GL 6.44 GP 3.01 ZAL 58.08 ZAP 170.01 ETS 161.19 ZAE 152.82 ETE 4.86 ZAC 92.70 ETC 255.88 CLP 170.47

PLANETOCENTRIC CONIC

C3 27.389 VHL 5.233 DLA 17.10 RAL 155.52 RAD 6568.1 VEL 12.197 PTH 2.19 VHP 9.331 DPA .08 RAP 190.40 ECC 1.4508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 8 39	2853.84	-28.31	85.76	28.93	90.84	13 56 13	2253.8	-27.89	77.12
90.00	5 48 25	4372.34	5.57	181.62	20.77	62.19	7 1 18	3772.3	1.81	174.97
100.00	14 39 49	2559.86	-29.82	64.09	28.88	92.13	15 22 29	1959.9	-29.21	55.34
100.00	6 59 57	4141.55	6.91	163.93	20.05	60.84	8 8 58	3541.5	2.97	157.36
110.00	16 9 41	2278.67	-33.78	42.42	28.57	95.61	16 47 40	1678.7	-32.63	33.37
110.00	7 46 34	3995.50	10.30	150.79	17.98	57.23	8 53 9	3395.5	5.91	144.45

DIFFERENTIAL CORRECTIONS
TDE .1485 TRA -.7140 TC3 1.3487 BAU .4941
RDE -.5860 RRA -.1947 RC3 .0418 FAU .07459
FDE .2986 FRA -.2677 FC3-2.3577 BSP 5200
BDE .6045 BRA .7401 BC3 1.3493 FSP 602

MID-COURSE EXECUTION ACCURACY
SGT 1639.5 SGR 680.6 SG3 216.7
RRT .1254 RRF -.1460 RTF -.7732
SGB 1775.2 R23 -.0296 R13 -.7743
SG1 1642.2 SG2 674.1 THA 3.58

ORBIT DETERMINATION ACCURACY
ST 297.3 SR 645.0 SS 280.2
CRT -.4578 CRS .9084 CST -.7022
LSA 712.9 MSA 264.9 SSA 67.4
EL1 661.9 EL2 257.6 ALF 104.09

LAUNCH DATE DEC 25 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 347.028 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 34.690 GAL 4.54 AZL 89.05 HCA 106.66 SMA 220.93 ECC .34229 INC .9476 V1 30.281
RP 242.06 LAP .91 LOP 199.91 VP 22.267 GAP 19.28 AZP 90.27 TAL 17.91 TAP 124.57 RCA 145.31 APO 296.55 V2 22.678
RC 151.478 GL 6.35 GP 3.10 ZAL 56.90 ZAP 169.33 ETS 161.87 ZAE 153.11 ETE 5.24 ZAC 92.84 ETC 255.88 CLP 169.79

PLANETOCENTRIC CONIC

C3 26.755 VHL 5.173 DLA 17.44 RAL 154.34 RAD 6568.1 VEL 12.171 PTH 2.18 VHP 9.094 DPA .06 RAP 190.66 ECC 1.4403

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 0 35	2860.82	-28.31	86.27	27.44	90.59	13 48 15	2260.8	-27.93	77.62
90.00	5 47 3	4353.72	4.98	180.57	19.31	62.09	6 59 37	3753.7	1.21	173.93
100.00	14 32 2	2565.87	-29.84	64.54	27.40	91.90	15 14 48	1965.9	-29.26	55.78
100.00	6 58 17	4123.90	6.32	162.95	18.57	60.72	8 7 1	3523.9	2.37	156.39
110.00	16 2 31	2282.78	-33.80	42.74	27.10	95.42	16 40 34	1682.8	-32.68	33.68
110.00	7 44 17	3979.76	9.72	149.94	16.50	57.07	8 50 37	3379.8	5.32	143.62

DIFFERENTIAL CORRECTIONS
TDE .1324 TRA -.6829 TC3 1.4091 BAU .5043
RDE -.5799 RRA -.1869 RC3 .0495 FAU .07762
FDE .3229 FRA -.3205 FC3-2.5115 BSP 5306
BDE .5948 BRA .7081 BC3 1.4100 FSP 641

MID-COURSE EXECUTION ACCURACY
SGT 1665.9 SGR 679.9 SG3 228.9
RRT .1346 RRF -.1565 RTF -.7795
SGB 1799.3 R23 -.0315 R13 -.7806
SG1 1668.9 SG2 672.5 THA 3.75

ORBIT DETERMINATION ACCURACY
ST 282.9 SR 645.6 SS 300.7
CRT -.4307 CRS .9009 CST -.6984
LSA 717.0 MSA 261.4 SSA 70.0
EL1 659.0 EL2 250.1 ALF 102.52

LAUNCH DATE DEC 25 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 349.870 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 34.591 GAL 4.65 AZL 89.08 HCA 107.59 SMA 218.45 ECC .33536 INC .9249 V1 30.281
RP 241.79 LAP .88 LOP 200.83 VP 22.142 GAP 18.65 AZP 90.28 TAL 18.62 TAP 126.21 RCA 145.19 APO 291.71 V2 22.706
RC 153.781 GL 6.24 GP 3.19 ZAL 55.74 ZAP 168.64 ETS 162.46 ZAE 153.44 ETE 5.64 ZAC 92.98 ETC 255.87 CLP 169.09

PLANETOCENTRIC CONIC

C3 26.184 VHL 5.117 DLA 17.76 RAL 153.16 RAD 6568.1 VEL 12.147 PTH 2.18 VHP 8.864 DPA .05 RAP 190.91 ECC 1.4309

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 52 42	2867.65	-28.32	86.77	25.99	90.34	13 40 29	2267.7	-27.97	78.12
90.00	5 45 35	4336.19	4.42	179.59	17.88	62.00	6 57 51	3736.2	.64	172.95
100.00	14 24 27	2571.76	-29.85	64.97	25.96	91.67	15 7 19	1971.8	-29.30	56.21
100.00	6 56 31	4107.31	5.77	162.03	17.14	60.62	8 4 58	3507.3	1.81	155.47
110.00	15 55 31	2286.83	-33.83	43.05	25.68	95.24	16 33 38	1686.8	-32.73	33.99
110.00	7 41 56	3965.00	9.18	149.15	15.06	56.93	8 48 1	3365.0	4.76	142.85

DIFFERENTIAL CORRECTIONS
TDE .1170 TRA -.6524 TC3 1.4673 BAU .5140
RDE -.5742 RRA -.1790 RC3 .0578 FAU .08079
FDE .3478 FRA -.3766 FC3-2.6711 BSP 5414
BDE .5860 BRA .6765 BC3-1.4684 FSP 682

MID-COURSE EXECUTION ACCURACY
SGT 1691.3 SGR 679.1 SG3 241.6
RRT .1445 RRF -.1679 RTF -.7853
SGB 1822.5 R23 -.0336 R13 -.7865
SG1 1694.6 SG2 670.7 THA 3.94

ORBIT DETERMINATION ACCURACY
ST 268.6 SR 646.1 SS 321.3
CRT -.4013 CRS .8933 CST -.6912
LSA 721.7 MSA 258.4 SSA 72.4
EL1 656.5 EL2 242.1 ALF 100.98

LAUNCH DATE DEC 25 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 352.783 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	34.498	GAL	4.75	AZL	89.10	HCA	108.51	SMA	216.15	ECC	.32883	INC	.9019
RP	241.51	LAP	.86	LOP	201.76	VP	22.024	GAP	18.02	AZP	90.29	TAL	19.33	TAP	127.85	RCA	145.07	APO	287.23
RC	156.092	GL	6.13	GP	3.28	ZAL	54.60	ZAP	167.94	ETS	162.99	ZAE	153.80	ETE	6.07	ZAC	93.12	ETC	255.86

V1	30.281	V2	22.734	CLP	168.39														

PLANETOCENTRIC CONIC

C3	25.669	VHL	5.066	DLA	18.06	RAL	152.01	RAD	6568.0	VEL	12.126	PTH	2.17	VHP	8.640	DPA	.04	RAP	191.15
ECC	1.4224																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 45 2	2874.27	-28.32	87.25	24.58	90.09	13 32 56	2274.3	-28.00	78.60
90.00	5 44 1	4319.74	3.90	178.67	16.50	61.93	6 56 1	3719.7	.11	172.03
100.00	14 17 4	2577.47	-29.86	65.40	24.56	91.44	15 0 2	1977.5	-29.34	56.63
100.00	6 54 40	4091.78	5.25	161.17	15.75	60.53	8 2 51	3491.8	1.28	154.62
110.00	15 48 42	2290.78	-33.85	43.36	24.29	95.06	16 26 53	1690.8	-32.78	34.28
110.00	7 39 31	3951.23	8.66	148.41	13.66	56.80	8 45 22	3351.2	4.23	142.13

DIFFERENTIAL CORRECTIONS

TDE	.1025	TRA	-.6220	TC3	1.5247	BAU	.5237
RDE	-.5690	RRA	-.1711	RC3	.0667	FAU	.08414
FDE	.3734	FRA	-.4365	FC3	-2.8379	BSP	5516
BDE	.5781	BRA	.6451	BC3	1.5262	FSP	725

MID-COURSE EXECUTION ACCURACY

SGT	1716.9	SGR	678.3	SG3	255.1		
RRT	.1550	RRF	-.1800	RTF	-.7910		
SGB	1846.0	R23	-.0359	R13	-.7923		
SG1	1720.7	SG2	668.6	THA	4.13		

ORBIT DETERMINATION ACCURACY

ST	254.6	SR	646.4	SS	342.1
CRT	-.3701	CRS	.8858	CST	-.6813
LSA	727.0	MSA	256.1	SSA	74.7
EL1	654.2	EL2	233.7	ALF	99.52

LAUNCH DATE DEC 25 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 355.761 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	34.409	GAL	4.85	AZL	89.12	HCA	109.45	SMA	214.01	ECC	.32267	INC	.8785
RP	241.22	LAP	.83	LOP	202.69	VP	21.914	GAP	17.40	AZP	90.29	TAL	20.04	TAP	129.49	RCA	144.95	APO	283.06
RC	158.408	GL	6.01	GP	3.38	ZAL	53.48	ZAP	167.22	ETS	163.46	ZAE	154.20	ETE	6.53	ZAC	93.26	ETC	255.86

V1	30.281	V2	22.762	CLP	167.67		

PLANETOCENTRIC CONIC

C3	25.206	VHL	5.021	DLA	18.33	RAL	150.87	RAD	6568.0	VEL	12.107	PTH	2.17	VHP	8.423	DPA	.05	RAP	191.38
ECC	1.4148																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 37 37	2880.63	-28.32	87.72	23.22	89.86	13 25 37	2280.6	-28.04	79.06
90.00	5 42 20	4304.41	3.40	177.81	15.15	61.87	6 54 5	3704.4	-.38	171.18
100.00	14 9 55	2582.95	-29.87	65.80	23.20	91.23	14 52 58	1982.9	-29.38	57.03
100.00	6 52 43	4077.32	4.76	160.37	14.40	60.45	8 0 40	3477.3	.79	153.83
110.00	15 42 6	2294.58	-33.87	43.65	22.95	94.89	16 20 20	1694.6	-32.83	34.57
110.00	7 37 2	3938.45	8.19	147.73	12.30	56.70	8 42 40	3338.5	3.75	141.46

DIFFERENTIAL CORRECTIONS

TDE	.0883	TRA	-.5918	TC3	1.5794	BAU	.5329
RDE	-.5641	RRA	-.1631	RC3	.0763	FAU	.08766
FDE	.3999	FRA	-.5009	FC3	-3.0109	BSP	5621
BDE	.5709	BRA	.6139	BC3	1.5812	FSP	771

MID-COURSE EXECUTION ACCURACY

SGT	1741.1	SGR	677.3	SG3	269.2		
RRT	.1664	RRF	-.1930	RTF	-.7962		
SGB	1868.2	R23	-.0383	R13	-.7977		
SG1	1745.4	SG2	666.2	THA	4.34		

ORBIT DETERMINATION ACCURACY

ST	240.8	SR	646.4	SS	363.2
CRT	-.3352	CRS	.8782	CST	-.6675
LSA	732.8	MSA	254.6	SSA	76.5
EL1	652.1	EL2	224.8	ALF	98.08

LAUNCH DATE DEC 25 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 358.800 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	34.324	GAL	4.95	AZL	89.15	HCA	110.38	SMA	212.01	ECC	.31686	INC	.8549
RP	240.93	LAP	.80	LOP	203.62	VP	21.811	GAP	16.78	AZP	90.30	TAL	20.74	TAP	131.12	RCA	144.83	APO	279.19
RC	160.729	GL	5.88	GP	3.49	ZAL	52.38	ZAP	166.48	ETS	163.88	ZAE	154.63	ETE	7.02	ZAC	93.40	ETC	255.85

V1	30.281	V2	22.791	CLP	166.93		

PLANETOCENTRIC CONIC

C3	24.791	VHL	4.979	DLA	18.59	RAL	149.74	RAD	6568.0	VEL	12.090	PTH	2.16	VHP	8.211	DPA	.06	RAP	191.60
ECC	1.4080																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 30 26	2886.69	-28.31	88.16	21.88	89.64	13 18 33	2286.7	-28.07	79.50
90.00	5 40 33	4290.16	2.95	177.01	13.85	61.82	6 52 3	3690.2	-.84	170.38
100.00	14 3 0	2588.17	-29.88	66.19	21.87	91.03	14 46 9	1988.2	-29.41	57.42
100.00	6 50 40	4063.91	4.31	159.63	13.09	60.39	7 58 24	3463.9	.34	153.09
110.00	15 35 41	2298.21	-33.89	43.93	21.64	94.72	16 13 59	1698.2	-32.87	34.85
110.00	7 34 29	3926.63	7.74	147.10	10.98	56.60	8 39 55	3326.6	3.30	140.84

DIFFERENTIAL CORRECTIONS

TDE	.0840	TRA	-.5524	TC3	1.6466	BAU	.5465
RDE	-.5596	RRA	-.1551	RC3	.0865	FAU	.09132
FDE	.4277	FRA	-.5690	FC3	-3.1891	BSP	5503
BDE	.5658	BRA	.5738	BC3	1.6488	FSP	822

MID-COURSE EXECUTION ACCURACY

SGT	1774.2	SGR	676.4	SG3	284.0		
RRT	.1710	RRF	-.2071	RTF	-.8053		
SGB	1898.7	R23	-.0476	R13	-.8069		
SG1	1778.6	SG2	664.8	THA	4.34		

ORBIT DETERMINATION ACCURACY

ST	228.6	SR	646.4	SS	384.8
CRT	-.3437	CRS	.8711	CST	-.6823
LSA	741.0	MSA	250.8	SSA	78.6
EL1	651.7	EL2	212.9	ALF	97.76

LAUNCH DATE DEC 25 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 361.893 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	34.243	GAL	5.04	AZL	89.17	HCA	111.31	SMA	210.15	ECC	.31139	INC	.8309
RP	240.64	LAP	.77	LOP	204.56	VP	21.714	GAP	16.17	AZP	90.30	TAL	21.44	TAP	132.75	RCA	144.71	APO	275.59
RC	163.052	GL	5.75	GP	3.59	ZAL	51.32	ZAP	165.74	ETS	164.25	ZAE	155.10	ETE	7.54	ZAC	93.55	ETC	255.84

V1	30.281	V2	22.821	CLP	166.19		

PLANETOCENTRIC CONIC

C3	24.418	VHL	4.941	DLA	18.83	RAL	148.65	RAD	6568.0	VEL	12.075	PTH	2.16	VHP	8.005	DPA	.08	RAP	191.82
ECC	1.4019																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 23 33	2892.33	-28.31	88.57	20.60	89.43	13 11 46	2292.3	-28.09	79.92
90.00	5 38 40	4277.07	2.52	176.28	12.59	61.79	6 49 57	3677.1	-1.27	169.65
100.00	13 56 22	2593.03	-29.88	66.55	20.59	90.84	14 39 35	1993.0	-29.45	57.78
100.00	6 48 32	4051.60	3.90	158.95	11.83	60.34	7 56 4	3451.6	-.08	152.42
110.00	15 29 31	2301.59	-33.91	44.19	20.37	94.57	16 7 53	1701.6	-32.91	35.10
110.00	7 31 53	3915.81	7.34	146.53	9.71	56.52	8 37 8	3315.8	2.88	140.27

DIFFERENTIAL CORRECTIONS

TDE	.0667	TRA	-.5277	TC3	1.6888	BAU	.5522
RDE	-.5552	RRA	-.1468	RC3	.0976	FAU	.09525
FDE	.4547	FRA	-.6428	FC3	-3.3772	BSP	5713
BDE	.5592	BRA	.5477	BC3	1.6917	FSP	872

MID-COURSE EXECUTION ACCURACY

SGT	1791.5	SGR	675.3	SG3	299.8		
RRT	.1880	RRF	-.2217	RTF	-.8078		
SGB	1914.6	R23	-.0468	R13	-.8095		
SG1	1796.7	SG2	661.4	THA	4.69		

ORBIT DETERMINATION ACCURACY

ST	214.7	SR	646.0	SS	405.5
CRT	-.2824	CRS	.8631	CST	-.6479
LSA	746.7	MSA	252.9	SSA	79.5
EL1	649.2	EL2	205.0	ALF	95.96

LAUNCH DATE DEC 25 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 365.037 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 34.166 GAL 5.13 AZL 89.19 HCA 112.25 SMA 208.41 ECC .30624 INC .8066 V1 30.281
RP 240.34 LAP .75 LOP 206.49 VP 21.624 GAP 15.57 AZP 90.31 TAL 22.13 TAP 134.38 RCA 144.59 APO 272.23 V2 22.851
RC 165.375 GL 5.60 GP 3.71 ZAL 50.28 ZAP 164.97 ETS 164.59 ZAE 155.60 ETE 8.11 ZAC 93.70 ETC 255.84 CLP 165.42

PLANETOCENTRIC CONIC

C3 24.084 VHL 4.908 DLA 19.04 RAL 147.57 RAD 6568.0 VEL 12.061 PTH 2.16 VHP 7.804 DPA .11 RAP 192.03 ECC 1.3964

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 16 58	2897.57	-28.31	88.96	19.35	89.24	13 5 15	2297.6	-28.11	80.30
90.00	5 36 41	4265.08	2.14	175.61	11.37	61.76	6 47 46	3665.1	-1.65	168.98
100.00	13 50 0	2597.53	-29.89	66.89	19.35	90.66	14 33 18	1997.5	-29.47	58.11
100.00	6 46 19	4040.34	3.52	158.33	10.60	60.30	7 53 40	3440.3	-.46	151.80
110.00	15 23 36	2304.71	-33.93	44.44	19.14	94.42	16 2 1	1704.7	-32.95	35.34
110.00	7 29 13	3905.94	6.97	146.00	8.47	56.45	8 34 19	3305.9	2.51	139.75

DIFFERENTIAL CORRECTIONS
TDE .0523 TRA -.5010 TC3 1.7325 BAU .5589
RDE -.5511 RRA -.1385 RC3 .1093 FAU .09937
FDE .4830 FRA -.7212 FC3-3.5719 BSP 5859
BDE .5536 BRA .5198 BC3 1.7359 FSP 926

MID-COURSE EXECUTION ACCURACY
SGT 1810.5 SGR 674.4 SG3 316.3
RRT .2039 RRF -.2376 RTF -.8111
SGB 1932.1 R23 -.0481 R13 -.8130
SG1 1816.5 SG2 658.0 THA 5.00

ORBIT DETERMINATION ACCURACY
ST 201.9 SR 645.5 SS 426.7
CRT -.2268 CRS .8556 CST -.6153
LSA 753.6 MSA 255.2 SSA 80.1
EL1 647.3 EL2 196.1 ALF 94.47

LAUNCH DATE DEC 25 1964 FLIGHT TIME 158.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 368.229 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 34.092 GAL 5.22 AZL 89.22 HCA 113.19 SMA 206.79 ECC .30138 INC .7818 V1 30.281
RP 240.04 LAP .72 LOP 206.43 VP 21.540 GAP 14.97 AZP 90.31 TAL 22.80 TAP 135.99 RCA 144.46 APO 269.11 V2 22.881
RC 167.697 GL 5.45 GP 3.82 ZAL 49.27 ZAP 164.19 ETS 164.89 ZAE 156.14 ETE 8.73 ZAC 93.85 ETC 255.83 CLP 164.65

PLANETOCENTRIC CONIC

C3 23.786 VHL 4.877 DLA 19.23 RAL 146.52 RAD 6568.0 VEL 12.048 PTH 2.15 VHP 7.610 DPA .15 RAP 192.22 ECC 1.3915

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 10 40	2902.35	-28.30	89.31	18.14	89.06	12 59 2	2302.3	-28.13	80.65
90.00	5 34 35	4254.20	1.79	175.00	10.19	61.73	6 45 29	3654.2	-2.00	168.38
100.00	13 43 55	2601.64	-29.89	67.19	18.15	90.50	14 27 17	2001.6	-29.50	58.41
100.00	6 44 1	4030.13	3.17	157.76	9.42	60.26	7 51 11	3430.1	-.81	151.24
110.00	15 17 55	2307.54	-33.94	44.66	17.95	94.29	15 56 23	1707.5	-32.98	35.55
110.00	7 26 30	3897.00	6.63	145.53	7.28	56.39	8 31 27	3297.0	2.17	139.29

DIFFERENTIAL CORRECTIONS
TDE .0403 TRA -.4733 TC3 1.7752 BAU .5658
RDE -.5473 RRA -.1299 RC3 .1218 FAU .10370
FDE .5117 FRA -.8044 FC3-3.7744 BSP 5977
BDE .5488 BRA .4908 BC3 1.7793 FSP 984

MID-COURSE EXECUTION ACCURACY
SGT 1829.6 SGR 673.5 SG3 333.7
RRT .2196 RRF -.2546 RTF -.8147
SGB 1949.6 R23 -.0506 R13 -.8168
SG1 1836.4 SG2 654.6 THA 5.30

ORBIT DETERMINATION ACCURACY
ST 190.1 SR 644.8 SS 447.7
CRT -.1767 CRS .8480 CST -.5851
LSA 761.1 MSA 258.0 SSA 80.4
EL1 645.7 EL2 186.9 ALF 93.26

LAUNCH DATE DEC 25 1964 FLIGHT TIME 160.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 371.465 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 34.022 GAL 5.31 AZL 89.24 HCA 114.13 SMA 205.26 ECC .29681 INC .7566 V1 30.281
RP 239.73 LAP .69 LOP 207.38 VP 21.463 GAP 14.38 AZP 90.31 TAL 23.47 TAP 137.61 RCA 144.34 APO 266.19 V2 22.912
RC 170.016 GL 5.29 GP 3.95 ZAL 48.29 ZAP 163.39 ETS 165.17 ZAE 156.71 ETE 9.41 ZAC 94.00 ETC 255.83 CLP 163.85

PLANETOCENTRIC CONIC

C3 23.520 VHL 4.850 DLA 19.41 RAL 145.49 RAD 6568.0 VEL 12.037 PTH 2.15 VHP 7.420 DPA .20 RAP 192.41 ECC 1.3871

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 4 41	2906.64	-28.30	89.62	16.97	88.91	12 53 8	2306.6	-28.15	80.96
90.00	5 32 23	4244.39	1.47	174.46	9.05	61.72	6 43 7	3644.4	-2.32	167.83
100.00	13 38 8	2605.31	-29.89	67.47	16.98	90.36	14 21 33	2005.3	-29.52	58.68
100.00	6 41 37	4020.96	2.86	157.26	8.28	60.23	7 48 38	3421.0	-1.12	150.74
110.00	15 12 30	2310.06	-33.96	44.85	16.79	94.18	15 51 0	1710.1	-33.01	35.74
110.00	7 23 44	3888.97	6.33	145.11	6.13	56.34	8 28 33	3289.0	1.86	138.87

DIFFERENTIAL CORRECTIONS
TDE .0299 TRA -.4454 TC3 1.8161 BAU .5726
RDE -.5436 RRA -.1212 RC3 .1351 FAU .10824
FDE .5410 FRA -.8931 FC3-3.9843 BSP 6071
BDE .5444 BRA .4616 BC3 1.8211 FSP 1044

MID-COURSE EXECUTION ACCURACY
SGT 1848.1 SGR 672.8 SG3 352.0
RRT .2355 RRF -.2726 RTF -.8183
SGB 1966.7 R23 -.0540 R13 -.8207
SG1 1855.8 SG2 651.2 THA 5.59

ORBIT DETERMINATION ACCURACY
ST 179.0 SR 643.9 SS 468.7
CRT -.1289 CRS .8405 CST -.5548
LSA 769.1 MSA 261.4 SSA 80.4
EL1 644.3 EL2 177.4 ALF 92.22

LAUNCH DATE DEC 25 1964 FLIGHT TIME 162.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 374.741 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.956 GAL 5.39 AZL 89.27 HCA 115.08 SMA 203.84 ECC .29250 INC .7310 V1 30.281
RP 239.42 LAP .66 LOP 208.32 VP 21.391 GAP 13.79 AZP 90.31 TAL 24.13 TAP 139.21 RCA 144.22 APO 263.46 V2 22.943
RC 172.331 GL 5.13 GP 4.07 ZAL 47.34 ZAP 162.58 ETS 165.42 ZAE 157.31 ETE 10.15 ZAC 94.16 ETC 255.82 CLP 163.05

PLANETOCENTRIC CONIC

C3 23.282 VHL 4.825 DLA 19.56 RAL 144.49 RAD 6567.9 VEL 12.028 PTH 2.15 VHP 7.235 DPA .26 RAP 192.58 ECC 1.3832

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 59 1	2910.41	-28.29	89.90	15.84	88.77	12 47 32	2310.4	-28.16	81.23
90.00	5 30 5	4235.68	1.19	173.97	7.95	61.71	6 40 40	3635.7	-2.60	167.34
100.00	13 32 38	2608.52	-29.89	67.70	15.86	90.23	14 16 7	2008.5	-29.54	58.92
100.00	6 39 8	4012.80	2.59	156.81	7.17	60.21	7 46 1	3412.8	-1.40	150.29
110.00	15 7 20	2312.24	-33.97	45.02	15.68	94.08	15 45 53	1712.2	-33.03	35.91
110.00	7 20 56	3881.84	6.06	144.73	5.02	56.29	8 25 38	3281.8	1.59	138.50

DIFFERENTIAL CORRECTIONS
TDE .0204 TRA -.4182 TC3 1.8540 BAU .5789
RDE -.5401 RRA -.1122 RC3 .1492 FAU .11301
FDE .5710 FRA -.9869 FC3-4.2021 BSP 6154
BDE .5405 BRA .4330 BC3 1.8600 FSP 1108

MID-COURSE EXECUTION ACCURACY
SGT 1865.3 SGR 672.4 SG3 371.1
RRT .2525 RRF -.2918 RTF -.8217
SGB 1982.8 R23 -.0578 R13 -.8243
SG1 1874.1 SG2 647.5 THA 5.91

ORBIT DETERMINATION ACCURACY
ST 168.7 SR 642.8 SS 489.7
CRT -.0791 CRS .8332 CST -.5210
LSA 777.5 MSA 265.6 SSA 80.0
EL1 642.9 EL2 168.1 ALF 91.28

LAUNCH DATE DEC 25 1964 FLIGHT TIME 164.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 378.055 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.893 GAL 5.47 AZL 89.29 HCA 116.02 SMA 202.51 ECC .28844 INC .7049 V1 30.281
RP 239.11 LAP .63 LOP 209.27 VP 21.324 GAP 13.21 AZP 90.31 TAL 24.78 TAP 140.80 RCA 144.09 APO 260.92 V2 22.975
RC 174.639 GL 4.96 GP 4.21 ZAL 46.42 ZAP 161.74 ETS 165.65 ZAE 157.94 ETE 10.96 ZAC 94.31 ETC 255.82 CLP 162.22

PLANETOCENTRIC CONIC

C3 23.072 VHL 4.803 DLA 19.69 RAL 143.52 RAD 6567.9 VEL 12.019 PTH 2.15 VHP 7.056 DPA .33 RAP 192.75 ECC 1.3797

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 53 41	2913.63	-28.29	90.13	14.75	88.65	12 42 15	2313.6	-28.18	81.47
90.00	5 27 40	4228.02	.94	173.54	6.89	61.70	6 38 8	3628.0	-2.85	166.91
100.00	13 27 27	2611.25	-29.89	67.91	14.77	90.12	14 10 59	2011.2	-29.56	59.12
100.00	6 36 35	4005.63	2.35	156.42	6.11	60.19	7 43 21	3405.6	-1.64	149.90
110.00	15 2 27	2314.07	-33.98	45.16	14.60	94.00	15 41 1	1714.1	-33.05	36.05
110.00	7 18 5	3875.57	5.82	144.40	3.95	56.26	8 22 41	3275.6	1.35	138.17

DIFFERENTIAL CORRECTIONS

TDE .0121 TRA -.3911 TC3 1.8892 BAU .5849
RDE -.5368 RRA -.1030 RC3 .1642 FAU .11803
FDE .6014 FRA-1.0868 FC3-4.4288 BSP 6229
BDE .5369 BRA .4045 BC3 1.8963 FSP 1176

MID-COURSE EXECUTION ACCURACY

SGT 1881.4 SGR 672.2 SG3 391.3
RRT .2702 RRF -.3123 RTF -.8249
SGB 1997.8 R23 -.0621 R13 -.8278
SG1 1891.3 SG2 643.8 THA 6.24

ORBIT DETERMINATION ACCURACY

ST 159.0 SR 641.5 SS 510.6
CRT -.0307 CRS .8259 CST -.4865
LSA 786.2 MSA 270.3 SSA 79.4
EL1 641.5 EL2 158.9 ALF 90.46

LAUNCH DATE DEC 25 1964 FLIGHT TIME 166.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 381.405 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.833 GAL 5.55 AZL 89.32 HCA 116.97 SMA 201.25 ECC .28462 INC .6783 V1 30.281
RP 238.79 LAP .60 LOP 210.22 VP 21.263 GAP 12.64 AZP 90.31 TAL 25.42 TAP 142.39 RCA 143.97 APO 258.53 V2 23.007
RC 176.939 GL 4.78 GP 4.35 ZAL 45.53 ZAP 160.89 ETS 165.85 ZAE 158.60 ETE 11.85 ZAC 94.47 ETC 255.81 CLP 161.37

PLANETOCENTRIC CONIC

C3 22.884 VHL 4.784 DLA 19.80 RAL 142.58 RAD 6567.9 VEL 12.011 PTH 2.14 VHP 6.881 DPA .41 RAP 192.90 ECC 1.3766

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 48 41	2916.27	-28.28	90.32	13.70	88.55	12 37 17	2316.3	-28.18	81.66
90.00	5 25 10	4221.40	.73	173.17	5.87	61.69	6 35 31	3621.4	-3.06	166.54
100.00	13 22 35	2613.47	-29.89	68.07	13.73	90.04	14 6 9	2013.5	-29.57	59.28
100.00	6 33 57	3999.44	2.14	156.08	5.08	60.18	7 40 36	3399.4	-1.85	149.56
110.00	14 57 49	2315.52	-33.98	45.28	13.56	93.93	15 36 25	1715.5	-33.07	36.16
110.00	7 15 12	3870.15	5.62	144.11	2.92	56.23	8 19 42	3270.2	1.14	137.89

DIFFERENTIAL CORRECTIONS

TDE .0048 TRA -.3650 TC3 1.9209 BAU .5903
RDE -.5335 RRA -.0934 RC3 .1800 FAU .12330
FDE .6321 FRA-1.1931 FC3-4.6646 BSP 6288
BDE .5335 BRA .3768 BC3 1.9293 FSP 1246

MID-COURSE EXECUTION ACCURACY

SGT 1895.7 SGR 672.4 SG3 412.5
RRT .2888 RRF -.3339 RTF -.8277
SGB 2011.4 R23 -.0668 R13 -.8309
SG1 1906.9 SG2 640.0 THA 6.60

ORBIT DETERMINATION ACCURACY

ST 150.0 SR 640.0 SS 531.3
CRT .0164 CRS .8186 CST -.4513
LSA 795.1 MSA 275.7 SSA 78.5
EL1 640.0 EL2 150.0 ALF 89.77

LAUNCH DATE DEC 25 1964 FLIGHT TIME 168.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 384.788 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.775 GAL 5.62 AZL 89.35 HCA 117.92 SMA 200.08 ECC .28103 INC .6513 V1 30.281
RP 238.47 LAP .58 LOP 211.17 VP 21.207 GAP 12.08 AZP 90.30 TAL 26.04 TAP 143.96 RCA 143.85 APO 256.31 V2 23.040
RC 179.231 GL 4.60 GP 4.49 ZAL 44.68 ZAP 160.02 ETS 166.04 ZAE 159.28 ETE 12.85 ZAC 94.64 ETC 255.81 CLP 160.51

PLANETOCENTRIC CONIC

C3 22.718 VHL 4.766 DLA 19.89 RAL 141.67 RAD 6567.9 VEL 12.004 PTH 2.14 VHP 6.711 DPA .51 RAP 193.04 ECC 1.3739

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 44 1	2918.34	-28.28	90.48	12.69	88.48	12 32 39	2318.3	-28.19	81.81
90.00	5 22 34	4215.80	.55	172.86	4.88	61.69	6 32 50	3615.8	-3.24	166.23
100.00	13 18 1	2615.18	-29.89	68.20	12.72	89.97	14 1 36	2015.2	-29.58	59.41
100.00	6 31 14	3994.18	1.96	155.79	4.09	60.17	7 37 49	3394.2	-2.03	149.27
110.00	14 53 28	2316.59	-33.99	45.36	12.56	93.88	15 32 4	1716.6	-33.08	36.24
110.00	7 12 17	3865.55	5.44	143.87	1.93	56.20	8 16 43	3265.5	.96	137.65

DIFFERENTIAL CORRECTIONS

TDE .0016 TRA -.3366 TC3 1.9552 BAU .5969
RDE -.5303 RRA -.0835 RC3 .1969 FAU .12886
FDE .6627 FRA-1.3059 FC3-4.9106 BSP 6280
BDE .5303 BRA .3468 BC3 1.9651 FSP 1321

MID-COURSE EXECUTION ACCURACY

SGT 1912.9 SGR 673.1 SG3 434.9
RRT .3065 RRF -.3567 RTF -.8314
SGB 2027.9 R23 -.0736 R13 -.8350
SG1 1925.4 SG2 636.5 THA 6.91

ORBIT DETERMINATION ACCURACY

ST 140.7 SR 638.3 SS 551.7
CRT .0357 CRS .8111 CST -.4359
LSA 804.2 MSA 280.7 SSA 77.7
EL1 638.3 EL2 140.6 ALF 89.53

LAUNCH DATE DEC 25 1964 FLIGHT TIME 170.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 388.202 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.721 GAL 5.70 AZL 89.38 HCA 118.88 SMA 198.98 ECC .27764 INC .6236 V1 30.281
RP 238.14 LAP .55 LOP 212.12 VP 21.157 GAP 11.52 AZP 90.30 TAL 26.64 TAP 145.52 RCA 143.73 APO 254.22 V2 23.073
RC 181.513 GL 4.41 GP 4.65 ZAL 43.86 ZAP 159.12 ETS 166.22 ZAE 160.00 ETE 13.95 ZAC 94.80 ETC 255.80 CLP 159.63

PLANETOCENTRIC CONIC

C3 22.571 VHL 4.751 DLA 19.97 RAL 140.79 RAD 6567.9 VEL 11.998 PTH 2.14 VHP 6.546 DPA .62 RAP 193.17 ECC 1.3715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 39 41	2919.78	-28.28	90.58	11.72	88.42	12 28 21	2319.8	-28.20	81.92
90.00	5 19 52	4211.19	.40	172.60	3.93	61.69	6 30 4	3611.2	-3.39	165.97
100.00	13 13 47	2616.34	-29.89	68.29	11.75	89.92	13 57 23	2016.3	-29.58	59.50
100.00	6 28 27	3989.86	1.81	155.55	3.14	60.16	7 34 57	3389.9	-2.17	149.03
110.00	14 49 23	2317.24	-33.99	45.41	11.59	93.85	15 28 0	1717.2	-33.08	36.29
110.00	7 9 21	3861.73	5.30	143.67	.97	56.18	8 13 42	3261.7	.82	137.45

DIFFERENTIAL CORRECTIONS

TDE -.0070 TRA -.3156 TC3 1.9746 BAU .5994
RDE -.5272 RRA -.0733 RC3 .2147 FAU .13465
FDE .6948 FRA-1.4239 FC3-5.1645 BSP 6406
BDE .5273 BRA .3240 BC3 1.9863 FSP 1401

MID-COURSE EXECUTION ACCURACY

SGT 1919.5 SGR 674.4 SG3 458.2
RRT .3293 RRF -.3809 RTF -.8325
SGB 2034.5 R23 -.0777 R13 -.8366
SG1 1933.8 SG2 632.0 THA 7.39

ORBIT DETERMINATION ACCURACY

ST 134.2 SR 636.5 SS 572.4
CRT .1072 CRS .8045 CST -.3772
LSA 813.8 MSA 287.5 SSA 76.5
EL1 636.7 EL2 133.4 ALF 88.65

LAUNCH DATE DEC 25 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 391.646 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.669 GAL 5.77 AZL 89.40 HCA 119.84 SMA 197.94 ECC .27446 INC .5954 V1 30.281
RP 237.81 LAP .52 LOP 213.08 VP 21.110 GAP 10.97 AZP 90.30 TAL 27.23 TAP 147.07 RCA 143.62 APO 252.27 V2 23.106
RC 183.786 GL 4.21 GP 4.81 ZAL 43.07 ZAP 158.21 ETS 166.38 ZAE 160.74 ETE 15.18 ZAC 94.97 ETC 255.80 CLP 158.72

PLANETOCENTRIC CONIC

C3 22.441 VHL 4.737 DLA 20.02 RAL 139.94 RAD 6567.9 VEL 11.992 PTH 2.14 VHP 6.386 DPA .75 RAP 193.28 ECC 1.3693

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 35 41	2920.61	-28.28	90.64	10.78	88.39	12 24 21	2320.6	-28.20	81.98
90.00	5 17 5	4207.55	.28	172.40	3.01	61.68	6 27 13	3607.5	-3.50	165.77
100.00	13 9 51	2616.97	-29.89	68.33	10.81	89.90	13 53 28	2017.0	-29.59	59.54
100.00	6 25 36	3986.43	1.70	155.36	2.22	60.15	7 32 3	3386.4	-2.29	148.84
110.00	14 45 34	2317.48	-33.99	45.43	10.65	93.84	15 24 12	1717.5	-33.09	36.31
110.00	7 6 22	3858.68	5.18	143.51	.06	56.16	8 10 41	3258.7	.70	137.29

DIFFERENTIAL CORRECTIONS
TDE -.0117 TRA -.2925 TC3 1.9954 BAU .6027
RDE -.5242 RRA -.0626 RC3 .2336 FAU .14072
FDE .7268 FRA-1.5495 FC3-5.4290 BSP 6452
BDE .5243 BRA .2991 BC3 2.0090 FSP 1483

MID-COURSE EXECUTION ACCURACY
SGT 1927.7 SGR 676.3 SG3 482.7
RRT .3510 RRF -.4062 RTF -.8344
SGB 2042.9 R23 -.0838 R13 -.8389
SG1 1944.0 SG2 628.0 THA 7.85

ORBIT DETERMINATION ACCURACY
ST 127.2 SR 634.5 SS 592.9
CRT .1497 CRS .7977 CST -.3395
LSA 823.6 MSA 293.7 SSA 75.3
EL1 634.8 EL2 125.7 ALF 88.21

LAUNCH DATE DEC 25 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 395.117 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.620 GAL 5.83 AZL 89.43 HCA 120.79 SMA 196.97 ECC .27146 INC .5664 V1 30.281
RP 237.48 LAP .49 LOP 214.04 VP 21.069 GAP 10.43 AZP 90.29 TAL 27.81 TAP 148.60 RCA 143.50 APO 250.44 V2 23.140
RC 186.049 GL 4.01 GP 4.98 ZAL 42.31 ZAP 157.27 ETS 166.52 ZAE 161.50 ETE 16.56 ZAC 95.14 ETC 255.79 CLP 157.80

PLANETOCENTRIC CONIC

C3 22.326 VHL 4.725 DLA 20.05 RAL 139.12 RAD 6567.9 VEL 11.988 PTH 2.14 VHP 6.229 DPA .89 RAP 193.39 ECC 1.3674

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 32 1	2920.83	-28.27	90.66	9.88	88.39	12 20 42	2320.8	-28.20	81.99
90.00	5 14 13	4204.84	.19	172.25	2.13	61.68	6 24 17	3604.8	-3.59	165.62
100.00	13 6 13	2617.05	-29.89	68.34	9.91	89.90	13 49 50	2017.0	-29.59	59.55
100.00	6 22 41	3983.85	1.61	155.22	1.34	60.15	7 29 5	3383.9	-2.38	148.70
110.00	14 42 2	2317.31	-33.99	45.42	9.75	93.85	15 20 39	1717.3	-33.09	36.29
110.00	7 3 22	3856.35	5.09	143.39	359.17	56.15	8 7 39	3256.4	.61	137.17

DIFFERENTIAL CORRECTIONS
TDE -.0138 TRA -.2693 TC3 2.0155 BAU .6063
RDE -.5211 RRA -.0515 RC3 .2536 FAU .14714
FDE .7582 FRA-1.6829 FC3-5.7058 BSP 6460
BDE .5213 BRA .2741 BC3 2.0314 FSP 1570

MID-COURSE EXECUTION ACCURACY
SGT 1936.2 SGR 679.1 SG3 508.5
RRT .3728 RRF -.4326 RTF -.8363
SGB 2051.8 R23 -.0911 R13 -.8415
SG1 1954.6 SG2 624.2 THA 8.30

ORBIT DETERMINATION ACCURACY
ST 120.1 SR 632.3 SS 612.8
CRT .1720 CRS .7907 CST -.3170
LSA 833.2 MSA 299.8 SSA 74.1
EL1 632.6 EL2 118.2 ALF 88.06

LAUNCH DATE DEC 25 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 398.616 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.573 GAL 5.89 AZL 89.46 HCA 121.76 SMA 196.05 ECC .26864 INC .5370 V1 30.281
RP 237.15 LAP .46 LOP 215.00 VP 21.032 GAP 9.90 AZP 90.28 TAL 28.37 TAP 150.13 RCA 143.39 APO 248.72 V2 23.174
RC 188.300 GL 3.81 GP 5.15 ZAL 41.58 ZAP 156.31 ETS 166.66 ZAE 162.28 ETE 18.13 ZAC 95.32 ETC 255.79 CLP 156.85

PLANETOCENTRIC CONIC

C3 22.225 VHL 4.714 DLA 20.07 RAL 138.33 RAD 6567.9 VEL 11.983 PTH 2.14 VHP 6.078 DPA 1.04 RAP 193.47 ECC 1.3658

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 28 40	2920.44	-28.28	90.63	9.01	88.40	12 17 20	2320.4	-28.20	81.97
90.00	5 11 15	4203.03	.14	172.15	1.27	61.68	6 21 18	3603.0	-3.65	165.52
100.00	13 2 54	2616.59	-29.89	68.30	9.04	89.91	13 46 30	2016.6	-29.58	59.51
100.00	6 19 42	3982.11	1.55	155.13	.49	60.14	7 26 4	3382.1	-2.43	148.60
110.00	14 38 44	2316.74	-33.99	45.37	8.88	93.87	15 17 21	1716.7	-33.08	36.25
110.00	7 0 21	3854.73	5.03	143.30	358.32	56.14	8 4 36	3254.7	.55	137.08

DIFFERENTIAL CORRECTIONS
TDE -.0037 TRA -.2360 TC3 2.0518 BAU .6151
RDE -.5179 RRA -.0396 RC3 .2753 FAU .15406
FDE .7847 FRA-1.8285 FC3-6.0012 BSP 6198
BDE .5179 BRA .2393 BC3 2.0702 FSP 1652

MID-COURSE EXECUTION ACCURACY
SGT 1958.6 SGR 682.7 SG3 536.3
RRT .3893 RRF -.4596 RTF -.8414
SGB 2074.1 R23 -.1033 R13 -.8473
SG1 1978.5 SG2 622.5 THA 8.58

ORBIT DETERMINATION ACCURACY
ST 108.5 SR 629.6 SS 630.6
CRT .0688 CRS .7812 CST -.3903
LSA 841.1 MSA 304.8 SSA 73.4
EL1 629.7 EL2 108.3 ALF 89.30

LAUNCH DATE DEC 25 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 402.136 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.529 GAL 5.95 AZL 89.49 HCA 122.72 SMA 195.19 ECC .26598 INC .5066 V1 30.281
RP 236.81 LAP .43 LOP 215.97 VP 20.999 GAP 9.37 AZP 90.27 TAL 28.91 TAP 151.63 RCA 143.28 APO 247.11 V2 23.209
RC 190.540 GL 3.59 GP 5.34 ZAL 40.89 ZAP 155.33 ETS 166.78 ZAE 163.08 ETE 19.90 ZAC 95.50 ETC 255.79 CLP 155.88

PLANETOCENTRIC CONIC

C3 22.134 VHL 4.705 DLA 20.07 RAL 137.57 RAD 6567.9 VEL 11.980 PTH 2.14 VHP 5.930 DPA 1.21 RAP 193.54 ECC 1.3643

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 25 41	2919.35	-28.28	90.55	8.17	88.44	12 14 20	2319.3	-28.19	81.89
90.00	5 8 12	4202.13	.11	172.10	.46	61.68	6 18 14	3602.1	-3.68	165.47
100.00	12 59 54	2615.51	-29.89	68.22	8.20	89.96	13 43 30	2015.5	-29.58	59.43
100.00	6 16 40	3981.20	1.52	155.08	359.67	60.14	7 23 1	3381.2	-2.47	148.55
110.00	14 35 44	2315.67	-33.98	45.29	8.04	93.92	15 14 20	1715.7	-33.07	36.17
110.00	6 57 19	3853.81	5.00	143.25	357.51	56.14	8 1 33	3253.8	.52	137.03

DIFFERENTIAL CORRECTIONS
TDE -.0193 TRA -.2309 TC3 2.0365 BAU .6090
RDE -.5151 RRA -.0277 RC3 .2973 FAU .16081
FDE .8228 FRA-1.9697 FC3-6.2897 BSP 6547
BDE .5155 BRA .2326 BC3 2.0581 FSP 1760

MID-COURSE EXECUTION ACCURACY
SGT 1939.6 SGR 687.8 SG3 563.6
RRT .4209 RRF -.4886 RTF -.8377
SGB 2058.0 R23 -.1062 R13 -.8444
SG1 1983.5 SG2 616.3 THA 9.43

ORBIT DETERMINATION ACCURACY
ST 109.2 SR 627.5 SS 652.7
CRT .2362 CRS .7780 CST -.2522
LSA 853.8 MSA 312.4 SSA 71.7
EL1 628.0 EL2 106.0 ALF 87.58

LAUNCH DATE DEC 25 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 405.682 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.487 GAL 6.01 AZL 89.52 HCA 123.69 SMA 194.39 ECC .26348 INC .4757 V1 30.281
RP 236.46 LAP .40 LOP 216.93 VP 20.970 GAP 8.85 AZP 90.26 TAL 29.43 TAP 153.12 RCA 143.17 APO 245.60 V2 23.244
RC 192.768 GL 3.38 GP 5.53 ZAL 40.23 ZAP 154.32 ETS 166.90 ZAE 163.89 ETE 21.92 ZAC 95.68 ETC 255.78 CLP 154.88

PLANETOCENTRIC CONIC

C3 22.054 VHL 4.696 DLA 20.05 RAL 136.84 RAD 6567.9 VEL 11.976 PTH 2.13 VHP 5.787 DPA 1.40 RAP 193.60 ECC 1.3629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 22 59	2917.66	-28.28	90.43	7.37	88.50	12 11 37	2317.7	-28.19	81.76
90.00	5 5 5	4202.07	.11	172.10	359.67	61.68	6 15 7	3602.1	-3.68	165.46
100.00	12 57 11	2613.90	-29.89	68.10	7.40	90.02	13 40 45	2013.9	-29.57	59.31
100.00	6 13 34	3981.07	1.51	155.07	358.89	60.14	7 19 55	3381.1	-2.47	148.55
110.00	14 32 59	2314.20	-33.98	45.17	7.23	93.99	15 11 33	1714.2	-33.05	36.06
110.00	6 54 15	3853.53	4.99	143.24	356.73	56.14	7 58 29	3253.5	.51	137.02

DIFFERENTIAL CORRECTIONS
TDE -.0200 TRA -.2134 TC3 2.0423 BAU .6095
RDE -.5121 RRA -.0149 RC3 .3210 FAU .16810
FDE .8549 FRA-2.1251 FC3-6.5991 BSP 6565
BDE .5125 BRA .2139 BC3 2.0674 FSP 1862

MID-COURSE EXECUTION ACCURACY
SGT 1938.2 SGR 694.0 SG3 593.1
RRT .4453 RRF -.5179 RTF -.8380
SGB 2058.7 R23 -.1152 R13 -.8456
SG1 1965.4 SG2 612.8 THA 10.05

ORBIT DETERMINATION ACCURACY
ST 104.0 SR 624.8 SS 672.4
CRT .2497 CRS .7719 CST -.2340
LSA 864.3 MSA 318.4 SSA 70.5
EL1 625.4 EL2 100.6 ALF 87.56

LAUNCH DATE DEC 25 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 409.249 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.446 GAL 6.07 AZL 89.56 HCA 124.66 SMA 193.63 ECC .26113 INC .4439 V1 30.281
RP 236.12 LAP .37 LOP 217.90 VP 20.946 GAP 8.34 AZP 90.25 TAL 29.93 TAP 154.59 RCA 143.06 APO 244.19 V2 23.279
RC 194.983 GL 3.15 GP 5.74 ZAL 39.60 ZAP 153.28 ETS 167.01 ZAE 164.71 ETE 24.25 ZAC 95.87 ETC 255.78 CLP 153.86

PLANETOCENTRIC CONIC

C3 21.983 VHL 4.689 DLA 20.01 RAL 136.15 RAD 6567.9 VEL 11.973 PTH 2.13 VHP 5.648 DPA 1.60 RAP 193.64 ECC 1.3618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 20 37	2915.34	-28.28	90.26	6.60	88.59	12 9 13	2315.3	-28.18	81.59
90.00	5 1 52	4202.84	.13	172.14	358.91	61.68	6 11 55	3602.8	-3.66	165.50
100.00	12 54 47	2611.72	-29.89	67.94	6.62	90.11	13 38 18	2011.7	-29.56	59.15
100.00	6 10 24	3981.69	1.54	155.10	358.13	60.14	7 16 46	3381.7	-2.45	148.58
110.00	14 30 29	2312.28	-33.97	45.03	6.44	94.08	15 9 2	1712.3	-33.03	35.91
110.00	6 51 11	3853.89	5.00	143.26	355.98	56.14	7 55 25	3253.9	.52	137.04

DIFFERENTIAL CORRECTIONS
TDE -.0191 TRA -.1972 TC3 2.0447 BAU .6095
RDE -.5090 RRA -.0015 RC3 .3463 FAU .17575
FDE .8862 FRA-2.2882 FC3-6.9216 BSP 6558
BDE .5093 BRA .1972 BC3 2.0738 FSP 1969

MID-COURSE EXECUTION ACCURACY
SGT 1934.5 SGR 701.6 SG3 624.0
RRT .4697 RRF -.5477 RTF -.8379
SGB 2057.8 R23 -.1252 R13 -.8467
SG1 1965.5 SG2 609.6 THA 10.71

ORBIT DETERMINATION ACCURACY
ST 98.9 SR 622.0 SS 691.5
CRT .2459 CRS .7658 CST -.2300
LSA 874.7 MSA 324.0 SSA 69.4
EL1 622.5 EL2 95.8 ALF 87.71

LAUNCH DATE DEC 25 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 412.838 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.408 GAL 6.12 AZL 89.59 HCA 125.63 SMA 192.91 ECC .25892 INC .4112 V1 30.281
RP 235.77 LAP .33 LOP 218.88 VP 20.925 GAP 7.84 AZP 90.24 TAL 30.42 TAP 156.05 RCA 142.96 APO 242.86 V2 23.315
RC 197.185 GL 2.92 GP 5.95 ZAL 38.99 ZAP 152.22 ETS 167.11 ZAE 165.53 ETE 26.93 ZAC 96.06 ETC 255.77 CLP 152.82

PLANETOCENTRIC CONIC

C3 21.920 VHL 4.682 DLA 19.96 RAL 135.48 RAD 6567.9 VEL 11.971 PTH 2.13 VHP 5.513 DPA 1.83 RAP 193.66 ECC 1.3607

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 18 34	2912.38	-28.29	90.04	5.85	88.70	12 7 6	2312.4	-28.17	81.38
90.00	4 58 36	4204.40	.18	172.23	358.18	61.68	6 8 40	3604.4	-3.61	165.59
100.00	12 52 39	2608.97	-29.89	67.74	5.87	90.21	13 36 8	2009.0	-29.54	58.95
100.00	6 7 11	3983.04	1.58	155.18	357.41	60.15	7 13 34	3383.0	-2.40	148.66
110.00	14 28 15	2309.92	-33.96	44.84	5.69	94.19	15 6 44	1709.9	-33.00	35.73
110.00	6 48 5	3854.86	5.04	143.31	355.26	56.15	7 52 20	3254.9	.56	137.09

DIFFERENTIAL CORRECTIONS
TDE -.0151 TRA -.1807 TC3 2.0469 BAU .6097
RDE -.5057 RRA .0128 RC3 .3732 FAU .18384
FDE .9150 FRA-2.4618 FC3-7.2608 BSP 6495
BDE .5059 BRA .1812 BC3 2.0806 FSP 2076

MID-COURSE EXECUTION ACCURACY
SGT 1931.1 SGR 710.9 SG3 656.6
RRT .4934 RRF -.5780 RTF -.8380
SGB 2057.8 R23 -.1367 R13 -.8481
SG1 1966.1 SG2 607.3 THA 11.40

ORBIT DETERMINATION ACCURACY
ST 92.9 SR 618.9 SS 709.8
CRT .2034 CRS .7589 CST -.2560
LSA 884.5 MSA 329.4 SSA 68.3
EL1 619.2 EL2 90.9 ALF 88.21

LAUNCH DATE DEC 25 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 416.448 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.372 GAL 6.17 AZL 89.62 HCA 126.61 SMA 192.24 ECC .25684 INC .3778 V1 30.281
RP 235.42 LAP .30 LOP 219.85 VP 20.907 GAP 7.34 AZP 90.23 TAL 30.89 TAP 157.50 RCA 142.86 APO 241.61 V2 23.351
RC 199.372 GL 2.68 GP 6.17 ZAL 38.42 ZAP 151.13 ETS 167.21 ZAE 166.35 ETE 30.06 ZAC 96.26 ETC 255.77 CLP 151.74

PLANETOCENTRIC CONIC

C3 21.864 VHL 4.676 DLA 19.89 RAL 134.83 RAD 6567.9 VEL 11.968 PTH 2.13 VHP 5.382 DPA 2.07 RAP 193.67 ECC 1.3598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 16 48	2908.81	-28.29	89.78	5.14	88.83	12 5 17	2308.8	-28.16	81.12
90.00	4 55 14	4206.74	.26	172.36	357.48	61.68	6 5 21	3606.7	-3.53	165.72
100.00	12 50 49	2605.67	-29.89	67.49	5.15	90.34	13 34 14	2005.7	-29.52	58.71
100.00	6 3 55	3985.11	1.65	155.29	356.71	60.15	7 10 20	3385.1	-2.33	148.77
110.00	14 26 14	2307.12	-33.94	44.62	4.96	94.31	15 4 41	1707.1	-32.97	35.52
110.00	6 44 58	3856.43	5.10	143.39	354.56	56.15	7 49 15	3256.4	.62	137.17

DIFFERENTIAL CORRECTIONS
TDE -.0046 TRA -.1602 TC3 2.0550 BAU .6121
RDE -.5021 RRA .0281 RC3 .4022 FAU .19244
FDE .9391 FRA-2.6486 FC3-7.6200 BSP 6284
BDE .5021 BRA .1626 BC3 2.0940 FSP 2179

MID-COURSE EXECUTION ACCURACY
SGT 1933.1 SGR 722.1 SG3 691.3
RRT .5149 RRF -.6084 RTF -.8393
SGB 2063.6 R23 -.1502 R13 -.8509
SG1 1972.4 SG2 606.7 THA 12.04

ORBIT DETERMINATION ACCURACY
ST 85.3 SR 615.5 SS 726.7
CRT .0655 CRS .7505 CST -.3451
LSA 893.1 MSA 334.7 SSA 67.5
EL1 615.5 EL2 85.1 ALF 89.47

LAUNCH DATE DEC 25 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 420.075 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.338	GAL	6.21	AZL	89.66	HCA	127.59	SMA	191.61	ECC	.25488	INC	.3432	V1	30.281
RP	235.06	LAP	.27	LOP	220.83	VP	20.894	GAP	6.86	AZP	90.21	TAL	31.33	TAP	158.92	RCA	142.77	APO	240.44	V2	23.387
RC	201.544	GL	2.44	GP	6.41	ZAL	37.88	ZAP	150.01	ETS	167.30	ZAE	167.14	ETE	33.69	ZAC	96.46	ETC	255.76	CLP	150.64

PLANETOCENTRIC CONIC

C3	21.812	VHL	4.670	DLA	19.80	RAL	134.23	RAD	6567.9	VEL	11.966	PTH	2.13	VHP	5.256	DPA	2.33	RAP	193.66	ECC	1.3590

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 15 22	2904.54	-28.30	89.47	4.45	88.98	12 3 47	2304.5	-28.14	80.81
90.00	4 51 48	4209.85	.36	172.53	356.81	61.69	6 1 58	3609.8	-3.43	165.90
100.00	12 49 16	2601.75	-29.89	67.20	4.46	90.50	13 32 38	2001.8	-29.50	58.42
100.00	6 0 36	3987.87	1.74	155.44	356.04	60.15	7 7 3	3387.9	-2.24	148.92
110.00	14 24 30	2303.81	-33.93	44.37	4.25	94.47	15 2 54	1703.8	-32.94	35.27
110.00	6 41 51	3858.58	5.18	143.50	353.90	56.16	7 46 10	3258.6	.70	137.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0124	TRA	-.1614	TC3	2.0229	BAU	.6031	SGT	1901.2	SGR	735.4	SG3	724.9	ST	86.2	SR	612.9	SS	748.1
RDE	-.4993	RRA	.0433	RC3	.4314	FAU	.20067	RRT	.5427	RRF	-.6388	RTF	-.8338	CRT	.1695	CRS	.7493	CST	-.2739
FDE	.9782	FRA	-2.8280	FC3	-7.9650	BSP	6520	SGB	2038.5	R23	-.1611	R13	-.8476	LSA	907.4	MSA	339.0	SSA	66.2
BDE	.4995	BRA	.1672	BC3	2.0684	FSP	2319	SG1	1947.3	SG2	603.0	THA	13.14	EL1	613.1	EL2	84.9	ALF	88.61

LAUNCH DATE DEC 25 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 423.721 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.306	GAL	6.26	AZL	89.69	HCA	128.57	SMA	191.01	ECC	.25304	INC	.3073	V1	30.281
RP	234.71	LAP	.24	LOP	221.82	VP	20.883	GAP	6.38	AZP	90.19	TAL	31.76	TAP	160.33	RCA	142.68	APO	239.35	V2	23.424
RC	203.699	GL	2.18	GP	6.65	ZAL	37.37	ZAP	148.87	ETS	167.39	ZAE	167.90	ETE	37.95	ZAC	96.67	ETC	255.76	CLP	149.52

PLANETOCENTRIC CONIC

C3	21.765	VHL	4.665	DLA	19.69	RAL	133.64	RAD	6567.9	VEL	11.964	PTH	2.13	VHP	5.133	DPA	2.62	RAP	193.63	ECC	1.3582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 14 13	2899.68	-28.31	89.11	3.78	89.16	12 2 33	2299.7	-28.12	80.45
90.00	4 48 18	4213.68	.48	172.74	356.16	61.69	5 58 32	3613.7	-3.31	166.11
100.00	12 48 0	2597.28	-29.89	66.87	3.78	90.67	13 31 17	1997.3	-29.47	58.09
100.00	5 57 13	3991.31	1.86	155.63	355.39	60.16	7 3 44	3391.3	-2.12	149.11
110.00	14 22 59	2300.07	-33.91	44.08	3.56	94.64	15 1 20	1700.1	-32.89	34.99
110.00	6 38 42	3861.29	5.28	143.65	353.27	56.18	7 43 4	3261.3	.80	137.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0081	TRA	-.1536	TC3	2.0076	BAU	.5995	SGT	1883.9	SGR	751.0	SG3	761.5	ST	82.9	SR	609.6	SS	766.2
RDE	-.4959	RRA	.0600	RC3	.4634	FAU	.20972	RRT	.5657	RRF	-.6689	RTF	-.8312	CRT	.1060	CRS	.7441	CST	-.3198
FDE	1.0065	FRA	-3.0255	FC3	-8.3418	BSP	6479	SGB	2028.0	R23	-.1754	R13	-.8474	LSA	918.4	MSA	343.3	SSA	65.2
BDE	.4959	BRA	.1649	BC3	2.0604	FSP	2446	SG1	1936.5	SG2	602.4	THA	14.10	EL1	609.7	EL2	82.4	ALF	89.16

LAUNCH DATE DEC 25 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 427.385 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.275	GAL	6.30	AZL	89.73	HCA	129.56	SMA	190.45	ECC	.25130	INC	.2708	V1	30.281
RP	234.35	LAP	.21	LOP	222.80	VP	20.876	GAP	5.91	AZP	90.17	TAL	32.17	TAP	161.72	RCA	142.59	APO	238.31	V2	23.461
RC	205.837	GL	1.92	GP	6.91	ZAL	36.89	ZAP	147.69	ETS	167.48	ZAE	168.61	ETE	42.92	ZAC	96.88	ETC	255.76	CLP	148.36

PLANETOCENTRIC CONIC

C3	21.722	VHL	4.661	DLA	19.57	RAL	133.08	RAD	6567.9	VEL	11.962	PTH	2.13	VHP	5.014	DPA	2.92	RAP	193.58	ECC	1.3575

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 13 21	2894.18	-28.31	88.71	3.14	89.36	12 1 35	2294.2	-28.10	80.05
90.00	4 44 44	4218.22	.63	173.00	355.54	61.69	5 55 2	3618.2	-3.16	166.37
100.00	12 46 59	2592.23	-29.88	66.49	3.14	90.87	13 30 11	1992.2	-29.44	57.72
100.00	5 53 47	3995.40	2.00	155.86	354.78	60.17	7 0 22	3395.4	-1.98	149.33
110.00	14 21 43	2295.85	-33.88	43.75	2.90	94.83	14 59 59	1695.9	-32.84	34.67
110.00	6 35 32	3864.54	5.40	143.82	352.66	56.20	7 39 57	3264.5	.93	137.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0025	TRA	-.1480	TC3	1.9879	BAU	.5951	SGT	1863.0	SGR	769.1	SG3	799.5	ST	80.4	SR	606.2	SS	783.9
RDE	-.4923	RRA	.0776	RC3	.4973	FAU	.21907	RRT	.5872	RRF	-.6982	RTF	-.8278	CRT	.0185	CRS	.7394	CST	-.3833
FDE	1.0338	FRA	-3.2307	FC3	-8.7312	BSP	6427	SGB	2015.5	R23	-.1911	R13	-.8470	LSA	929.4	MSA	347.0	SSA	64.4
BDE	.4923	BRA	.1671	BC3	2.0492	FSP	2579	SG1	1923.2	SG2	603.1	THA	15.15	EL1	606.2	EL2	80.3	ALF	89.86

LAUNCH DATE DEC 25 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 431.067 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.246	GAL	6.33	AZL	89.77	HCA	130.55	SMA	189.93	ECC	.24967	INC	.2329	V1	30.281
RP	233.98	LAP	.18	LOP	223.79	VP	20.872	GAP	5.45	AZP	90.15	TAL	32.55	TAP	163.10	RCA	142.51	APO	237.35	V2	23.498
RC	207.958	GL	1.66	GP	7.18	ZAL	36.43	ZAP	146.48	ETS	167.56	ZAE	169.24	ETE	48.70	ZAC	97.10	ETC	255.75	CLP	147.17

PLANETOCENTRIC CONIC

C3	21.682	VHL	4.656	DLA	19.43	RAL	132.55	RAD	6567.9	VEL	11.961	PTH	2.13	VHP	4.899	DPA	3.25	RAP	193.51	ECC	1.3568

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 12 46	2888.04	-28.31	88.26	2.52	89.59	12 0 54	2288.0	-28.07	79.60
90.00	4 41 5	4223.47	.80	173.29	354.94	61.69	5 51 29	3623.5	-2.99	166.66
100.00	12 46 15	2586.61	-29.87	66.08	2.51	91.09	13 29 21	1986.6	-29.40	57.30
100.00	5 50 18	4000.14	2.16	156.12	354.18	60.18	6 56 58	3400.1	-1.82	149.59
110.00	14 20 40	2291.17	-33.85	43.39	2.26	95.04	14 58 52	1691.2	-32.79	34.31
110.00	6 32 21	3868.34	5.55	144.02	352.08	56.22	7 36 49	3268.3	1.07	137.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0069	TRA	-.1419	TC3	1.9685	BAU	.5912	SGT	1842.5	SGR	790.0	SG3	839.5	ST	78.6	SR	602.4	SS	800.5
RDE	-.4885	RRA	.0964	RC3	.5337	FAU	.22893	RRT	.6064	RRF	-.7267	RTF	-.8245	CRT	-.1351	CRS	.7336	CST	-.4843
FDE	1.0560	FRA	-3.4488	FC3	-9.1408	BSP	6290	SGB	2004.7	R23	-.2080	R13	-.8473	LSA	939.6	MSA	350.7	SSA	63.5
BDE	.4885	BRA	.1715	BC3	2.0395	FSP	2709	SG1	1911.1	SG2	605.6	THA	16.25	EL1	602.5	EL2	77.9	ALF	91.03

LAUNCH DATE DEC 25 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 434.764 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.219	GAL	6.37	AZL	89.81	HCA	131.54	SMA	189.43	ECC	.24813	INC	.1938	V1	30.281
RP	233.62	LAP	.15	LOP	224.78	VP	20.871	GAP	4.99	AZP	90.13	TAL	32.92	TAP	164.46	RCA	142.43	APO	236.44	V2	23.536
RC	210.060	GL	1.38	GP	7.47	ZAL	36.01	ZAP	145.24	ETS	167.65	ZAE	169.76	ETE	55.35	ZAC	97.33	ETC	255.75	CLP	145.95

PLANETOCENTRIC CONIC

C3	21.644	VHL	4.652	DLA	19.28	RAL	132.05	RAD	6567.9	VEL	11.959	PTH	2.13	VHP	4.789	DPA	3.60	RAP	193.42	ECC	1.3562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 12 28	2881.26	-28.32	87.76	1.92	89.84	12 0 29	2281.3	-28.04	79.11
90.00	4 37 22	4229.40	.99	173.62	354.36	61.70	5 47 51	3629.4	-2.80	166.99
100.00	12 45 46	2580.38	-29.87	65.61	1.90	91.33	13 28 46	1980.4	-29.36	56.84
100.00	5 46 45	4005.51	2.34	156.41	353.61	60.19	6 53 30	3405.5	-1.64	149.89
110.00	14 19 52	2285.98	-33.82	42.99	1.63	95.28	14 57 58	1686.0	-32.72	33.92
110.00	6 29 8	3872.67	5.71	144.25	351.52	56.24	7 33 41	3272.7	1.24	138.02

DIFFERENTIAL CORRECTIONS

TDE	.0108	TRA	-.1451	TC3	1.9320	BAU	.5830
RDE	-.4849	RRA	.1159	RC3	.5715	FAU	.23876
FDE	1.0837	FRA	-3.6676	FC3	-9.5503	BSP	6299
BDE	.4850	BRA	.1857	BC3	2.0148	FSP	2862

MID-COURSE EXECUTION ACCURACY

SGT	1807.6	SGR	813.8	SG3	879.6
RRT	.6250	RRF	-.7539	RTF	-.8178
SGB	1982.4	R23	-.2261	R13	-.8453
SG1	1886.6	SG2	608.7	THA	17.61

ORBIT DETERMINATION ACCURACY

ST	79.4	SR	599.1	SS	818.5
CRT	-.2029	CRS	.7311	CST	-.5402
LSA	952.1	MSA	353.1	SSA	62.7
EL1	599.3	EL2	77.8	ALF	91.57

LAUNCH DATE DEC 25 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 438.478 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.193	GAL	6.40	AZL	89.85	HCA	132.53	SMA	188.97	ECC	.24668	INC	.1536	V1	30.281
RP	233.25	LAP	.11	LOP	225.77	VP	20.872	GAP	4.55	AZP	90.10	TAL	33.27	TAP	165.80	RCA	142.36	APO	235.59	V2	23.574
RC	212.144	GL	1.09	GP	7.77	ZAL	35.61	ZAP	143.97	ETS	167.73	ZAE	170.13	ETE	62.84	ZAC	97.57	ETC	255.75	CLP	144.70

PLANETOCENTRIC CONIC

C3	21.607	VHL	4.648	DLA	19.11	RAL	131.57	RAD	6567.9	VEL	11.958	PTH	2.13	VHP	4.681	DPA	3.98	RAP	193.32	ECC	1.3556

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 12 26	2873.83	-28.32	87.22	1.34	90.11	12 0 20	2273.8	-28.00	78.57
90.00	4 33 34	4236.01	1.20	173.99	353.81	61.71	5 44 10	3636.0	-2.59	167.36
100.00	12 45 33	2573.57	-29.85	65.11	1.31	91.60	13 28 26	1973.6	-29.31	56.34
100.00	5 43 9	4011.51	2.55	156.74	353.06	60.21	6 50 0	3411.5	-1.44	150.22
110.00	14 19 17	2280.31	-33.79	42.55	1.02	95.53	14 57 17	1680.3	-32.65	33.49
110.00	6 25 54	3877.53	5.90	144.50	350.98	56.27	7 30 32	3277.5	1.42	138.27

DIFFERENTIAL CORRECTIONS

TDE	.0199	TRA	-.1469	TC3	1.8979	BAU	.5761
RDE	-.4808	RRA	.1369	RC3	.6121	FAU	.24913
FDE	1.1042	FRA	-3.8996	FC3	-9.9820	BSP	6191
BDE	.4812	BRA	.2008	BC3	1.9942	FSP	3007

MID-COURSE EXECUTION ACCURACY

SGT	1775.0	SGR	840.8	SG3	921.9
RRT	.6402	RRF	-.7798	RTF	-.8113
SGB	1964.1	R23	-.2453	R13	-.8444
SG1	1865.4	SG2	614.6	THA	19.01

ORBIT DETERMINATION ACCURACY

ST	81.9	SR	595.3	SS	834.7
CRT	-.3422	CRS	.7270	CST	-.6291
LSA	963.1	MSA	355.6	SSA	61.9
EL1	596.0	EL2	76.9	ALF	92.74

LAUNCH DATE DEC 25 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 442.206 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.169	GAL	6.43	AZL	89.89	HCA	133.53	SMA	188.54	ECC	.24531	INC	.1112	V1	30.281
RP	232.88	LAP	.08	LOP	226.77	VP	20.877	GAP	4.11	AZP	90.08	TAL	33.60	TAP	167.12	RCA	142.29	APO	234.79	V2	23.612
RC	214.210	GL	.79	GP	8.08	ZAL	35.24	ZAP	142.66	ETS	167.82	ZAE	170.33	ETE	71.04	ZAC	97.81	ETC	255.74	CLP	143.42

PLANETOCENTRIC CONIC

C3	21.572	VHL	4.645	DLA	18.92	RAL	131.12	RAD	6567.9	VEL	11.956	PTH	2.13	VHP	4.578	DPA	4.38	RAP	193.19	ECC	1.3550

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 12 40	2865.76	-28.31	86.63	.77	90.40	12 0 26	2265.8	-27.96	77.98
90.00	4 29 42	4243.29	1.44	174.40	353.27	61.72	5 40 26	3643.3	-2.36	167.77
100.00	12 45 35	2566.15	-29.84	64.56	.74	91.89	13 28 21	1966.2	-29.26	55.80
100.00	5 39 29	4018.13	2.77	157.10	352.53	60.22	6 46 27	3418.1	-1.21	150.58
110.00	14 18 55	2274.13	-33.74	42.07	.43	95.81	14 56 49	1674.1	-32.57	33.03
110.00	6 22 38	3882.92	6.10	144.79	350.47	56.30	7 27 21	3282.9	1.63	138.55

DIFFERENTIAL CORRECTIONS

TDE	.0282	TRA	-.1531	TC3	1.8560	BAU	.5676
RDE	-.4767	RRA	.1590	RC3	.6551	FAU	.25973
FDE	1.1239	FRA	-4.1383	FC-10	.4239	BSP	6112
BDE	.4775	BRA	.2207	BC3	1.9682	FSP	3163

MID-COURSE EXECUTION ACCURACY

SGT	1735.9	SGR	871.2	SG3	965.2
RRT	.6528	RRF	-.8041	RTF	-.8028
SGB	1942.3	R23	-.2653	R13	-.8430
SG1	1839.7	SG2	622.8	THA	20.61

ORBIT DETERMINATION ACCURACY

ST	86.4	SR	591.6	SS	851.0
CRT	-.4544	CRS	.7239	CST	-.7000
LSA	974.7	MSA	357.5	SSA	61.2
EL1	592.9	EL2	76.8	ALF	93.86

LAUNCH DATE DEC 25 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 445.949 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.146	GAL	6.46	AZL	89.93	HCA	134.53	SMA	188.13	ECC	.24402	INC	.0678	V1	30.281
RP	232.51	LAP	.05	LOP	227.77	VP	20.884	GAP	3.68	AZP	90.05	TAL	33.90	TAP	168.43	RCA	142.22	APO	234.04	V2	23.650
RC	216.258	GL	.49	GP	8.41	ZAL	34.89	ZAP	141.32	ETS	167.91	ZAE	170.32	ETE	79.65	ZAC	98.06	ETC	255.74	CLP	142.10

PLANETOCENTRIC CONIC

C3	21.537	VHL	4.641	DLA	18.71	RAL	130.68	RAD	6567.9	VEL	11.955	PTH	2.13	VHP	4.479	DPA	4.81	RAP	193.04	ECC	1.3544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 13 10	2857.02	-28.31	85.99	.22	90.73	12 0 47	2257.0	-27.91	77.35
90.00	4 25 45	4251.23	1.69	174.84	352.76	61.73	5 36 36	3651.2	-2.10	168.21
100.00	12 45 52	2558.12	-29.82	63.96	.18	92.20	13 28 30	1958.1	-29.20	55.21
100.00	5 35 45	4025.38	3.01	157.50	352.03	60.25	6 42 50	3425.4	-.97	150.98
110.00	14 18 46	2267.43	-33.70	41.55	359.85	96.12	14 56 34	1667.4	-32.48	32.53
110.00	6 19 20	3888.83	6.32	145.10	349.98	56.34	7 24 8	3288.8	1.86	138.86

DIFFERENTIAL CORRECTIONS

TDE	.0383	TRA	-.1618	TC3	1.8093	BAU	.5587
RDE	-.4722	RRA	.1825	RC3	.7009	FAU	.27068
FDE	1.1383	FRA	-4.3859	FC-10	.8810	BSP	6013
BDE	.4737	BRA	.2439	BC3	1.9403	FSP	3321

MID-COURSE EXECUTION ACCURACY

SGT	1693.2	SGR	905.3	SG3	1010.0
RRT	.6620	RRF	-.8267	RTF	-.7926
SGB	1920.0	R23	-.2859	R13	-.8419
SG1	1812.3	SG2	633.9	THA	22.37

ORBIT DETERMINATION ACCURACY

ST	93.7	SR	587.6	SS	866.1
CRT	-.5645	CRS	.7205	CST	-.7616
LSA	985.6	MSA	359.2	SSA	60.5
EL1	590.0	EL2	77.0	ALF	95.23

LAUNCH DATE DEC 25 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 449.707 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.124	GAL	6.48	AZL	89.98	HCA	135.53	SMA	187.75	ECC	.24281	INC	.0198
RP	232.14	LAP	.02	LOP	228.78	VP	20.893	GAP	3.26	AZP	90.02	TAL	34.19	TAP	169.72	RCA	142.16	APO	233.33
RC	218.287	GL	.17	GP	8.76	ZAL	34.57	ZAP	139.94	ETS	168.00	ZAE	170.08	ETE	88.31	ZAC	98.32	ETC	255.74

V1 30.281 V2 23.689 CLP 140.75

PLANETOCENTRIC CONIC

C3 21.501 VHL 4.637 DLA 18.48 RAL 130.27 RAD 6567.9 VEL 11.953 PTH 2.13 VHP 4.384 DPA 5.27 RAP 192.88 ECC 1.3539

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 13 56	2847.62	-28.30	85.30	359.69	91.07	12 1 24	2247.6	-27.85	76.67
90.00	4 21 43	4259.87	1.97	175.32	352.27	61.75	5 32 43	3659.9	-1.82	168.69
100.00	12 46 24	2549.47	-29.79	63.32	359.63	92.54	13 28 53	1949.5	-29.12	54.58
100.00	5 31 57	4033.25	3.28	157.94	351.54	60.27	6 39 10	3433.2	-.70	151.41
110.00	14 18 51	2260.20	-33.64	40.99	359.28	96.44	14 56 31	1660.2	-32.39	31.99
110.00	6 15 59	3895.28	6.57	145.44	349.51	56.38	7 20 54	3295.3	2.10	139.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0484	TRA	-.1744	TC3	1.7566	BAU	.5490	SGT	1646.0	SGR	943.2	SG3	1055.8	ST	103.0	SR	583.7	SS	881.1
RDE	-.4675	RRA	.2073	RC3	.7494	FAU	.28187	RRT	.6674	RRF	-.8475	RTF	-.7799	CRT	-.6497	CRS	.7183	CST	-.8065
FDE	1.1515	FRA	-4.6397	FC	-11.3490	BSP	5914	SGB	1897.1	R23	-.3065	R13	-.8409	LSA	997.2	MSA	360.2	SSA	59.8
BDE	.4701	BRA	.2709	BC3	1.9098	FSP	3486	SG1	1782.8	SG2	648.5	THA	24.36	EL1	587.6	EL2	77.8	ALF	96.66

LAUNCH DATE DEC 25 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 453.478 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.104	GAL	6.50	AZL	90.02	HCA	136.54	SMA	187.39	ECC	.24166	INC	.0242
RP	231.76	LAP	-.02	LOP	229.78	VP	20.905	GAP	2.84	AZP	89.98	TAL	34.45	TAP	171.00	RCA	142.10	APO	232.67
RC	220.299	GL	-.17	GP	9.12	ZAL	34.28	ZAP	138.53	ETS	168.10	ZAE	169.61	ETE	96.60	ZAC	98.59	ETC	255.74

V1 30.281 V2 23.728 CLP 139.37

PLANETOCENTRIC CONIC

C3 21.466 VHL 4.633 DLA 18.23 RAL 129.89 RAD 6567.9 VEL 11.952 PTH 2.13 VHP 4.292 DPA 5.75 RAP 192.69 ECC 1.3533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 14 57	2837.53	-28.28	84.57	359.16	91.44	12 2 15	2237.5	-27.78	75.94
90.00	4 17 36	4269.16	2.27	175.84	351.79	61.77	5 28 45	3669.2	-1.52	169.21
100.00	12 47 10	2540.17	-29.76	62.63	359.10	92.90	13 29 30	1940.2	-29.04	53.90
100.00	5 28 5	4041.75	3.57	158.40	351.07	60.30	6 35 26	3441.7	-.41	151.88
110.00	14 19 9	2252.41	-33.58	40.39	358.72	96.79	14 56 41	1652.4	-32.28	31.40
110.00	6 12 35	3902.27	6.83	145.81	349.06	56.42	7 17 38	3302.3	2.37	139.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0600	TRA	-.1897	TC3	1.6986	BAU	.5389	SGT	1595.0	SGR	985.1	SG3	1102.9	ST	115.0	SR	579.6	SS	895.3
RDE	-.4625	RRA	.2337	RC3	.8009	FAU	.29329	RRT	.6685	RRF	-.8665	RTF	-.7647	CRT	-.7224	CRS	.7159	CST	-.8381
FDE	1.1588	FRA	-4.9023	FC	-11.8286	BSP	5798	SGB	1874.7	R23	-.3262	R13	-.8406	LSA	1008.4	MSA	361.0	SSA	59.1
BDE	.4664	BRA	.3010	BC3	1.8779	FSP	3653	SG1	1752.0	SG2	666.9	THA	26.58	EL1	585.7	EL2	78.7	ALF	98.31

LAUNCH DATE DEC 25 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 457.263 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.084	GAL	6.52	AZL	90.07	HCA	137.55	SMA	187.05	ECC	.24058	INC	.0713
RP	231.38	LAP	-.05	LOP	230.79	VP	20.920	GAP	2.44	AZP	89.95	TAL	34.70	TAP	172.25	RCA	142.05	APO	232.05
RC	222.292	GL	-.51	GP	9.50	ZAL	34.01	ZAP	137.09	ETS	168.20	ZAE	168.92	ETE	104.24	ZAC	98.88	ETC	255.74

V1 30.281 V2 23.768 CLP 137.95

PLANETOCENTRIC CONIC

C3 21.430 VHL 4.629 DLA 17.97 RAL 129.52 RAD 6567.9 VEL 11.950 PTH 2.13 VHP 4.205 DPA 6.27 RAP 192.48 ECC 1.3527

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 16 14	2826.75	-28.26	83.78	358.65	91.83	12 3 21	2226.7	-27.71	75.16
90.00	4 13 23	4279.14	2.59	176.40	351.34	61.79	5 24 42	3679.1	-1.20	169.77
100.00	12 48 12	2530.22	-29.73	61.89	358.58	93.29	13 30 22	1930.2	-28.96	53.17
100.00	5 24 7	4050.90	3.87	158.91	350.62	60.34	6 31 38	3450.9	-.10	152.38
110.00	14 19 39	2244.06	-33.51	39.75	358.17	97.17	14 57 3	1644.1	-32.16	30.78
110.00	6 9 9	3909.82	7.11	146.21	348.62	56.48	7 14 19	3309.8	2.66	139.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0720	TRA	-.2094	TC3	1.6337	BAU	.5283	SGT	1539.5	SGR	1031.2	SG3	1150.7	ST	129.1	SR	575.5	SS	908.8
RDE	-.4572	RRA	.2616	RC3	.8555	FAU	.30491	RRT	.6645	RRF	-.8837	RTF	-.7458	CRT	-.7762	CRS	.7143	CST	-.8592
FDE	1.1624	FRA	-5.1689	FC	-12.3178	BSP	5690	SGB	1853.0	R23	-.3443	R13	-.8411	LSA	1019.7	MSA	361.4	SSA	58.5
BDE	.4628	BRA	.3351	BC3	1.8441	FSP	3826	SG1	1719.7	SG2	689.9	THA	29.11	EL1	584.3	EL2	80.2	ALF	100.07

LAUNCH DATE DEC 25 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 461.061 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.066	GAL	6.54	AZL	90.12	HCA	138.57	SMA	186.74	ECC	.23955	INC	.1225
RP	231.01	LAP	-.08	LOP	231.81	VP	20.936	GAP	2.04	AZP	89.91	TAL	34.93	TAP	173.49	RCA	142.01	APO	231.47
RC	224.266	GL	-.87	GP	9.90	ZAL	33.77	ZAP	135.61	ETS	168.31	ZAE	168.03	ETE	111.06	ZAC	99.17	ETC	255.74

V1 30.281 V2 23.807 CLP 136.50

PLANETOCENTRIC CONIC

C3 21.393 VHL 4.625 DLA 17.68 RAL 129.17 RAD 6567.9 VEL 11.949 PTH 2.13 VHP 4.121 DPA 6.81 RAP 192.26 ECC 1.3521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 17 47	2815.24	-28.23	82.94	358.15	92.25	12 4 42	2215.2	-27.62	74.32
90.00	4 9 5	4289.82	2.93	176.99	350.90	61.82	5 20 34	3689.8	-.86	170.36
100.00	12 49 28	2519.59	-29.68	61.10	358.06	93.70	13 31 27	1919.6	-28.86	52.40
100.00	5 20 5	4060.70	4.21	159.45	350.19	60.38	6 27 45	3460.7	.23	152.92
110.00	14 20 23	2235.12	-33.43	39.06	357.63	97.57	14 57 38	1635.1	-32.03	30.12
110.00	6 5 39	3917.94	7.42	146.64	348.21	56.54	7 10 57	3317.9	2.97	140.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0851	TRA	-.2323	TC3	1.5634	BAU	.5179	SGT	1481.2	SGR	1081.8	SG3	1199.5	ST	145.6	SR	571.0	SS	921.0
RDE	-.4513	RRA	.2913	RC3	.9136	FAU	.31677	RRT	.6547	RRF	-.8991	RTF	-.7227	CRT	-.8193	CRS	.7122	CST	-.8711
FDE	1.1577	FRA	-5.4433	FC	-12.8186	BSP	5574	SGB	1834.1	R23	-.3592	R13	-.8431	LSA	1030.2	MSA	361.8	SSA	57.9
BDE	.4593	BRA	.3726	BC3	1.8108	FSP	3998	SG1	1688.0	SG2	717.5	THA	32.00	EL1	583.6	EL2	81.7	ALF	102.04

LAUNCH DATE DEC 25 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 464.872 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.050	GAL	6.55	AZL	90.18	HCA	139.58	SMA	186.45	ECC	.23859	INC	.1757
RP	230.62	LAP	-.11	LOP	232.83	VP	20.955	GAP	1.65	AZP	89.87	TAL	35.14	TAP	174.72	RCA	141.96	APO	230.93
RC	226.222	GL	-1.25	GP	10.32	ZAL	33.56	ZAP	134.09	ETS	168.43	ZAE	166.96	ETE	117.01	ZAC	99.48	ETC	255.74

V1 30.281 V2 23.847 CLP 135.01

PLANETOCENTRIC CONIC

C3	21.356	VHL	4.621	DLA	17.37	RAL	128.84	RAD	6567.9	VEL	11.947	PTH	2.13	VHP	4.041	DPA	7.39	RAP	192.01

ECC 1.3515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 19 35	2802.99	-28.20	82.04	357.65	92.70	12 6 18	2203.0	-27.53	73.44
90.00	4 4 39	4301.21	3.30	177.63	350.47	61.86	5 16 21	3701.2	-.49	171.00
100.00	12 50 58	2508.25	-29.63	60.26	357.56	94.14	13 32 47	1908.2	-28.74	51.57
100.00	5 15 57	4071.19	4.56	160.03	349.78	60.43	6 23 48	3471.2	.59	153.49
110.00	14 21 20	2225.55	-33.35	38.33	357.09	97.99	14 58 25	1625.6	-31.88	29.41
110.00	6 2 5	3926.65	7.74	147.10	347.82	56.60	7 7 31	3326.6	3.30	140.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0980	TRA	-.2594	TC3	1.4854	BAU	.5073	SGT	1418.8	SGR	1136.8	SG3	1248.8	ST	163.3	SR	566.7	SS	933.1
RDE	-.4451	RRA	.3227	RC3	.9750	FAU	.32864	RRT	.6378	RRF	-.9128	RTF	-.6938	CRT	-.8498	CRS	.7114	CST	-.8785
FDE	1.1500	FRA	-5.7214	FC	-13.3228	BSP	5478	SGB	1818.1	R23	-.3692	R13	-.8473	LSA	1041.3	MSA	361.6	SSA	57.2
BDE	.4558	BRA	.4140	BC3	1.7768	FSP	4177	SG1	1656.1	SG2	750.1	THA	35.35	EL1	583.8	EL2	83.6	ALF	104.06

LAUNCH DATE DEC 25 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 468.696 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.034	GAL	6.57	AZL	90.23	HCA	140.60	SMA	186.17	ECC	.23767	INC	.2318
RP	230.24	LAP	-.15	LOP	233.85	VP	20.976	GAP	1.27	AZP	89.82	TAL	35.32	TAP	175.93	RCA	141.93	APO	230.42
RC	228.159	GL	-1.65	GP	10.76	ZAL	33.37	ZAP	132.54	ETS	168.55	ZAE	165.74	ETE	122.14	ZAC	99.80	ETC	255.74

V1 30.281 V2 23.887 CLP 133.48

PLANETOCENTRIC CONIC

C3	21.317	VHL	4.617	DLA	17.04	RAL	128.53	RAD	6567.9	VEL	11.946	PTH	2.13	VHP	3.965	DPA	8.00	RAP	191.74

ECC 1.3508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 21 38	2789.98	-28.15	81.09	357.16	93.18	12 8 8	2190.0	-27.42	72.50
90.00	4 0 7	4313.35	3.69	178.31	350.07	61.90	5 12 1	3713.3	-.10	171.68
100.00	12 52 44	2496.18	-29.57	59.37	357.05	94.60	13 34 20	1896.2	-28.62	50.70
100.00	5 11 42	4082.38	4.93	160.64	349.38	60.48	6 19 45	3482.4	.96	154.11
110.00	14 22 30	2215.35	-33.25	37.55	356.56	98.44	14 59 25	1615.4	-31.72	28.66
110.00	5 58 26	3935.97	8.09	147.60	347.44	56.68	7 4 2	3336.0	3.65	141.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1117	TRA	-.2907	TC3	1.4005	BAU	.4971	SGT	1354.2	SGR	1196.3	SG3	1298.1	ST	183.1	SR	562.1	SS	943.9
RDE	-.4384	RRA	.3558	RC3	1.0398	FAU	.34051	RRT	.6123	RRF	-.9249	RTF	-.6576	CRT	-.8741	CRS	.7109	CST	-.8818
FDE	1.1349	FRA	-6.0010	FC	-13.8291	BSP	5399	SGB	1807.0	R23	-.3722	R13	-.8546	LSA	1052.1	MSA	361.3	SSA	56.5
BDE	.4524	BRA	.4595	BC3	1.7443	FSP	4361	SG1	1626.3	SG2	787.6	THA	39.26	EL1	585.0	EL2	85.5	ALF	106.25

LAUNCH DATE DEC 25 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 472.531 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.019	GAL	6.58	AZL	90.29	HCA	141.63	SMA	185.92	ECC	.23681	INC	.2903
RP	229.86	LAP	-.18	LOP	234.87	VP	20.998	GAP	.89	AZP	89.77	TAL	35.49	TAP	177.12	RCA	141.89	APO	229.95
RC	230.076	GL	-2.06	GP	11.22	ZAL	33.20	ZAP	130.95	ETS	168.69	ZAE	164.39	ETE	126.53	ZAC	100.13	ETC	255.75

V1 30.281 V2 23.927 CLP 131.93

PLANETOCENTRIC CONIC

C3	21.277	VHL	4.613	DLA	16.68	RAL	128.24	RAD	6567.9	VEL	11.944	PTH	2.13	VHP	3.894	DPA	8.64	RAP	191.46

ECC 1.3502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 23 57	2776.16	-28.10	80.09	356.68	93.68	12 10 13	2176.2	-27.29	71.51
90.00	3 55 28	4326.26	4.10	179.03	349.67	61.96	5 7 34	3726.3	.32	172.40
100.00	12 54 45	2483.35	-29.49	58.43	356.56	95.09	13 36 8	1883.4	-28.48	49.77
100.00	5 7 22	4094.30	5.33	161.30	349.00	60.54	6 15 36	3494.3	1.37	154.76
110.00	14 23 53	2204.47	-33.14	36.72	356.03	98.92	15 0 37	1604.5	-31.55	27.86
110.00	5 54 42	3945.94	8.47	148.13	347.08	56.76	7 0 28	3345.9	4.03	141.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1262	TRA	-.3256	TC3	1.3097	BAU	.4881	SGT	1289.5	SGR	1260.9	SG3	1347.9	ST	204.8	SR	557.3	SS	954.0
RDE	-.4309	RRA	.3911	RC3	1.1087	FAU	.35245	RRT	.5768	RRF	-.9356	RTF	-.6128	CRT	-.8944	CRS	.7104	CST	-.8811
FDE	1.1106	FRA	-6.2860	FC	-14.3411	BSP	5325	SGB	1803.5	R23	-.3647	R13	-.8662	LSA	1062.6	MSA	361.1	SSA	55.8
BDE	.4490	BRA	.5089	BC3	1.7160	FSP	4537	SG1	1601.5	SG2	829.3	THA	43.89	EL1	587.4	EL2	86.9	ALF	108.62

LAUNCH DATE DEC 25 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 476.379 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.005	GAL	6.58	AZL	90.35	HCA	142.65	SMA	185.69	ECC	.23599	INC	.3510
RP	229.47	LAP	-.21	LOP	235.90	VP	21.023	GAP	.53	AZP	89.72	TAL	35.64	TAP	178.30	RCA	141.87	APO	229.50
RC	231.973	GL	-2.50	GP	11.71	ZAL	33.07	ZAP	129.33	ETS	168.84	ZAE	162.93	ETE	130.30	ZAC	100.48	ETC	255.75

V1 30.281 V2 23.968 CLP 130.33

PLANETOCENTRIC CONIC

C3	21.236	VHL	4.608	DLA	16.30	RAL	127.96	RAD	6567.9	VEL	11.942	PTH	2.13	VHP	3.826	DPA	9.31	RAP	191.16

ECC 1.3495

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 26 32	2761.50	-28.03	79.02	356.20	94.21	12 12 33	2161.5	-27.15	70.46
90.00	3 50 40	4339.98	4.54	179.80	349.30	62.02	5 3 0	3740.0	.76	173.16
100.00	12 57 0	2469.72	-29.41	57.42	356.06	95.62	13 38 10	1869.7	-28.32	48.79
100.00	5 2 52	4107.00	5.76	162.01	348.63	60.62	6 11 19	3507.0	1.80	155.46
110.00	14 25 29	2192.89	-33.01	35.84	355.51	99.43	15 2 2	1592.9	-31.36	27.01
110.00	5 50 53	3956.60	8.86	148.70	346.73	56.85	6 56 49	3356.6	4.44	142.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1402	TRA	-.3656	TC3	1.2105	BAU	.4802	SGT	1224.5	SGR	1330.4	SG3	1397.5	ST	227.4	SR	552.3	SS	963.0
RDE	-.4228	RRA	.4283	RC3	1.1816	FAU	.36431	RRT	.5282	RRF	-.9449	RTF	-.5557	CRT	-.9093	CRS	.7104	CST	-.8798
FDE	1.0781	FRA	-6.5706	FC	-14.8524	BSP	5296	SGB	1808.2	R23	-.3431	R13	-.8829	LSA	1072.8	MSA	360.8	SSA	55.1
BDE	.4454	BRA	.5631	BC3	1.6916	FSP	4716	SG1	1583.0	SG2	873.8	THA	49.47	EL1	590.7	EL2	88.5	ALF	111.02

LAUNCH DATE DEC 25 1964 FLIGHT TIME 220.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 480.238 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.993 GAL 6.59 AZL 90.42 HCA 143.69 SMA 185.47 ECC .23521 INC .4154 V1 30.281
RP 229.09 LAP -.25 LOP 236.93 VP 21.049 GAP .17 AZP 89.66 TAL 35.77 TAP 179.46 RCA 141.84 APO 229.09 V2 24.009
RC 233.848 GL -2.96 GP 12.22 ZAL 32.95 ZAP 127.67 ETS 169.00 ZAE 161.36 ETE 133.53 ZAC 100.85 ETC 255.76 CLP 128.70

PLANETOCENTRIC CONIC

C3 21.193 VHL 4.604 DLA 15.89 RAL 127.70 RAD 6567.9 VEL 11.940 PTH 2.12 VHP 3.763 DPA 10.02 RAP 190.84 ECC 1.3488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 29 22	2745.97	-27.95	77.89	355.72	94.77	12 15 8	2146.0	-26.99	69.35
90.00	3 45 43	4354.56	5.01	180.62	348.94	62.09	4 58 17	3754.6	1.23	173.97
100.00	12 59 31	2455.25	-29.31	56.36	355.57	96.17	13 40 27	1855.3	-28.14	47.75
100.00	4 58 15	4120.51	6.21	162.76	348.28	60.70	6 6 55	3520.5	2.26	156.20
110.00	14 27 19	2180.55	-32.87	34.91	354.98	99.97	15 3 40	1580.6	-31.14	26.11
110.00	5 46 56	3967.98	9.29	149.31	346.40	56.95	6 53 4	3368.0	4.87	143.00

DIFFERENTIAL CORRECTIONS
TDE .1546 TRA -.4098 TC3 1.1042 BAU .4744
RDE -.4138 RRA .4676 RC3 1.2584 FAU .37595
FDE 1.0369 FRA-6.8537 FC-15.3573 BSP 5306
BDE .4417 BRA .6217 BC3 1.6742 FSP 4895

MID-COURSE EXECUTION ACCURACY
SGT 1162.6 SGR 1404.9 SG3 1446.4
RRT .4641 RRF -.9530 RTF -.4842
SGB 1823.6 R23 -.3029 R13 -.9048
SG1 1575.5 SG2 918.4 THA 56.15

ORBIT DETERMINATION ACCURACY
ST 251.5 SR 547.2 SS 971.2
CRT -.9222 CRS .7111 CST -.8766
LSA 1083.0 MSA 360.5 SSA 54.3
EL1 595.5 EL2 89.4 ALF 113.53

LAUNCH DATE DEC 25 1964 FLIGHT TIME 222.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 484.109 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.981 GAL 6.59 AZL 90.48 HCA 144.72 SMA 185.26 ECC .23448 INC .4831 V1 30.281
RP 228.70 LAP -.28 LOP 237.96 VP 21.077 GAP -.18 AZP 89.61 TAL 35.88 TAP 180.60 RCA 141.82 APO 228.70 V2 24.049
RC 235.703 GL -3.45 GP 12.76 ZAL 32.87 ZAP 125.98 ETS 169.17 ZAE 159.71 ETE 136.32 ZAC 101.23 ETC 255.76 CLP 127.04

PLANETOCENTRIC CONIC

C3 21.151 VHL 4.599 DLA 15.45 RAL 127.45 RAD 6567.9 VEL 11.939 PTH 2.12 VHP 3.704 DPA 10.77 RAP 190.51 ECC 1.3481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 32 30	2729.52	-27.85	76.70	355.24	95.36	12 17 59	2129.5	-26.81	68.18
90.00	3 40 36	4370.05	5.50	181.49	348.59	62.18	4 53 26	3770.0	1.73	174.84
100.00	13 2 18	2439.90	-29.19	55.23	355.08	96.75	13 42 58	1839.9	-27.95	46.65
100.00	4 53 29	4134.90	6.69	163.56	347.94	60.80	6 2 23	3534.9	2.74	156.99
110.00	14 29 23	2167.42	-32.71	33.92	354.45	100.53	15 5 31	1567.4	-30.91	25.16
110.00	5 42 53	3980.14	9.74	149.96	346.09	57.07	6 49 13	3380.1	5.33	143.64

DIFFERENTIAL CORRECTIONS
TDE .1695 TRA -.4580 TC3 .9915 BAU .4714
RDE -.4036 RRA .5094 RC3 1.3400 FAU .38748
FDE .9817 FRA-7.1378 FC-15.8603 BSP 5354
BDE .4377 BRA .6850 BC3 1.6670 FSP 5064

MID-COURSE EXECUTION ACCURACY
SGT 1107.6 SGR 1485.1 SG3 1495.1
RRT .3819 RRF -.9600 RTF -.3957
SGB 1852.6 R23 -.2420 R13 -.9295
SG1 1585.0 SG2 959.1 THA 63.96

ORBIT DETERMINATION ACCURACY
ST 277.3 SR 541.5 SS 978.3
CRT -.9341 CRS .7115 CST -.8703
LSA 1092.7 MSA 360.9 SSA 53.5
EL1 601.8 EL2 89.1 ALF 116.18

LAUNCH DATE DEC 25 1964 FLIGHT TIME 224.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 487.991 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.970 GAL 6.59 AZL 90.55 HCA 145.76 SMA 185.08 ECC .23378 INC .5550 V1 30.281
RP 228.31 LAP -.31 LOP 239.00 VP 21.107 GAP -.53 AZP 89.54 TAL 35.98 TAP 181.73 RCA 141.81 APO 228.34 V2 24.090
RC 237.537 GL -3.96 GP 13.32 ZAL 32.82 ZAP 124.26 ETS 169.37 ZAE 157.98 ETE 138.74 ZAC 101.64 ETC 255.77 CLP 125.35

PLANETOCENTRIC CONIC

C3 21.108 VHL 4.594 DLA 14.97 RAL 127.21 RAD 6567.9 VEL 11.937 PTH 2.12 VHP 3.649 DPA 11.55 RAP 190.16 ECC 1.3474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 35 54	2712.08	-27.73	75.43	354.76	95.98	12 21 6	2112.1	-26.61	66.95
90.00	3 35 18	4386.50	6.02	182.42	348.26	62.28	4 48 25	3786.5	2.26	175.76
100.00	13 5 21	2423.60	-29.05	54.04	354.58	97.36	13 45 45	1823.6	-27.73	45.49
100.00	4 48 32	4150.21	7.19	164.41	347.62	60.91	5 57 42	3550.2	3.26	157.83
110.00	14 31 42	2153.45	-32.53	32.87	353.92	101.13	15 7 35	1553.5	-30.65	24.15
110.00	5 38 41	3993.13	10.22	150.66	345.79	57.20	6 45 14	3393.1	5.82	144.33

DIFFERENTIAL CORRECTIONS
TDE .1837 TRA -.5113 TC3 .8703 BAU .4713
RDE -.3924 RRA .5533 RC3 1.4255 FAU .39850
FDE .9179 FRA-7.4145 FC-16.3448 BSP 5476
BDE .4333 BRA .7533 BC3 1.6702 FSP 5237

MID-COURSE EXECUTION ACCURACY
SGT 1061.9 SGR 1570.1 SG3 1541.9
RRT .2783 RRF -.9660 RTF -.2865
SGB 1895.5 R23 -.1639 R13 -.9522
SG1 1615.7 SG2 991.2 THA 72.63

ORBIT DETERMINATION ACCURACY
ST 303.7 SR 535.7 SS 984.8
CRT -.9439 CRS .7130 CST -.8642
LSA 1102.6 MSA 361.2 SSA 52.5
EL1 609.5 EL2 88.1 ALF 118.81

LAUNCH DATE DEC 25 1964 FLIGHT TIME 226.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 491.884 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.960 GAL 6.58 AZL 90.63 HCA 146.80 SMA 184.90 ECC .23311 INC .6306 V1 30.281
RP 227.92 LAP -.35 LOP 240.04 VP 21.138 GAP -.87 AZP 89.47 TAL 36.05 TAP 182.85 RCA 141.80 APO 228.01 V2 24.132
RC 239.350 GL -4.50 GP 13.91 ZAL 32.79 ZAP 122.51 ETS 169.58 ZAE 156.18 ETE 140.85 ZAC 102.07 ETC 255.78 CLP 123.62

PLANETOCENTRIC CONIC

C3 21.064 VHL 4.590 DLA 14.47 RAL 126.98 RAD 6567.9 VEL 11.935 PTH 2.12 VHP 3.598 DPA 12.37 RAP 189.80 ECC 1.3467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 39 36	2693.60	-27.59	74.10	354.27	96.64	12 24 30	2093.6	-26.38	65.64
90.00	3 29 48	4404.00	6.58	183.41	347.94	62.40	4 43 12	3804.0	2.83	176.73
100.00	13 8 41	2406.30	-28.90	52.78	354.08	98.01	13 48 47	1806.3	-27.49	44.26
100.00	4 43 24	4166.53	7.73	165.32	347.32	61.04	5 52 51	3566.5	3.81	158.73
110.00	14 34 15	2138.58	-32.33	31.75	353.39	101.76	15 9 53	1538.6	-30.37	23.08
110.00	5 34 20	4007.02	10.73	151.41	345.51	57.35	6 41 7	3407.0	6.35	145.06

DIFFERENTIAL CORRECTIONS
TDE .1969 TRA -.5694 TC3 .7406 BAU .4749
RDE -.3802 RRA .5997 RC3 1.5151 FAU .40896
FDE .8444 FRA-7.6854 FC-16.8079 BSP 5664
BDE .4281 BRA .8269 BC3 1.6864 FSP 5403

MID-COURSE EXECUTION ACCURACY
SGT 1030.2 SGR 1660.5 SG3 1586.8
RRT .1527 RRF -.9712 RTF -.1562
SGB 1954.1 R23 -.0801 R13 -.9679
SG1 1672.3 SG2 1011.0 THA 81.44

ORBIT DETERMINATION ACCURACY
ST 330.6 SR 529.9 SS 990.9
CRT -.9525 CRS .7158 CST -.8580
LSA 1112.9 MSA 361.7 SSA 51.4
EL1 618.6 EL2 86.3 ALF 121.40

LAUNCH DATE DEC 25 1964 FLIGHT TIME 228.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 495.788 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.950 GAL 6.58 AZL 90.71 HCA 147.84 SMA 184.75 ECC .23248 INC .7111 V1 30.281
RP 227.53 LAP -.38 LOP 241.09 VP 21.171 GAP -1.20 AZP 89.40 TAL 36.11 TAP 183.95 RCA 141.80 APO 227.70 V2 24.173
RC 241.142 GL -5.08 GP 14.53 ZAL 32.79 ZAP 120.73 ETS 169.81 ZAE 154.32 ETE 142.71 ZAC 102.52 ETC 255.79 CLP 121.86

PLANETOCENTRIC CONIC

C3 21.022 VHL 4.585 DLA 13.92 RAL 126.77 RAD 6567.9 VEL 11.933 PTH 2.12 VHP 3.552 DPA 13.22 RAP 189.44 ECC 1.3460

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 43 36	2674.00	-27.43	72.69	353.78	97.33	12 28 10	2074.0	-26.13	64.26
90.00	3 24 5	4422.63	7.16	184.46	347.64	62.53	4 37 47	3822.6	3.43	177.78
100.00	13 12 18	2387.94	-28.71	51.44	353.58	98.69	13 52 6	1787.9	-27.21	42.96
100.00	4 38 4	4183.93	8.31	166.30	347.02	61.18	5 47 48	3583.9	4.40	159.69
110.00	14 37 3	2122.75	-32.10	30.57	352.85	102.42	15 12 26	1522.7	-30.06	21.96
110.00	5 29 48	4021.88	11.27	152.22	345.24	57.51	6 36 50	3421.9	6.91	145.85

DIFFERENTIAL CORRECTIONS
TDE .2099 TRA -.6321 TC3 .6043 BAU .4833
RDE -.3662 RRA .6486 RC3 1.6099 FAU .41899
FDE .7551 FRA-7.9474 FC-17.2549 BSP 5921
BDE .4221 BRA .9057 BC3 1.7196 FSP 5559

MID-COURSE EXECUTION ACCURACY
SGT 1019.0 SGR 1756.7 SG3 1630.1
RRT .0103 RRF -.9756 RTF -.0101
SGB 2030.8 R23 -.0051 R13 -.9756
SG1 1756.8 SG2 1018.9 THA 89.48

ORBIT DETERMINATION ACCURACY
ST 358.7 SR 523.6 SS 996.1
CRT -.9608 CRS .7188 CST -.8493
LSA 1122.8 MSA 363.1 SSA 50.2
EL1 629.3 EL2 82.8 ALF 124.02

LAUNCH DATE DEC 25 1964 FLIGHT TIME 230.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 499.705 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.942 GAL 6.57 AZL 90.80 HCA 148.89 SMA 184.60 ECC .23188 INC .7965 V1 30.281
RP 227.14 LAP -.41 LOP 242.14 VP 21.205 GAP -1.52 AZP 89.32 TAL 36.15 TAP 185.04 RCA 141.80 APO 227.41 V2 24.214
RC 242.914 GL -5.70 GP 15.18 ZAL 32.83 ZAP 118.92 ETS 170.06 ZAE 152.39 ETE 144.35 ZAC 103.00 ETC 255.81 CLP 120.08

PLANETOCENTRIC CONIC

C3 20.982 VHL 4.581 DLA 13.34 RAL 126.56 RAD 6567.9 VEL 11.932 PTH 2.12 VHP 3.510 DPA 14.12 RAP 189.06 ECC 1.3453

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 47 54	2653.25	-27.24	71.20	353.29	98.05	12 32 8	2053.2	-25.84	62.81
90.00	3 18 7	4442.48	7.78	185.59	347.35	62.69	4 32 9	3842.5	4.06	178.89
100.00	13 16 13	2368.45	-28.51	50.03	353.07	99.40	13 55 41	1768.5	-26.91	41.59
100.00	4 32 29	4202.51	8.91	167.34	346.75	61.35	5 42 32	3602.5	5.02	160.72
110.00	14 40 7	2105.91	-31.85	29.32	352.30	103.12	15 15 13	1505.9	-29.72	20.76
110.00	5 25 4	4037.82	11.85	153.09	344.99	57.70	6 32 22	3437.8	7.51	146.69

DIFFERENTIAL CORRECTIONS
TDE .2292 TRA -.6919 TC3 .4750 BAU .4997
RDE -.3464 RRA .7044 RC3 1.7167 FAU .43023
FDE .6081 FRA-8.2428 FC-17.7513 BSP 6154
BDE .4154 BRA .9874 BC3 1.7812 FSP 5616

MID-COURSE EXECUTION ACCURACY
SGT 1030.9 SGR 1865.7 SG3 1678.3
RRT -.1275 RRF -.9795 RTF .1281
SGB 2131.6 R23 .0501 R13 -.9783
SG1 1872.3 SG2 1018.9 THA 95.73

ORBIT DETERMINATION ACCURACY
ST 391.9 SR 513.6 SS 1002.2
CRT -.9743 CRS .7165 CST -.8184
LSA 1131.3 MSA 373.6 SSA 48.2
EL1 642.2 EL2 70.5 ALF 127.15

LAUNCH DATE DEC 25 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 503.630 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.934 GAL 6.56 AZL 90.89 HCA 149.94 SMA 184.47 ECC .23131 INC .8877 V1 30.281
RP 226.75 LAP -.44 LOP 243.19 VP 21.240 GAP -1.83 AZP 89.23 TAL 36.17 TAP 186.11 RCA 141.80 APO 227.14 V2 24.256
RC 244.666 GL -6.36 GP 15.87 ZAL 32.90 ZAP 117.10 ETS 170.34 ZAE 150.42 ETE 145.81 ZAC 103.50 ETC 255.82 CLP 118.26

PLANETOCENTRIC CONIC

C3 20.944 VHL 4.576 DLA 12.71 RAL 126.36 RAD 6567.9 VEL 11.930 PTH 2.12 VHP 3.473 DPA 15.06 RAP 188.69 ECC 1.3447

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 52 34	2631.17	-27.02	69.62	352.78	98.81	12 36 25	2031.2	-25.52	61.27
90.00	3 11 52	4463.67	8.44	186.80	347.09	62.87	4 26 15	3863.7	4.74	180.08
100.00	13 20 27	2347.69	-28.27	48.54	352.55	100.16	13 59 35	1747.7	-26.57	40.14
100.00	4 26 39	4222.38	9.56	168.46	346.49	61.54	5 37 1	3622.4	5.69	161.82
110.00	14 43 29	2087.92	-31.56	28.00	351.74	103.86	15 18 17	1487.9	-29.34	19.50
110.00	5 20 7	4054.92	12.47	154.03	344.76	57.91	6 27 42	3454.9	8.15	147.60

DIFFERENTIAL CORRECTIONS
TDE .2370 TRA -.7672 TC3 .3174 BAU .5168
RDE -.3300 RRA .7576 RC3 1.8182 FAU .43802
FDE .5047 FRA-8.4670 FC-18.1059 BSP 6603
BDE .4063 BRA 1.0783 BC3 1.8457 FSP 5781

MID-COURSE EXECUTION ACCURACY
SGT 1068.6 SGR 1971.2 SG3 1713.1
RRT -.2832 RRF -.9827 RTF .2866
SGB 2242.3 R23 .0938 R13 -.9782
SG1 2002.4 SG2 1008.9 THA 101.75

ORBIT DETERMINATION ACCURACY
ST 418.8 SR 508.2 SS 1007.5
CRT -.9789 CRS .7249 CST -.8151
LSA 1143.0 MSA 374.1 SSA 46.8
EL1 655.2 EL2 66.5 ALF 129.38

LAUNCH DATE DEC 25 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 507.565 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.927 GAL 6.55 AZL 90.99 HCA 151.00 SMA 184.35 ECC .23077 INC .9852 V1 30.281
RP 226.36 LAP -.48 LOP 244.24 VP 21.277 GAP -2.14 AZP 89.14 TAL 36.18 TAP 187.17 RCA 141.81 APO 226.89 V2 24.297
RC 246.398 GL -7.07 GP 16.59 ZAL 33.00 ZAP 115.25 ETS 170.63 ZAE 148.40 ETE 147.12 ZAC 104.04 ETC 255.83 CLP 116.43

PLANETOCENTRIC CONIC

C3 20.909 VHL 4.573 DLA 12.02 RAL 126.16 RAD 6567.8 VEL 11.929 PTH 2.12 VHP 3.441 DPA 16.03 RAP 188.32 ECC 1.3441

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 57 34	2607.71	-26.76	67.95	352.27	99.61	12 41 1	2007.7	-25.16	59.65
90.00	3 5 18	4486.34	9.14	188.09	346.83	63.08	4 20 5	3886.3	5.46	181.35
100.00	13 25 2	2325.60	-27.99	46.95	352.02	100.95	14 3 48	1725.6	-26.19	38.61
100.00	4 20 31	4243.67	10.25	169.67	346.25	61.77	5 31 15	3643.7	6.40	163.00
110.00	14 47 8	2068.73	-31.24	26.60	351.17	104.63	15 21 36	1468.7	-28.92	18.16
110.00	5 14 55	4073.32	13.14	155.04	344.54	58.16	6 22 48	3473.3	8.83	148.58

DIFFERENTIAL CORRECTIONS
TDE .2442 TRA -.8463 TC3 .1551 BAU .5399
RDE -.3109 RRA .8144 RC3 1.9251 FAU .44505
FDE .3823 FRA-8.6806 FC-18.4270 BSP 7110
BDE .3954 BRA 1.1745 BC3 1.9314 FSP 5924

MID-COURSE EXECUTION ACCURACY
SGT 1135.4 SGR 2083.3 SG3 1745.0
RRT -.4230 RRF -.9854 RTF .4280
SGB 2372.6 R23 .1226 R13 -.9778
SG1 2153.8 SG2 995.1 THA 106.63

ORBIT DETERMINATION ACCURACY
ST 446.6 SR 502.5 SS 1013.2
CRT -.9838 CRS .7342 CST -.8078
LSA 1155.3 MSA 376.5 SSA 45.3
EL1 669.6 EL2 60.1 ALF 131.57

LAUNCH DATE DEC 25 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 511.511 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	32.921	GAL	6.54	AZL	91.09	HCA	152.06	SMA	184.24	ECC	.23025	INC	1.0898
RP	225.97	LAP	-.51	LOP	245.30	VP	21.314	GAP	-2.44	AZP	89.04	TAL	36.16	TAP	188.22	RCA	141.82	APO	226.67
RC	248.110	GL	-7.82	GP	17.36	ZAL	33.14	ZAP	113.39	ETS	170.96	ZAE	146.34	ETE	148.31	ZAC	104.62	ETC	255.85

V1	30.281	V2	24.339	CLP	114.57														

PLANETOCENTRIC CONIC

C3	20.880	VHL	4.569	DLA	11.29	RAL	125.97	RAD	6567.8	VEL	11.927	PTH	2.12	VHP	3.414	DPA	17.05	RAP	187.95
ECC	1.3436																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 2 56	2582.73	-26.47	66.18	351.74	100.45	12 45 59	1982.7	-24.76	57.93
90.00	2 58 24	4510.64	9.89	189.49	346.60	63.33	4 13 35	3910.6	6.23	182.72
100.00	13 29 58	2302.05	-27.67	45.27	351.48	101.78	14 8 20	1702.1	-25.77	36.99
100.00	4 14 4	4266.55	10.98	170.97	346.03	62.02	5 25 10	3666.6	7.16	164.27
110.00	14 51 5	2048.22	-30.88	25.11	350.59	105.44	15 25 13	1448.2	-28.45	16.75
110.00	5 9 26	4093.15	13.85	156.14	344.35	58.43	6 17 39	3493.1	9.57	149.65

DIFFERENTIAL CORRECTIONS

TDE	.2497	TRA	-.9300	TC3	-.0140	BAU	.5686
RDE	-.2889	RRA	.8742	RC3	2.0369	FAU	.45105
FDE	.2402	FRA	-8.8762	FC	-18.7020	BSP	7680
BDE	.3819	BRA	1.2764	BC3	2.0369	FSP	6048

MID-COURSE EXECUTION ACCURACY

SGT	1229.7	SGR	2201.3	SG3	1772.8		
RRT	-.5417	RRF	-.9877	RTF	.5473		
SGB	2521.5	R23	.1407	R13	-.9777		
SG1	2323.6	SG2	979.2	THA	110.67		

ORBIT DETERMINATION ACCURACY

ST	474.7	SR	496.8	SS	1019.4		
CRT	-.9884	CRS	.7451	CST	-.7979		
LSA	1168.2	MSA	380.5	SSA	43.5		
EL1	685.1	EL2	52.2	ALF	133.68		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 515.468 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	32.915	GAL	6.52	AZL	91.20	HCA	153.12	SMA	184.15	ECC	.22975	INC	1.2024
RP	225.58	LAP	-.54	LOP	246.37	VP	21.353	GAP	-2.74	AZP	88.93	TAL	36.14	TAP	189.25	RCA	141.84	APO	226.46
RC	249.803	GL	-8.64	GP	18.16	ZAL	33.33	ZAP	111.51	ETS	171.32	ZAE	144.23	ETE	149.38	ZAC	105.23	ETC	255.86
V1	30.281	V2	24.381	CLP	112.70														

PLANETOCENTRIC CONIC

C3	20.858	VHL	4.567	DLA	10.49	RAL	125.78	RAD	6567.8	VEL	11.926	PTH	2.12	VHP	3.391	DPA	18.11	RAP	187.59
ECC	1.3433																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 8 43	2556.12	-26.12	64.31	351.21	101.33	12 51 19	1956.1	-24.30	56.12
90.00	2 51 7	4536.75	10.68	191.00	346.39	63.62	4 6 43	3936.7	7.05	184.20
100.00	13 35 17	2276.93	-27.31	43.49	350.92	102.65	14 13 14	1676.9	-25.30	35.27
100.00	4 7 14	4291.17	11.77	172.38	345.82	62.32	5 18 45	3691.2	7.97	165.65
110.00	14 55 23	2026.29	-30.47	23.53	349.99	106.30	15 29 9	1426.3	-27.94	15.25
110.00	5 3 37	4114.57	14.61	157.33	344.18	58.75	6 12 12	3514.6	10.36	150.80

DIFFERENTIAL CORRECTIONS

TDE	.2536	TRA	-1.0177	TC3	-.1881	BAU	.6027
RDE	-.2637	RRA	.9379	RC3	2.1533	FAU	.45587
FDE	.0796	FRA	-9.0545	FC	-18.9220	BSP	8314
BDE	.3658	BRA	1.3839	BC3	2.1614	FSP	6150

MID-COURSE EXECUTION ACCURACY

SGT	1347.8	SGR	2325.9	SG3	1796.2		
RRT	-.6370	RRF	-.9896	RTF	.6424		
SGB	2688.2	R23	.1513	R13	-.9781		
SG1	2509.8	SG2	962.9	THA	114.01		

ORBIT DETERMINATION ACCURACY

ST	503.0	SR	491.7	SS	1027.3		
CRT	-.9922	CRS	.7586	CST	-.7852		
LSA	1182.8	MSA	386.5	SSA	41.4		
EL1	702.0	EL2	44.0	ALF	135.65		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 519.434 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	32.910	GAL	6.50	AZL	91.32	HCA	154.18	SMA	184.06	ECC	.22927	INC	1.3237
RP	225.19	LAP	-.58	LOP	247.43	VP	21.393	GAP	-3.02	AZP	88.81	TAL	36.09	TAP	190.27	RCA	141.86	APO	226.26
RC	251.477	GL	-9.52	GP	19.01	ZAL	33.56	ZAP	109.62	ETS	171.70	ZAE	142.10	ETE	150.37	ZAC	105.88	ETC	255.87
V1	30.281	V2	24.423	CLP	110.81														

PLANETOCENTRIC CONIC

C3	20.845	VHL	4.566	DLA	9.63	RAL	125.59	RAD	6567.8	VEL	11.926	PTH	2.12	VHP	3.375	DPA	19.22	RAP	187.24
ECC	1.3431																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 14 56	2527.70	-25.73	62.32	350.66	102.25	12 57 3	1927.7	-23.78	54.19
90.00	2 43 22	4564.88	11.53	192.63	346.20	63.96	3 59 27	3964.9	7.94	185.80
100.00	13 41 0	2250.07	-26.90	41.60	350.36	103.56	14 18 30	1650.1	-24.77	33.45
100.00	3 59 59	4317.74	12.60	173.91	345.65	62.67	5 11 56	3717.7	8.84	167.14
110.00	15 0 2	2002.79	-30.01	21.85	349.39	107.19	15 33 24	1402.8	-27.37	13.66
110.00	4 57 27	4137.78	15.42	158.64	344.03	59.11	6 6 25	3537.8	11.21	152.06

DIFFERENTIAL CORRECTIONS

TDE	.2546	TRA	-1.1099	TC3	-.3677	BAU	.6424
RDE	-.2343	RRA	1.0060	RC3	2.2755	FAU	.45967
FDE	-.1038	FRA	-9.2165	FC	-19.0909	BSP	8993
BDE	.3460	BRA	1.4980	BC3	2.3051	FSP	6218

MID-COURSE EXECUTION ACCURACY

SGT	1486.9	SGR	2458.4	SG3	1815.5		
RRT	-.7115	RRF	-.9913	RTF	.7165		
SGB	2873.1	R23	.1565	R13	-.9790		
SG1	2712.5	SG2	947.0	THA	116.81		

ORBIT DETERMINATION ACCURACY

ST	530.9	SR	487.7	SS	1038.2		
CRT	-.9940	CRS	.7753	CST	-.7700		
LSA	1200.1	MSA	394.7	SSA	39.1		
EL1	719.8	EL2	39.3	ALF	137.44		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 523.411 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	32.905	GAL	6.48	AZL	91.46	HCA	155.25	SMA	183.99	ECC	.22882	INC	1.4552
RP	224.80	LAP	-.61	LOP	248.50	VP	21.434	GAP	-3.30	AZP	88.68	TAL	36.03	TAP	191.28	RCA	141.89	APO	226.09
RC	253.132	GL	-10.48	GP	19.91	ZAL	33.85	ZAP	107.73	ETS	172.12	ZAE	139.93	ETE	151.27	ZAC	106.58	ETC	255.88
V1	30.281	V2	24.465	CLP	108.90														

PLANETOCENTRIC CONIC

C3	20.846	VHL	4.566	DLA	8.70	RAL	125.40	RAD	6567.8	VEL	11.926	PTH	2.12	VHP	3.364	DPA	20.37	RAP	186.91
ECC	1.3431																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 21 36	2497.29	-25.27	60.21	350.10	103.21	13 3 14	1897.3	-23.20	52.15
90.00	2 35 8	4595.30	12.43	194.41	346.04	64.35	3 51 43	3995.3	8.88	187.53
100.00	13 47 11	2221.30	-26.42	39.60	349.78	104.51	14 24 12	1621.3	-24.17	31.52
100.00	3 52 15	4346.52	13.49	175.58	345.50	63.07	5 4 41	3746.5	9.78	168.76
110.00	15 5 4	1977.58	-29.49	20.08	348.76	108.12	15 38 1	1377.6	-26.73	11.98
110.00	4 50 51	4163.00	16.30	160.07	343.91	59.53	6 0 14	3563.0	12.13	153.44

DIFFERENTIAL CORRECTIONS

TDE	.2523	TRA	-1.2071	TC3	-.5521	BAU	.6869
RDE	-.2004	RRA	1.0784	RC3	2.4020	FAU	.46196
FDE	-.3068	FRA	-9.3543	FC	-19.1857	BSP	9727
BDE	.3222	BRA	1.6187	BC3	2.4646	FSP	6261

MID-COURSE EXECUTION ACCURACY

SGT	1644.0	SGR	2597.8	SG3	1828.9		
RRT	-.7688	RRF	-.9927	RTF	.7732		
SGB	3074.3	R23	.1582	R13	-.9801		
SG1	2929.5	SG2	932.2	THA	119.18		

ORBIT DETERMINATION ACCURACY

ST	558.4	SR	486.1	SS	1052.6		
CRT	-.9927	CRS	.7959	CST	-.7535		
LSA	1221.0	MSA	404.7	SSA	36.7		
EL1	739.0	EL2	44.4	ALF	138.99		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 527.397 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.901 GAL 6.46 AZL 91.60 HCA 156.33 SMA 183.92 ECC .22839 INC 1.5984 V1 30.281
RP 224.41 LAP -.64 LOP 249.58 VP 21.476 GAP -3.58 AZP 88.54 TAL 35.95 TAP 192.28 RCA 141.92 APO 225.93 V2 24.506
RC 254.766 GL -11.52 GP 20.86 ZAL 34.19 ZAP 105.84 ETS 172.58 ZAE 137.73 ETE 152.11 ZAC 107.34 ETC 255.89 CLP 106.99

PLANETOCENTRIC CONIC

C3 20.863 VHL 4.568 DLA 7.67 RAL 125.19 RAD 6567.8 VEL 11.927 PTH 2.12 VHP 3.359 DPA 21.58 RAP 186.61 ECC 1.3433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 28 48	2464.68	-24.75	57.97	349.52	104.22	13 9 53	1864.7	-22.55	49.99
90.00	2 26 19	4628.30	13.40	196.35	345.91	64.82	3 43 27	4028.3	9.89	189.43
100.00	13 53 50	2190.42	-25.88	37.47	349.19	105.51	14 30 21	1590.4	-23.50	29.47
100.00	3 43 58	4377.79	14.45	177.41	345.39	63.55	4 56 56	3777.8	10.78	170.54
110.00	15 10 31	1950.47	-28.90	18.19	348.13	109.10	15 43 1	1350.5	-26.02	10.19
110.00	4 43 47	4190.51	17.24	161.64	343.83	60.02	5 53 38	3590.5	13.13	154.95

DIFFERENTIAL CORRECTIONS
TDE .2458 TRA-1.3091 TC3 -.7412 BAU .7362
RDE -.1611 RRA 1.1561 RC3 2.5335 FAU .46284
FDE -.5309 FRA-9.4688 FC-19.2068 BSP 10502
BDE .2939 BRA 1.7465 BC3 2.6397 FSP 6270

MID-COURSE EXECUTION ACCURACY
SGT 1816.4 SGR 2745.6 SG3 1836.8
RRT -.8129 RRF -.9939 RTF .8166
SGB 3292.0 R23 .1575 R13 -.9814
SG1 3161.2 SG2 918.8 THA 121.20

ORBIT DETERMINATION ACCURACY
ST 585.3 SR 488.2 SS 1072.1
CRT -.9866 CRS .8208 CST -.7365
LSA 1247.3 MSA 416.4 SSA 34.0
EL1 759.7 EL2 61.4 ALF 140.24

LAUNCH DATE DEC 25 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 531.394 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.898 GAL 6.43 AZL 91.76 HCA 157.40 SMA 183.87 ECC .22797 INC 1.7553 V1 30.281
RP 224.02 LAP -.67 LOP 250.66 VP 21.519 GAP -3.85 AZP 88.38 TAL 35.86 TAP 193.26 RCA 141.95 APO 225.78 V2 24.548
RC 256.380 GL -12.65 GP 21.88 ZAL 34.59 ZAP 103.96 ETS 173.08 ZAE 135.51 ETE 152.88 ZAC 108.15 ETC 255.90 CLP 105.06

PLANETOCENTRIC CONIC

C3 20.901 VHL 4.572 DLA 6.56 RAL 124.98 RAD 6567.8 VEL 11.928 PTH 2.12 VHP 3.360 DPA 22.84 RAP 186.34 ECC 1.3440

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 36 34	2429.63	-24.14	55.58	348.93	105.27	13 17 4	1829.6	-21.81	47.68
90.00	2 16 51	4664.23	14.43	198.49	345.82	65.37	3 34 35	4064.2	10.99	191.50
100.00	14 1 2	2157.20	-25.25	35.19	348.58	106.55	14 36 59	1557.2	-22.74	27.29
100.00	3 35 4	4411.90	15.48	179.42	345.31	64.10	4 48 36	3811.9	11.87	172.49
110.00	15 16 26	1921.26	-28.23	16.17	347.48	110.12	15 48 27	1321.3	-25.23	8.29
110.00	4 36 10	4220.61	18.26	163.38	343.79	60.59	5 46 30	3620.6	14.20	156.62

DIFFERENTIAL CORRECTIONS
TDE .2363 TRA-1.4143 TC3 -.9296 BAU .7901
RDE -.1145 RRA 1.2401 RC3 2.6704 FAU .46232
FDE -.7834 FRA-9.5613 FC-19.1493 BSP 11317
BDE .2626 BRA 1.8810 BC3 2.8275 FSP 6231

MID-COURSE EXECUTION ACCURACY
SGT 1998.3 SGR 2903.4 SG3 1839.0
RRT -.8461 RRF -.9949 RTF .8490
SGB 3524.7 R23 .1553 R13 -.9828
SG1 3405.7 SG2 908.1 THA 122.84

ORBIT DETERMINATION ACCURACY
ST 612.3 SR 496.2 SS 1099.1
CRT -.9729 CRS .8495 CST -.7159
LSA 1281.1 MSA 432.3 SSA 31.1
EL1 783.0 EL2 89.7 ALF 141.14

LAUNCH DATE DEC 25 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 535.399 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.895 GAL 6.40 AZL 91.93 HCA 158.48 SMA 183.82 ECC .22757 INC 1.9273 V1 30.281
RP 223.63 LAP -.71 LOP 251.74 VP 21.562 GAP -4.11 AZP 88.21 TAL 35.75 TAP 194.23 RCA 141.99 APO 225.65 V2 24.590
RC 257.974 GL -13.89 GP 22.96 ZAL 35.08 ZAP 102.08 ETS 173.61 ZAE 133.28 ETE 153.61 ZAC 109.03 ETC 255.90 CLP 103.14

PLANETOCENTRIC CONIC

C3 20.967 VHL 4.579 DLA 5.34 RAL 124.75 RAD 6567.9 VEL 11.931 PTH 2.12 VHP 3.369 DPA 24.15 RAP 186.12 ECC 1.3451

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 44 59	2391.82	-23.44	53.03	348.33	106.36	13 24 50	1791.8	-20.97	45.23
90.00	2 6 37	4703.55	15.53	200.85	345.78	66.02	3 25 0	4103.6	12.16	193.79
100.00	14 8 50	2121.33	-24.54	32.77	347.96	107.63	14 44 12	1521.3	-21.89	24.97
100.00	3 25 26	4449.27	16.57	181.66	345.28	64.76	4 39 36	3849.3	13.04	174.65
110.00	15 22 51	1889.68	-27.48	14.03	346.81	111.18	15 54 21	1289.7	-24.35	6.26
110.00	4 27 55	4253.74	19.35	165.32	343.80	61.26	5 38 48	3653.7	15.37	158.47

DIFFERENTIAL CORRECTIONS
TDE .2187 TRA-1.5274 TC3-1.1252 BAU .8471
RDE -.0642 RRA 1.3273 RC3 2.8047 FAU .45892
FDE-1.0292 FRA-9.5998 FC-18.9492 BSP 12218
BDE .2280 BRA 2.0235 BC3 3.0220 FSP 6213

MID-COURSE EXECUTION ACCURACY
SGT 2195.8 SGR 3063.6 SG3 1829.5
RRT -.8727 RRF -.9957 RTF .8751
SGB 3769.3 R23 .1522 R13 -.9841
SG1 3660.9 SG2 897.3 THA 124.38

ORBIT DETERMINATION ACCURACY
ST 638.3 SR 512.6 SS 1128.3
CRT -.9551 CRS .8795 CST -.7063
LSA 1321.2 MSA 443.6 SSA 28.5
EL1 809.9 EL2 119.8 ALF 141.52

LAUNCH DATE DEC 25 1964 FLIGHT TIME 250.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 539.413 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.893 GAL 6.37 AZL 92.12 HCA 159.57 SMA 183.78 ECC .22718 INC 2.1174 V1 30.281
RP 223.24 LAP -.74 LOP 252.82 VP 21.607 GAP -4.36 AZP 88.02 TAL 35.62 TAP 195.19 RCA 142.03 APO 225.54 V2 24.632
RC 259.547 GL -15.26 GP 24.12 ZAL 35.64 ZAP 100.23 ETS 174.20 ZAE 131.02 ETE 154.29 ZAC 109.99 ETC 255.89 CLP 101.22

PLANETOCENTRIC CONIC

C3 21.068 VHL 4.590 DLA 4.00 RAL 124.50 RAD 6567.9 VEL 11.935 PTH 2.12 VHP 3.385 DPA 25.53 RAP 185.95 ECC 1.3467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 54 6	2350.91	-22.63	50.31	347.73	107.49	13 33 17	1750.9	-20.02	42.60
90.00	1 55 30	4746.77	16.71	203.48	345.80	66.80	3 14 37	4146.8	13.42	196.34
100.00	14 17 19	2082.51	-23.71	30.18	347.34	108.76	14 52 2	1482.5	-20.93	22.49
100.00	3 14 58	4490.41	17.75	184.14	345.32	65.55	4 29 49	3890.4	14.30	177.05
110.00	15 29 52	1855.48	-26.61	11.75	346.14	112.29	16 0 47	1255.5	-23.35	4.10
110.00	4 18 55	4290.20	20.53	167.50	343.87	62.05	5 30 25	3690.2	16.63	160.54

DIFFERENTIAL CORRECTIONS
TDE .1942 TRA-1.6464 TC3-1.3221 BAU .9067
RDE -.0083 RRA 1.4186 RC3 2.9349 FAU .45264
FDE-1.2753 FRA-9.5866 FC-18.5997 BSP 13200
BDE .1944 BRA 2.1733 BC3 3.2190 FSP 6191

MID-COURSE EXECUTION ACCURACY
SGT 2403.3 SGR 3226.5 SG3 1808.2
RRT -.8936 RRF -.9964 RTF .8957
SGB 4023.2 R23 .1484 R13 -.9854
SG1 3924.3 SG2 886.8 THA 125.76

ORBIT DETERMINATION ACCURACY
ST 664.9 SR 538.7 SS 1160.4
CRT -.9341 CRS .9081 CST -.7037
LSA 1368.7 MSA 452.8 SSA 25.9
EL1 842.2 EL2 151.9 ALF 141.39

LAUNCH DATE DEC 25 1964 FLIGHT TIME 252.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 543.436 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.891 GAL 6.34 AZL 92.33 HCA 160.66 SMA 183.75 ECC .22681 INC 2.3284 V1 30.281
RP 222.85 LAP -.77 LOP 253.91 VP 21.652 GAP -4.61 AZP 87.80 TAL 35.48 TAP 196.14 RCA 142.08 APO 225.43 V2 24.674
RC 261.100 GL -16.76 GP 25.36 ZAL 36.31 ZAP 98.40 ETS 174.83 ZAE 128.76 ETE 154.94 ZAC 111.03 ETC 255.87 CLP 99.31

PLANETOCENTRIC CONIC

C3 21.215 VHL 4.606 DLA 2.52 RAL 124.23 RAD 6567.9 VEL 11.941 PTH 2.13 VHP 3.409 DPA 26.97 RAP 185.84 ECC 1.3492

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 4 4	2306.48	-21.69	47.39	347.12	108.67	13 42 30	1706.5	-18.94	39.79
90.00	1 43 20	4794.55	17.96	206.42	345.90	67.74	3 3 15	4194.6	14.79	199.18
100.00	14 26 35	2040.33	-22.76	27.41	346.71	109.92	15 0 35	1440.3	-19.84	19.83
100.00	3 3 31	4535.94	19.01	186.94	345.43	66.49	4 19 7	3935.9	15.67	179.74
110.00	15 37 31	1818.31	-25.63	9.30	345.46	113.43	16 7 49	1218.3	-22.24	1.79
110.00	4 9 4	4330.72	21.80	169.95	344.02	63.00	5 21 15	3730.7	18.01	162.88

DIFFERENTIAL CORRECTIONS
TDE .1611 TRA-1.7725 TC3-1.5195 BAU .9685
RDE .0533 RRA 1.5138 RC3 3.0580 FAU .44321
FDE-1.5155 FRA-9.5131 FC-18.0859 BSP 14293
BDE .1697 BRA 2.3310 BC3 3.4147 FSP 6185

MID-COURSE EXECUTION ACCURACY
SGT 2621.1 SGR 3390.1 SG3 1773.7
RRT -.9104 RRF -.9970 RTF .9122
SGB 4285.2 R23 .1443 R13 -.9865
SG1 4194.7 SG2 876.5 THA 127.03

ORBIT DETERMINATION ACCURACY
ST 693.0 SR 575.6 SS 1194.0
CRT -.9142 CRS .9330 CST -.7106
LSA 1423.7 MSA 458.0 SSA 23.6
EL1 882.0 EL2 183.3 ALF 140.77

LAUNCH DATE DEC 25 1964 FLIGHT TIME 254.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 547.471 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.890 GAL 6.31 AZL 92.56 HCA 161.75 SMA 183.73 ECC .22646 INC 2.5647 V1 30.281
RP 222.47 LAP -.80 LOP 255.01 VP 21.698 GAP -4.85 AZP 87.56 TAL 35.33 TAP 197.08 RCA 142.12 APO 225.34 V2 24.716
RC 262.633 GL -18.42 GP 26.69 ZAL 37.09 ZAP 96.61 ETS 175.51 ZAE 126.48 ETE 155.55 ZAC 112.17 ETC 255.83 CLP 97.40

PLANETOCENTRIC CONIC

C3 21.425 VHL 4.629 DLA .88 RAL 123.91 RAD 6567.9 VEL 11.950 PTH 2.13 VHP 3.443 DPA 28.50 RAP 185.81 ECC 1.3526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 14 58	2258.10	-20.60	44.26	346.52	109.87	13 52 36	1658.1	-17.71	36.78
90.00	1 29 57	4847.67	19.30	209.74	346.09	68.87	2 50 44	4247.7	16.26	202.39
100.00	14 36 43	1994.40	-21.66	24.44	346.09	111.12	15 9 57	1394.4	-18.60	16.98
100.00	2 50 53	4586.60	20.36	190.10	345.64	67.62	4 7 19	3986.6	17.14	182.78
110.00	15 45 54	1777.86	-24.51	6.70	344.79	114.61	16 15 32	1177.9	-20.98	359.33
110.00	3 58 11	4375.91	23.17	172.75	344.28	64.14	5 11 7	3775.9	19.51	165.53

DIFFERENTIAL CORRECTIONS
TDE .1229 TRA-1.9002 TC3-1.7026 BAU 1.0396
RDE .1407 RRA 1.6324 RC3 3.2052 FAU .43540
FDE-1.8549 FRA-9.4860 FC-17.5937 BSP 15181
BDE .1868 BRA 2.5051 BC3 3.6293 FSP 5959

MID-COURSE EXECUTION ACCURACY
SGT 2835.7 SGR 3594.2 SG3 1746.2
RRT -.9227 RRF -.9975 RTF .9239
SGB 4578.2 R23 .1396 R13 -.9877
SG1 4493.9 SG2 874.3 THA 127.73

ORBIT DETERMINATION ACCURACY
ST 723.5 SR 637.0 SS 1259.4
CRT -.8800 CRS .9564 CST -.7053
LSA 1512.7 MSA 476.3 SSA 20.7
EL1 935.1 EL2 234.1 ALF 139.12

LAUNCH DATE DEC 25 1964 FLIGHT TIME 256.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 551.514 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.889 GAL 6.27 AZL 92.83 HCA 162.84 SMA 183.72 ECC .22612 INC 2.8309 V1 30.281
RP 222.08 LAP -.83 LOP 256.10 VP 21.744 GAP -5.09 AZP 87.29 TAL 35.16 TAP 198.00 RCA 142.18 APO 225.26 V2 24.758
RC 264.145 GL -20.27 GP 28.14 ZAL 38.00 ZAP 94.86 ETS 176.26 ZAE 124.20 ETE 156.14 ZAC 113.41 ETC 255.78 CLP 95.51

PLANETOCENTRIC CONIC

C3 21.713 VHL 4.660 DLA -.94 RAL 123.56 RAD 6567.9 VEL 11.962 PTH 2.13 VHP 3.488 DPA 30.10 RAP 185.88 ECC 1.3573

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 26 59	2205.06	-19.34	40.88	345.93	111.10	14 3 44	1605.1	-16.30	33.52
90.00	1 15 4	4907.15	20.72	213.53	346.39	70.25	2 36 52	4307.1	17.84	206.04
100.00	14 47 54	1944.08	-20.39	21.24	345.48	112.34	15 20 18	1344.1	-17.19	13.91
100.00	2 36 51	4643.37	21.78	193.71	345.97	69.01	3 54 14	4043.4	18.74	186.24
110.00	15 55 9	1733.59	-23.22	3.90	344.12	115.82	16 24 2	1133.6	-19.56	356.68
110.00	3 46 6	4426.63	24.64	175.95	344.67	65.52	4 59 52	3826.6	21.13	168.57

DIFFERENTIAL CORRECTIONS
TDE .0731 TRA-2.0366 TC3-1.8814 BAU 1.1108
RDE .2337 RRA 1.7543 RC3 3.3323 FAU .42289
FDE-2.1541 FRA-9.3667 FC-16.8611 BSP 16245
BDE .2449 BRA 2.6880 BC3 3.8267 FSP 5795

MID-COURSE EXECUTION ACCURACY
SGT 3058.6 SGR 3792.2 SG3 1698.8
RRT -.9330 RRF -.9979 RTF .9339
SGB 4872.0 R23 .1349 R13 -.9888
SG1 4793.6 SG2 870.5 THA 128.46

ORBIT DETERMINATION ACCURACY
ST 758.5 SR 714.2 SS 1319.9
CRT -.8590 CRS .9724 CST -.7174
LSA 1609.9 MSA 485.5 SSA 18.2
EL1 1004.6 EL2 276.1 ALF 137.01

LAUNCH DATE DEC 25 1964 FLIGHT TIME 258.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 555.565 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.889 GAL 6.23 AZL 93.13 HCA 163.94 SMA 183.71 ECC .22579 INC 3.1333 V1 30.281
RP 221.70 LAP -.87 LOP 257.20 VP 21.791 GAP -5.32 AZP 86.99 TAL 34.98 TAP 198.92 RCA 142.23 APO 225.19 V2 24.799
RC 265.639 GL -22.34 GP 29.70 ZAL 39.08 ZAP 93.16 ETS 177.06 ZAE 121.91 ETE 156.69 ZAC 114.78 ETC 255.71 CLP 93.63

PLANETOCENTRIC CONIC

C3 22.108 VHL 4.702 DLA -2.96 RAL 123.14 RAD 6567.9 VEL 11.979 PTH 2.13 VHP 3.547 DPA 31.80 RAP 186.05 ECC 1.3638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 40 22	2146.64	-17.86	37.23	345.39	112.34	14 16 9	1546.6	-14.68	30.00
90.00	0 58 24	4974.28	22.20	217.90	346.86	71.95	2 21 18	4374.3	19.52	210.25
100.00	15 0 20	1888.70	-18.92	17.78	344.91	113.58	15 31 48	1288.7	-15.57	10.59
100.00	2 21 7	4707.46	23.29	197.88	346.46	70.71	3 39 34	4107.5	20.44	190.24
110.00	16 5 24	1684.98	-21.75	.90	343.49	117.04	16 33 29	1085.0	-17.95	353.83
110.00	3 32 32	4483.94	26.21	179.67	345.22	67.23	4 47 16	3883.9	22.89	172.08

DIFFERENTIAL CORRECTIONS
TDE .0112 TRA-2.1812 TC3-2.0478 BAU 1.1855
RDE .3433 RRA 1.8891 RC3 3.4489 FAU .40758
FDE-2.4569 FRA-9.1975 FC-15.9607 BSP 17351
BDE .3435 BRA 2.8855 BC3 4.0111 FSP 5593

MID-COURSE EXECUTION ACCURACY
SGT 3285.1 SGR 4000.9 SG3 1639.8
RRT -.9415 RRF -.9983 RTF .9420
SGB 5176.8 R23 .1302 R13 -.9898
SG1 5103.5 SG2 867.8 THA 129.05

ORBIT DETERMINATION ACCURACY
ST 800.6 SR 814.0 SS 1387.5
CRT -.8470 CRS .9833 CST -.7375
LSA 1728.0 MSA 492.5 SSA 15.9
EL1 1097.3 EL2 315.7 ALF 134.44

LAUNCH DATE DEC 25 1964 FLIGHT TIME 260.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 559.625 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.889 GAL 6.19 AZL 93.48 HCA 165.04 SMA 183.71 ECC .22548 INC 3.4798 V1 30.281
RP 221.32 LAP -.90 LOP 258.31 VP 21.838 GAP -5.54 AZP 86.64 TAL 34.78 TAP 199.82 RCA 142.29 APO 225.14 V2 24.841
RC 267.114 GL -24.65 GP 31.41 ZAL 40.34 ZAP 91.52 ETS 177.94 ZAE 119.63 ETE 157.23 ZAC 116.30 ETC 255.60 CLP 91.79

PLANETOCENTRIC CONIC

C3 22.646 VHL 4.759 DLA -5.22 RAL 122.65 RAD 6567.9 VEL 12.001 PTH 2.14 VHP 3.621 DPA 33.60 RAP 186.37 ECC 1.3727

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 55 24	2081.84	-16.14	33.25	344.91	113.58	14 30 5	1481.8	-12.82	26.15
90.00	0 39 28	5050.75	23.72	222.99	347.52	74.06	2 3 39	4450.7	21.31	215.14
100.00	15 14 16	1827.38	-17.21	14.04	344.41	114.82	15 44 44	1227.4	-13.72	6.98
100.00	2 3 17	4780.44	24.84	202.74	347.16	72.82	3 22 57	4180.4	22.26	194.90
110.00	16 16 53	1631.38	-20.06	357.66	342.90	118.28	16 44 4	1031.4	-16.12	350.75
110.00	3 17 10	4549.20	27.85	184.03	346.01	69.33	4 32 59	3949.2	24.79	176.20

DIFFERENTIAL CORRECTIONS
TDE -.0653 TRA-2.3357 TC3-2.1973 BAU 1.2650
RDE .4755 RRA 2.0417 RC3 3.5538 FAU .38981
FDE-2.7668 FRA-8.9825 FC-14.9019 BSP 18452
BDE .4799 BRA 3.1022 BC3 4.1782 FSP 5335

MID-COURSE EXECUTION ACCURACY
SGT 3514.9 SGR 4226.2 SG3 1570.0
RRT -.9485 RRF -.9986 RTF .9487
SGB 5496.8 R23 .1254 R13 -.9907
SG1 5428.0 SG2 867.2 THA 129.47

ORBIT DETERMINATION ACCURACY
ST 853.1 SR 941.5 SS 1463.7
CRT -.8450 CRS .9904 CST -.7637
LSA 1873.1 MSA 497.9 SSA 13.8
EL1 1220.8 EL2 351.8 ALF 131.67

LAUNCH DATE DEC 25 1964 FLIGHT TIME 262.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 563.694 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.889 GAL 6.15 AZL 93.88 HCA 166.14 SMA 183.72 ECC .22518 INC 3.8818 V1 30.281
RP 220.94 LAP -.93 LOP 259.42 VP 21.886 GAP -5.76 AZP 86.23 TAL 34.57 TAP 200.72 RCA 142.35 APO 225.09 V2 24.883
RC 268.570 GL -27.25 GP 33.27 ZAL 41.82 ZAP 89.97 ETS 178.89 ZAE 117.35 ETE 157.75 ZAC 117.97 ETC 255.46 CLP 89.97

PLANETOCENTRIC CONIC

C3 23.381 VHL 4.835 DLA -7.75 RAL 122.07 RAD 6567.9 VEL 12.032 PTH 2.15 VHP 3.714 DPA 35.52 RAP 186.85 ECC 1.3848

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 12 31	2009.34	-14.12	28.89	344.53	114.80	14 46 0	1409.3	-10.66	21.92
90.00	0 17 42	5138.80	25.23	228.99	348.44	76.71	1 43 21	4538.8	23.16	220.94
100.00	15 30 7	1758.97	-15.21	9.94	344.00	116.05	15 59 26	1159.0	-11.58	3.03
100.00	1 42 47	4864.41	26.41	208.49	348.12	75.46	3 3 51	4264.4	24.15	200.42
110.00	16 29 51	1571.97	-18.10	354.16	342.41	119.50	16 56 3	972.0	-14.04	347.41
110.00	2 59 33	4624.17	29.55	189.21	347.08	71.97	4 16 37	4024.2	26.80	181.10

DIFFERENTIAL CORRECTIONS
TDE -.1567 TRA-2.5006 TC3-2.3207 BAU 1.3478
RDE .6319 RRA 2.2133 RC3 3.6342 FAU .36875
FDE-3.0598 FRA-8.7033 FC-13.6539 BSP 19616
BDE .6510 BRA 3.3395 BC3 4.3120 FSP 5041

MID-COURSE EXECUTION ACCURACY
SGT 3743.5 SGR 4463.0 SG3 1486.0
RRT -.9542 RRF -.9988 RTF .9541
SGB 5825.2 R23 .1207 R13 -.9915
SG1 5760.1 SG2 867.9 THA 129.75

ORBIT DETERMINATION ACCURACY
ST 918.6 SR 1096.5 SS 1540.8
CRT -.8523 CRS .9946 CST -.7938
LSA 2041.6 MSA 501.6 SSA 11.8
EL1 1378.4 EL2 382.2 ALF 129.10

LAUNCH DATE DEC 25 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 567.770 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.890 GAL 6.11 AZL 94.35 HCA 167.25 SMA 183.74 ECC .22489 INC 4.3535 V1 30.281
RP 220.56 LAP -.96 LOP 260.53 VP 21.934 GAP -5.98 AZP 85.75 TAL 34.35 TAP 201.60 RCA 142.42 APO 225.06 V2 24.924
RC 270.009 GL -30.18 GP 35.32 ZAL 43.56 ZAP 88.52 ETS 179.91 ZAE 115.08 ETE 158.25 ZAC 119.83 ETC 255.27 CLP 88.18

PLANETOCENTRIC CONIC

C3 24.391 VHL 4.939 DLA -10.60 RAL 121.37 RAD 6568.0 VEL 12.073 PTH 2.16 VHP 3.832 DPA 37.56 RAP 187.54 ECC 1.4014

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 32 23	1927.25	-11.72	24.05	344.34	115.96	15 4 31	1327.2	-8.13	17.21
90.00	23 48 17	5241.61	26.65	236.19	349.67	80.05	25 15 38	4641.6	25.00	227.91
100.00	15 48 27	1681.86	-12.85	5.43	343.76	117.22	16 16 29	1081.9	-9.11	358.65
100.00	1 18 50	4962.23	27.89	215.38	349.41	78.79	2 41 32	4362.2	26.06	207.05
110.00	16 44 42	1505.68	-15.84	350.36	342.05	120.70	17 9 48	905.7	-11.65	343.76
110.00	2 39 4	4711.17	31.22	195.43	348.53	75.31	3 57 35	4111.2	28.88	187.01

DIFFERENTIAL CORRECTIONS
TDE -.2679 TRA-2.6805 TC3-2.4131 BAU 1.4363
RDE .8217 RRA 2.4120 RC3 3.6847 FAU .34468
FDE-3.3352 FRA-8.3634 FC-12.2340 BSP 20768
BDE .8643 BRA 3.6059 BC3 4.4045 FSP 4689

MID-COURSE EXECUTION ACCURACY
SGT 3973.3 SGR 4718.0 SG3 1389.0
RRT -.9590 RRF -.9990 RTF .9587
SGB 6168.2 R23 .1160 R13 -.9922
SG1 6106.6 SG2 869.7 THA 129.90

ORBIT DETERMINATION ACCURACY
ST 1001.3 SR 1284.6 SS 1617.8
CRT -.8667 CRS .9970 CST -.8257
LSA 2239.7 MSA 503.7 SSA 10.1
EL1 1577.1 EL2 406.9 ALF 126.90

LAUNCH DATE DEC 25 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 571.854 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.892 GAL 6.06 AZL 94.92 HCA 168.36 SMA 183.76 ECC .22461 INC 4.9154 V1 30.281
RP 220.18 LAP -.99 LOP 261.65 VP 21.983 GAP -6.18 AZP 85.18 TAL 34.12 TAP 202.48 RCA 142.48 APO 225.03 V2 24.965
RC 271.430 GL -33.49 GP 37.56 ZAL 45.61 ZAP 87.19 ETS 181.02 ZAE 112.82 ETE 158.74 ZAC 121.90 ETC 255.02 CLP 86.45

PLANETOCENTRIC CONIC

C3 25.797 VHL 5.079 DLA -13.80 RAL 120.50 RAD 6568.0 VEL 12.131 PTH 2.17 VHP 3.982 DPA 39.75 RAP 188.49 ECC 1.4245

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 5	1832.61	-8.84	18.59	344.42	117.01	15 26 38	1232.6	-5.15	11.85
90.00	23 17 41	5363.85	27.78	244.95	351.27	84.29	24 47 4	4763.9	26.70	236.45
100.00	16 10 9	1593.65	-10.06	.37	343.77	118.30	16 36 42	993.7	-6.20	353.71
100.00	0 50 14	5078.04	29.14	223.75	351.10	83.03	2 14 52	4478.0	27.87	215.18
110.00	17 2 3	1431.07	-13.20	346.18	341.92	121.82	17 25 54	831.1	-8.90	339.73
110.00	2 14 49	4813.39	32.73	203.02	350.46	79.55	3 35 2	4213.4	30.95	194.25

DIFFERENTIAL CORRECTIONS
TDE -.3990 TRA-2.8768 TC3-2.4610 BAU 1.5289
RDE 1.0491 RRA 2.6413 RC3 3.6874 FAU .31690
FDE-3.5616 FRA-7.9405 FC-10.6350 BSP 22017
BDE 1.1224 BRA 3.9054 BC3 4.4332 FSP 4306

MID-COURSE EXECUTION ACCURACY
SGT 4197.6 SGR 4984.4 SG3 1275.5
RRT -.9631 RRF -.9992 RTF .9624
SGB 6516.5 R23 .1115 R13 -.9929
SG1 6457.8 SG2 872.5 THA 129.92

ORBIT DETERMINATION ACCURACY
ST 1101.5 SR 1503.5 SS 1682.2
CRT -.8839 CRS .9983 CST -.8554
LSA 2459.4 MSA 504.9 SSA 8.5
EL1 1814.3 EL2 426.8 ALF 125.16

LAUNCH DATE DEC 25 1964 FLIGHT TIME 268.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 575.944 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.893 GAL 6.02 AZL 95.60 HCA 169.47 SMA 183.78 ECC .22434 INC 5.5966 V1 30.281
RP 219.81 LAP -1.02 LOP 262.77 VP 22.032 GAP -6.39 AZP 84.50 TAL 33.87 TAP 203.34 RCA 142.55 APO 225.01 V2 25.006
RC 272.833 GL -37.24 GP 40.04 ZAL 48.02 ZAP 86.00 ETS 182.20 ZAE 110.59 ETE 159.21 ZAC 124.20 ETC 254.68 CLP 84.77

PLANETOCENTRIC CONIC

C3 27.787 VHL 5.271 DLA -17.41 RAL 119.42 RAD 6568.1 VEL 12.213 PTH 2.19 VHP 4.175 DPA 42.07 RAP 189.75 ECC 1.4573

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 25 33	1720.13	-5.31	12.21	344.95	117.85	15 54 13	1120.1	-1.54	5.56
90.00	22 39 36	5513.24	28.32	255.84	353.24	89.72	24 11 29	4913.2	27.98	247.19
100.00	16 36 48	1490.23	-6.67	354.57	344.22	119.21	17 1 38	890.2	-2.72	348.00
100.00	0 14 58	5218.37	29.86	234.12	353.21	88.43	1 41 57	4618.4	29.32	225.35
110.00	17 22 51	1345.94	-10.10	341.54	342.13	122.83	17 45 17	745.9	-5.70	335.21
110.00	1 45 24	4935.43	33.86	212.36	352.94	84.97	3 7 40	4335.4	32.79	203.28

DIFFERENTIAL CORRECTIONS
TDE -.5541 TRA-3.0960 TC3-2.4556 BAU 1.6291
RDE 1.3287 RRA 2.9151 RC3 3.6333 FAU .28583
FDE-3.7299 FRA-7.4367 FC3-8.9053 BSP 23262
BDE 1.4396 BRA 4.2524 BC3 4.3853 FSP 3862

MID-COURSE EXECUTION ACCURACY
SGT 4416.1 SGR 5271.2 SG3 1147.3
RRT -.9665 RRF -.9993 RTF .9655
SGB 6876.6 R23 .1072 R13 -.9935
SG1 6820.5 SG2 876.6 THA 129.78

ORBIT DETERMINATION ACCURACY
ST 1219.9 SR 1758.2 SS 1728.8
CRT -.9011 CRS .9990 CST -.8812
LSA 2704.0 MSA 506.6 SSA 7.1
EL1 2093.3 EL2 444.2 ALF 123.74

LAUNCH DATE DEC 25 1964 FLIGHT TIME 270.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 580.041 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.895 GAL 5.97 AZL 96.44 HCA 170.59 SMA 183.82 ECC .22409 INC 6.4397 V1 30.281
RP 219.44 LAP -1.05 LOP 263.89 VP 22.081 GAP -6.59 AZP 83.65 TAL 33.61 TAP 204.20 RCA 142.63 APO 225.01 V2 25.047
RC 274.220 GL -41.49 GP 42.77 ZAL 50.83 ZAP 85.00 ETS 183.44 ZAE 108.40 ETE 159.67 ZAC 126.76 ETC 254.23 CLP 83.17

PLANETOCENTRIC CONIC

C3 30.676 VHL 5.539 DLA -21.47 RAL 118.05 RAD 6568.2 VEL 12.331 PTH 2.22 VHP 4.426 DPA 44.55 RAP 191.42 ECC 1.5048

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 5 5	1577.67	-.74	4.24	346.30	118.31	16 31 23	977.7	3.05	357.61
90.00	21 49 7	5705.18	27.58	269.81	355.36	96.68	23 24 12	5105.2	28.22	261.21
100.00	17 11 38	1362.89	-2.39	347.53	345.38	119.81	17 34 21	762.9	1.59	341.01
100.00	23 25 15	5395.20	29.46	247.23	355.59	95.31	24 55 10	4795.2	29.88	238.45
110.00	17 48 49	1246.31	-6.38	336.22	342.91	123.65	18 9 36	646.3	-1.91	329.99
110.00	1 8 29	5084.54	34.14	223.98	355.93	91.84	2 33 13	4484.5	34.02	214.74

DIFFERENTIAL CORRECTIONS
TDE -.7363 TRA-3.3465 TC3-2.3872 BAU 1.7402
RDE 1.6752 RRA 3.2497 RC3 3.5079 FAU .25156
FDE-3.8095 FRA-6.8389 FC3-7.0996 BSP 24471
BDE 1.8299 BRA 4.6648 BC3 4.2431 FSP 3358

MID-COURSE EXECUTION ACCURACY
SGT 4627.2 SGR 5581.5 SG3 1004.5
RRT -.9693 RRF -.9994 RTF .9680
SGB 7250.1 R23 .1032 R13 -.9940
SG1 7196.2 SG2 882.5 THA 129.49

ORBIT DETERMINATION ACCURACY
ST 1353.5 SR 2047.3 SS 1743.7
CRT -.9162 CRS .9994 CST -.9019
LSA 2967.1 MSA 509.7 SSA 5.9
EL1 2410.6 EL2 460.7 ALF 122.54

LAUNCH DATE DEC 25 1964 FLIGHT TIME 272.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 584.143 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.897 GAL 5.92 AZL 97.51 HCA 171.70 SMA 183.85 ECC .22385 INC 7.5110 V1 30.281
RP 219.07 LAP -1.08 LOP 265.02 VP 22.131 GAP -6.78 AZP 82.57 TAL 33.34 TAP 205.05 RCA 142.70 APO 225.01 V2 25.088
RC 275.589 GL -46.30 GP 45.77 ZAL 54.09 ZAP 84.21 ETS 184.72 ZAE 106.27 ETE 160.09 ZAC 129.59 ETC 253.63 CLP 81.68

PLANETOCENTRIC CONIC

C3 35.006 VHL 5.917 DLA -26.01 RAL 116.27 RAD 6568.4 VEL 12.505 PTH 2.26 VHP 4.763 DPA 47.15 RAP 193.60 ECC 1.5761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 9 51	1359.90	6.25	352.05	349.44	117.67	17 32 30	759.9	9.91	345.28
90.00	20 30 7	701.44	23.75	311.79	356.64	105.90	20 41 49	101.4	25.70	303.67
100.00	18 4 0	1185.02	3.64	337.77	348.00	119.69	18 23 45	585.0	7.56	331.18
100.00	22 18 39	5639.59	26.62	264.81	357.49	104.12	23 52 39	5039.6	28.30	256.41
110.00	18 23 45	1123.04	-1.69	329.76	344.68	124.15	18 42 28	523.0	2.80	323.55
110.00	0 19 19	5274.34	32.76	238.60	359.02	100.37	1 47 14	4674.3	33.84	229.53

DIFFERENTIAL CORRECTIONS
TDE -.9401 TRA-3.6362 TC3-2.2416 BAU 1.8631
RDE 2.1006 RRA 3.6655 RC3 3.2899 FAU .21375
FDE-3.7481 FRA-6.1238 FC3-5.2863 BSP 25755
BDE 2.3014 BRA 5.1631 BC3 3.9809 FSP 2814

MID-COURSE EXECUTION ACCURACY
SGT 4818.2 SGR 5907.0 SG3 845.9
RRT -.9716 RRF -.9994 RTF .9699
SGB 7622.9 R23 .0997 R13 -.9945
SG1 7570.8 SG2 889.8 THA 129.04

ORBIT DETERMINATION ACCURACY
ST 1488.9 SR 2357.0 SS 1703.2
CRT -.9272 CRS .9996 CST -.9163
LSA 3226.0 MSA 516.0 SSA 4.9
EL1 2746.5 EL2 478.5 ALF 121.42

LAUNCH DATE DEC 25 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 651.579 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 32.970 GAL 4.73 AZL 81.68 HCA 190.43 SMA 185.08 ECC .22034 INC 8.3233 V1 30.281
RP 213.62 LAP -1.50 LOP 283.57 VP 22.923 GAP -9.16 AZP 98.19 TAL 26.69 TAP 217.13 RCA 144.30 APO 225.86 V2 25.697
RC 295.251 GL 53.06 GP -37.20 ZAL 61.98 ZAP 66.16 ETS 159.48 ZAE 88.72 ETE 177.75 ZAC 47.90 ETC 253.86 CLP 59.51

PLANETOCENTRIC CONIC

C3 35.417 VHL 5.951 DLA 65.71 RAL 166.95 RAD 6568.4 VEL 12.521 PTH 2.27 VHP 4.631 DPA -25.83 RAP 149.63 ECC 1.5829

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
10.76	9 8 16	4247.22	-56.74	241.85	130.58	17.43	10 19 3	3647.2	-64.27	236.76
10.76	0 3 1	4907.63	-12.82	251.63	6.43	9.70	1 24 48	4307.6	-20.70	250.61
20.76	7 48 33	4318.89	-48.36	229.54	98.58	28.01	9 0 32	3718.9	-55.26	223.37
20.76	2 2 57	4800.48	-18.10	243.05	27.47	19.16	3 22 58	4200.5	-25.63	240.56
27.86	5 11 18	4538.90	-31.94	230.07	60.61	29.00	6 26 57	3938.9	-38.85	225.52
152.14	15 16 56	2816.37	-31.94	85.43	60.59	29.00	16 3 52	2216.4	-38.84	80.88

DIFFERENTIAL CORRECTIONS
TDE 7.5592 TRA -.5355 TC3-4.0909 BAU 2.2223
RDE 3.3028 RRA .0911 RC3-2.3008 FAU .22908
FDE 6.9559 FRA .2775 FC3-5.5997 BSP 33487
BDE 8.2492 BRA .5432 BC3 4.6935 FSP 3028

MID-COURSE EXECUTION ACCURACY
SGT 8845.5 SGR 4202.0 SG3 818.3
RRT .9742 RRF .9973 RTF .9595
SGB 9792.8 R23 .2374 R13 .9701
SG1 9755.0 SG2 860.2 THA 25.04

ORBIT DETERMINATION ACCURACY
ST 7288.8 SR 3181.5 SS 2681.9
CRT .9974 CRS-1.0000 CST -.9967
LSA 8388.5 MSA 274.4 SSA 6.4
EL1 7950.2 EL2 209.7 ALF 23.54

LAUNCH DATE DEC 25 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 655.832 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	32.976	GAL	4.64	AZL	82.41	HCA	191.62	SMA	185.18	ECC	.22023	INC	7.5922	V1	30.281
RP	213.31	LAP	-1.52	LOP	284.76	VP	22.971	GAP	-9.28	AZP	97.44	TAL	26.20	TAP	217.82	RCA	144.40	APO	225.97	V2	25.731
RC	296.356	GL	50.48	GP	-34.28	ZAL	60.79	ZAP	64.11	ETS	159.81	ZAE	87.25	ETE	176.93	ZAC	50.68	ETC	254.56	CLP	58.10

PLANETOCENTRIC CONIC

C3	31.689	VHL	5.629	DLA	63.18	RAL	164.72	RAD	6568.3	VEL	12.372	PTH	2.23	VHP	4.480	DPA	-23.12	RAP	150.84	ECC	1.5215

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.84	5 9 19	4499.87	-32.82	225.81	55.70	32.47	6 24 19	3899.9	-39.45	220.68
149.16	15 1 8	2799.31	-32.81	84.55	55.68	32.47	15 47 47	2199.3	-39.44	79.41
30.84	5 9 19	4499.87	-32.82	225.81	55.70	32.47	6 24 19	3899.9	-39.45	220.68
149.16	15 1 8	2799.31	-32.81	84.55	55.68	32.47	15 47 47	2199.3	-39.44	79.41
30.84	5 9 19	4499.87	-32.82	225.81	55.70	32.47	6 24 19	3899.9	-39.45	220.68
149.16	15 1 8	2799.31	-32.81	84.55	55.68	32.47	15 47 47	2199.3	-39.44	79.41

DIFFERENTIAL CORRECTIONS

TDE	7.0857	TRA	-.7072	TC3	-4.6208	BAU	2.1911
RDE	2.8164	RRA	.0240	RC3	-2.3229	FAU	.24468
FDE	6.9747	FRA	.1282	FC3	-6.6846	BSP	33552
BDE	7.6249	BRA	.7077	BC3	5.1718	FSP	3255

MID-COURSE EXECUTION ACCURACY

SGT	9034.5	SGR	3880.7	SG3	894.2		
RRT	.9753	RRF	.9971	RTF	.9613		
SGB	9832.7	R23	.2365	R13	.9699		
SG1	9800.8	SG2	790.7	THA	22.89		

ORBIT DETERMINATION ACCURACY

ST	7229.5	SR	2867.7	SS	2749.1		
CRT	.9974	CRS	-1.0000	CST	-.9969		
LSA	8244.8	MSA	263.0	SSA	7.4		
EL1	7775.1	EL2	192.2	ALF	21.60		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 660.094 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	32.982	GAL	4.55	AZL	83.01	HCA	192.80	SMA	185.29	ECC	.22013	INC	6.9929	V1	30.281
RP	213.01	LAP	-1.55	LOP	285.95	VP	23.018	GAP	-9.40	AZP	96.82	TAL	25.69	TAP	218.49	RCA	144.50	APO	226.08	V2	25.765
RC	297.448	GL	48.20	GP	-31.67	ZAL	59.85	ZAP	62.21	ETS	160.18	ZAE	85.78	ETE	176.28	ZAC	53.19	ETC	255.11	CLP	56.79

PLANETOCENTRIC CONIC

C3	28.832	VHL	5.370	DLA	60.88	RAL	163.19	RAD	6568.2	VEL	12.256	PTH	2.20	VHP	4.375	DPA	-20.71	RAP	151.93	ECC	1.4745

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
33.56	5 9 50	4464.75	-33.36	221.82	51.68	35.64	6 24 15	3864.7	-39.72	216.19
146.44	14 48 25	2787.04	-33.35	83.77	51.67	35.63	15 34 52	2187.0	-39.71	78.14
33.56	5 9 50	4464.75	-33.36	221.82	51.68	35.64	6 24 15	3864.7	-39.72	216.19
146.44	14 48 25	2787.04	-33.35	83.77	51.67	35.63	15 34 52	2187.0	-39.71	78.14
33.56	5 9 50	4464.75	-33.36	221.82	51.68	35.64	6 24 15	3864.7	-39.72	216.19
146.44	14 48 25	2787.04	-33.35	83.77	51.67	35.63	15 34 52	2187.0	-39.71	78.14

DIFFERENTIAL CORRECTIONS

TDE	6.6979	TRA	-.8448	TC3	-5.1433	BAU	2.1738
RDE	2.4248	RRA	-.0164	RC3	-2.3132	FAU	.25586
FDE	6.8659	FRA	.0043	FC3	-7.6827	BSP	33701
BDE	7.1233	BRA	.8450	BC3	5.6395	FSP	3427

MID-COURSE EXECUTION ACCURACY

SGT	9220.6	SGR	3587.1	SG3	953.3		
RRT	.9760	RRF	.9968	RTF	.9624		
SGB	9893.8	R23	.2365	R13	.9695		
SG1	9866.8	SG2	730.4	THA	20.91		

ORBIT DETERMINATION ACCURACY

ST	7170.6	SR	2588.5	SS	2770.6		
CRT	.9973	CRS	-1.0000	CST	-.9969		
LSA	8107.3	MSA	255.8	SSA	8.5		
EL1	7621.3	EL2	179.1	ALF	19.81		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 310.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 664.365 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	32.989	GAL	4.46	AZL	83.51	HCA	193.99	SMA	185.40	ECC	.22004	INC	6.4925	V1	30.281
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.065	GAP	-9.51	AZP	96.30	TAL	25.17	TAP	219.16	RCA	144.61	APO	226.20	V2	25.798
RC	298.526	GL	46.17	GP	-29.33	ZAL	59.13	ZAP	60.45	ETS	160.59	ZAE	84.32	ETE	175.75	ZAC	55.44	ETC	255.53	CLP	55.55

PLANETOCENTRIC CONIC

C3	26.573	VHL	5.155	DLA	58.79	RAL	162.14	RAD	6568.1	VEL	12.163	PTH	2.18	VHP	4.303	DPA	-18.57	RAP	152.92	ECC	1.4373

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
36.06	5 12 2	4432.65	-33.66	218.08	48.36	38.51	6 25 54	3832.7	-39.75	212.03
143.94	14 37 54	2778.50	-33.64	83.12	48.35	38.50	15 24 12	2178.5	-39.74	77.07
36.06	5 12 2	4432.65	-33.66	218.08	48.36	38.51	6 25 54	3832.7	-39.75	212.03
143.94	14 37 54	2778.50	-33.64	83.12	48.35	38.50	15 24 12	2178.5	-39.74	77.07
36.06	5 12 2	4432.65	-33.66	218.08	48.36	38.51	6 25 54	3832.7	-39.75	212.03
143.94	14 37 54	2778.50	-33.64	83.12	48.35	38.50	15 24 12	2178.5	-39.74	77.07

DIFFERENTIAL CORRECTIONS

TDE	6.3790	TRA	-.9528	TC3	-5.6534	BAU	2.1654
RDE	2.1076	RRA	-.0384	RC3	-2.2785	FAU	.26315
FDE	6.6769	FRA	-.0899	FC3	-8.5731	BSP	33986
BDE	6.7182	BRA	.9536	BC3	6.0953	FSP	3556

MID-COURSE EXECUTION ACCURACY

SGT	9403.1	SGR	3318.6	SG3	997.3		
RRT	.9764	RRF	.9963	RTF	.9631		
SGB	9971.5	R23	.2365	R13	.9689		
SG1	9948.5	SG2	676.8	THA	19.11		

ORBIT DETERMINATION ACCURACY

ST	7118.7	SR	2343.8	SS	2761.0		
CRT	.9971	CRS	-1.0000	CST	-.9969		
LSA	7983.1	MSA	251.0	SSA	9.5		
EL1	7492.7	EL2	168.8	ALF	18.18		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 312.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 668.645 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	32.996	GAL	4.37	AZL	83.93	HCA	195.19	SMA	185.52	ECC	.21995	INC	6.0681	V1	30.281
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.111	GAP	-9.62	AZP	95.86	TAL	24.63	TAP	219.82	RCA	144.71	APO	226.32	V2	25.831
RC	299.592	GL	44.36	GP	-27.25	ZAL	58.59	ZAP	58.80	ETS	161.01	ZAE	82.89	ETE	175.32	ZAC	57.47	ETC	255.87	CLP	54.36

PLANETOCENTRIC CONIC

C3	24.742	VHL	4.974	DLA	56.87	RAL	161.46	RAD	6568.0	VEL	12.088	PTH	2.16	VHP	4.257	DPA	-16.67	RAP	153.84	ECC	1.4072

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.37	5 15 23	4403.05	-33.78	214.60	45.59	41.11	6 28 46	3803.1	-39.62	208.19
141.63	14 29 3	2772.82	-33.76	82.59	45.58	41.10	15 15 16	2172.8	-39.61	76.19
38.37	5 15 23	4403.05	-33.78	214.60	45.59	41.11	6 28 46	3803.1	-39.62	208.19
141.63	14 29 3	2772.82	-33.76	82.59	45.58	41.10	15 15 16	2172.8	-39.61	76.19
38.37	5 15 23	4403.05	-33.78	214.60	45.59	41.11	6 28 46	3803.1	-39.62	208.19
141.63	14 29 3	2772.82	-33.76	82.59	45.58	41.10	15 15 16	2172.8	-39.61	76.19

DIFFERENTIAL CORRECTIONS

TDE	6.1096	TRA	-1.0403	TC3	-6.1574	BAU	2.1661
RDE	1.8467	RRA	-.0495	RC3	-2.2293	FAU	.26764
FDE	6.4321	FRA	-.1609	FC3	-9.3648	BSP	34276
BDE	6.3826	BRA	1.0414	BC3	6.5485	FSP	3634

MID-COURSE EXECUTION ACCURACY

SGT	9584.1	SGR	3074.8	SG3	1028.9		
RRT	.9767	RRF	.9957	RTF	.9634		
SGB	10065.3	R23	.2361	R13	.9682		
SG1	10045.6	SG2	629.1	THA	17.47		

ORBIT DETERMINATION ACCURACY

ST	7070.6	SR	2128.4	SS	2727.1		
CRT	.9969	CRS	-1.0000	CST	-.9968		
LSA	7867.6	MSA	247.2	SSA	10.5		
EL1	7382.2	EL2	160.2	ALF	16.71		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 314.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 672.933 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.003 GAL 4.27 AZL 84.30 HCA 196.39 SMA 185.64 ECC .21988 INC 5.7033 V1 30.281
RP 212.15 LAP -1.61 LOP 289.55 VP 23.157 GAP -9.72 AZP 95.47 TAL 24.08 TAP 220.47 RCA 144.82 APO 226.45 V2 25.863
RC 300.645 GL 42.74 GP -25.38 ZAL 58.22 ZAP 57.26 ETS 161.43 ZAE 81.47 ETE 174.97 ZAC 59.30 ETC 256.14 CLP 53.23

PLANETOCENTRIC CONIC

C3 23.223 VHL 4.819 DLA 55.12 RAL 161.04 RAD 6567.9 VEL 12.025 PTH 2.15 VHP 4.229 DPA -14.99 RAP 154.68 ECC 1.3822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.51	5 19 37	4375.38	-33.77	211.33	43.27	43.47	6 32 32	3775.4	-39.37	204.63
139.49	14 21 30	2769.45	-33.75	82.18	43.26	43.46	15 7 40	2169.5	-39.36	75.49
40.51	5 19 37	4375.38	-33.77	211.33	43.27	43.47	6 32 32	3775.4	-39.37	204.63
139.49	14 21 30	2769.45	-33.75	82.18	43.26	43.46	15 7 40	2169.5	-39.36	75.49
40.51	5 19 37	4375.38	-33.77	211.33	43.27	43.47	6 32 32	3775.4	-39.37	204.63
139.49	14 21 30	2769.45	-33.75	82.18	43.26	43.46	15 7 40	2169.5	-39.36	75.49

DIFFERENTIAL CORRECTIONS

TDE 5.8827 TRA-1.1061 TC3-6.6512 BAU 2.1718
RDE 1.6317 RRA -.0511 RC3-2.1670 FAU .26946
FDE 6.1607 FRA -.2020 FC-10.0452 BSP 34676
BDE 6.1049 BRA 1.1073 BC3 6.9953 FSP 3687

MID-COURSE EXECUTION ACCURACY

SGT 9762.3 SGR 2852.6 SG3 1049.5
RRT .9768 RRF .9949 RTF .9635
SGB10170.5 R23 .2351 R13 .9675
SG110153.6 SG2 587.0 THA 15.99

ORBIT DETERMINATION ACCURACY

ST 7030.9 SR 1941.3 SS 2678.9
CRT .9966 CRS-1.0000 CST -.9966
LSA 7766.5 MSA 245.1 SSA 11.6
EL1 7292.3 EL2 153.3 ALF 15.39

LAUNCH DATE DEC 25 1964 FLIGHT TIME 316.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 677.229 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.010 GAL 4.18 AZL 84.61 HCA 197.59 SMA 185.76 ECC .21981 INC 5.3864 V1 30.281
RP 211.87 LAP -1.63 LOP 290.76 VP 23.202 GAP -9.83 AZP 95.14 TAL 23.52 TAP 221.11 RCA 144.92 APO 226.59 V2 25.895
RC 301.687 GL 41.28 GP -23.71 ZAL 58.00 ZAP 55.81 ETS 161.84 ZAE 80.09 ETE 174.70 ZAC 60.96 ETC 256.35 CLP 52.14

PLANETOCENTRIC CONIC

C3 21.939 VHL 4.684 DLA 53.50 RAL 160.84 RAD 6567.9 VEL 11.972 PTH 2.13 VHP 4.216 DPA -13.51 RAP 155.48 ECC 1.3611

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.51	5 24 32	4349.26	-33.66	208.26	41.33	45.62	6 37 1	3749.3	-39.04	201.32
137.49	14 14 58	2767.95	-33.65	81.88	41.31	45.61	15 1 6	2167.9	-39.03	74.95
42.51	5 24 32	4349.26	-33.66	208.26	41.33	45.62	6 37 1	3749.3	-39.04	201.32
137.49	14 14 58	2767.95	-33.65	81.88	41.31	45.61	15 1 6	2167.9	-39.03	74.95
42.51	5 24 32	4349.26	-33.66	208.26	41.33	45.62	6 37 1	3749.3	-39.04	201.32
137.49	14 14 58	2767.95	-33.65	81.88	41.31	45.61	15 1 6	2167.9	-39.03	74.95

DIFFERENTIAL CORRECTIONS

TDE 5.6881 TRA-1.1555 TC3-7.1358 BAU 2.1815
RDE 1.4524 RRA -.0476 RC3-2.0970 FAU .26926
FDE 5.8732 FRA -.2223 FC-10.6251 BSP 35130
BDE 5.8706 BRA 1.1564 BC3 7.4375 FSP 3711

MID-COURSE EXECUTION ACCURACY

SGT 9937.0 SGR 2650.5 SG3 1061.3
RRT .9768 RRF .9940 RTF .9635
SGB10284.4 R23 .2331 R13 .9669
SG110269.7 SG2 549.5 THA 14.65

ORBIT DETERMINATION ACCURACY

ST 6997.3 SR 1777.9 SS 2619.7
CRT .9963 CRS-1.0000 CST -.9965
LSA 7676.4 MSA 243.2 SSA 12.7
EL1 7218.1 EL2 147.4 ALF 14.21

LAUNCH DATE DEC 25 1964 FLIGHT TIME 318.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 681.533 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.017 GAL 4.08 AZL 84.89 HCA 198.80 SMA 185.88 ECC .21976 INC 5.1081 V1 30.281
RP 211.60 LAP -1.64 LOP 291.97 VP 23.247 GAP -9.93 AZP 94.84 TAL 22.94 TAP 221.74 RCA 145.03 APO 226.73 V2 25.926
RC 302.717 GL 39.97 GP -22.20 ZAL 57.91 ZAP 54.44 ETS 162.24 ZAE 78.73 ETE 174.47 ZAC 62.46 ETC 256.51 CLP 51.09

PLANETOCENTRIC CONIC

C3 20.836 VHL 4.565 DLA 51.99 RAL 160.81 RAD 6567.8 VEL 11.925 PTH 2.12 VHP 4.214 DPA -12.19 RAP 156.24 ECC 1.3429

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
44.38	5 30 1	4324.36	-33.48	205.36	39.70	47.58	6 42 5	3724.4	-38.65	198.22
135.62	14 9 15	2768.00	-33.47	81.69	39.69	47.57	14 55 23	2168.0	-38.64	74.55
44.38	5 30 1	4324.36	-33.48	205.36	39.70	47.58	6 42 5	3724.4	-38.65	198.22
135.62	14 9 15	2768.00	-33.47	81.69	39.69	47.57	14 55 23	2168.0	-38.64	74.55
44.38	5 30 1	4324.36	-33.48	205.36	39.70	47.58	6 42 5	3724.4	-38.65	198.22
135.62	14 9 15	2768.00	-33.47	81.69	39.69	47.57	14 55 23	2168.0	-38.64	74.55

DIFFERENTIAL CORRECTIONS

TDE 5.5176 TRA-1.1909 TC3-7.6165 BAU 2.1952
RDE 1.3011 RRA -.0406 RC3-2.0230 FAU .26755
FDE 5.5774 FRA -.2242 FC-11.1171 BSP 35596
BDE 5.6689 BRA 1.1916 BC3 7.8806 FSP 3708

MID-COURSE EXECUTION ACCURACY

SGT10109.8 SGR 2466.8 SG3 1066.0
RRT .9766 RRF .9928 RTF .9634
SGB10406.4 R23 .2301 R13 .9662
SG110393.5 SG2 516.6 THA 13.44

ORBIT DETERMINATION ACCURACY

ST 6967.1 SR 1634.4 SS 2552.1
CRT .9960 CRS -.9999 CST -.9963
LSA 7593.8 MSA 241.8 SSA 13.8
EL1 7154.8 EL2 142.4 ALF 13.16

LAUNCH DATE DEC 25 1964 FLIGHT TIME 320.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 685.844 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.024 GAL 3.97 AZL 85.14 HCA 200.01 SMA 186.00 ECC .21971 INC 4.8615 V1 30.281
RP 211.33 LAP -1.66 LOP 293.18 VP 23.291 GAP -10.02 AZP 94.57 TAL 22.35 TAP 222.36 RCA 145.14 APO 226.87 V2 25.956
RC 303.736 GL 38.78 GP -20.84 ZAL 57.93 ZAP 53.15 ETS 162.62 ZAE 77.40 ETE 174.29 ZAC 63.83 ETC 256.65 CLP 50.07

PLANETOCENTRIC CONIC

C3 19.873 VHL 4.458 DLA 50.59 RAL 160.92 RAD 6567.8 VEL 11.885 PTH 2.11 VHP 4.222 DPA -11.02 RAP 156.97 ECC 1.3271

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
46.15	5 35 58	4300.40	-33.25	202.61	38.34	49.39	6 47 39	3700.4	-38.22	195.30
133.85	14 4 13	2769.37	-33.24	81.59	38.33	49.38	14 50 22	2169.4	-38.21	74.28
46.15	5 35 58	4300.40	-33.25	202.61	38.34	49.39	6 47 39	3700.4	-38.22	195.30
133.85	14 4 13	2769.37	-33.24	81.59	38.33	49.38	14 50 22	2169.4	-38.21	74.28
46.15	5 35 58	4300.40	-33.25	202.61	38.34	49.39	6 47 39	3700.4	-38.22	195.30
133.85	14 4 13	2769.37	-33.24	81.59	38.33	49.38	14 50 22	2169.4	-38.21	74.28

DIFFERENTIAL CORRECTIONS

TDE 5.3634 TRA-1.2172 TC3-8.0982 BAU 2.2129
RDE 1.1722 RRA -.0320 RC3-1.9476 FAU .26473
FDE 5.2788 FRA -.2137 FC-11.5322 BSP 36005
BDE 5.4900 BRA 1.2176 BC3 8.3291 FSP 3681

MID-COURSE EXECUTION ACCURACY

SGT10282.1 SGR 2299.9 SG3 1065.0
RRT .9761 RRF .9914 RTF .9632
SGB10536.2 R23 .2259 R13 .9655
SG110524.9 SG2 488.1 THA 12.34

ORBIT DETERMINATION ACCURACY

ST 6936.2 SR 1507.7 SS 2477.8
CRT .9956 CRS -.9999 CST -.9961
LSA 7514.3 MSA 240.8 SSA 14.9
EL1 7096.8 EL2 138.2 ALF 12.22

LAUNCH DATE DEC 25 1964 FLIGHT TIME 322.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 690.162 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.031 GAL 3.87 AZL 85.36 HCA 201.22 SMA 186.13 ECC .21968 INC 4.6416 V1 30.281
RP 211.08 LAP -1.68 LOP 294.40 VP 23.334 GAP -10.12 AZP 94.33 TAL 21.75 TAP 222.97 RCA 145.24 APO 227.02 V2 25.986
RC 304.746 GL 37.69 GP -19.61 ZAL 58.07 ZAP 51.92 ETS 162.99 ZAE 76.10 ETE 174.14 ZAC 65.07 ETC 256.75 CLP 49.10

PLANETOCENTRIC CONIC

C3 19.023 VHL 4.362 DLA 49.27 RAL 161.16 RAD 6567.8 VEL 11.849 PTH 2.10 VHP 4.237 DPA -9.98 RAP 157.68 ECC 1.3131

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.83	5 42 20	4277.19	-32.98	199.98	37.21	51.06	6 53 37	3677.2	-37.77	192.53
132.17	13 59 44	2771.88	-32.97	81.57	37.20	51.05	14 45 56	2171.9	-37.75	74.12
47.83	5 42 20	4277.19	-32.98	199.98	37.21	51.06	6 53 37	3677.2	-37.77	192.53
132.17	13 59 44	2771.88	-32.97	81.57	37.20	51.05	14 45 56	2171.9	-37.75	74.12
47.83	5 42 20	4277.19	-32.98	199.98	37.21	51.06	6 53 37	3677.2	-37.77	192.53
132.17	13 59 44	2771.88	-32.97	81.57	37.20	51.05	14 45 56	2171.9	-37.75	74.12

DIFFERENTIAL CORRECTIONS
TDE 5.2313 TRA-1.2256 TC3-8.5668 BAU 2.2300
RDE 1.0632 RRA -.0202 RC3-1.8690 FAU .26062
FDE 4.9902 FRA -.1806 FC-11.8605 BSP 36556
BDE 5.3382 BRA 1.2258 BC3 8.7683 FSP 3648

MID-COURSE EXECUTION ACCURACY
SGT10448.0 SGR 2147.1 SG3 1058.7
RRT .9754 RRF .9897 RTF .9628
SGB10666.3 R23 .2208 R13 .9648
SG110656.2 SG2 464.1 THA 11.36

ORBIT DETERMINATION ACCURACY
ST 6915.5 SR 1397.6 SS 2402.6
CRT .9951 CRS -.9999 CST -.9958
LSA 7449.3 MSA 240.7 SSA 15.9
EL1 7054.0 EL2 134.8 ALF 11.38

LAUNCH DATE DEC 25 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 694.487 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.039 GAL 3.76 AZL 85.56 HCA 202.43 SMA 186.26 ECC .21966 INC 4.4439 V1 30.281
RP 210.82 LAP -1.69 LOP 295.62 VP 23.377 GAP -10.21 AZP 94.11 TAL 21.14 TAP 223.57 RCA 145.34 APO 227.17 V2 26.015
RC 305.746 GL 36.71 GP -18.50 ZAL 58.30 ZAP 50.75 ETS 163.33 ZAE 74.83 ETE 174.03 ZAC 66.22 ETC 256.83 CLP 48.15

PLANETOCENTRIC CONIC

C3 18.264 VHL 4.274 DLA 48.03 RAL 161.50 RAD 6567.7 VEL 11.817 PTH 2.09 VHP 4.258 DPA -9.06 RAP 158.37 ECC 1.3006

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.43	5 49 4	4254.58	-32.68	197.46	36.28	52.60	6 59 59	3654.6	-37.29	189.89
130.57	13 55 43	2775.40	-32.66	81.64	36.27	52.59	14 41 59	2175.4	-37.27	74.07
49.43	5 49 4	4254.58	-32.68	197.46	36.28	52.60	6 59 59	3654.6	-37.29	189.89
130.57	13 55 43	2775.40	-32.66	81.64	36.27	52.59	14 41 59	2175.4	-37.27	74.07
49.43	5 49 4	4254.58	-32.68	197.46	36.28	52.60	6 59 59	3654.6	-37.29	189.89
130.57	13 55 43	2775.40	-32.66	81.64	36.27	52.59	14 41 59	2175.4	-37.27	74.07

DIFFERENTIAL CORRECTIONS
TDE 5.1083 TRA-1.2277 TC3-9.0409 BAU 2.2505
RDE .9691 RRA -.0083 RC3-1.7917 FAU .25589
FDE 4.7070 FRA -.1409 FC-12.1295 BSP 37047
BDE 5.1994 BRA 1.2277 BC3 9.2168 FSP 3601

MID-COURSE EXECUTION ACCURACY
SGT10614.9 SGR 2008.4 SG3 1048.9
RRT .9744 RRF .9876 RTF .9624
SGB10803.2 R23 .2143 R13 .9641
SG110794.1 SG2 443.9 THA 10.46

ORBIT DETERMINATION ACCURACY
ST 6892.1 SR 1300.0 SS 2324.4
CRT .9946 CRS -.9999 CST -.9955
LSA 7384.9 MSA 240.8 SSA 17.0
EL1 7012.4 EL2 132.0 ALF 10.63

LAUNCH DATE DEC 25 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 698.818 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.046 GAL 3.65 AZL 85.73 HCA 203.65 SMA 186.39 ECC .21965 INC 4.2652 V1 30.281
RP 210.58 LAP -1.71 LOP 296.84 VP 23.419 GAP -10.30 AZP 93.91 TAL 20.51 TAP 224.16 RCA 145.45 APO 227.33 V2 26.043
RC 306.737 GL 35.80 GP -17.48 ZAL 58.61 ZAP 49.63 ETS 163.66 ZAE 73.58 ETE 173.94 ZAC 67.27 ETC 256.89 CLP 47.23

PLANETOCENTRIC CONIC

C3 17.579 VHL 4.193 DLA 46.85 RAL 161.94 RAD 6567.7 VEL 11.788 PTH 2.08 VHP 4.283 DPA -8.24 RAP 159.04 ECC 1.2893

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.97	5 56 12	4232.23	-32.35	195.02	35.53	54.05	7 6 44	3632.2	-36.79	187.35
129.03	13 52 4	2779.91	-32.34	81.78	35.52	54.04	14 38 24	2179.9	-36.78	74.11
50.97	5 56 12	4232.23	-32.35	195.02	35.53	54.05	7 6 44	3632.2	-36.79	187.35
129.03	13 52 4	2779.91	-32.34	81.78	35.52	54.04	14 38 24	2179.9	-36.78	74.11
50.97	5 56 12	4232.23	-32.35	195.02	35.53	54.05	7 6 44	3632.2	-36.79	187.35
129.03	13 52 4	2779.91	-32.34	81.78	35.52	54.04	14 38 24	2179.9	-36.78	74.11

DIFFERENTIAL CORRECTIONS
TDE 4.9968 TRA-1.2178 TC3-9.5110 BAU 2.2713
RDE .8875 RRA .0043 RC3-1.7153 FAU .25056
FDE 4.4318 FRA -.0901 FC-12.3394 BSP 37589
BDE 5.0750 BRA 1.2178 BC3 9.6644 FSP 3546

MID-COURSE EXECUTION ACCURACY
SGT10777.6 SGR 1881.5 SG3 1036.0
RRT .9731 RRF .9852 RTF .9620
SGB10940.6 R23 .2068 R13 .9634
SG110932.2 SG2 427.3 THA 9.66

ORBIT DETERMINATION ACCURACY
ST 6871.4 SR 1213.6 SS 2244.4
CRT .9941 CRS -.9998 CST -.9951
LSA 7325.8 MSA 241.1 SSA 18.0
EL1 6976.5 EL2 129.5 ALF 9.96

LAUNCH DATE DEC 25 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 703.156 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.054 GAL 3.54 AZL 85.90 HCA 204.88 SMA 186.52 ECC .21966 INC 4.1027 V1 30.281
RP 210.34 LAP -1.72 LOP 298.06 VP 23.461 GAP -10.38 AZP 93.72 TAL 19.87 TAP 224.75 RCA 145.55 APO 227.49 V2 26.071
RC 307.719 GL 34.97 GP -16.56 ZAL 59.01 ZAP 48.56 ETS 163.97 ZAE 72.36 ETE 173.87 ZAC 68.24 ETC 256.94 CLP 46.33

PLANETOCENTRIC CONIC

C3 16.957 VHL 4.118 DLA 45.73 RAL 162.45 RAD 6567.7 VEL 11.762 PTH 2.08 VHP 4.314 DPA -7.52 RAP 159.71 ECC 1.2791

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.46	6 3 39	4210.16	-32.00	192.65	34.94	55.40	7 13 49	3610.2	-36.28	184.89
127.54	13 48 45	2785.31	-31.99	82.00	34.93	55.39	14 35 10	2185.3	-36.27	74.25
52.46	6 3 39	4210.16	-32.00	192.65	34.94	55.40	7 13 49	3610.2	-36.28	184.89
127.54	13 48 45	2785.31	-31.99	82.00	34.93	55.39	14 35 10	2185.3	-36.27	74.25
52.46	6 3 39	4210.16	-32.00	192.65	34.94	55.40	7 13 49	3610.2	-36.28	184.89
127.54	13 48 45	2785.31	-31.99	82.00	34.93	55.39	14 35 10	2185.3	-36.27	74.25

DIFFERENTIAL CORRECTIONS
TDE 4.8942 TRA-1.1991 TC3-9.9808 BAU 2.2930
RDE .8170 RRA .0171 RC3-1.6397 FAU .24472
FDE 4.1693 FRA -.0318 FC-12.4940 BSP 38120
BDE 4.9619 BRA 1.1992 BC310.1146 FSP 3482

MID-COURSE EXECUTION ACCURACY
SGT10938.5 SGR 1765.5 SG3 1020.6
RRT .9714 RRF .9824 RTF .9615
SGB11080.1 R23 .1982 R13 .9627
SG111072.3 SG2 414.1 THA 8.92

ORBIT DETERMINATION ACCURACY
ST 6851.7 SR 1137.5 SS 2165.1
CRT .9935 CRS -.9998 CST -.9947
LSA 7271.1 MSA 241.8 SSA 19.1
EL1 6944.3 EL2 127.5 ALF 9.37

LAUNCH DATE DEC 25 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 707.500 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.062	GAL	3.43	AZL	86.05	HCA	206.10	SMA	186.66	ECC	.21968	INC	3.9542
RP	210.10	LAP	-1.74	LOP	299.29	VP	23.501	GAP	-10.47	AZP	93.55	TAL	19.22	TAP	225.32	RCA	145.65	APO	227.66
RC	308.691	GL	34.21	GP	-15.71	ZAL	59.49	ZAP	47.54	ETS	164.27	ZAE	71.16	ETE	173.81	ZAC	69.15	ETC	256.97

V1	30.281	V2	26.098	CLP	45.47														

PLANETOCENTRIC CONIC

C3	16.387	VHL	4.048	DLA	44.65	RAL	163.05	RAD	6567.7	VEL	11.738	PTH	2.07	VHP	4.347	DPA	-6.88	RAP	160.37

ECC	1.2697	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		53.92	6 11 29	4188.14	-31.63	190.32	34.48	56.68	7 21 17	3588.1	-35.76	182.50							
		126.08	13 45 39	2791.65	-31.62	82.29	34.47	56.67	14 32 10	2191.7	-35.75	74.47							
		53.92	6 11 29	4188.14	-31.63	190.32	34.48	56.68	7 21 17	3588.1	-35.76	182.50							
		126.08	13 45 39	2791.65	-31.62	82.29	34.47	56.67	14 32 10	2191.7	-35.75	74.47							
		53.92	6 11 29	4188.14	-31.63	190.32	34.48	56.68	7 21 17	3588.1	-35.76	182.50							
		126.08	13 45 39	2791.65	-31.62	82.29	34.47	56.67	14 32 10	2191.7	-35.75	74.47							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.7962	TRA	-1.1726	TC	-10.4536	BAU	2.3158	SGT	11097.5	SGR	1659.3	SG3	1003.4	ST	6829.1	SR	1068.9	SS	2083.1
RDE	.7546	RRA	.0295	RC3	-1.5668	FAU	.23866	RRT	.9693	RRF	.9791	RTF	.9610	CRT	.9929	CRS	-.9997	CST	-.9942
FDE	3.9124	FRA	.0298	FC	-12.6086	BSP	38651	SGB	11220.8	R23	.1886	R13	.9620	LSA	7215.2	MSA	242.4	SSA	20.1
BDE	4.8552	BRA	1.1730	BC	310.5703	FSP	3409	SG	111213.6	SG2	403.6	THA	8.26	EL1	6911.1	EL2	125.6	ALF	8.84

LAUNCH DATE DEC 25 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 711.850 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.069	GAL	3.31	AZL	86.18	HCA	207.33	SMA	186.79	ECC	.21972	INC	3.8179
RP	209.88	LAP	-1.75	LOP	300.52	VP	23.541	GAP	-10.55	AZP	93.39	TAL	18.55	TAP	225.88	RCA	145.75	APO	227.83
RC	309.654	GL	33.50	GP	-14.93	ZAL	60.04	ZAP	46.55	ETS	164.54	ZAE	69.99	ETE	173.77	ZAC	69.99	ETC	256.98

V1	30.281	V2	26.124	CLP	44.63														

PLANETOCENTRIC CONIC

C3	15.862	VHL	3.983	DLA	43.60	RAL	163.71	RAD	6567.6	VEL	11.715	PTH	2.06	VHP	4.384	DPA	-6.31	RAP	161.03

ECC	1.2611	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		55.34	6 19 41	4166.00	-31.25	188.02	34.15	57.89	7 29 7	3566.0	-35.24	180.14							
		124.66	13 42 43	2798.97	-31.24	82.67	34.14	57.87	14 29 22	2199.0	-35.23	74.79							
		55.34	6 19 41	4166.00	-31.25	188.02	34.15	57.89	7 29 7	3566.0	-35.24	180.14							
		124.66	13 42 43	2798.97	-31.24	82.67	34.14	57.87	14 29 22	2199.0	-35.23	74.79							
		55.34	6 19 41	4166.00	-31.25	188.02	34.15	57.89	7 29 7	3566.0	-35.24	180.14							
		124.66	13 42 43	2798.97	-31.24	82.67	34.14	57.87	14 29 22	2199.0	-35.23	74.79							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.7038	TRA	-1.1376	TC	-10.9266	BAU	2.3387	SGT	11253.9	SGR	1561.8	SG3	984.5	ST	6805.8	SR	1008.1	SS	2002.4
RDE	.7001	RRA	.0420	RC3	-1.4949	FAU	.23226	RRT	.9667	RRF	.9752	RTF	.9604	CRT	.9922	CRS	-.9997	CST	-.9937
FDE	3.6684	FRA	.0977	FC	-12.6763	BSP	39179	SGB	11361.8	R23	.1784	R13	.9612	LSA	7161.4	MSA	243.6	SSA	21.1
BDE	4.7556	BRA	1.1384	BC	311.0283	FSP	3338	SG	111354.9	SG2	396.3	THA	7.65	EL1	6879.0	EL2	124.0	ALF	8.36

LAUNCH DATE DEC 25 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 716.205 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.077	GAL	3.19	AZL	86.31	HCA	208.56	SMA	186.93	ECC	.21977	INC	3.6921
RP	209.66	LAP	-1.76	LOP	301.75	VP	23.581	GAP	-10.63	AZP	93.24	TAL	17.87	TAP	226.43	RCA	145.85	APO	228.01
RC	310.607	GL	32.84	GP	-14.21	ZAL	60.67	ZAP	45.61	ETS	164.80	ZAE	68.85	ETE	173.74	ZAC	70.77	ETC	256.99

V1	30.281	V2	26.149	CLP	43.81														

PLANETOCENTRIC CONIC

C3	15.376	VHL	3.921	DLA	42.59	RAL	164.43	RAD	6567.6	VEL	11.694	PTH	2.06	VHP	4.424	DPA	-5.82	RAP	161.69

ECC	1.2531	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		56.74	6 28 17	4143.66	-30.85	185.75	33.94	59.03	7 37 20	3543.7	-34.70	177.82							
		123.26	13 39 55	2807.25	-30.84	83.12	33.93	59.02	14 26 42	2207.2	-34.69	75.19							
		56.74	6 28 17	4143.66	-30.85	185.75	33.94	59.03	7 37 20	3543.7	-34.70	177.82							
		123.26	13 39 55	2807.25	-30.84	83.12	33.93	59.02	14 26 42	2207.2	-34.69	75.19							
		56.74	6 28 17	4143.66	-30.85	185.75	33.94	59.03	7 37 20	3543.7	-34.70	177.82							
		123.26	13 39 55	2807.25	-30.84	83.12	33.93	59.02	14 26 42	2207.2	-34.69	75.19							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.6151	TRA	-1.0950	TC	-11.4016	BAU	2.3620	SGT	11408.4	SGR	1472.3	SG3	964.5	ST	6780.2	SR	953.6	SS	1921.7
RDE	.6518	RRA	.0541	RC3	-1.4250	FAU	.22569	RRT	.9635	RRF	.9707	RTF	.9597	CRT	.9915	CRS	-.9996	CST	-.9931
FDE	3.4343	FRA	.1684	FC	-12.7071	BSP	39703	SGB	11503.0	R23	.1677	R13	.9605	LSA	7107.3	MSA	245.0	SSA	22.1
BDE	4.6609	BRA	1.0964	BC	311.4903	FSP	3260	SG	111496.4	SG2	391.4	THA	7.10	EL1	6845.9	EL2	122.6	ALF	7.94

LAUNCH DATE DEC 25 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 720.563 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.085	GAL	3.07	AZL	86.42	HCA	209.79	SMA	187.07	ECC	.21984	INC	3.5756
RP	209.44	LAP	-1.78	LOP	302.99	VP	23.619	GAP	-10.71	AZP	93.10	TAL	17.18	TAP	226.98	RCA	145.94	APO	228.19
RC	311.551	GL	32.23	GP	-13.55	ZAL	61.36	ZAP	44.70	ETS	165.05	ZAE	67.73	ETE	173.72	ZAC	71.51	ETC	256.99

V1	30.281	V2	26.174	CLP	43.01														

PLANETOCENTRIC CONIC

C3	14.924	VHL	3.863	DLA	41.61	RAL	165.22	RAD	6567.6	VEL	11.675	PTH	2.05	VHP	4.466	DPA	-5.38	RAP	162.35

ECC	1.2456	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		58.14	6 37 17	4120.92	-30.43	183.47	33.82	60.13	7 45 58	3520.9	-34.15	175.51							
		121.86	13 37 11	2816.59	-30.42	83.65	33.82	60.12	14 24 8	2216.6	-34.14	75.69							
		58.14	6 37 17	4120.92	-30.43	183.47	33.82	60.13	7 45 58	3520.9	-34.15	175.51							
		121.86	13 37 11	2816.59	-30.42	83.65	33.82	60.12	14 24 8	2216.6	-34.14	75.69							
		58.14	6 37 17	4120.92	-30.43	183.47	33.82	60.13	7 45 58	3520.9	-34.15	175.51							
		121.86	13 37 11	2816.59	-30.42	83.65	33.82	60.12	14 24 8	2216.6	-34.14	75.69							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.5502	TRA	-1.0234	TC	-11.8256	BAU	2.3746	SGT	11538.8	SGR	1388.1	SG3	939.9	ST	6781.5	SR	910.2	SS	1859.1
RDE	.6127	RRA	.0698	RC3	-1.3463	FAU	.21740	RRT	.9587	RRF	.9654	RTF	.9588	CRT	.9908	CRS	-.9996	CST	-.9921
FDE	3.2409	FRA	.2757	FC	-12.6115	BSP	40738	SGB	11622.0	R23	.1588	R13	.9594	LSA	7085.9	MSA	251.2	SSA	22.5
BDE	4.5912	BRA	1.0257	BC	311.9020	FSP	3246	SG	111615.4	SG2	392.4	THA	6.59	EL1	6841.2	EL2	122.1	ALF	7.58

LAUNCH DATE DEC 25 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 724.931 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.093	GAL	2.95	AZL	86.53	HCA	211.03	SMA	187.21	ECC	.21992	INC	3.4673
RP	209.24	LAP	-1.79	LOP	304.23	VP	23.657	GAP	-10.78	AZP	92.97	TAL	16.48	TAP	227.51	RCA	146.04	APO	228.38
RC	312.486	GL	31.66	GP	-12.94	ZAL	62.11	ZAP	43.82	ETS	165.28	ZAE	66.62	ETE	173.71	ZAC	72.20	ETC	256.98

V1	30.281	V2	26.198	CLP	42.24														

PLANETOCENTRIC CONIC

C3	14.502	VHL	3.808	DLA	40.64	RAL	166.06	RAD	6567.6	VEL	11.657	PTH	2.05	VHP	4.510	DPA	-5.01	RAP	163.01
ECC	1.2387																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.53	6 46 44	4097.63	-30.00	181.18	33.81	61.19	7 55 2	3497.6	-33.59	173.18
120.47	13 34 26	2827.13	-29.99	84.28	33.80	61.17	14 21 33	2227.1	-33.58	76.28
59.53	6 46 44	4097.63	-30.00	181.18	33.81	61.19	7 55 2	3497.6	-33.59	173.18
120.47	13 34 26	2827.13	-29.99	84.28	33.80	61.17	14 21 33	2227.1	-33.58	76.28
59.53	6 46 44	4097.63	-30.00	181.18	33.81	61.19	7 55 2	3497.6	-33.59	173.18
120.47	13 34 26	2827.13	-29.99	84.28	33.80	61.17	14 21 33	2227.1	-33.58	76.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.4559	TRA	-.9757	TC-12.3303	BAU	2.4036	SGT11699.7	SGR	1313.7	SG3	920.1	ST	6735.0	SR	863.4	SS	1770.9		
RDE	.5727	RRA	.0789	RC3-1.2857	FAU	.21147	RRT	.9545	RRF	.9594	RTF	.9583	CRT	.9901	CRS	-.9995	CST	-.9914	
FDE	3.0119	FRA	.3327	FC-12.6242	BSP	41017	SGB11773.2	R23	.1468	R13	.9588	LSA	7012.7	MSA	250.7	SSA	23.7		
BDE	4.4925	BRA	.9789	BC312.3971	FSP	3132	SG111766.7	SG2	389.7	THA	6.12	EL1	6789.0	EL2	120.3	ALF	7.24		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 340.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 729.303 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.102	GAL	2.82	AZL	86.63	HCA	212.27	SMA	187.35	ECC	.22003	INC	3.3663
RP	209.04	LAP	-1.80	LOP	305.47	VP	23.694	GAP	-10.86	AZP	92.85	TAL	15.76	TAP	228.03	RCA	146.13	APO	228.58
RC	313.411	GL	31.12	GP	-12.38	ZAL	62.92	ZAP	42.97	ETS	165.50	ZAE	65.54	ETE	173.71	ZAC	72.85	ETC	256.97

V1	30.281	V2	26.221	CLP	41.48														

PLANETOCENTRIC CONIC

C3	14.108	VHL	3.756	DLA	39.69	RAL	166.96	RAD	6567.6	VEL	11.640	PTH	2.04	VHP	4.556	DPA	-4.68	RAP	163.67
ECC	1.2322																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.94	6 56 41	4073.58	-29.56	178.87	33.88	62.20	8 4 35	3473.6	-33.02	170.84
119.06	13 31 38	2839.00	-29.54	85.01	33.87	62.19	14 18 57	2239.0	-33.01	76.99
60.94	6 56 41	4073.58	-29.56	178.87	33.88	62.20	8 4 35	3473.6	-33.02	170.84
119.06	13 31 38	2839.00	-29.54	85.01	33.87	62.19	14 18 57	2239.0	-33.01	76.99
60.94	6 56 41	4073.58	-29.56	178.87	33.88	62.20	8 4 35	3473.6	-33.02	170.84
119.06	13 31 38	2839.00	-29.54	85.01	33.87	62.19	14 18 57	2239.0	-33.01	76.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.3664	TRA	-.9164	TC-12.8283	BAU	2.4306	SGT11854.6	SGR	1244.9	SG3	899.3	ST	6689.0	SR	822.1	SS	1686.3		
RDE	.5375	RRA	.0886	RC3-1.2248	FAU	.20521	RRT	.9493	RRF	.9526	RTF	.9577	CRT	.9894	CRS	-.9994	CST	-.9904	
FDE	2.7982	FRA	.3980	FC-12.5926	BSP	41371	SGB11919.8	R23	.1352	R13	.9581	LSA	6942.5	MSA	251.4	SSA	24.8		
BDE	4.3993	BRA	.9206	BC312.8866	FSP	3028	SG111913.4	SG2	389.6	THA	5.70	EL1	6738.3	EL2	118.8	ALF	6.93		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 342.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 733.679 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.110	GAL	2.70	AZL	86.73	HCA	213.51	SMA	187.50	ECC	.22015	INC	3.2720
RP	208.85	LAP	-1.81	LOP	306.71	VP	23.730	GAP	-10.93	AZP	92.73	TAL	15.04	TAP	228.54	RCA	146.22	APO	228.78
RC	314.329	GL	30.61	GP	-11.85	ZAL	63.80	ZAP	42.15	ETS	165.70	ZAE	64.48	ETE	173.70	ZAC	73.47	ETC	256.95

V1	30.281	V2	26.243	CLP	40.75														

PLANETOCENTRIC CONIC

C3	13.739	VHL	3.707	DLA	38.75	RAL	167.90	RAD	6567.5	VEL	11.624	PTH	2.04	VHP	4.603	DPA	-4.40	RAP	164.33
ECC	1.2261																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.36	7 7 11	4048.56	-29.09	176.50	34.04	63.18	8 14 40	3448.6	-32.43	168.45
117.64	13 28 40	2852.37	-29.08	85.85	34.03	63.17	14 16 12	2252.4	-32.42	77.81
62.36	7 7 11	4048.56	-29.09	176.50	34.04	63.18	8 14 40	3448.6	-32.43	168.45
117.64	13 28 40	2852.37	-29.08	85.85	34.03	63.17	14 16 12	2252.4	-32.42	77.81
62.36	7 7 11	4048.56	-29.09	176.50	34.04	63.18	8 14 40	3448.6	-32.43	168.45
117.64	13 28 40	2852.37	-29.08	85.85	34.03	63.17	14 16 12	2252.4	-32.42	77.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.2800	TRA	-.8473	TC-13.3195	BAU	2.4558	SGT12003.7	SGR	1181.0	SG3	877.4	ST	6641.6	SR	785.3	SS	1604.7		
RDE	.5064	RRA	.0984	RC3-1.1637	FAU	.19868	RRT	.9430	RRF	.9447	RTF	.9570	CRT	.9886	CRS	-.9993	CST	-.9892	
FDE	2.5978	FRA	.4675	FC-12.5194	BSP	41823	SGB12061.7	R23	.1241	R13	.9574	LSA	6873.0	MSA	252.9	SSA	25.7		
BDE	4.3098	BRA	.8530	BC313.3703	FSP	2937	SG112055.3	SG2	391.3	THA	5.31	EL1	6686.9	EL2	117.3	ALF	6.67		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 344.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 738.060 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.118	GAL	2.57	AZL	86.82	HCA	214.75	SMA	187.64	ECC	.22030	INC	3.1834
RP	208.67	LAP	-1.81	LOP	307.95	VP	23.765	GAP	-11.00	AZP	92.62	TAL	14.30	TAP	229.05	RCA	146.31	APO	228.98
RC	315.238	GL	30.13	GP	-11.37	ZAL	64.74	ZAP	41.35	ETS	165.89	ZAE	63.44	ETE	173.71	ZAC	74.05	ETC	256.93

V1	30.281	V2	26.264	CLP	40.03														

PLANETOCENTRIC CONIC

C3	13.393	VHL	3.660	DLA	37.82	RAL	168.90	RAD	6567.5	VEL	11.609	PTH	2.03	VHP	4.652	DPA	-4.16	RAP	165.01
ECC	1.2204																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.81	7 18 18	4022.31	-28.61	174.06	34.28	64.13	8 25 20	3422.3	-31.83	166.00
116.19	13 25 29	2867.49	-28.60	86.83	34.27	64.12	14 13 16	2267.5	-31.82	78.77
63.81	7 18 18	4022.31	-28.61	174.06	34.28	64.13	8 25 20	3422.3	-31.83	166.00
116.19	13 25 29	2867.49	-28.60	86.83	34.27	64.12	14 13 16	2267.5	-31.82	78.77
63.81	7 18 18	4022.31	-28.61	174.06	34.28	64.13	8 25 20	3422.3	-31.83	166.00
116.19	13 25 29	2867.49	-28.60	86.83	34.27	64.12	14 13 16	2267.5	-31.82	78.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.1944	TRA	-.7701	TC-13.8106	BAU	2.4807	SGT12150.3	SGR	1122.3	SG3	855.3	ST	6589.7	SR	752.2	SS	1524.2		
RDE	.4784	RRA	.1078	RC3-1.1039	FAU	.19215	RRT	.9357	RRF	.9358	RTF	.9563	CRT	.9879	CRS	-.9992	CST	-.9878	
FDE	2.4071	FRA	.5385	FC-12.4207	BSP	42284	SGB12202.0	R23	.1136	R13	.9566	LSA	6800.6	MSA	254.8	SSA	26.7		
BDE	4.2216	BRA	.7776	BC313.8546	FSP	2848	SG112195.6	SG2	394.4	THA	4.94	EL1	6631.5	EL2	115.8	ALF	6.44		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 346.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 742.445 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.126	GAL	2.43	AZL	86.90	HCA	216.00	SMA	187.79	ECC	.22046	INC	3.1000	V1	30.281
RP	208.49	LAP	-1.82	LOP	309.20	VP	23.799	GAP	-11.08	AZP	92.51	TAL	13.54	TAP	229.54	RCA	146.39	APO	229.19	V2	26.285
RC	316.140	GL	29.68	GP	-10.91	ZAL	65.73	ZAP	40.58	ETS	166.07	ZAE	62.42	ETE	173.71	ZAC	74.61	ETC	256.90	CLP	39.33

PLANETOCENTRIC CONIC

C3	13.068	VHL	3.615	DLA	36.89	RAL	169.94	RAD	6567.5	VEL	11.595	PTH	2.03	VHP	4.703	DPA	-3.96	RAP	165.68	ECC	1.2151

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.30	7 30 7	3994.57	-28.10	171.52	34.59	65.05	8 36 41	3394.6	-31.22	163.46
114.70	13 21 58	2884.60	-28.09	87.95	34.59	65.04	14 10 3	2284.6	-31.21	79.89
65.30	7 30 7	3994.57	-28.10	171.52	34.59	65.05	8 36 41	3394.6	-31.22	163.46
114.70	13 21 58	2884.60	-28.09	87.95	34.59	65.04	14 10 3	2284.6	-31.21	79.89
65.30	7 30 7	3994.57	-28.10	171.52	34.59	65.05	8 36 41	3394.6	-31.22	163.46
114.70	13 21 58	2884.60	-28.09	87.95	34.59	65.04	14 10 3	2284.6	-31.21	79.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.1084	TRA	-.6850	TC-14.3024	BAU	2.5054	SGT12295.1	SGR	1068.3	SG3	833.1	ST	6531.8	SR	722.2	SS	1444.9
RDE	.4533	RRA	.1169	RC3-1.0454	FAU	.18565	RRT .9273	RRF	.9257	RTF	.9555	CRT	.9873	CRS	-.9990	CST	-.9861
FDE	2.2257	FRA	.6090	FC-12.2993	BSP	42753	SGB12341.5	R23	.1034	R13	.9558	LSA	6723.6	MSA	256.9	SSA	27.6
BDE	4.1334	BRA	.6949	BC314.3405	FSP	2761	SG112335.0	SG2	398.6	THA	4.61	EL1	6570.6	EL2	114.1	ALF	6.23

LAUNCH DATE DEC 25 1964 FLIGHT TIME 348.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 746.833 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.135	GAL	2.30	AZL	86.98	HCA	217.24	SMA	187.94	ECC	.22065	INC	3.0214	V1	30.281
RP	208.32	LAP	-1.83	LOP	310.45	VP	23.832	GAP	-11.15	AZP	92.41	TAL	12.78	TAP	230.02	RCA	146.47	APO	229.41	V2	26.304
RC	317.035	GL	29.24	GP	-10.49	ZAL	66.79	ZAP	39.83	ETS	166.24	ZAE	61.42	ETE	173.72	ZAC	75.14	ETC	256.86	CLP	38.65

PLANETOCENTRIC CONIC

C3	12.763	VHL	3.573	DLA	35.96	RAL	171.02	RAD	6567.5	VEL	11.582	PTH	2.03	VHP	4.755	DPA	-3.80	RAP	166.37	ECC	1.2101

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.85	7 42 46	3964.81	-27.58	168.86	34.98	65.96	8 48 51	3364.8	-30.58	160.79
113.15	13 17 58	2904.20	-27.57	89.26	34.97	65.94	14 6 23	2304.2	-30.57	81.19
66.85	7 42 46	3964.81	-27.58	168.86	34.98	65.96	8 48 51	3364.8	-30.58	160.79
113.15	13 17 58	2904.20	-27.57	89.26	34.97	65.94	14 6 23	2304.2	-30.57	81.19
66.85	7 42 46	3964.81	-27.58	168.86	34.98	65.96	8 48 51	3364.8	-30.58	160.79
113.15	13 17 58	2904.20	-27.57	89.26	34.97	65.94	14 6 23	2304.2	-30.57	81.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.0213	TRA	-.5936	TC-14.7898	BAU	2.5292	SGT12435.8	SGR	1018.0	SG3	810.3	ST	6466.7	SR	694.9	SS	1366.1
RDE	.4306	RRA	.1254	RC3 -.9874	FAU	.17909	RRT .9176	RRF	.9143	RTF	.9548	CRT	.9867	CRS	-.9988	CST	-.9841
FDE	2.0518	FRA	.6773	FC-12.1475	BSP	43192	SGB12477.4	R23	.0936	R13	.9551	LSA	6640.7	MSA	259.0	SSA	28.5
BDE	4.0443	BRA	.6067	BC314.8227	FSP	2670	SG112470.8	SG2	403.5	THA	4.30	EL1	6502.9	EL2	112.2	ALF	6.05

LAUNCH DATE DEC 25 1964 FLIGHT TIME 350.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 751.225 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.143	GAL	2.16	AZL	87.05	HCA	218.49	SMA	188.09	ECC	.22086	INC	2.9470	V1	30.281
RP	208.16	LAP	-1.83	LOP	311.70	VP	23.865	GAP	-11.21	AZP	92.31	TAL	12.00	TAP	230.49	RCA	146.55	APO	229.63	V2	26.323
RC	317.924	GL	28.82	GP	-10.09	ZAL	67.90	ZAP	39.11	ETS	166.40	ZAE	60.43	ETE	173.74	ZAC	75.65	ETC	256.83	CLP	37.99

PLANETOCENTRIC CONIC

C3	12.478	VHL	3.532	DLA	35.02	RAL	172.15	RAD	6567.5	VEL	11.570	PTH	2.02	VHP	4.808	DPA	-3.68	RAP	167.05	ECC	1.2054

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.47	7 56 23	3932.66	-27.04	166.04	35.43	66.84	9 1 56	3332.7	-29.93	157.97
111.53	13 13 22	2926.69	-27.02	90.78	35.43	66.82	14 2 9	2326.7	-29.92	82.71
68.47	7 56 23	3932.66	-27.04	166.04	35.43	66.84	9 1 56	3332.7	-29.93	157.97
111.53	13 13 22	2926.69	-27.02	90.78	35.43	66.82	14 2 9	2326.7	-29.92	82.71
68.47	7 56 23	3932.66	-27.04	166.04	35.43	66.84	9 1 56	3332.7	-29.93	157.97
111.53	13 13 22	2926.69	-27.02	90.78	35.43	66.82	14 2 9	2326.7	-29.92	82.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.9341	TRA	-.4930	TC-15.2741	BAU	2.5527	SGT12574.4	SGR	972.2	SG3	787.9	ST	6396.1	SR	670.2	SS	1288.8
RDE	.4101	RRA	.1338	RC3 -.9309	FAU	.17263	RRT .9065	RRF	.9015	RTF	.9540	CRT	.9862	CRS	-.9983	CST	-.9816
FDE	1.8868	FRA	.7469	FC-11.9775	BSP	43704	SGB12611.9	R23	.0847	R13	.9542	LSA	6553.7	MSA	261.7	SSA	29.4
BDE	3.9554	BRA	.5109	BC315.3024	FSP	2592	SG112605.3	SG2	409.4	THA	4.01	EL1	6430.1	EL2	110.2	ALF	5.90

LAUNCH DATE DEC 25 1964 FLIGHT TIME 352.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 755.621 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.152	GAL	2.02	AZL	87.12	HCA	219.75	SMA	188.24	ECC	.22110	INC	2.8765	V1	30.281
RP	208.01	LAP	-1.84	LOP	312.95	VP	23.896	GAP	-11.28	AZP	92.21	TAL	11.21	TAP	230.95	RCA	146.62	APO	229.86	V2	26.341
RC	318.808	GL	28.41	GP	-9.72	ZAL	69.06	ZAP	38.41	ETS	166.55	ZAE	59.46	ETE	173.75	ZAC	76.14	ETC	256.79	CLP	37.34

PLANETOCENTRIC CONIC

C3	12.211	VHL	3.494	DLA	34.08	RAL	173.32	RAD	6567.5	VEL	11.558	PTH	2.02	VHP	4.862	DPA	-3.58	RAP	167.75	ECC	1.2010

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.19	8 11 10	3897.39	-26.47	163.01	35.96	67.70	9 16 8	3297.4	-29.25	154.94
109.81	13 7 55	2952.79	-26.46	92.56	35.95	67.69	13 57 8	2352.8	-29.24	84.49
70.19	8 11 10	3897.39	-26.47	163.01	35.96	67.70	9 16 8	3297.4	-29.25	154.94
109.81	13 7 55	2952.79	-26.46	92.56	35.95	67.69	13 57 8	2352.8	-29.24	84.49
110.00	13 29 4	2888.31	-28.05	88.22	36.65	69.61	14 17 13	2288.3	-30.56	79.93
110.00	12 49 12	3009.86	-24.90	96.27	35.21	65.79	13 39 22	2409.9	-27.95	88.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.8447	TRA	-.3862	TC-15.7550	BAU	2.5760	SGT12710.8	SGR	930.0	SG3	765.3	ST	6316.7	SR	647.8	SS	1213.4
RDE	.3916	RRA	.1416	RC3 -.8750	FAU	.16620	RRT .8940	RRF	.8873	RTF	.9533	CRT	.9859	CRS	-.9976	CST	-.9786
FDE	1.7304	FRA	.8138	FC-11.7833	BSP	44189	SGB12744.8	R23	.0764	R13	.9534	LSA	6459.3	MSA	264.7	SSA	30.3
BDE	3.8646	BRA	.4113	BC315.7793	FSP	2509	SG112738.0	SG2	415.9	THA	3.75	EL1	6348.9	EL2	107.9	ALF	5.78

LAUNCH DATE DEC 25 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 760.020 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.160 GAL 1.88 AZL 87.19 HCA 221.00 SMA 188.39 ECC .22135 INC 2.8095 V1 30.281
RP 207.86 LAP -1.84 LOP 314.21 VP 23.927 GAP -11.35 AZP 92.12 TAL 10.40 TAP 231.40 RCA 146.69 APO 230.09 V2 26.357
RC 319.685 GL 28.01 GP -9.38 ZAL 70.29 ZAP 37.72 ETS 166.69 ZAE 58.51 ETE 173.76 ZAC 76.61 ETC 256.75 CLP 36.71

PLANETOCENTRIC CONIC

C3 11.963 VHL 3.459 DLA 33.13 RAL 174.53 RAD 6567.5 VEL 11.548 PTH 2.02 VHP 4.917 DPA -3.51 RAP 168.45 ECC 1.1969

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.04	8 27 25	3858.03	-25.87	159.69	36.55	68.55	9 31 43	3258.0	-28.55	151.63
107.96	13 1 20	2983.46	-25.86	94.67	36.54	68.54	13 51 4	2383.5	-28.54	86.61
72.04	8 27 25	3858.03	-25.87	159.69	36.55	68.55	9 31 43	3258.0	-28.55	151.63
107.96	13 1 20	2983.46	-25.86	94.67	36.54	68.54	13 51 4	2383.5	-28.54	86.61
110.00	14 18 2	2747.96	-30.98	78.35	38.47	74.77	15 3 50	2148.0	-32.76	69.58
110.00	12 9 54	3141.53	-20.97	104.47	34.11	62.37	13 2 15	2541.5	-24.50	97.10

DIFFERENTIAL CORRECTIONS
TDE 3.7534 TRA -.2730 TC-16.2333 BAU 2.5995
RDE .3749 RRA .1489 RC3 -.8208 FAU .15996
FDE 1.5809 FRA .8781 FC-11.5764 BSP 44661
BDE 3.7720 BRA .3110 BC316.2540 FSP 2427

MID-COURSE EXECUTION ACCURACY
SGT12847.0 SGR 891.5 SG3 743.2
RRT .8799 RRF .8716 RTF .9525
SGB12877.9 R23 .0686 R13 .9527
SG112871.0 SG2 422.7 THA 3.50

ORBIT DETERMINATION ACCURACY
ST 6228.9 SR 627.5 SS 1139.0
CRT .9857 CRS -.9965 CST -.9749
LSA 6357.5 MSA 267.8 SSA 31.1
EL1 6259.6 EL2 105.3 ALF 5.67

LAUNCH DATE DEC 25 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 764.419 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.169 GAL 1.74 AZL 87.25 HCA 222.25 SMA 188.54 ECC .22164 INC 2.7458 V1 30.281
RP 207.73 LAP -1.85 LOP 315.46 VP 23.956 GAP -11.42 AZP 92.03 TAL 9.59 TAP 231.84 RCA 146.75 APO 230.33 V2 26.373
RC 320.558 GL 27.63 GP -9.05 ZAL 71.56 ZAP 37.06 ETS 166.82 ZAE 57.57 ETE 173.78 ZAC 77.06 ETC 256.71 CLP 36.09

PLANETOCENTRIC CONIC

C3 11.731 VHL 3.425 DLA 32.17 RAL 175.78 RAD 6567.4 VEL 11.538 PTH 2.01 VHP 4.973 DPA -3.48 RAP 169.16 ECC 1.1931

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.06	8 45 35	3813.10	-25.26	155.98	37.21	69.38	9 49 8	3213.1	-27.83	147.93
105.94	12 53 10	3020.20	-25.24	97.22	37.20	69.37	13 43 30	2420.2	-27.82	89.17
74.06	8 45 35	3813.10	-25.26	155.98	37.21	69.38	9 49 8	3213.1	-27.83	147.93
105.94	12 53 10	3020.20	-25.24	97.22	37.20	69.37	13 43 30	2420.2	-27.82	89.17
110.00	14 47 24	2667.00	-32.27	72.40	39.54	78.07	15 31 51	2067.0	-33.58	63.41
110.00	11 50 31	3214.30	-18.61	108.80	33.88	60.80	12 44 5	2614.3	-22.36	101.67

DIFFERENTIAL CORRECTIONS
TDE 3.6764 TRA -.1362 TC-16.6447 BAU 2.6133
RDE .3611 RRA .1571 RC3 -.7616 FAU .15289
FDE 1.4537 FRA .9558 FC-11.2823 BSP 45542
BDE 3.6941 BRA .2079 BC316.6622 FSP 2381

MID-COURSE EXECUTION ACCURACY
SGT12957.6 SGR 856.4 SG3 718.8
RRT .8633 RRF .8544 RTF .9515
SGB12985.9 R23 .0636 R13 .9516
SG112978.7 SG2 431.5 THA 3.27

ORBIT DETERMINATION ACCURACY
ST 6159.9 SR 611.3 SS 1077.5
CRT .9858 CRS -.9949 CST -.9703
LSA 6277.2 MSA 273.2 SSA 31.6
EL1 6189.3 EL2 102.1 ALF 5.59

LAUNCH DATE DEC 25 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 768.821 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.178 GAL 1.59 AZL 87.32 HCA 223.51 SMA 188.70 ECC .22195 INC 2.6849 V1 30.281
RP 207.60 LAP -1.85 LOP 316.72 VP 23.985 GAP -11.48 AZP 91.95 TAL 8.76 TAP 232.27 RCA 146.82 APO 230.58 V2 26.388
RC 321.425 GL 27.24 GP -8.75 ZAL 72.90 ZAP 36.41 ETS 166.95 ZAE 56.65 ETE 173.79 ZAC 77.49 ETC 256.66 CLP 35.49

PLANETOCENTRIC CONIC

C3 11.518 VHL 3.394 DLA 31.19 RAL 177.07 RAD 6567.4 VEL 11.528 PTH 2.01 VHP 5.031 DPA -3.46 RAP 169.88 ECC 1.1896

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.34	9 6 24	3760.14	-24.61	151.70	37.93	70.21	10 9 4	3160.1	-27.08	143.66
103.66	12 42 37	3065.50	-24.60	100.40	37.92	70.19	13 33 43	2465.5	-27.07	92.36
76.34	9 6 24	3760.14	-24.61	151.70	37.93	70.21	10 9 4	3160.1	-27.08	143.66
103.66	12 42 37	3065.50	-24.60	100.40	37.92	70.19	13 33 43	2465.5	-27.07	92.36
110.00	15 11 36	2601.74	-33.09	67.48	40.42	80.87	15 54 58	2001.7	-33.99	58.36
110.00	11 36 35	3271.89	-16.67	112.13	33.96	59.71	12 31 7	2671.9	-20.56	105.17

DIFFERENTIAL CORRECTIONS
TDE 3.5886 TRA .0017 TC-17.0737 BAU 2.6314
RDE .3480 RRA .1644 RC3 -.7062 FAU .14635
FDE 1.3251 FRA 1.0265 FC-11.0000 BSP 46260
BDE 3.6055 BRA .1644 BC317.0883 FSP 2323

MID-COURSE EXECUTION ACCURACY
SGT13077.1 SGR 824.7 SG3 695.8
RRT .8452 RRF .8357 RTF .9504
SGB13103.1 R23 .0590 R13 .9505
SG113095.7 SG2 440.1 THA 3.05

ORBIT DETERMINATION ACCURACY
ST 6068.4 SR 595.6 SS 1012.3
CRT .9861 CRS -.9923 CST -.9645
LSA 6174.7 MSA 278.5 SSA 32.2
EL1 6096.8 EL2 98.7 ALF 5.53

LAUNCH DATE DEC 25 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 773.231 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.186 GAL 1.44 AZL 87.37 HCA 224.77 SMA 188.85 ECC .22229 INC 2.6267 V1 30.281
RP 207.48 LAP -1.85 LOP 317.98 VP 24.012 GAP -11.55 AZP 91.87 TAL 7.92 TAP 232.69 RCA 146.87 APO 230.83 V2 26.402
RC 322.286 GL 26.86 GP -8.46 ZAL 74.28 ZAP 35.78 ETS 167.06 ZAE 55.74 ETE 173.80 ZAC 77.92 ETC 256.62 CLP 34.90

PLANETOCENTRIC CONIC

C3 11.323 VHL 3.365 DLA 30.20 RAL 178.39 RAD 6567.4 VEL 11.520 PTH 2.01 VHP 5.089 DPA -3.47 RAP 170.60 ECC 1.1863

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.04	9 31 15	3694.55	-23.94	146.52	38.70	71.02	10 32 50	3094.5	-26.31	138.50
100.96	12 28 18	3123.98	-23.93	104.52	38.70	71.00	13 20 22	2524.0	-26.30	96.50
79.04	9 31 15	3694.55	-23.94	146.52	38.70	71.02	10 32 50	3094.5	-26.31	138.50
100.96	12 28 18	3123.98	-23.93	104.52	38.70	71.00	13 20 22	2524.0	-26.30	96.50
110.00	15 33 8	2544.69	-33.62	63.12	41.21	83.41	16 15 32	1944.7	-34.16	53.91
110.00	11 25 36	3321.84	-14.93	114.96	34.25	58.89	12 20 58	2721.8	-18.94	108.14

DIFFERENTIAL CORRECTIONS
TDE 3.4594 TRA .1060 TC-17.6197 BAU 2.6691
RDE .3332 RRA .1677 RC3 -.6632 FAU .14181
FDE 1.1677 FRA 1.0518 FC-10.8425 BSP 46049
BDE 3.4754 BRA .1984 BC317.6322 FSP 2189

MID-COURSE EXECUTION ACCURACY
SGT13241.9 SGR 793.8 SG3 677.5
RRT .8279 RRF .8144 RTF .9502
SGB13265.7 R23 .0477 R13 .9503
SG113258.3 SG2 444.7 THA 2.84

ORBIT DETERMINATION ACCURACY
ST 5901.4 SR 576.0 SS 921.0
CRT .9862 CRS -.9883 CST -.9569
LSA 5994.1 MSA 277.9 SSA 33.8
EL1 5928.7 EL2 95.0 ALF 5.50

LAUNCH DATE DEC 25 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 777.639 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.195 GAL 1.29 AZL 87.43 HCA 226.03 SMA 189.01 ECC .22266 INC 2.5710 V1 30.281
RP 207.36 LAP -1.85 LOP 319.24 VP 24.039 GAP -11.61 AZP 91.79 TAL 7.07 TAP 233.09 RCA 146.92 APO 231.09 V2 26.416
RC 323.141 GL 26.48 GP -8.19 ZAL 75.72 ZAP 35.17 ETS 167.17 ZAE 54.85 ETE 173.82 ZAC 78.33 ETC 256.57 CLP 34.32

PLANETOCENTRIC CONIC

C3 11.145 VHL 3.338 DLA 29.19 RAL 179.75 RAD 6567.4 VEL 11.512 PTH 2.01 VHP 5.148 DPA -3.50 RAP 171.33 ECC 1.1834

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.60	10 4 12	3603.15	-23.24	139.49	39.55	71.82	11 4 15	3003.1	-25.51	131.48
97.40	12 6 10	3208.84	-23.22	110.56	39.54	71.80	12 59 39	2608.8	-25.50	102.55
100.00	13 20 55	2969.20	-27.05	94.01	40.73	76.76	14 10 24	2369.2	-28.60	85.55
100.00	11 32 9	3318.02	-19.52	117.13	38.04	66.90	12 27 27	2718.0	-22.48	109.58
110.00	15 53 2	2492.75	-33.95	59.10	41.96	85.76	16 34 35	1892.8	-34.17	49.86
110.00	11 16 31	3367.22	-13.32	117.49	34.69	58.22	12 12 39	2767.2	-17.42	110.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.3553 TRA .2472 TC-18.0551 BAU 2.6917 SGT13368.6 SGR 766.9 SG3 655.9 ST 5771.8 SR 562.0 SS 852.5
RDE .3219 RRA .1732 RC3 -.6121 FAU .13593 RRT .8070 RRF .7918 RTF .9494 CRT .9868 CRS -.9823 CST -.9472
FDE 1.0429 FRA 1.1055 FC-10.5591 BSP 46507 SGB13390.6 R23 .0420 R13 .9495 LSA 5854.6 MSA 282.2 SSA 34.6
BDE 3.3707 BRA .3018 BC318.0655 FSP 2113 SG113382.9 SG2 452.5 THA 2.65 EL1 5798.4 EL2 90.5 ALF 5.49

LAUNCH DATE DEC 25 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 782.048 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.204 GAL 1.13 AZL 87.48 HCA 227.29 SMA 189.17 ECC .22306 INC 2.5176 V1 30.281
RP 207.26 LAP -1.85 LOP 320.50 VP 24.064 GAP -11.68 AZP 91.71 TAL 6.20 TAP 233.49 RCA 146.97 APO 231.36 V2 26.428
RC 323.990 GL 26.10 GP -7.93 ZAL 77.22 ZAP 34.57 ETS 167.27 ZAE 53.97 ETE 173.83 ZAC 78.73 ETC 256.52 CLP 33.76

PLANETOCENTRIC CONIC

C3 10.984 VHL 3.314 DLA 28.16 RAL 181.14 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 5.208 DPA -3.56 RAP 172.07 ECC 1.1808

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 36 42	3318.73	-24.23	118.94	41.00	74.88	12 32 1	2718.7	-26.07	110.76
90.00	10 44 45	3487.30	-20.79	130.09	39.83	70.33	11 42 53	2887.3	-23.28	122.31
100.00	13 57 18	2865.46	-28.45	86.62	42.03	80.41	14 45 3	2265.5	-29.48	77.97
100.00	11 6 51	3415.80	-16.80	123.12	38.10	64.91	12 3 47	2815.8	-20.04	115.82
110.00	16 11 49	2444.41	-34.13	55.33	42.70	87.99	16 52 33	1844.4	-34.03	46.09
110.00	11 8 49	3409.61	-11.79	119.82	35.27	57.68	12 5 39	2809.6	-15.97	113.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.2486 TRA .3942 TC-18.4756 BAU 2.7144 SGT13495.1 SGR 742.7 SG3 634.7 ST 5632.8 SR 549.4 SS 787.5
RDE .3119 RRA .1781 RC3 -.5621 FAU .13021 RRT .7844 RRF .7676 RTF .9487 CRT .9877 CRS -.9736 CST -.9351
FDE .9255 FRA 1.1544 FC-10.2628 BSP 46963 SGB13515.5 R23 .0365 R13 .9487 LSA 5706.7 MSA 286.6 SSA 35.5
BDE 3.2635 BRA .4326 BC318.4842 FSP 2040 SG113507.7 SG2 460.3 THA 2.47 EL1 5658.9 EL2 85.5 ALF 5.50

LAUNCH DATE DEC 25 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 786.459 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.213 GAL .97 AZL 87.53 HCA 228.55 SMA 189.32 ECC .22349 INC 2.4662 V1 30.281
RP 207.16 LAP -1.85 LOP 321.77 VP 24.089 GAP -11.75 AZP 91.63 TAL 5.32 TAP 233.87 RCA 147.01 APO 231.64 V2 26.439
RC 324.833 GL 25.72 GP -7.69 ZAL 78.76 ZAP 33.99 ETS 167.36 ZAE 53.10 ETE 173.84 ZAC 79.11 ETC 256.48 CLP 33.21

PLANETOCENTRIC CONIC

C3 10.842 VHL 3.293 DLA 27.12 RAL 182.56 RAD 6567.4 VEL 11.499 PTH 2.00 VHP 5.269 DPA -3.63 RAP 172.81 ECC 1.1784

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 28 44	3164.08	-26.55	108.21	42.67	79.78	13 21 28	2564.1	-27.69	99.73
90.00	10 4 3	3636.60	-17.09	139.48	39.64	67.07	11 4 40	3036.6	-20.05	132.06
100.00	14 25 34	2787.48	-29.20	80.95	43.12	83.31	15 12 1	2187.5	-29.82	72.20
100.00	10 49 55	3488.44	-14.65	127.44	38.48	63.65	11 48 3	2888.4	-18.07	120.32
110.00	16 29 48	2398.71	-34.18	51.76	43.45	90.10	17 9 47	1798.7	-33.79	42.54
110.00	11 2 10	3449.97	-10.31	122.01	35.96	57.23	11 59 40	2850.0	-14.56	115.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.1369 TRA .5479 TC-18.8772 BAU 2.7372 SGT13619.3 SGR 720.5 SG3 613.6 ST 5480.5 SR 537.7 SS 722.9
RDE .3028 RRA .1826 RC3 -.5130 FAU .12462 RRT .7600 RRF .7415 RTF .9478 CRT .9888 CRS -.9604 CST -.9185
FDE .8101 FRA 1.2008 FC3-9.9509 BSP 47408 SGB13638.3 R23 .0313 R13 .9478 LSA 5546.3 MSA 291.7 SSA 36.4
BDE 3.1515 BRA .5775 BC318.8841 FSP 1965 SG113630.3 SG2 467.9 THA 2.31 EL1 5506.3 EL2 79.9 ALF 5.54

LAUNCH DATE DEC 25 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 790.870 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.222 GAL .81 AZL 87.58 HCA 229.81 SMA 189.48 ECC .22396 INC 2.4167 V1 30.281
RP 207.08 LAP -1.85 LOP 323.03 VP 24.112 GAP -11.81 AZP 91.56 TAL 4.43 TAP 234.25 RCA 147.05 APO 231.92 V2 26.449
RC 325.671 GL 25.33 GP -7.46 ZAL 80.35 ZAP 33.42 ETS 167.45 ZAE 52.24 ETE 173.85 ZAC 79.49 ETC 256.43 CLP 32.67

PLANETOCENTRIC CONIC

C3 10.718 VHL 3.274 DLA 26.05 RAL 184.01 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 5.331 DPA -3.72 RAP 173.57 ECC 1.1764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 1 29	3071.60	-27.50	101.61	43.89	82.95	13 52 40	2471.6	-28.19	93.01
90.00	9 42 52	3724.40	-14.68	144.80	40.02	65.51	10 44 57	3124.4	-17.87	137.57
100.00	14 50 13	2721.04	-29.63	76.05	44.13	85.85	15 35 34	2121.0	-29.89	67.26
100.00	10 36 49	3550.19	-12.75	131.04	39.06	62.73	11 35 59	2950.2	-16.31	124.06
110.00	16 47 11	2355.08	-34.13	48.36	44.22	92.11	17 26 26	1755.1	-33.46	39.18
110.00	10 56 21	3488.91	-8.87	124.10	36.75	56.85	11 54 30	2888.9	-13.17	117.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 3.0225 TRA .7082 TC-19.2559 BAU 2.7600 SGT13742.3 SGR 700.6 SG3 592.5 ST 5319.2 SR 527.5 SS 663.6
RDE .2949 RRA .1866 RC3 -.4643 FAU .11907 RRT .7338 RRF .7137 RTF .9470 CRT .9901 CRS -.9417 CST -.8977
FDE .7030 FRA 1.2417 FC3-9.6175 BSP 47830 SGB13760.2 R23 .0264 R13 .9471 LSA 5378.0 MSA 296.8 SSA 37.3
BDE 3.0368 BRA .7324 BC319.2615 FSP 1891 SG113751.9 SG2 475.6 THA 2.14 EL1 5344.8 EL2 73.6 ALF 5.61

LAUNCH DATE DEC 25 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 795.281 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.231	GAL	.65	AZL	87.63	HCA	231.08	SMA	189.64	ECC	.22446	INC	2.3690	V1	30.281
RP	207.00	LAP	-1.84	LOP	324.30	VP	24.134	GAP	-11.88	AZP	91.49	TAL	3.53	TAP	234.61	RCA	147.08	APO	232.21	V2	26.459
RC	326.503	GL	24.94	GP	-7.24	ZAL	81.99	ZAP	32.87	ETS	167.53	ZAE	51.40	ETE	173.87	ZAC	79.86	ETC	256.39	CLP	32.15

PLANETOCENTRIC CONIC

C3	10.613	VHL	3.258	DLA	24.96	RAL	185.48	RAD	6567.4	VEL	11.489	PTH	2.00	VHP	5.393	DPA	-3.83	RAP	174.33	ECC	1.1747

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 28 44	2996.80	-28.00	96.20	45.00	85.62	14 18 41	2396.8	-28.32	87.55
90.00	9 27 23	3795.18	-12.64	149.00	40.63	64.45	10 30 39	3195.2	-15.98	141.91
100.00	15 12 45	2661.46	-29.84	71.64	45.11	88.16	15 57 6	2061.5	-29.78	62.83
100.00	10 26 4	3605.75	-11.00	134.24	39.79	62.03	11 26 10	3005.8	-14.66	127.36
110.00	17 4 5	2313.10	-33.97	45.09	45.02	94.04	17 42 39	1713.1	-33.04	35.97
110.00	10 51 12	3526.89	-7.45	126.13	37.65	56.54	11 49 59	2926.9	-11.80	119.73

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	2.9033	TRA	.8763	TC	-19.6058	BAU	2.7825	SGT	13861.7	SGR	682.7	SG3	571.8	ST	5145.8	SR	518.1	SS	607.1
RDE	.2878	RRA	.1902	RC3	-.4169	FAU	.11369	RRT	.7060	RRF	.6842	RTF	.9460	CRT	.9916	CRS	-.9137	CST	-.8688
FDE	.5985	FRA	1.2818	FC3	-9.2740	BSP	48269	SGB	13878.5	R23	.0219	R13	.9461	LSA	5198.4	MSA	303.5	SSA	38.1
BDE	2.9175	BRA	.8967	BC	319.6103	FSP	1818	SG	113870.0	SG2	483.2	THA	1.99	EL1	5171.4	EL2	66.7	ALF	5.70

LAUNCH DATE DEC 25 1964 FLIGHT TIME 372.00 ARRIVAL DATE JAN 1 1966

HELIOCENTRIC CONIC DISTANCE 799.693 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.239	GAL	.48	AZL	87.68	HCA	232.34	SMA	189.80	ECC	.22499	INC	2.3230	V1	30.281
RP	206.93	LAP	-1.84	LOP	325.56	VP	24.156	GAP	-11.94	AZP	91.42	TAL	2.61	TAP	234.96	RCA	147.10	APO	232.51	V2	26.467
RC	327.330	GL	24.53	GP	-7.04	ZAL	83.68	ZAP	32.33	ETS	167.61	ZAE	50.57	ETE	173.87	ZAC	80.22	ETC	256.34	CLP	31.63

PLANETOCENTRIC CONIC

C3	10.527	VHL	3.245	DLA	23.85	RAL	186.98	RAD	6567.4	VEL	11.485	PTH	2.00	VHP	5.457	DPA	-3.95	RAP	175.09	ECC	1.1733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 53 7	2931.37	-28.25	91.43	46.06	88.00	14 41 58	2331.4	-28.23	82.76
90.00	9 14 59	3857.32	-10.79	152.63	41.41	63.66	10 19 16	3257.3	-14.24	145.65
100.00	15 33 51	2606.55	-29.89	67.56	46.09	90.31	16 17 18	2006.5	-29.53	58.77
100.00	10 16 55	3657.38	-9.34	137.17	40.64	61.47	11 17 53	3057.4	-13.08	130.37
110.00	17 20 38	2272.49	-33.73	41.94	45.85	95.89	17 58 30	1672.5	-32.55	32.91
110.00	10 46 38	3564.20	-6.04	128.10	38.63	56.29	11 46 2	2964.2	-10.43	121.76

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	2.7829	TRA	1.0518	TC	-19.9266	BAU	2.8050	SGT	13981.3	SGR	667.2	SG3	551.7	ST	4967.2	SR	510.4	SS	558.7
RDE	.2819	RRA	.1935	RC3	-.3705	FAU	.10845	RRT	.6768	RRF	.6538	RTF	.9452	CRT	.9932	CRS	-.8757	CST	-.8330
FDE	.5036	FRA	1.3185	FC3	-8.9190	BSP	48724	SGB	13997.3	R23	.0180	R13	.9452	LSA	5014.7	MSA	310.6	SSA	38.9
BDE	2.7972	BRA	1.0695	BC	319.9300	FSP	1751	SG	113988.6	SG2	490.9	THA	1.85	EL1	4993.0	EL2	59.3	ALF	5.83

LAUNCH DATE DEC 25 1964 FLIGHT TIME 374.00 ARRIVAL DATE JAN 3 1966

HELIOCENTRIC CONIC DISTANCE 804.104 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.248	GAL	.31	AZL	87.72	HCA	233.61	SMA	189.96	ECC	.22556	INC	2.2784	V1	30.281
RP	206.86	LAP	-1.83	LOP	326.83	VP	24.176	GAP	-12.01	AZP	91.35	TAL	1.69	TAP	235.30	RCA	147.12	APO	232.81	V2	26.474
RC	328.152	GL	24.12	GP	-6.85	ZAL	85.41	ZAP	31.80	ETS	167.68	ZAE	49.75	ETE	173.88	ZAC	80.58	ETC	256.30	CLP	31.13

PLANETOCENTRIC CONIC

C3	10.461	VHL	3.234	DLA	22.72	RAL	188.51	RAD	6567.4	VEL	11.483	PTH	2.00	VHP	5.521	DPA	-4.09	RAP	175.86	ECC	1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 15 40	2871.92	-28.32	87.08	47.12	90.18	15 3 32	2271.9	-27.99	78.43
90.00	9 4 34	3914.22	-9.05	155.90	42.31	63.06	10 9 49	3314.2	-12.60	149.02
100.00	15 53 57	2555.05	-29.81	63.73	47.09	92.32	16 36 32	1955.1	-29.17	54.99
100.00	10 8 59	3706.32	-7.73	139.92	41.60	61.04	11 10 45	3106.3	-11.54	133.19
110.00	17 36 52	2233.07	-33.42	38.91	46.72	97.66	18 14 5	1633.1	-32.00	29.97
110.00	10 42 33	3601.08	-4.64	130.04	39.71	56.10	11 42 34	3001.1	-9.07	123.74

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	2.6584	TRA	1.2308	TC	-20.2198	BAU	2.8283	SGT	14101.2	SGR	653.1	SG3	531.7	ST	4778.4	SR	503.5	SS	514.7
RDE	.2770	RRA	.1958	RC3	-.3259	FAU	.10345	RRT	.6468	RRF	.6214	RTF	.9448	CRT	.9947	CRS	-.8245	CST	-.7884
FDE	.4136	FRA	1.3440	FC3	-8.5608	BSP	49192	SGB	14116.3	R23	.0125	R13	.9448	LSA	4821.8	MSA	316.9	SSA	39.8
BDE	2.6728	BRA	1.2462	BC	320.2224	FSP	1691	SG	114107.5	SG2	497.9	THA	1.72	EL1	4804.6	EL2	51.7	ALF	5.98

LAUNCH DATE DEC 25 1964 FLIGHT TIME 376.00 ARRIVAL DATE JAN 5 1966

HELIOCENTRIC CONIC DISTANCE 808.515 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.257	GAL	.14	AZL	87.76	HCA	234.88	SMA	190.13	ECC	.22617	INC	2.2353	V1	30.281
RP	206.81	LAP	-1.83	LOP	328.10	VP	24.195	GAP	-12.08	AZP	91.29	TAL	.75	TAP	235.62	RCA	147.13	APO	233.13	V2	26.480
RC	328.970	GL	23.70	GP	-6.66	ZAL	87.18	ZAP	31.29	ETS	167.74	ZAE	48.94	ETE	173.89	ZAC	80.92	ETC	256.25	CLP	30.64

PLANETOCENTRIC CONIC

C3	10.416	VHL	3.227	DLA	21.57	RAL	190.05	RAD	6567.4	VEL	11.481	PTH	2.00	VHP	5.587	DPA	-4.25	RAP	176.64	ECC	1.1714

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 36 58	2816.73	-28.24	83.05	48.20	92.20	15 23 55	2216.7	-27.63	74.43
90.00	8 55 36	3967.65	-7.39	158.95	43.33	62.59	10 1 43	3367.7	-11.01	152.14
100.00	16 13 16	2506.22	-29.62	60.11	48.11	94.21	16 55 2	1906.2	-28.72	51.43
100.00	10 1 59	3753.39	-6.17	142.54	42.67	60.69	11 4 32	3153.4	-10.03	135.88
110.00	17 52 51	2194.68	-33.03	35.98	47.63	99.35	18 29 26	1594.7	-31.39	27.14
110.00	10 38 53	3637.70	-3.25	131.96	40.86	55.95	11 39 31	3057.7	-7.70	125.70

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	2.5265	TRA	1.4187	TC	-20.4626	BAU	2.8497	SGT	14209.3	SGR	639.6	SG3	511.1	ST	4575.6	SR	496.3	SS	471.1
RDE	.2722	RRA	.1978	RC3	-.2815	FAU	.09839	RRT	.6151	RRF	.5856	RTF	.9434	CRT	.9958	CRS	-.7436	CST	-.7191
FDE	.3154	FRA	1.3680	FC3	-8.1779	BSP	49554	SGB	14223.7	R23	.0059	R13	.9434	LSA	4614.7	MSA	326.9	SSA	40.5
BDE	2.5412	BRA	1.4324	BC	320.4645	FSP	1612	SG	114214.8	SG2	504.1	THA	1.59	EL1	4602.2	EL2	45.0	ALF	6.17

LAUNCH DATE DEC 25 1964 FLIGHT TIME 378.00 ARRIVAL DATE JAN 7 1966

HELIOCENTRIC CONIC DISTANCE 812.923 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.266 GAL -.04 AZL 87.81 HCA 236.14 SMA 190.29 ECC .22682 INC 2.1935 V1 30.281
RP 206.77 LAP -1.82 LOP 329.37 VP 24.213 GAP -12.15 AZP 91.22 TAL 359.80 TAP 235.94 RCA 147.13 APO 233.45 V2 26.486
RC 329.784 GL 23.26 GP -6.49 ZAL 88.99 ZAP 30.79 ETS 167.80 ZAE 48.15 ETE 173.89 ZAC 81.27 ETC 256.21 CLP 30.16

PLANETOCENTRIC CONIC

C3 10.392 VHL 3.224 DLA 20.41 RAL 191.61 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 5.653 DPA -4.42 RAP 177.43 ECC 1.1710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 57 19	2764.77	-28.04	79.26	49.29	94.09	15 43 24	2164.8	-27.18	70.70
90.00	8 47 42	4018.67	-5.78	161.83	44.45	62.23	9 54 41	3418.7	-9.46	155.08
100.00	16 31 59	2459.56	-29.34	56.67	49.16	96.00	17 12 58	1859.6	-28.20	48.06
100.00	9 55 44	3799.11	-4.64	145.07	43.82	60.44	10 59 3	3199.1	-8.55	138.46
110.00	18 8 36	2157.24	-32.58	33.15	48.60	100.97	18 44 34	1557.2	-30.73	24.42
110.00	10 35 35	3674.20	-1.86	133.87	42.09	55.86	11 36 50	3074.2	-6.33	127.63

DIFFERENTIAL CORRECTIONS

TDE 2.4132 TRA 1.6177 TC-20.5644 BAU 2.8571
RDE .2719 RRA .2000 RC3 -.2200 FAU .08994
FDE .2801 FRA 1.3985 FC3-7.4929 BSP 50483
BDE 2.4285 BRA 1.6301 BC320.5656 FSP 1651

MID-COURSE EXECUTION ACCURACY

SGT14268.5 SGR 630.6 SG3 478.1
RRT .5688 RRF .5537 RTF .9413
SGB14282.4 R23 .0214 R13 .9413
SG114273.0 SG2 518.5 THA 1.44

ORBIT DETERMINATION ACCURACY

ST 4404.9 SR 496.5 SS 463.8
CRT .9965 CRS -.7035 CST -.6993
LSA 4444.5 MSA 330.7 SSA 41.2
EL1 4432.6 EL2 41.5 ALF 6.41

LAUNCH DATE DEC 25 1964 FLIGHT TIME 380.00 ARRIVAL DATE JAN 9 1966

HELIOCENTRIC CONIC DISTANCE 817.331 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.275 GAL -.22 AZL 87.85 HCA 237.41 SMA 190.45 ECC .22752 INC 2.1529 V1 30.281
RP 206.73 LAP -1.81 LOP 330.64 VP 24.230 GAP -12.22 AZP 91.16 TAL 358.83 TAP 236.24 RCA 147.12 APO 233.78 V2 26.490
RC 330.595 GL 22.82 GP -6.32 ZAL 90.83 ZAP 30.30 ETS 167.85 ZAE 47.36 ETE 173.90 ZAC 81.60 ETC 256.17 CLP 29.69

PLANETOCENTRIC CONIC

C3 10.389 VHL 3.223 DLA 19.22 RAL 193.19 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 5.720 DPA -4.60 RAP 178.22 ECC 1.1710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 16 57	2715.41	-27.75	75.68	50.42	95.86	16 2 12	2115.4	-26.65	67.18
90.00	8 40 40	4067.94	-4.21	164.60	45.66	61.97	9 48 28	3467.9	-7.93	157.90
100.00	16 50 11	2414.72	-28.97	53.39	50.26	97.69	17 30 26	1814.7	-27.61	44.86
100.00	9 50 7	3843.86	-3.14	147.54	45.07	60.26	10 54 11	3243.9	-7.07	140.96
110.00	18 24 10	2120.68	-32.07	30.42	49.62	102.51	18 59 31	1520.7	-30.02	21.81
110.00	10 32 37	3710.66	-.46	135.77	43.40	55.82	11 34 28	3110.7	-4.95	129.55

DIFFERENTIAL CORRECTIONS

TDE 2.2700 TRA 1.8231 TC-20.8215 BAU 2.8921
RDE .2678 RRA .2019 RC3 -.1936 FAU .08803
FDE .1748 FRA 1.4262 FC3-7.3352 BSP 50574
BDE 2.2858 BRA 1.8343 BC320.8224 FSP 1516

MID-COURSE EXECUTION ACCURACY

SGT14430.0 SGR 621.8 SG3 470.6
RRT .5462 RRF .5193 RTF .9408
SGB14443.4 R23 .0057 R13 .9408
SG114434.0 SG2 520.7 THA 1.35

ORBIT DETERMINATION ACCURACY

ST 4183.9 SR 489.5 SS 432.4
CRT .9960 CRS -.5611 CST -.5847
LSA 4219.9 MSA 350.4 SSA 41.7
EL1 4212.2 EL2 43.7 ALF 6.65

LAUNCH DATE DEC 25 1964 FLIGHT TIME 382.00 ARRIVAL DATE JAN 11 1966

HELIOCENTRIC CONIC DISTANCE 821.736 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.284 GAL -.40 AZL 87.89 HCA 238.68 SMA 190.62 ECC .22825 INC 2.1134 V1 30.281
RP 206.70 LAP -1.81 LOP 331.91 VP 24.246 GAP -12.29 AZP 91.10 TAL 357.86 TAP 236.54 RCA 147.11 APO 234.13 V2 26.493
RC 331.403 GL 22.36 GP -6.16 ZAL 92.71 ZAP 29.82 ETS 167.90 ZAE 46.59 ETE 173.90 ZAC 81.93 ETC 256.13 CLP 29.23

PLANETOCENTRIC CONIC

C3 10.410 VHL 3.226 DLA 18.03 RAL 194.78 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 5.788 DPA -4.79 RAP 179.02 ECC 1.1713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 58	2668.20	-27.38	72.27	51.59	97.53	16 20 26	2068.2	-26.05	63.86
90.00	8 34 21	4115.94	-2.67	167.29	46.97	61.80	9 42 57	3515.9	-6.42	160.62
100.00	17 7 59	2371.49	-28.54	50.25	51.40	99.29	17 47 30	1771.5	-26.96	41.80
100.00	9 45 1	3887.89	-1.65	149.96	46.40	60.15	10 49 49	3287.9	-5.61	143.41
110.00	18 39 33	2084.97	-31.52	27.78	50.69	103.98	19 14 18	1485.0	-29.27	19.29
110.00	10 29 56	3747.17	.93	137.67	44.78	55.83	11 32 23	3147.2	-3.56	131.47

DIFFERENTIAL CORRECTIONS

TDE 2.1326 TRA 2.0374 TC-20.9436 BAU 2.9147
RDE .2663 RRA .2033 RC3 -.1533 FAU .08325
FDE .1021 FRA 1.4510 FC3-6.9237 BSP 50954
BDE 2.1492 BRA 2.0475 BC320.9441 FSP 1439

MID-COURSE EXECUTION ACCURACY

SGT14541.7 SGR 614.5 SG3 451.7
RRT .5117 RRF .4845 RTF .9388
SGB14554.6 R23 .0041 R13 .9388
SG114545.1 SG2 527.8 THA 1.24

ORBIT DETERMINATION ACCURACY

ST 3976.2 SR 486.4 SS 421.8
CRT .9938 CRS -.4356 CST -.4976
LSA 4011.1 MSA 367.1 SSA 42.3
EL1 4005.5 EL2 53.6 ALF 6.93

LAUNCH DATE DEC 25 1964 FLIGHT TIME 384.00 ARRIVAL DATE JAN 13 1966

HELIOCENTRIC CONIC DISTANCE 826.139 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.293 GAL -.58 AZL 87.93 HCA 239.95 SMA 190.78 ECC .22904 INC 2.0749 V1 30.281
RP 206.68 LAP -1.80 LOP 333.18 VP 24.261 GAP -12.36 AZP 91.04 TAL 356.87 TAP 236.82 RCA 147.09 APO 234.48 V2 26.495
RC 332.208 GL 21.89 GP -6.01 ZAL 94.62 ZAP 29.35 ETS 167.95 ZAE 45.82 ETE 173.90 ZAC 82.26 ETC 256.09 CLP 28.79

PLANETOCENTRIC CONIC

C3 10.454 VHL 3.233 DLA 16.81 RAL 196.38 RAD 6567.4 VEL 11.482 PTH 2.00 VHP 5.856 DPA -5.00 RAP 179.83 ECC 1.1720

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 54 29	2622.87	-26.93	69.03	52.80	99.10	16 38 12	2022.9	-25.40	60.70
90.00	8 28 36	4162.99	-1.16	169.92	48.35	61.70	9 37 59	3563.0	-4.93	163.27
100.00	17 25 24	2329.69	-28.04	47.24	52.58	100.80	18 4 14	1729.7	-26.27	38.89
100.00	9 40 23	3931.39	-.17	152.34	47.80	60.11	10 45 54	3331.4	-4.15	145.81
110.00	18 54 46	2050.09	-30.91	25.24	51.82	105.37	19 28 56	1450.1	-28.50	16.88
110.00	10 27 30	3783.76	2.33	139.58	46.24	55.89	11 30 34	3183.8	-2.16	133.38

DIFFERENTIAL CORRECTIONS

TDE 1.9934 TRA 2.2547 TC-21.0148 BAU 2.9370
RDE .2658 RRA .2037 RC3 -.1152 FAU .07871
FDE .0355 FRA 1.4621 FC3-6.5184 BSP 51382
BDE 2.0111 BRA 2.2639 BC321.0151 FSP 1378

MID-COURSE EXECUTION ACCURACY

SGT14648.0 SGR 607.9 SG3 432.8
RRT .4772 RRF .4480 RTF .9375
SGB14660.6 R23 -.0001 R13 .9375
SG114650.9 SG2 534.1 THA 1.14

ORBIT DETERMINATION ACCURACY

ST 3770.0 SR 484.3 SS 417.0
CRT .9892 CRS -.3050 CST -.4153
LSA 3804.3 MSA 383.4 SSA 42.6
EL1 3800.4 EL2 70.6 ALF 7.24

LAUNCH DATE DEC 25 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 15 1966

HELIOCENTRIC CONIC DISTANCE 830.539 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.302	GAL	-.77	AZL	87.96	HCA	241.22	SMA	190.95	ECC	.22986	INC	2.0374
RP	206.67	LAP	-1.79	LOP	334.44	VP	24.275	GAP	-12.44	AZP	90.98	TAL	355.87	TAP	237.09	RCA	147.06	APO	234.84
RC	333.009	GL	21.41	GP	-5.87	ZAL	96.55	ZAP	28.90	ETS	167.99	ZAE	45.07	ETE	173.89	ZAC	82.58	ETC	256.05

V1 30.281 V2 26.497 CLP 28.35

PLANETOCENTRIC CONIC

C3 10.523 VHL 3.244 DLA 15.59 RAL 198.00 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 5.926 DPA -5.21 RAP 180.64 ECC 1.1732

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 12 35	2579.21	-26.42	65.93	54.06	100.57	16 55 34	1979.2	-24.70	57.69
90.00	8 23 22	4209.30	.34	172.50	49.81	61.68	9 33 31	3609.3	-3.45	165.87
100.00	17 42 30	2289.23	-27.49	44.36	53.82	102.22	18 20 39	1689.2	-25.53	36.11
100.00	9 36 8	3974.51	1.29	154.71	49.28	60.13	10 42 23	3374.5	-2.69	148.19
110.00	19 9 49	2016.03	-30.27	22.80	53.00	106.69	19 43 25	1416.0	-27.69	14.56
110.00	10 25 19	3820.47	3.73	141.50	47.76	56.00	11 28 59	3220.5	-.76	135.30

DIFFERENTIAL CORRECTIONS

TDE	1.8527	TRA	2.4807	TC	-21.0384	BAU	2.9596
RDE	.2662	RRA	.2039	RC3	-.0782	FAU	.07414
FDE	-.0242	FRA	1.4728	FC3	-6.1000	BSP	51789
BDE	1.8717	BRA	2.4890	BC3	21.0386	FSP	1314

MID-COURSE EXECUTION ACCURACY

SGT	14754.6	SGR	602.9	SG3	414.0		
RRT	.4420	RRF	.4121	RTF	.9359		
SGB	14766.9	R23	-.0024	R13	.9359		
SG1	14757.0	SG2	540.7	THA	1.04		

ORBIT DETERMINATION ACCURACY

ST	3569.1	SR	483.4	SS	419.8		
CRT	.9809	CRS	-.1790	CST	-.3466		
LSA	3603.4	MSA	402.5	SSA	42.8		
EL1	3600.5	EL2	93.2	ALF	7.57		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 17 1966

HELIOCENTRIC CONIC DISTANCE 834.935 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.312	GAL	-.96	AZL	88.00	HCA	242.49	SMA	191.11	ECC	.23074	INC	2.0008
RP	206.67	LAP	-1.77	LOP	335.71	VP	24.288	GAP	-12.51	AZP	90.92	TAL	354.86	TAP	237.34	RCA	147.02	APO	235.21
RC	333.807	GL	20.91	GP	-5.73	ZAL	98.50	ZAP	28.45	ETS	168.03	ZAE	44.32	ETE	173.89	ZAC	82.89	ETC	256.02

V1 30.281 V2 26.497 CLP 27.92

PLANETOCENTRIC CONIC

C3 10.617 VHL 3.258 DLA 14.36 RAL 199.61 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 5.996 DPA -5.44 RAP 181.46 ECC 1.1747

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 17	2537.08	-25.86	62.98	55.37	101.95	17 12 34	1937.1	-23.96	54.83
90.00	8 18 34	4255.07	1.82	175.05	51.35	61.74	9 29 29	3655.1	-1.98	168.42
100.00	17 59 18	2250.03	-26.90	41.60	55.10	103.56	18 36 48	1650.0	-24.76	33.45
100.00	9 32 14	4017.33	2.74	157.06	50.84	60.22	10 39 12	3417.3	-1.24	150.54
110.00	19 24 42	1982.81	-29.60	20.44	54.24	107.93	19 57 45	1382.8	-26.87	12.33
110.00	10 23 20	3857.32	5.13	143.44	49.35	56.16	11 27 37	3257.3	.65	137.22

DIFFERENTIAL CORRECTIONS

TDE	1.7113	TRA	2.7153	TC	-21.0052	BAU	2.9815
RDE	.2675	RRA	.2037	RC3	-.0429	FAU	.06962
FDE	-.0796	FRA	1.4811	FC3	-5.6771	BSP	52224
BDE	1.7321	BRA	2.7229	BC3	21.0053	FSP	1256

MID-COURSE EXECUTION ACCURACY

SGT	14856.7	SGR	599.0	SG3	395.3		
RRT	.4068	RRF	.3764	RTF	.9337		
SGB	14868.8	R23	-.0044	R13	.9337		
SG1	14858.7	SG2	547.1	THA	.94		

ORBIT DETERMINATION ACCURACY

ST	3377.8	SR	483.3	SS	428.0		
CRT	.9677	CRS	-.0593	CST	-.2927		
LSA	3412.4	MSA	424.8	SSA	42.8		
EL1	3410.1	EL2	120.6	ALF	7.89		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 19 1966

HELIOCENTRIC CONIC DISTANCE 839.327 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.321	GAL	-1.16	AZL	88.03	HCA	243.76	SMA	191.28	ECC	.23167	INC	1.9651
RP	206.68	LAP	-1.76	LOP	336.98	VP	24.299	GAP	-12.59	AZP	90.87	TAL	353.84	TAP	237.59	RCA	146.97	APO	235.59
RC	334.601	GL	20.40	GP	-5.60	ZAL	100.46	ZAP	28.02	ETS	168.06	ZAE	43.58	ETE	173.88	ZAC	83.21	ETC	255.98

V1 30.281 V2 26.496 CLP 27.50

PLANETOCENTRIC CONIC

C3 10.738 VHL 3.277 DLA 13.12 RAL 201.23 RAD 6567.4 VEL 11.495 PTH 2.00 VHP 6.068 DPA -5.68 RAP 182.29 ECC 1.1767

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 39	2496.39	-25.26	60.15	56.72	103.24	17 29 15	1896.4	-23.19	52.09
90.00	8 14 8	4300.36	3.27	177.58	52.96	61.86	9 25 48	3700.4	-.52	170.95
100.00	18 15 49	2212.05	-26.26	38.96	56.44	104.81	18 52 41	1612.0	-23.97	30.91
100.00	9 28 39	4059.94	4.18	159.41	52.46	60.37	10 36 19	3459.9	.20	152.88
110.00	19 39 25	1950.45	-28.90	18.18	55.53	109.10	20 11 55	1350.5	-26.02	10.19
110.00	10 21 32	3894.30	6.53	145.39	51.01	56.37	11 26 26	3294.3	2.06	139.15

DIFFERENTIAL CORRECTIONS

TDE	1.5679	TRA	2.9557	TC	-20.9230	BAU	3.0037
RDE	.2697	RRA	.2029	RC3	-.0096	FAU	.06519
FDE	-.1305	FRA	1.4826	FC3	-5.2558	BSP	52663
BDE	1.5910	BRA	2.9627	BC3	20.9230	FSP	1200

MID-COURSE EXECUTION ACCURACY

SGT	14957.0	SGR	595.8	SG3	376.6		
RRT	.3716	RRF	.3402	RTF	.9315		
SGB	14968.8	R23	-.0069	R13	.9315		
SG1	14958.6	SG2	553.1	THA	.85		

ORBIT DETERMINATION ACCURACY

ST	3196.8	SR	484.0	SS	438.8		
CRT	.9479	CRS	.0500	CST	-.2573		
LSA	3231.5	MSA	449.0	SSA	42.7		
EL1	3229.6	EL2	152.6	ALF	8.19		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 21 1966

HELIOCENTRIC CONIC DISTANCE 843.715 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.330	GAL	-1.36	AZL	88.07	HCA	245.02	SMA	191.45	ECC	.23265	INC	1.9301
RP	206.69	LAP	-1.75	LOP	338.25	VP	24.310	GAP	-12.67	AZP	90.82	TAL	352.80	TAP	237.82	RCA	146.91	APO	235.99
RC	335.390	GL	19.88	GP	-5.48	ZAL	102.44	ZAP	27.59	ETS	168.09	ZAE	42.86	ETE	173.87	ZAC	83.52	ETC	255.95

V1 30.281 V2 26.494 CLP 27.09

PLANETOCENTRIC CONIC

C3 10.887 VHL 3.300 DLA 11.88 RAL 202.85 RAD 6567.4 VEL 11.501 PTH 2.00 VHP 6.140 DPA -5.92 RAP 183.12 ECC 1.1792

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 41	2457.08	-24.62	57.45	58.13	104.45	17 45 38	1857.1	-22.39	49.48
90.00	8 10 2	4345.30	4.71	180.10	54.64	62.05	9 22 27	3745.3	.94	173.46
100.00	18 32 4	2175.26	-25.60	36.43	57.83	105.99	19 8 19	1575.3	-23.16	28.48
100.00	9 25 20	4102.36	5.60	161.75	54.15	60.59	10 33 42	3502.4	1.64	155.20
110.00	19 53 58	1918.98	-28.18	16.02	56.89	110.20	20 25 57	1319.0	-25.17	8.14
110.00	10 19 55	3931.40	7.92	147.36	52.73	56.64	11 25 27	3331.4	3.48	141.09

DIFFERENTIAL CORRECTIONS

TDE	1.4245	TRA	3.2060	TC	-20.7893	BAU	3.0260
RDE	.2726	RRA	.2018	RC3	.0214	FAU	.06092
FDE	-.1769	FRA	1.4828	FC3	-4.8438	BSP	53113
BDE	1.4503	BRA	3.2124	BC3	20.7893	FSP	1146

MID-COURSE EXECUTION ACCURACY

SGT	15056.6	SGR	593.7	SG3	358.7		
RRT	.3372	RRF	.3049	RTF	.9289		
SGB	15068.3	R23	-.0093	R13	.9289		
SG1	15057.9	SG2	558.9	THA	.76		

ORBIT DETERMINATION ACCURACY

ST	3033.2	SR	485.5	SS	452.3		
CRT	.9196	CRS	.1467	CST	-.2424		
LSA	3067.9	MSA	476.4	SSA	42.3		
EL1	3066.0	EL2	188.6	ALF	8.40		

LAUNCH DATE DEC 25 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 23 1966

HELIOCENTRIC CONIC DISTANCE 848.098 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.339	GAL	-1.56	AZL	88.10	HCA	246.29	SMA	191.62	ECC	.23368	INC	1.8959
RP	206.72	LAP	-1.74	LOP	339.52	VP	24.319	GAP	-12.75	AZP	90.76	TAL	351.75	TAP	238.05	RCA	146.84	APO	236.39
RC	336.176	GL	19.36	GP	-5.36	ZAL	104.42	ZAP	27.18	ETS	168.12	ZAE	42.14	ETE	173.86	ZAC	83.82	ETC	255.93

V1	30.281	V2	26.491	CLP	26.69														

PLANETOCENTRIC CONIC

C3	11.066	VHL	3.327	DLA	10.64	RAL	204.48	RAD	6567.4	VEL	11.509	PTH	2.00	VHP	6.214	DPA	-6.18	RAP	183.96

ECC	1.1821																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 25	2419.11	-23.95	54.87	59.58	105.58	18 1 44	1819.1	-21.58	47.00
90.00	8 6 14	4389.94	6.13	182.61	56.39	62.30	9 19 24	3789.9	2.38	175.95
100.00	18 48 4	2139.65	-24.91	34.01	59.27	107.08	19 23 44	1539.7	-22.33	26.15
100.00	9 22 16	4144.63	7.01	164.10	55.91	60.87	10 31 21	3544.6	3.07	157.53
110.00	20 8 21	1888.42	-27.45	13.95	58.29	111.23	20 39 49	1288.4	-24.31	6.18
110.00	10 18 28	3968.63	9.31	149.34	54.51	56.96	11 24 37	3368.6	4.89	143.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2781	TRA	3.4613	TC-20.6109	BAU	3.0492	SGT15155.0	SGR	592.4	SG3	341.0	ST	2885.7	SR	487.6	SS	466.4
RDE	.2764	RRA	.2002	RC3 .0501	FAU	.05674	RRT .3029	RRF	.2697	RTF	.9259	CRT	.8807	CRS	.2317	CST	-.2470
FDE	-.2193	FRA	1.4783	FC3-4.4390	BSP	53513	SGB15166.6	R23	-.0117	R13	.9259	LSA	2919.8	MSA	505.5	SSA	41.7
BDE	1.3077	BRA	3.4670	BC320.6109	FSP	1090	SG115156.1	SG2	564.5	THA	.68	EL1	2917.7	EL2	228.4	ALF	8.52

LAUNCH DATE DEC 25 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 25 1966

HELIOCENTRIC CONIC DISTANCE 852.475 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.348	GAL	-1.76	AZL	88.14	HCA	247.56	SMA	191.78	ECC	.23477	INC	1.8623
RP	206.75	LAP	-1.72	LOP	340.79	VP	24.327	GAP	-12.83	AZP	90.71	TAL	350.70	TAP	238.26	RCA	146.76	APO	236.81
RC	336.957	GL	18.82	GP	-5.25	ZAL	106.40	ZAP	26.78	ETS	168.14	ZAE	41.43	ETE	173.85	ZAC	84.12	ETC	255.90

V1	30.281	V2	26.488	CLP	26.29														

PLANETOCENTRIC CONIC

C3	11.275	VHL	3.358	DLA	9.41	RAL	206.09	RAD	6567.4	VEL	11.518	PTH	2.01	VHP	6.288	DPA	-6.44	RAP	184.80

ECC	1.1856																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 51	2382.47	-23.26	52.41	61.09	106.63	18 17 34	1782.5	-20.76	44.62
90.00	8 2 42	4434.30	7.53	185.13	58.20	62.62	9 16 36	3834.3	3.80	178.43
100.00	19 3 49	2105.24	-24.20	31.69	60.76	108.11	19 38 54	1505.2	-21.50	23.94
100.00	9 19 26	4186.76	8.40	166.46	57.73	61.21	10 29 12	3586.8	4.49	159.85
110.00	20 22 33	1858.83	-26.70	11.97	59.75	112.18	20 53 32	1258.8	-23.45	4.31
110.00	10 17 10	4005.94	10.69	151.36	56.35	57.34	11 23 56	3405.9	6.31	145.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1324	TRA	3.7256	TC-20.3812	BAU	3.0721	SGT15251.0	SGR	591.7	SG3	323.4	ST	2763.9	SR	490.5	SS	480.1
RDE	.2811	RRA	.1981	RC3 .0768	FAU	.05258	RRT .2691	RRF	.2352	RTF	.9223	CRT	.8297	CRS	.3049	CST	-.2702
FDE	-.2572	FRA	1.4698	FC3-4.0372	BSP	53915	SGB15262.5	R23	-.0139	R13	.9223	LSA	2796.8	MSA	535.3	SSA	41.0
BDE	1.1667	BRA	3.7308	BC320.3814	FSP	1034	SG115251.8	SG2	569.8	THA	.60	EL1	2794.0	EL2	270.9	ALF	8.46

LAUNCH DATE DEC 25 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 27 1966

HELIOCENTRIC CONIC DISTANCE 856.846 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.357	GAL	-1.97	AZL	88.17	HCA	248.83	SMA	191.95	ECC	.23591	INC	1.8293
RP	206.79	LAP	-1.71	LOP	342.06	VP	24.335	GAP	-12.92	AZP	90.66	TAL	349.63	TAP	238.46	RCA	146.67	APO	237.24
RC	337.733	GL	18.28	GP	-5.14	ZAL	108.39	ZAP	26.38	ETS	168.16	ZAE	40.73	ETE	173.83	ZAC	84.42	ETC	255.88

V1	30.281	V2	26.483	CLP	25.91														

PLANETOCENTRIC CONIC

C3	11.515	VHL	3.393	DLA	8.18	RAL	207.70	RAD	6567.4	VEL	11.528	PTH	2.01	VHP	6.364	DPA	-6.71	RAP	185.66

ECC	1.1895																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 0	2347.13	-22.55	50.06	62.64	107.60	18 33 7	1747.1	-19.93	42.36
90.00	7 59 24	4478.41	8.90	187.64	60.07	63.01	9 14 2	3878.4	5.21	180.90
100.00	19 19 18	2072.02	-23.48	29.49	62.31	109.05	19 53 50	1472.0	-20.66	21.82
100.00	9 16 47	4228.75	9.77	168.82	59.61	61.61	10 27 16	3628.7	5.90	162.17
110.00	20 36 34	1830.22	-25.95	10.08	61.26	113.07	21 7 4	1230.2	-22.60	2.53
110.00	10 16 1	4043.31	12.05	153.39	58.25	57.77	11 23 24	3443.3	7.71	146.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9863	TRA	3.9969	TC-20.1085	BAU	3.0957	SGT15346.2	SGR	591.7	SG3	306.2	ST	2669.2	SR	494.0	SS	492.8
RDE	.2865	RRA	.1957	RC3 .1011	FAU	.04856	RRT .2362	RRF	.2014	RTF	.9183	CRT	.7656	CRS	.3683	CST	-.3086
FDE	-.2909	FRA	1.4577	FC3-3.6504	BSP	54320	SGB15357.6	R23	-.0163	R13	.9183	LSA	2700.2	MSA	564.5	SSA	40.2
BDE	1.0271	BRA	4.0017	BC320.1087	FSP	981	SG115346.9	SG2	574.9	THA	.52	EL1	2696.2	EL2	314.6	ALF	8.18

LAUNCH DATE DEC 25 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 29 1966

HELIOCENTRIC CONIC DISTANCE 861.210 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.366	GAL	-2.19	AZL	88.20	HCA	250.10	SMA	192.12	ECC	.23712	INC	1.7969
RP	206.84	LAP	-1.69	LOP	343.33	VP	24.341	GAP	-13.01	AZP	90.61	TAL	348.55	TAP	238.65	RCA	146.57	APO	237.68
RC	338.506	GL	17.73	GP	-5.03	ZAL	110.36	ZAP	25.99	ETS	168.18	ZAE	40.04	ETE	173.81	ZAC	84.72	ETC	255.86

V1	30.281	V2	26.477	CLP	25.54														

PLANETOCENTRIC CONIC

C3	11.789	VHL	3.434	DLA	6.96	RAL	209.31	RAD	6567.4	VEL	11.540	PTH	2.01	VHP	6.440	DPA	-6.99	RAP	186.51

ECC	1.1940																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 53	2313.10	-21.83	47.82	64.24	108.50	18 48 26	1713.1	-19.10	40.21
90.00	7 56 19	4522.26	10.24	190.16	62.00	63.46	9 11 42	3922.3	6.60	183.38
100.00	19 34 33	2040.01	-22.75	27.39	63.89	109.93	20 8 33	1440.0	-19.83	19.81
100.00	9 14 20	4270.58	11.11	171.20	61.55	62.07	10 25 31	3670.6	7.29	164.50
110.00	20 50 24	1802.64	-25.20	8.29	62.81	113.90	21 20 26	1202.6	-21.76	.83
110.00	10 14 59	4080.72	13.40	155.45	60.20	58.26	11 23 0	3480.7	9.11	148.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8410	TRA	4.2766	TC-19.7899	BAU	3.1192	SGT15438.4	SGR	592.3	SG3	289.3	ST	2605.3	SR	498.1	SS	503.2
RDE	.2928	RRA	.1927	RC3 .1231	FAU	.04459	RRT .2041	RRF	.1684	RTF	.9136	CRT	.6890	CRS	.4226	CST	-.3590
FDE	-.3200	FRA	1.4412	FC3-3.2747	BSP	54729	SGB15449.8	R23	-.0187	R13	.9136	LSA	2634.0	MSA	590.9	SSA	39.2
BDE	.8905	BRA	4.2810	BC319.7902	FSP	928	SG115438.9	SG2	579.8	THA	.45	EL1	2628.2	EL2	357.9	ALF	7.65

LAUNCH DATE DEC 25 1964 FLIGHT TIME 402.00 ARRIVAL DATE JAN 31 1966

HELIOCENTRIC CONIC DISTANCE 865.566 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.375 GAL -2.40 AZL 88.23 HCA 251.36 SMA 192.29 ECC .23839 INC 1.7650 V1 30.281
RP 206.90 LAP -1.67 LOP 344.60 VP 24.346 GAP -13.10 AZP 90.56 TAL 347.46 TAP 238.82 RCA 146.45 APO 238.13 V2 26.470
RC 339.274 GL 17.18 GP -4.93 ZAL 112.33 ZAP 25.62 ETS 168.20 ZAE 39.36 ETE 173.79 ZAC 85.02 ETC 255.84 CLP 25.17

PLANETOCENTRIC CONIC

C3 12.098 VHL 3.478 DLA 5.76 RAL 210.90 RAD 6567.5 VEL 11.554 PTH 2.02 VHP 6.518 DPA -7.27 RAP 187.38 ECC 1.1991

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 28	2280.38	-21.11	45.69	65.89	109.32	19 3 29	1680.4	-18.28	38.16
90.00	7 53 27	4565.87	11.56	192.69	63.99	63.97	9 9 33	3965.9	7.97	185.85
100.00	19 49 32	2009.23	-22.02	25.39	65.53	110.74	20 23 2	1409.2	-19.01	17.90
100.00	9 12 4	4312.25	12.43	173.59	63.54	62.59	10 23 56	3712.2	8.66	166.83
110.00	21 4 1	1776.13	-24.46	6.59	64.42	114.66	21 33 37	1176.1	-20.93	359.22
110.00	10 14 4	4118.11	14.73	157.53	62.21	58.80	11 22 42	3518.1	10.49	150.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6958 TRA 4.5641 TC-19.4339 BAU 3.1434 SGT15530.0 SGR 593.3 SG3 272.8 ST 2572.4 SR 502.8 SS 511.9
RDE .2998 RRA .1894 RC3 .1428 FAU .04072 RRT .1728 RRF .1363 RTF .9081 CRT .6016 CRS .4702 CST -.4161
FDE -.3455 FRA 1.4216 FC3-2.9138 BSP 55121 SGB15541.4 R23 -.0211 R13 .9081 LSA 2598.9 MSA 613.5 SSA 38.1
BDE .7577 BRA 4.5680 BC319.4344 FSP 878 SG115530.4 SG2 584.4 THA .38 EL1 2590.5 EL2 398.8 ALF 6.87

LAUNCH DATE DEC 25 1964 FLIGHT TIME 404.00 ARRIVAL DATE FEB 2 1966

HELIOCENTRIC CONIC DISTANCE 869.915 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.384 GAL -2.63 AZL 88.27 HCA 252.63 SMA 192.46 ECC .23972 INC 1.7337 V1 30.281
RP 206.97 LAP -1.65 LOP 345.86 VP 24.350 GAP -13.19 AZP 90.52 TAL 346.36 TAP 238.99 RCA 146.32 APO 238.60 V2 26.462
RC 340.039 GL 16.62 GP -4.84 ZAL 114.28 ZAP 25.25 ETS 168.21 ZAE 38.68 ETE 173.77 ZAC 85.31 ETC 255.83 CLP 24.81

PLANETOCENTRIC CONIC

C3 12.444 VHL 3.528 DLA 4.57 RAL 212.48 RAD 6567.5 VEL 11.569 PTH 2.02 VHP 6.597 DPA -7.57 RAP 188.24 ECC 1.2048

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 47	2248.98	-20.39	43.67	67.57	110.09	19 18 16	1649.0	-17.47	36.21
90.00	7 50 45	4609.21	12.84	195.23	66.03	64.54	9 7 34	4009.2	9.31	188.33
100.00	20 4 17	1979.70	-21.30	23.50	67.20	111.48	20 37 16	1379.7	-18.19	16.08
100.00	9 9 57	4353.72	13.72	176.00	65.59	63.18	10 22 31	3753.7	10.01	169.17
110.00	21 17 26	1750.72	-23.73	4.98	66.06	115.36	21 46 37	1150.7	-20.12	357.70
110.00	10 13 16	4155.46	16.04	159.64	64.28	59.40	11 22 32	3555.5	11.86	153.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5523 TRA 4.8600 TC-19.0413 BAU 3.1679 SGT15620.0 SGR 594.8 SG3 256.6 ST 2571.2 SR 507.8 SS 517.7
RDE .3076 RRA .1855 RC3 .1602 FAU .03691 RRT .1424 RRF .1050 RTF .9017 CRT .5072 CRS .5121 CST -.4751
FDE -.3672 FRA 1.3974 FC3-2.5682 BSP 55521 SGB15631.3 R23 -.0239 R13 .9017 LSA 2595.7 MSA 630.6 SSA 37.0
BDE .6322 BRA 4.8635 BC319.0420 FSP 825 SG115620.2 SG2 588.7 THA .31 EL1 2584.4 EL2 435.4 ALF 5.89

LAUNCH DATE DEC 25 1964 FLIGHT TIME 406.00 ARRIVAL DATE FEB 4 1966

HELIOCENTRIC CONIC DISTANCE 874.255 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.394 GAL -2.85 AZL 88.30 HCA 253.89 SMA 192.63 ECC .24112 INC 1.7027 V1 30.281
RP 207.04 LAP -1.64 LOP 347.13 VP 24.353 GAP -13.29 AZP 90.47 TAL 345.25 TAP 239.14 RCA 146.19 APO 239.08 V2 26.453
RC 340.800 GL 16.06 GP -4.75 ZAL 116.21 ZAP 24.89 ETS 168.22 ZAE 38.02 ETE 173.74 ZAC 85.60 ETC 255.82 CLP 24.46

PLANETOCENTRIC CONIC

C3 12.828 VHL 3.582 DLA 3.39 RAL 214.05 RAD 6567.5 VEL 11.585 PTH 2.03 VHP 6.676 DPA -7.86 RAP 189.12 ECC 1.2111

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 50	2218.91	-19.67	41.76	69.30	110.79	19 32 49	1618.9	-16.67	34.37
90.00	7 48 13	4652.27	14.09	197.78	68.13	65.18	9 5 46	4052.3	10.62	190.81
100.00	20 18 46	1951.42	-20.58	21.70	68.92	112.17	20 51 17	1351.4	-17.40	14.36
100.00	9 7 59	4394.99	14.97	178.42	67.69	63.82	10 21 14	3795.0	11.33	171.52
110.00	21 30 39	1726.44	-23.01	3.45	67.75	116.00	21 59 25	1126.4	-19.33	356.25
110.00	10 12 35	4192.74	17.32	161.77	66.39	60.06	11 22 28	3592.7	13.21	155.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4085 TRA 5.1625 TC-18.6219 BAU 3.1937 SGT15710.0 SGR 596.7 SG3 240.9 ST 2597.6 SR 513.3 SS 520.9
RDE .3162 RRA .1813 RC3 .1754 FAU .03321 RRT .1129 RRF .0747 RTF .8942 CRT .4090 CRS .5488 CST -.5334
FDE -.3851 FRA 1.3697 FC3-2.2414 BSP 55868 SGB15721.3 R23 -.0265 R13 .8942 LSA 2620.8 MSA 642.0 SSA 35.8
BDE .5166 BRA 5.1657 BC318.6227 FSP 775 SG115710.1 SG2 592.9 THA .25 EL1 2606.3 EL2 466.8 ALF 4.77

LAUNCH DATE DEC 25 1964 FLIGHT TIME 408.00 ARRIVAL DATE FEB 6 1966

HELIOCENTRIC CONIC DISTANCE 878.586 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.403 GAL -3.08 AZL 88.33 HCA 255.16 SMA 192.80 ECC .24259 INC 1.6723 V1 30.281
RP 207.13 LAP -1.62 LOP 348.39 VP 24.355 GAP -13.39 AZP 90.43 TAL 344.12 TAP 239.28 RCA 146.03 APO 239.58 V2 26.444
RC 341.558 GL 15.51 GP -4.66 ZAL 118.12 ZAP 24.54 ETS 168.23 ZAE 37.36 ETE 173.71 ZAC 85.89 ETC 255.81 CLP 24.12

PLANETOCENTRIC CONIC

C3 13.251 VHL 3.640 DLA 2.24 RAL 215.61 RAD 6567.5 VEL 11.603 PTH 2.03 VHP 6.757 DPA -8.17 RAP 190.00 ECC 1.2181

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 36	2190.16	-18.97	39.94	71.07	111.43	19 47 6	1590.2	-15.89	32.62
90.00	7 45 51	4695.04	15.29	200.34	70.27	65.87	9 4 6	4095.0	11.91	193.30
100.00	20 32 59	1924.42	-19.88	20.01	70.68	112.79	21 5 4	1324.4	-16.62	12.73
100.00	9 6 9	4436.01	16.19	180.86	69.85	64.52	10 20 5	3836.0	12.62	173.88
110.00	21 43 38	1703.31	-22.31	2.02	69.48	116.59	22 12 1	1103.3	-18.56	354.89
110.00	10 12 0	4229.89	18.57	163.93	68.56	60.77	11 22 30	3629.9	14.53	157.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2680 TRA 5.4744 TC-18.1706 BAU 3.2193 SGT15797.0 SGR 598.8 SG3 225.5 ST 2651.0 SR 519.1 SS 521.4
RDE .3255 RRA .1765 RC3 .1883 FAU .02958 RRT .0845 RRF .0451 RTF .8854 CRT .3127 CRS .5823 CST -.5857
FDE -.3999 FRA 1.3376 FC3-1.9322 BSP 56251 SGB15808.3 R23 -.0300 R13 .8854 LSA 2673.5 MSA 648.2 SSA 34.6
BDE .4216 BRA 5.4773 BC318.1716 FSP 726 SG115797.1 SG2 596.6 THA .18 EL1 2656.1 EL2 492.1 ALF 3.63

LAUNCH DATE DEC 25 1964 FLIGHT TIME 410.00 ARRIVAL DATE FEB 8 1966

HELIOCENTRIC CONIC DISTANCE 882.906 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.412 GAL -3.31 AZL 88.36 HCA 256.42 SMA 192.98 ECC .24413 INC 1.6421 V1 30.281
RP 207.22 LAP -1.60 LOP 349.66 VP 24.356 GAP -13.49 AZP 90.39 TAL 342.99 TAP 239.41 RCA 145.86 APO 240.09 V2 26.433
RC 342.314 GL 14.96 GP -4.58 ZAL 120.01 ZAP 24.20 ETS 168.24 ZAE 36.71 ETE 173.68 ZAC 86.17 ETC 255.81 CLP 23.79

PLANETOCENTRIC CONIC

C3 13.717 VHL 3.704 DLA 1.12 RAL 217.14 RAD 6567.5 VEL 11.623 PTH 2.04 VHP 6.840 DPA -8.48 RAP 190.89 ECC 1.2258

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 6	2162.75	-18.28	38.23	72.87	112.01	20 1 8	1562.8	-15.13	30.96
90.00	7 43 38	4737.49	16.46	202.91	72.47	66.63	9 2 35	4137.5	13.16	195.79
100.00	20 46 57	1898.70	-19.19	18.40	72.47	113.37	21 18 36	1298.7	-15.87	11.19
100.00	9 4 27	4476.78	17.36	183.31	72.04	65.28	10 19 4	3876.8	13.89	176.25
110.00	21 56 24	1681.35	-21.64	.67	71.24	117.13	22 24 25	1081.4	-17.83	353.62
110.00	10 11 30	4266.89	19.78	166.11	70.77	61.54	11 22 37	3666.9	15.83	159.22

DIFFERENTIAL CORRECTIONS
TDE .1284 TRA 5.7938 TC-17.6995 BAU 3.2461
RDE .3355 RRA .1714 RC3 .1993 FAU .02600
FDE -.4110 FRA 1.3021 FC3-1.6407 BSP 56580
BDE .3592 BRA 5.7963 BC317.7006 FSP 677

MID-COURSE EXECUTION ACCURACY
SGT15883.8 SGR 601.2 SG3 210.6
RRT .0570 RRF .0169 RTF .8749
SGB15895.1 R23 -.0331 R13 .8749
SG115883.8 SG2 600.3 THA .12

ORBIT DETERMINATION ACCURACY
ST 2725.3 SR 525.1 SS 518.9
CRT .2203 CRS .6119 CST -.6325
LSA 2747.5 MSA 649.6 SSA 33.5
EL1 2727.8 EL2 511.7 ALF 2.52

LAUNCH DATE DEC 25 1964 FLIGHT TIME 412.00 ARRIVAL DATE FEB 10 1966

HELIOCENTRIC CONIC DISTANCE 887.216 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.421 GAL -3.55 AZL 88.39 HCA 257.68 SMA 193.15 ECC .24574 INC 1.6123 V1 30.281
RP 207.32 LAP -1.58 LOP 350.92 VP 24.355 GAP -13.60 AZP 90.34 TAL 341.85 TAP 239.53 RCA 145.68 APO 240.61 V2 26.421
RC 343.066 GL 14.41 GP -4.50 ZAL 121.87 ZAP 23.86 ETS 168.24 ZAE 36.07 ETE 173.64 ZAC 86.45 ETC 255.80 CLP 23.46

PLANETOCENTRIC CONIC

C3 14.227 VHL 3.772 DLA .02 RAL 218.66 RAD 6567.6 VEL 11.645 PTH 2.04 VHP 6.923 DPA -8.79 RAP 191.78 ECC 1.2341

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 19	2136.67	-17.60	36.61	74.71	112.54	20 14 55	1536.7	-14.40	29.40
90.00	7 41 32	4779.61	17.58	205.49	74.70	67.44	9 1 12	4179.6	14.37	198.29
100.00	21 0 40	1874.26	-18.53	16.90	74.29	113.89	21 31 54	1274.3	-15.14	9.74
100.00	9 2 52	4517.25	18.50	185.78	74.29	66.09	10 18 9	3917.2	15.11	178.63
110.00	22 8 55	1660.59	-20.99	359.41	73.03	117.62	22 36 36	1060.6	-17.13	352.42
110.00	10 11 6	4303.69	20.96	168.31	73.02	62.36	11 22 49	3703.7	17.09	161.32

DIFFERENTIAL CORRECTIONS
TDE -.0090 TRA 6.1208 TC-17.2095 BAU 3.2736
RDE .3462 RRA .1657 RC3 .2083 FAU .02252
FDE -.4188 FRA 1.2618 FC3-1.3706 BSP 56896
BDE .3463 BRA 6.1230 BC317.2108 FSP 628

MID-COURSE EXECUTION ACCURACY
SGT15968.4 SGR 603.8 SG3 196.0
RRT .0305 RRF -.0106 RTF .8626
SGB15979.9 R23 -.0369 R13 .8626
SG115968.4 SG2 603.6 THA .07

ORBIT DETERMINATION ACCURACY
ST 2816.4 SR 531.3 SS 513.3
CRT .1348 CRS .6389 CST -.6723
LSA 2838.5 MSA 647.6 SSA 32.3
EL1 2817.3 EL2 526.3 ALF 1.51

LAUNCH DATE DEC 25 1964 FLIGHT TIME 414.00 ARRIVAL DATE FEB 12 1966

HELIOCENTRIC CONIC DISTANCE 891.514 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.430 GAL -3.79 AZL 88.42 HCA 258.94 SMA 193.32 ECC .24743 INC 1.5829 V1 30.281
RP 207.43 LAP -1.55 LOP 352.18 VP 24.354 GAP -13.71 AZP 90.30 TAL 340.70 TAP 239.64 RCA 145.49 APO 241.16 V2 26.408
RC 343.815 GL 13.87 GP -4.42 ZAL 123.70 ZAP 23.54 ETS 168.24 ZAE 35.44 ETE 173.61 ZAC 86.74 ETC 255.81 CLP 23.14

PLANETOCENTRIC CONIC

C3 14.783 VHL 3.845 DLA -1.06 RAL 220.16 RAD 6567.6 VEL 11.669 PTH 2.05 VHP 7.008 DPA -9.11 RAP 192.68 ECC 1.2433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 15	2111.92	-16.95	35.08	76.58	113.03	20 28 27	1511.9	-13.69	27.93
90.00	7 39 34	4821.36	18.65	208.09	76.98	68.30	8 59 56	4221.4	15.54	200.80
100.00	21 14 6	1851.12	-17.88	15.48	76.15	114.36	21 44 57	1251.1	-14.45	8.37
100.00	9 1 24	4557.40	19.59	188.27	76.57	66.96	10 17 22	3957.4	16.30	181.02
110.00	22 21 13	1641.02	-20.37	358.24	74.85	118.07	22 48 34	1041.0	-16.45	351.30
110.00	10 10 46	4340.27	22.10	170.54	75.32	63.23	11 23 7	3740.3	18.33	163.44

DIFFERENTIAL CORRECTIONS
TDE -.1432 TRA 6.4566 TC-16.7029 BAU 3.3014
RDE .3576 RRA .1597 RC3 .2154 FAU .01908
FDE -.4237 FRA 1.2181 FC3-1.1175 BSP 57234
BDE .3852 BRA 6.4585 BC316.7043 FSP 580

MID-COURSE EXECUTION ACCURACY
SGT16050.6 SGR 606.6 SG3 181.9
RRT .0050 RRF -.0366 RTF .8476
SGB16062.1 R23 -.0408 R13 .8476
SG116050.6 SG2 606.6 THA .01

ORBIT DETERMINATION ACCURACY
ST 2920.3 SR 537.6 SS 505.1
CRT .0576 CRS .6637 CST -.7048
LSA 2942.4 MSA 643.5 SSA 31.2
EL1 2920.5 EL2 536.7 ALF .63

LAUNCH DATE DEC 25 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 14 1966

HELIOCENTRIC CONIC DISTANCE 895.800 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.439 GAL -4.04 AZL 88.45 HCA 260.20 SMA 193.49 ECC .24920 INC 1.5537 V1 30.281
RP 207.54 LAP -1.53 LOP 353.44 VP 24.352 GAP -13.83 AZP 90.26 TAL 339.53 TAP 239.74 RCA 145.27 APO 241.71 V2 26.395
RC 344.561 GL 13.33 GP -4.35 ZAL 125.49 ZAP 23.22 ETS 168.24 ZAE 34.81 ETE 173.56 ZAC 87.02 ETC 255.81 CLP 22.84

PLANETOCENTRIC CONIC

C3 15.388 VHL 3.923 DLA -2.10 RAL 221.65 RAD 6567.6 VEL 11.695 PTH 2.06 VHP 7.094 DPA -9.43 RAP 193.59 ECC 1.2532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 54	2088.50	-16.32	33.65	78.47	113.46	20 41 43	1488.5	-13.01	26.54
90.00	7 37 44	4862.75	19.67	210.70	79.30	69.21	8 58 46	4262.7	16.67	203.31
100.00	21 27 16	1829.26	-17.26	14.15	78.03	114.79	21 57 46	1229.3	-13.78	7.09
100.00	9 0 3	4597.22	20.63	190.77	78.90	67.87	10 16 40	3997.2	17.45	183.42
110.00	22 33 16	1622.65	-19.77	357.14	76.70	118.47	23 0 19	1022.7	-15.82	350.25
110.00	10 10 32	4376.59	23.19	172.79	77.67	64.16	11 23 29	3776.6	19.53	165.57

DIFFERENTIAL CORRECTIONS
TDE -.2760 TRA 6.8001 TC-16.1901 BAU 3.3309
RDE .3696 RRA .1532 RC3 .2209 FAU .01570
FDE -.4259 FRA 1.1702 FC3 -.8835 BSP 57528
BDE .4613 BRA 6.8018 BC316.1916 FSP 532

MID-COURSE EXECUTION ACCURACY
SGT16133.3 SGR 609.6 SG3 168.3
RRT -.0198 RRF -.0616 RTF .8292
SGB16144.8 R23 .0452 R13 -.8292
SG116133.3 SG2 609.5 THA 179.96

ORBIT DETERMINATION ACCURACY
ST 3032.9 SR 544.0 SS 494.4
CRT -.0118 CRS .6870 CST -.7311
LSA 3054.6 MSA 638.0 SSA 30.2
EL1 3032.9 EL2 544.0 ALF 179.88

LAUNCH DATE DEC 25 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 16 1966

HELIOCENTRIC CONIC DISTANCE 900.072 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.449 GAL -4.29 AZL 88.48 HCA 261.46 SMA 193.67 ECC .25105 INC 1.5248 V1 30.281
RP 207.67 LAP -1.51 LOP 354.70 VP 24.349 GAP -13.95 AZP 90.23 TAL 338.36 TAP 239.82 RCA 145.05 APO 242.29 V2 26.380
RC 345.302 GL 12.80 GP -4.28 ZAL 127.26 ZAP 22.91 ETS 168.24 ZAE 34.19 ETE 173.52 ZAC 87.29 ETC 255.82 CLP 22.53

PLANETOCENTRIC CONIC

C3 16.043 VHL 4.005 DLA -3.12 RAL 223.11 RAD 6567.6 VEL 11.723 PTH 2.07 VHP 7.182 DPA -9.76 RAP 194.50 ECC 1.2640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 20 18	2066.39	-15.72	32.31	80.39	113.86	20 54 44	1466.4	-12.36	25.24
90.00	7 36 0	4903.73	20.64	213.31	81.65	70.17	8 57 43	4303.7	17.75	205.83
100.00	21 40 11	1808.68	-16.67	12.91	79.94	115.18	22 10 19	1208.7	-13.14	5.89
100.00	8 58 47	4636.67	21.62	193.28	81.26	68.84	10 16 4	4036.7	18.55	185.83
110.00	22 45 5	1605.48	-19.21	356.12	78.58	118.83	23 11 51	1005.5	-15.22	349.28
110.00	10 10 22	4412.63	24.25	175.06	80.05	65.13	11 23 55	3812.6	20.69	167.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4051 TRA 7.1528 TC-15.6670 BAU 3.3606 SGT16212.6 SGR 612.6 SG3 155.2 ST 3150.8 SR 550.4 SS 481.4
RDE .3822 RRA .1462 RC3 .2248 FAU .01238 RRT -.0434 RRF -.0850 RTF .8069 CRT -.0725 CRS .7088 CST -.7514
FDE -.4255 FRA 1.1186 FC3 -.6683 BSP 57812 SGB16224.2 R23 .0500 R13 -.8069 LSA 3172.1 MSA 632.0 SSA 29.2
BDE .5570 BRA 7.1543 BC315.6686 FSP 486 SG116212.7 SG2 612.0 THA 179.91 EL1 3151.1 EL2 548.9 ALF 179.25

LAUNCH DATE DEC 25 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 18 1966

HELIOCENTRIC CONIC DISTANCE 904.331 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.458 GAL -4.55 AZL 88.50 HCA 262.71 SMA 193.84 ECC .25298 INC 1.4961 V1 30.281
RP 207.80 LAP -1.48 LOP 355.95 VP 24.345 GAP -14.07 AZP 90.19 TAL 337.18 TAP 239.90 RCA 144.80 APO 242.88 V2 26.364
RC 346.039 GL 12.28 GP -4.21 ZAL 128.98 ZAP 22.61 ETS 168.24 ZAE 33.58 ETE 173.47 ZAC 87.57 ETC 255.84 CLP 22.24

PLANETOCENTRIC CONIC

C3 16.752 VHL 4.093 DLA -4.10 RAL 224.55 RAD 6567.7 VEL 11.753 PTH 2.07 VHP 7.271 DPA -10.09 RAP 195.41 ECC 1.2757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 33 24	2045.57	-15.14	31.06	82.34	114.22	21 7 30	1445.6	-11.74	24.02
90.00	7 34 22	4944.30	21.55	215.94	84.04	71.18	8 56 46	4344.3	18.78	208.36
100.00	21 52 49	1789.37	-16.11	11.75	81.87	115.52	22 22 39	1189.4	-12.54	4.78
100.00	8 57 38	4675.74	22.56	195.80	83.65	69.85	10 15 34	4075.7	19.61	188.25
110.00	22 56 39	1589.52	-18.69	355.19	80.47	119.16	23 23 9	989.5	-14.66	348.39
110.00	10 10 17	4448.35	25.25	177.35	82.46	66.15	11 24 25	3848.4	21.81	169.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.5318 TRA 7.5130 TC-15.1450 BAU 3.3922 SGT16292.1 SGR 615.7 SG3 142.5 ST 3270.9 SR 556.7 SS 465.7
RDE .3955 RRA .1388 RC3 .2273 FAU .00914 RRT -.0662 RRF -.1071 RTF .7796 CRT -.1259 CRS .7297 CST -.7667
FDE -.4223 FRA 1.0623 FC3 -.4725 BSP 58058 SGB16303.7 R23 .0555 R13 -.7796 LSA 3291.4 MSA 625.8 SSA 28.3
BDE .6627 BRA 7.5143 BC315.1467 FSP 440 SG116292.1 SG2 614.3 THA 179.86 EL1 3271.7 EL2 552.2 ALF 178.74

LAUNCH DATE DEC 25 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 20 1966

HELIOCENTRIC CONIC DISTANCE 908.574 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.467 GAL -4.81 AZL 88.53 HCA 263.97 SMA 194.02 ECC .25500 INC 1.4676 V1 30.281
RP 207.94 LAP -1.46 LOP 357.21 VP 24.339 GAP -14.20 AZP 90.15 TAL 335.99 TAP 239.96 RCA 144.54 APO 243.49 V2 26.348
RC 346.771 GL 11.78 GP -4.14 ZAL 130.67 ZAP 22.32 ETS 168.24 ZAE 32.98 ETE 173.42 ZAC 87.84 ETC 255.85 CLP 21.95

PLANETOCENTRIC CONIC

C3 17.516 VHL 4.185 DLA -5.05 RAL 225.96 RAD 6567.7 VEL 11.786 PTH 2.08 VHP 7.361 DPA -10.43 RAP 196.34 ECC 1.2883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 46 14	2026.03	-14.59	29.88	84.30	114.54	21 20 0	1426.0	-11.16	22.89
90.00	7 32 50	4984.44	22.41	218.57	86.45	72.22	8 55 55	4384.4	19.77	210.89
100.00	22 5 12	1771.31	-15.58	10.67	83.82	115.84	22 34 43	1171.3	-11.98	3.74
100.00	8 56 34	4714.40	23.44	198.33	86.08	70.90	10 15 8	4114.4	20.62	190.67
110.00	23 7 59	1574.73	-18.19	354.32	82.39	119.45	23 34 14	974.7	-14.13	347.56
110.00	10 10 16	4483.74	26.20	179.66	84.92	67.22	11 25 0	3883.7	22.89	172.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.6537 TRA 7.8824 TC-14.6201 BAU 3.4241 SGT16368.2 SGR 618.8 SG3 130.6 ST 3390.8 SR 562.9 SS 448.3
RDE .4093 RRA .1310 RC3 .2284 FAU .00594 RRT -.0880 RRF -.1270 RTF .7455 CRT -.1719 CRS .7500 CST -.7770
FDE -.4170 FRA 1.0027 FC3 -.2936 BSP 58318 SGB16379.9 R23 .0615 R13 -.7455 LSA 3410.4 MSA 620.0 SSA 27.4
BDE .7713 BRA 7.8835 BC314.6218 FSP 394 SG116368.3 SG2 616.4 THA 179.81 EL1 3392.3 EL2 554.3 ALF 178.32

LAUNCH DATE DEC 25 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 22 1966

HELIOCENTRIC CONIC DISTANCE 912.802 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.476 GAL -5.08 AZL 88.56 HCA 265.22 SMA 194.19 ECC .25711 INC 1.4392 V1 30.281
RP 208.09 LAP -1.43 LOP 358.46 VP 24.333 GAP -14.33 AZP 90.12 TAL 334.79 TAP 240.01 RCA 144.26 APO 244.12 V2 26.331
RC 347.497 GL 11.28 GP -4.08 ZAL 132.33 ZAP 22.04 ETS 168.24 ZAE 32.39 ETE 173.37 ZAC 88.12 ETC 255.88 CLP 21.68

PLANETOCENTRIC CONIC

C3 18.340 VHL 4.283 DLA -5.97 RAL 227.36 RAD 6567.7 VEL 11.820 PTH 2.09 VHP 7.453 DPA -10.77 RAP 197.27 ECC 1.3018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 58 48	2007.75	-14.07	28.79	86.28	114.83	21 32 15	1407.7	-10.61	21.83
90.00	7 31 25	5024.14	23.21	221.20	88.89	73.31	8 55 9	4424.1	20.70	213.43
100.00	22 17 18	1754.48	-15.07	9.68	85.79	116.12	22 46 33	1154.5	-11.44	2.77
100.00	8 55 35	4752.64	24.27	200.87	88.53	71.99	10 14 48	4152.6	21.58	193.11
110.00	23 19 4	1561.11	-17.74	353.53	84.32	119.71	23 45 5	961.1	-13.65	346.80
110.00	10 10 19	4518.77	27.10	181.98	87.40	68.33	11 25 37	3918.8	23.92	174.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.7741 TRA 8.2597 TC-14.1011 BAU 3.4579 SGT16443.7 SGR 621.9 SG3 119.3 ST 3509.2 SR 568.9 SS 429.2
RDE .4236 RRA .1227 RC3 .2284 FAU .00280 RRT -.1091 RRF -.1449 RTF .7029 CRT -.2124 CRS .7702 CST -.7832
FDE -.4099 FRA .9387 FC3 -.1321 BSP 58531 SGB16455.4 R23 .0685 R13 -.7029 LSA 3527.7 MSA 614.5 SSA 26.6
BDE .8824 BRA 8.2606 BC314.1029 FSP 349 SG116443.8 SG2 618.2 THA 179.76 EL1 3511.4 EL2 555.6 ALF 177.98

LAUNCH DATE DEC 25 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 24 1966

HELIOCENTRIC CONIC DISTANCE 917.013 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.485 GAL -5.35 AZL 88.59 HCA 266.47 SMA 194.36 ECC .25931 INC 1.4111 V1 30.281
RP 208.25 LAP -1.41 LOP 359.71 VP 24.326 GAP -14.47 AZP 90.09 TAL 333.58 TAP 240.05 RCA 143.96 APO 244.77 V2 26.312
RC 348.218 GL 10.79 GP -4.02 ZAL 133.94 ZAP 21.76 ETS 168.23 ZAE 31.80 ETE 173.31 ZAC 88.39 ETC 255.90 CLP 21.41

PLANETOCENTRIC CONIC

C3 19.225 VHL 4.385 DLA -6.86 RAL 228.73 RAD 6567.8 VEL 11.858 PTH 2.10 VHP 7.547 DPA -11.11 RAP 198.20 ECC 1.3164

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 11 5	1990.69	-13.58	27.78	88.28	115.09	21 44 16	1390.7	-10.09	20.84
90.00	7 30 4	5063.37	23.95	223.84	91.36	74.43	8 54 28	4463.4	21.59	215.97
100.00	22 29 9	1738.85	-14.60	8.75	87.77	116.37	22 58 8	1138.9	-10.94	1.88
100.00	8 54 41	4790.44	25.04	203.42	91.01	73.12	10 14 32	4190.4	22.49	195.55
110.00	23 29 54	1548.64	-17.31	352.81	86.26	119.94	23 55 43	948.6	-13.20	346.11
110.00	10 10 26	4553.42	27.95	184.32	89.91	69.47	11 26 19	3953.4	24.90	176.48

DIFFERENTIAL CORRECTIONS
TDE -.8896 TRA 8.6468 TC-13.5862 BAU 3.4925
RDE .4385 RRA .1140 RC3 .2274 FAU-.00030
FDE -.4004 FRA .8702 FC3 .0133 BSP 58738
BDE .9918 BRA 8.6476 BC313.5881 FSP 305

MID-COURSE EXECUTION ACCURACY
SGT16517.2 SGR 625.0 SG3 108.8
RRT -.1292 RRF -.1596 RTF .6492
SGB16529.0 R23 .0762 R13 -.6492
SG116517.4 SG2 619.7 THA 179.72

ORBIT DETERMINATION ACCURACY
ST 3624.4 SR 574.8 SS 408.2
CRT -.2470 CRS .7903 CST -.7851
LSA 3641.5 MSA 609.5 SSA 25.8
EL1 3627.2 EL2 556.5 ALF 177.70

LAUNCH DATE DEC 25 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 26 1966

HELIOCENTRIC CONIC DISTANCE 921.206 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.495 GAL -5.63 AZL 88.62 HCA 267.72 SMA 194.54 ECC .26161 INC 1.3830 V1 30.281
RP 208.42 LAP -1.38 LOP .96 VP 24.318 GAP -14.62 AZP 90.06 TAL 332.37 TAP 240.09 RCA 143.65 APO 245.43 V2 26.293
RC 348.934 GL 10.32 GP -3.96 ZAL 135.52 ZAP 21.49 ETS 168.23 ZAE 31.22 ETE 173.25 ZAC 88.66 ETC 255.93 CLP 21.14

PLANETOCENTRIC CONIC

C3 20.176 VHL 4.492 DLA -7.72 RAL 230.08 RAD 6567.8 VEL 11.898 PTH 2.11 VHP 7.642 DPA -11.45 RAP 199.14 ECC 1.3320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 23 6	1974.83	-13.12	26.84	90.29	115.32	21 56 1	1374.8	-9.61	19.93
90.00	7 28 49	5102.13	24.64	226.47	93.84	75.58	8 53 51	4502.1	22.41	218.51
100.00	22 40 44	1724.40	-14.17	7.91	89.76	116.60	23 9 28	1124.4	-10.48	1.05
100.00	8 53 52	4827.79	25.76	205.96	93.51	74.28	10 14 20	4227.8	23.35	197.99
110.00	23 40 29	1537.28	-16.93	352.16	88.22	120.15	24 6 7	937.3	-12.79	345.49
110.00	10 10 36	4587.68	28.75	186.67	92.44	70.66	11 27 4	3987.7	25.84	178.70

DIFFERENTIAL CORRECTIONS
TDE-1.0016 TRA 9.0427 TC-13.0797 BAU 3.5285
RDE .4539 RRA .1049 RC3 .2254 FAU-.00335
FDE -.3890 FRA .7980 FC3 .1438 BSP 58937
BDE 1.0996 BRA 9.0433 BC313.0816 FSP 261

MID-COURSE EXECUTION ACCURACY
SGT16588.9 SGR 628.0 SG3 99.2
RRT -.1486 RRF -.1698 RTF .5814
SGB16600.8 R23 .0842 R13 -.5814
SG116589.1 SG2 621.0 THA 179.68

ORBIT DETERMINATION ACCURACY
ST 3735.1 SR 580.4 SS 385.7
CRT -.2769 CRS .8105 CST -.7832
LSA 3751.0 MSA 605.0 SSA 25.1
EL1 3738.7 EL2 557.1 ALF 177.48

LAUNCH DATE DEC 25 1964 FLIGHT TIME 430.00 ARRIVAL DATE FEB 28 1966

HELIOCENTRIC CONIC DISTANCE 925.380 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.504 GAL -5.91 AZL 88.64 HCA 268.97 SMA 194.72 ECC .26400 INC 1.3550 V1 30.281
RP 208.59 LAP -1.35 LOP 2.21 VP 24.309 GAP -14.76 AZP 90.02 TAL 331.14 TAP 240.11 RCA 143.31 APO 246.12 V2 26.273
RC 349.644 GL 9.86 GP -3.90 ZAL 137.06 ZAP 21.23 ETS 168.23 ZAE 30.65 ETE 173.19 ZAC 88.92 ETC 255.96 CLP 20.89

PLANETOCENTRIC CONIC

C3 21.194 VHL 4.604 DLA -8.54 RAL 231.41 RAD 6567.9 VEL 11.940 PTH 2.12 VHP 7.739 DPA -11.80 RAP 200.09 ECC 1.3488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 34 51	1960.14	-12.69	25.98	92.31	115.53	22 7 31	1360.1	-9.15	19.09
90.00	7 27 39	5140.42	25.26	229.10	96.34	76.76	8 53 19	4540.4	23.19	221.05
100.00	22 52 3	1711.10	-13.76	7.13	91.77	116.80	23 20 34	1111.1	-10.05	.30
100.00	8 53 8	4864.69	26.41	208.51	96.02	75.47	10 14 13	4264.7	24.16	200.43
110.00	23 50 50	1527.02	-16.58	351.57	90.18	120.33	24 16 17	927.0	-12.42	344.92
110.00	10 10 50	4621.53	29.49	189.02	95.00	71.87	11 27 52	4021.5	26.73	180.93

DIFFERENTIAL CORRECTIONS
TDE-1.1106 TRA 9.4463 TC-12.5851 BAU 3.5665
RDE .4697 RRA .0954 RC3 .2227 FAU-.00636
FDE -.3765 FRA .7216 FC3 .2597 BSP 59064
BDE 1.2058 BRA 9.4468 BC312.5871 FSP 219

MID-COURSE EXECUTION ACCURACY
SGT16658.9 SGR 631.0 SG3 90.7
RRT -.1672 RRF -.1750 RTF .4960
SGB16670.8 R23 .0932 R13 -.4961
SG116659.2 SG2 622.1 THA 179.64

ORBIT DETERMINATION ACCURACY
ST 3840.8 SR 585.7 SS 362.4
CRT -.3030 CRS .8317 CST -.7766
LSA 3855.4 MSA 601.0 SSA 24.4
EL1 3844.9 EL2 557.5 ALF 177.30

LAUNCH DATE DEC 25 1964 FLIGHT TIME 432.00 ARRIVAL DATE MAR 2 1966

HELIOCENTRIC CONIC DISTANCE 929.534 EARTH TO MARS

RL 147.13 LAL -.00 LOL 93.24 VL 33.513 GAL -6.20 AZL 88.67 HCA 270.21 SMA 194.89 ECC .26649 INC 1.3271 V1 30.281
RP 208.77 LAP -1.33 LOP 3.46 VP 24.299 GAP -14.92 AZP 90.00 TAL 329.91 TAP 240.12 RCA 142.95 APO 246.83 V2 26.252
RC 350.348 GL 9.41 GP -3.85 ZAL 138.57 ZAP 20.98 ETS 168.22 ZAE 30.08 ETE 173.12 ZAC 89.19 ETC 256.00 CLP 20.64

PLANETOCENTRIC CONIC

C3 22.285 VHL 4.721 DLA -9.34 RAL 232.71 RAD 6567.9 VEL 11.986 PTH 2.14 VHP 7.838 DPA -12.15 RAP 201.05 ECC 1.3667

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 46 21	1946.57	-12.29	25.18	94.33	115.71	22 18 47	1346.6	-8.73	18.31
90.00	7 26 33	5178.21	25.82	231.73	98.85	77.96	8 52 52	4578.2	23.90	223.58
100.00	23 3 7	1698.91	-13.38	6.42	93.78	116.98	23 31 26	1098.9	-9.66	359.61
100.00	8 52 29	4901.10	27.01	211.05	98.55	76.68	10 14 10	4301.1	24.91	202.88
110.00	0 4 53	1517.82	-16.26	351.05	92.15	120.49	0 30 11	917.8	-12.09	344.42
110.00	10 11 8	4654.96	30.17	191.39	97.58	73.12	11 28 43	4055.0	27.57	183.16

DIFFERENTIAL CORRECTIONS
TDE-1.2148 TRA 9.8596 TC-12.1000 BAU 3.6055
RDE .4859 RRA .0854 RC3 .2193 FAU-.00934
FDE -.3620 FRA .6411 FC3 .3630 BSP 59193
BDE 1.3084 BRA 9.8599 BC312.1020 FSP 176

MID-COURSE EXECUTION ACCURACY
SGT16726.0 SGR 633.8 SG3 83.4
RRT -.1850 RRF -.1721 RTF .3898
SGB16738.0 R23 .1017 R13 -.3899
SG116726.4 SG2 622.9 THA 179.60

ORBIT DETERMINATION ACCURACY
ST 3940.6 SR 590.7 SS 338.0
CRT -.3253 CRS .8535 CST -.7652
LSA 3954.0 MSA 597.5 SSA 23.8
EL1 3945.4 EL2 557.9 ALF 177.15

LAUNCH DATE DEC 25 1964 FLIGHT TIME 434.00 ARRIVAL DATE MAR 4 1966

HELIOCENTRIC CONIC DISTANCE 933.666 EARTH TO MARS

RL	147.13	LAL	-.00	LOL	93.24	VL	33.522	GAL	-6.49	AZL	88.70	HCA	271.46	SMA	195.07	ECC	.26909	INC	1.2993
RP	208.96	LAP	-1.30	LOP	4.70	VP	24.288	GAP	-15.08	AZP	89.97	TAL	328.66	TAP	240.12	RCA	142.58	APO	247.56
RC	351.048	GL	8.97	GP	-3.80	ZAL	140.03	ZAP	20.74	ETS	168.22	ZAE	29.53	ETE	173.05	ZAC	89.45	ETC	256.04

V1	30.281	V2	26.230	CLP	20.40														

PLANETOCENTRIC CONIC

C3	23.450	VHL	4.843	DLA	-10.10	RAL	233.99	RAD	6568.0	VEL	12.034	PTH	2.15	VHP	7.939	DPA	-12.50	RAP	202.01

ECC	1.3859	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	21 57 35	1934.09	-11.92	24.45	96.37	115.87	22 29 49	1334.1	-8.35	17.60							
		90.00	7 25 33	5215.50	26.33	234.34	101.36	79.18	8 52 28	4615.5	24.57	226.12							
		100.00	23 13 56	1687.79	-13.04	5.77	95.80	117.14	23 42 4	1087.8	-9.30	358.98							
		100.00	8 51 53	4937.04	27.55	213.58	101.09	77.91	10 14 10	4337.0	25.60	205.32							
		110.00	0 14 45	1509.64	-15.98	350.58	94.13	120.63	0 39 55	909.6	-11.79	343.97							
		110.00	10 11 29	4687.95	30.80	193.75	100.17	74.39	11 29 37	4088.0	28.35	185.41							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.3142	TRA	10.2837	TC	-11.6282	BAU	3.6462	SGT	16792.7	SGR	636.6	SG3	77.7	ST	4034.7	SR	595.3	SS	313.0
RDE	.5026	RRA	.0750	RC3	.2154	FAU	-.01229	RRT	-.2020	RRF	-.1603	RTF	.2618	CRT	-.3441	CRS	.8765	CST	-.7474
FDE	-.3463	FRA	.5563	FC3	.4536	BSP	59327	SGB	16804.8	R23	.1096	R13	-.2619	LSA	4046.9	MSA	594.5	SSA	23.2
BDE	1.4070	BRA	10.2840	BC3	11.6302	FSP	135	SG1	16793.2	SG2	623.5	THA	179.56	EL1	4040.0	EL2	558.2	ALF	177.04

LAUNCH DATE DEC 26 1964 FLIGHT TIME 140.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 339.906 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	34.845	GAL	4.66	AZL	89.02	HCA	104.26	SMA	224.96	ECC	.35430	INC	.9767
RP	242.47	LAP	.95	LOP	198.52	VP	22.466	GAP	20.29	AZP	90.24	TAL	17.92	TAP	122.18	RCA	145.25	APO	304.66
RC	148.041	GL	6.37	GP	3.00	ZAL	57.08	ZAP	170.29	ETS	160.72	ZAE	152.73	ETE	4.76	ZAC	92.65	ETC	255.89

V1	30.282	V2	22.638	CLP	170.77

PLANETOCENTRIC CONIC

C3	28.511	VHL	5.340	DLA	17.02	RAL	155.51	RAD	6568.1	VEL	12.243	PTH	2.20	VHP	9.470	DPA	.14	RAP	190.25

ECC	1.4692	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	13 5 27	2860.86	-28.31	86.27	29.65	90.58	13 53 8	2260.9	-27.93	77.63							
		90.00	5 43 39	4385.33	5.99	182.35	21.35	62.27	6 56 45	3785.3	2.23	175.69							
		100.00	14 36 33	2567.10	-29.84	64.63	29.61	91.85	15 19 20	1967.1	-29.26	55.87							
		100.00	6 35 15	4154.31	7.33	164.64	20.62	60.94	8 4 29	3554.3	3.40	158.06							
		110.00	16 6 17	2286.35	-33.82	43.01	29.32	95.26	16 44 23	1686.4	-32.73	33.95							
		110.00	7 42 1	4007.83	10.76	151.46	18.55	57.36	8 48 48	3407.8	6.38	145.10							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1508	TRA	-.7129	TC3	1.2828	BAU	.4892	SGT	1594.6	SGR	684.4	SG3	208.5	ST	292.3	SR	648.9	SS	278.6
RDE	-.6014	RRA	-.1995	RC3	.0388	FAU	.07310	RRT	.1205	RRF	-.1408	RTF	-.7640	CRT	-.4652	CRS	.9027	CST	-.7201
FDE	.2972	FRA	-.2848	FC3	-2.2197	BSP	5017	SGB	1735.3	R23	-.0286	R13	-.7651	LSA	715.2	MSA	261.2	SSA	66.3
BDE	.6201	BRA	.7403	BC3	1.2834	FSP	575	SG1	1597.2	SG2	678.3	THA	3.61	EL1	665.4	EL2	252.3	ALF	103.87

LAUNCH DATE DEC 26 1964 FLIGHT TIME 142.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 342.629 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	34.739	GAL	4.77	AZL	89.05	HCA	105.18	SMA	222.16	ECC	.34672	INC	.9540
RP	242.20	LAP	.92	LOP	199.44	VP	22.328	GAP	19.64	AZP	90.25	TAL	18.64	TAP	123.82	RCA	145.13	APO	299.19
RC	150.330	GL	6.27	GP	3.09	ZAL	55.90	ZAP	169.62	ETS	161.45	ZAE	153.81	ETE	5.13	ZAC	92.79	ETC	255.88

V1	30.282	V2	22.664	CLP	170.08

PLANETOCENTRIC CONIC

C3	27.846	VHL	5.277	DLA	17.36	RAL	154.33	RAD	6568.1	VEL	12.216	PTH	2.19	VHP	9.229	DPA	.12	RAP	190.50

ECC	1.4583	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	12 57 23	2867.78	-28.32	86.78	28.16	90.33	13 45 11	2267.8	-27.97	78.13							
		90.00	5 42 18	4366.63	5.39	181.30	19.88	62.16	6 55 5	3766.6	1.62	174.65							
		100.00	14 28 47	2573.06	-29.85	65.07	28.13	91.62	15 11 40	1973.1	-29.31	56.31							
		100.00	6 53 36	4136.58	6.74	163.65	19.14	60.81	8 2 32	3536.6	2.80	157.08							
		110.00	15 59 7	2290.41	-33.85	43.33	27.86	95.08	16 37 17	1690.4	-32.78	34.26							
		110.00	7 39 45	3992.00	10.18	150.60	17.06	57.19	8 46 17	3392.0	5.78	144.27							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1351	TRA	-.6821	TC3	1.3411	BAU	.4995	SGT	1620.7	SGR	684.0	SG3	220.2	ST	278.4	SR	649.8	SS	298.4
RDE	-.5954	RRA	-.1916	RC3	.0461	FAU	.07606	RRT	.1291	RRF	-.1507	RTF	-.7706	CRT	-.4396	CRS	.8951	CST	-.7167
FDE	.3206	FRA	-.3372	FC3	-2.3647	BSP	5123	SGB	1759.2	R23	-.0305	R13	-.7718	LSA	719.3	MSA	258.1	SSA	68.8
BDE	.6105	BRA	.7085	BC3	1.3419	FSP	612	SG1	1623.7	SG2	677.0	THA	3.78	EL1	663.1	EL2	245.0	ALF	102.38

LAUNCH DATE DEC 26 1964 FLIGHT TIME 144.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 345.435 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 34.637 GAL 4.87 AZL 89.07 HCA 106.10 SMA 219.57 ECC .33957 INC .9313 V1 30.282
RP 241.93 LAP .89 LOP 200.37 VP 22.198 GAP 19.00 AZP 90.26 TAL 19.37 TAP 125.47 RCA 145.01 APO 294.13 V2 22.692
RC 152.629 GL 6.17 GP 3.18 ZAL 54.74 ZAP 168.93 ETS 162.09 ZAE 153.32 ETE 5.52 ZAC 92.93 ETC 255.87 CLP 169.39

PLANETOCENTRIC CONIC

C3 27.246 VHL 5.220 DLA 17.68 RAL 153.16 RAD 6568.1 VEL 12.191 PTH 2.19 VHP 8.994 DPA .11 RAP 190.75 ECC 1.4484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 49 31	2874.57	-28.32	87.27	26.71	90.08	13 37 25	2274.6	-28.01	78.62
90.00	5 40 51	4349.01	4.83	180.31	18.45	62.06	6 53 20	3749.0	1.06	173.66
100.00	14 21 12	2578.91	-29.86	65.50	26.69	91.39	15 4 11	1978.9	-29.35	56.74
100.00	6 51 51	4119.90	6.19	162.72	17.71	60.70	8 0 31	3519.9	2.24	156.17
110.00	15 52 7	2294.43	-33.87	43.64	26.43	94.89	16 30 22	1694.4	-32.83	34.56
110.00	7 37 25	3977.15	9.63	149.80	15.61	57.04	8 43 42	3377.1	5.22	143.49

DIFFERENTIAL CORRECTIONS
TDE .1199 TRA -.6510 TC3 1.3977 BAU .5095
RDE -.5899 RRA -.1836 RC3 .0539 FAU .07918
FDE .3453 FRA -.3935 FC3-2.5158 BSP 5224
BDE .6019 BRA .6770 BC3 1.3987 FSP 652

MID-COURSE EXECUTION ACCURACY
SGT 1646.2 SGR 683.5 SG3 232.6
RRT .1384 RRF -.1616 RTF -.7767
SGB 1782.4 R23 -.0326 R13 -.7779
SG1 1649.5 SG2 675.5 THA 3.95

ORBIT DETERMINATION ACCURACY
ST 264.5 SR 650.6 SS 318.9
CRT -.4116 CRS .8875 CST -.7100
LSA 724.2 MSA 255.6 SSA 71.1
EL1 661.0 EL2 237.2 ALF 100.92

LAUNCH DATE DEC 26 1964 FLIGHT TIME 146.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 348.315 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 34.540 GAL 4.98 AZL 89.09 HCA 107.03 SMA 217.17 ECC .33284 INC .9083 V1 30.282
RP 241.65 LAP .87 LOP 201.30 VP 22.075 GAP 18.37 AZP 90.27 TAL 20.09 TAP 127.12 RCA 144.89 APO 289.45 V2 22.720
RC 154.936 GL 6.06 GP 3.27 ZAL 53.60 ZAP 168.22 ETS 162.66 ZAE 153.67 ETE 5.94 ZAC 93.07 ETC 255.87 CLP 168.68

PLANETOCENTRIC CONIC

C3 26.707 VHL 5.168 DLA 17.98 RAL 152.00 RAD 6568.1 VEL 12.169 PTH 2.18 VHP 8.766 DPA .10 RAP 190.99 ECC 1.4395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 41 51	2881.17	-28.32	87.76	25.31	89.84	13 29 52	2281.2	-28.04	79.10
90.00	5 39 17	4332.48	4.30	179.38	17.06	61.98	6 51 30	3732.5	.52	172.74
100.00	14 13 49	2584.60	-29.87	65.93	25.29	91.17	14 56 54	1984.6	-29.39	57.15
100.00	6 50 0	4104.28	5.67	161.86	16.31	60.60	7 58 25	3504.3	1.71	155.31
110.00	15 45 18	2298.35	-33.90	43.94	25.05	94.71	16 23 37	1698.4	-32.87	34.86
110.00	7 35 0	3963.29	9.11	149.06	14.21	56.91	8 41 4	3363.3	4.69	142.76

DIFFERENTIAL CORRECTIONS
TDE .1049 TRA -.6216 TC3 1.4523 BAU .5190
RDE -.5847 RRA -.1756 RC3 .0623 FAU .08245
FDE .3707 FRA -.4534 FC3-2.6726 BSP 5341
BDE .5940 BRA .6459 BC3 1.4536 FSP 695

MID-COURSE EXECUTION ACCURACY
SGT 1670.8 SGR 682.8 SG3 245.6
RRT .1486 RRF -.1732 RTF -.7824
SGB 1805.0 R23 -.0347 R13 -.7837
SG1 1674.5 SG2 673.8 THA 4.15

ORBIT DETERMINATION ACCURACY
ST 250.6 SR 651.1 SS 339.5
CRT -.3798 CRS .8800 CST -.6992
LSA 729.5 MSA 253.9 SSA 73.2
EL1 659.0 EL2 229.1 ALF 99.47

LAUNCH DATE DEC 26 1964 FLIGHT TIME 148.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 351.264 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 34.448 GAL 5.08 AZL 89.11 HCA 107.96 SMA 214.94 ECC .32649 INC .8850 V1 30.282
RP 241.36 LAP .84 LOP 202.22 VP 21.960 GAP 17.74 AZP 90.27 TAL 20.80 TAP 128.76 RCA 144.76 APO 285.11 V2 22.748
RC 157.250 GL 5.94 GP 3.37 ZAL 52.48 ZAP 167.51 ETS 163.17 ZAE 154.05 ETE 6.38 ZAC 93.21 ETC 255.86 CLP 167.96

PLANETOCENTRIC CONIC

C3 26.222 VHL 5.121 DLA 18.26 RAL 150.86 RAD 6568.1 VEL 12.149 PTH 2.18 VHP 8.544 DPA .10 RAP 191.22 ECC 1.4315

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 34 26	2887.51	-28.31	88.22	23.94	89.61	13 22 33	2287.5	-28.07	79.56
90.00	5 37 38	4317.04	3.81	178.52	15.72	61.92	6 49 35	3717.0	.02	171.88
100.00	14 6 40	2590.07	-29.88	66.33	23.93	90.95	14 49 50	1990.1	-29.43	57.56
100.00	6 48 5	4089.72	5.18	161.05	14.96	60.52	7 56 14	3489.7	1.21	154.51
110.00	15 38 42	2302.14	-33.92	44.24	23.70	94.54	16 17 4	1702.1	-32.92	35.14
110.00	7 32 32	3950.41	8.63	148.37	12.84	56.80	8 38 23	3350.4	4.20	142.08

DIFFERENTIAL CORRECTIONS
TDE .0909 TRA -.5913 TC3 1.5054 BAU .5283
RDE -.5799 RRA -.1676 RC3 .0713 FAU .08589
FDE .3967 FRA -.5175 FC3-2.8359 BSP 5437
BDE .5869 BRA .6146 BC3 1.5070 FSP 739

MID-COURSE EXECUTION ACCURACY
SGT 1694.9 SGR 682.1 SG3 259.3
RRT .1594 RRF -.1856 RTF -.7880
SGB 1827.0 R23 -.0370 R13 -.7895
SG1 1699.0 SG2 671.8 THA 4.35

ORBIT DETERMINATION ACCURACY
ST 237.0 SR 651.5 SS 360.2
CRT -.3465 CRS .8724 CST -.6862
LSA 735.4 MSA 252.9 SSA 75.0
EL1 657.3 EL2 220.4 ALF 98.10

LAUNCH DATE DEC 26 1964 FLIGHT TIME 150.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 354.275 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 34.361 GAL 5.17 AZL 89.14 HCA 108.89 SMA 212.86 ECC .32051 INC .8613 V1 30.282
RP 241.08 LAP .82 LOP 203.16 VP 21.852 GAP 17.12 AZP 90.28 TAL 21.52 TAP 130.41 RCA 144.63 APO 281.08 V2 22.777
RC 159.568 GL 5.81 GP 3.47 ZAL 51.39 ZAP 166.78 ETS 163.62 ZAE 154.47 ETE 6.86 ZAC 93.35 ETC 255.85 CLP 167.23

PLANETOCENTRIC CONIC

C3 25.786 VHL 5.078 DLA 18.52 RAL 149.75 RAD 6568.0 VEL 12.131 PTH 2.17 VHP 8.328 DPA .11 RAP 191.44 ECC 1.4244

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 27 16	2893.55	-28.31	88.66	22.61	89.39	13 15 29	2293.5	-28.10	80.00
90.00	5 35 52	4302.71	3.35	177.71	14.41	61.87	6 47 35	3702.7	-.44	171.08
100.00	13 59 46	2595.27	-29.88	66.72	22.60	90.75	14 43 1	1995.3	-29.46	57.94
100.00	6 46 4	4076.22	4.73	160.31	13.65	60.45	7 54 0	3476.2	.76	153.77
110.00	15 32 18	2305.76	-33.94	44.52	22.39	94.38	16 10 44	1705.8	-32.96	35.42
110.00	7 30 1	3938.50	8.19	147.73	11.53	56.70	8 35 39	3338.5	3.75	141.46

DIFFERENTIAL CORRECTIONS
TDE .0776 TRA -.5619 TC3 1.5560 BAU .5371
RDE -.5754 RRA -.1595 RC3 .0810 FAU .08953
FDE .4234 FRA -.5856 FC3-3.0058 BSP 5537
BDE .5806 BRA .5841 BC3 1.5581 FSP 786

MID-COURSE EXECUTION ACCURACY
SGT 1718.1 SGR 681.3 SG3 273.7
RRT .1709 RRF -.1989 RTF -.7931
SGB 1848.3 R23 -.0396 R13 -.7947
SG1 1722.8 SG2 669.5 THA 4.57

ORBIT DETERMINATION ACCURACY
ST 223.9 SR 651.7 SS 381.0
CRT -.3105 CRS .8650 CST -.6699
LSA 741.8 MSA 252.9 SSA 76.4
EL1 655.8 EL2 211.5 ALF 96.80

LAUNCH DATE DEC 26 1964 FLIGHT TIME 152.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 357.345 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	34.277	GAL	5.27	AZL	89.16	HCA	109.83	SMA	210.92	ECC	.31487	INC	.8375	V1	30.282
RP	240.79	LAP	.79	LOP	204.09	VP	21.751	GAP	16.50	AZP	90.28	TAL	22.22	TAP	132.05	RCA	144.51	APO	277.33	V2	22.806
RC	161.890	GL	5.68	GP	3.57	ZAL	50.33	ZAP	166.03	ETS	164.02	ZAE	154.93	ETE	7.38	ZAC	93.49	ETC	255.85	CLP	166.48

PLANETOCENTRIC CONIC

C3	25.396	VHL	5.039	DLA	18.76	RAL	148.65	RAD	6568.0	VEL	12.115	PTH	2.17	VHP	8.118	DPA	.13	RAP	191.66	ECC	1.4180

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 20 22	2899.26	-28.31	89.08	21.32	89.18	13 8 41	2299.3	-28.12	80.42
90.00	5 34 1	4289.48	2.92	176.97	13.15	61.82	6 45 30	3689.5	-.87	170.34
100.00	13 53 6	2600.19	-29.89	67.09	21.32	90.56	14 36 26	2000.2	-29.49	58.30
100.00	6 43 57	4063.78	4.31	159.62	12.39	60.39	7 51 41	3463.8	.33	153.09
110.00	15 26 7	2309.18	-33.95	44.78	21.12	94.22	16 4 36	1709.2	-33.00	35.68
110.00	7 27 26	3927.55	7.78	147.15	10.25	56.61	8 32 53	3327.6	3.33	140.88

DIFFERENTIAL CORRECTIONS

TDE	.0725	TRA	-.5247	TC3	1.6164	BAU	.5497				
RDE	-.5712	RRA	-.1512	RC3	.0913	FAU	.09333				
FDE	.4513	FRA	-.6586	FC3	-3.1817	BSP	5450				
BDE	.5758	BRA	.5460	BC3	1.6190	FSP	837				

MID-COURSE EXECUTION ACCURACY

SGT	1748.7	SGR	680.6	SG3	288.8		
RRT	.1772	RRF	-.2132	RTF	-.8014		
SGB	1876.4	R23	-.0477	R13	-.8032		
SG1	1753.5	SG2	667.9	THA	4.62		

ORBIT DETERMINATION ACCURACY

ST	211.9	SR	651.7	SS	402.3		
CRT	-.3122	CRS	.8578	CST	-.6784		
LSA	749.8	MSA	251.3	SSA	77.9		
EL1	655.4	EL2	200.2	ALF	96.40		

LAUNCH DATE DEC 26 1964 FLIGHT TIME 154.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 360.467 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	34.198	GAL	5.36	AZL	89.19	HCA	110.76	SMA	209.11	ECC	.30957	INC	.8131	V1	30.282
RP	240.49	LAP	.76	LOP	205.03	VP	21.657	GAP	15.89	AZP	90.29	TAL	22.92	TAP	133.68	RCA	144.38	APO	273.84	V2	22.836
RC	164.213	GL	5.54	GP	3.68	ZAL	49.29	ZAP	165.27	ETS	164.38	ZAE	155.42	ETE	7.93	ZAC	93.64	ETC	255.84	CLP	165.72

PLANETOCENTRIC CONIC

C3	25.046	VHL	5.005	DLA	18.97	RAL	147.57	RAD	6568.0	VEL	12.101	PTH	2.17	VHP	7.914	DPA	.16	RAP	191.86	ECC	1.4122

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 13 46	2904.53	-28.30	89.47	20.07	88.98	13 2 10	2304.5	-28.14	80.80
90.00	5 32 3	4277.37	2.53	176.30	11.93	61.79	6 43 20	3677.4	-1.26	169.67
100.00	13 46 44	2604.72	-29.89	67.42	20.08	90.38	14 30 9	2004.7	-29.52	58.64
100.00	6 41 46	4052.40	3.93	158.99	11.16	60.34	7 49 18	3452.4	-.05	152.46
110.00	15 20 11	2312.33	-33.97	45.03	19.89	94.08	15 58 44	1712.3	-33.03	35.92
110.00	7 24 48	3917.57	7.40	146.62	9.02	56.53	8 30 5	3317.6	2.95	140.36

DIFFERENTIAL CORRECTIONS

TDE	.0564	TRA	-.4999	TC3	1.6557	BAU	.5555				
RDE	-.5672	RRA	-.1428	RC3	.1024	FAU	.09737				
FDE	.4791	FRA	-.7369	FC3	-3.3657	BSP	5640				
BDE	.5700	BRA	.5199	BC3	1.6589	FSP	889				

MID-COURSE EXECUTION ACCURACY

SGT	1765.5	SGR	679.8	SG3	304.8		
RRT	.1938	RRF	-.2282	RTF	-.8040		
SGB	1891.8	R23	-.0476	R13	-.8060		
SG1	1771.2	SG2	664.7	THA	4.97		

ORBIT DETERMINATION ACCURACY

ST	199.0	SR	651.4	SS	423.0		
CRT	-.2497	CRS	.8502	CST	-.6416		
LSA	756.3	MSA	254.6	SSA	78.3		
EL1	653.5	EL2	192.1	ALF	94.78		

LAUNCH DATE DEC 26 1964 FLIGHT TIME 156.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 363.638 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	34.122	GAL	5.45	AZL	89.21	HCA	111.70	SMA	207.42	ECC	.30457	INC	.7885	V1	30.282
RP	240.19	LAP	.73	LOP	205.96	VP	21.570	GAP	15.29	AZP	90.29	TAL	23.61	TAP	135.31	RCA	144.25	APO	270.59	V2	22.866
RC	166.536	GL	5.39	GP	3.80	ZAL	48.28	ZAP	164.49	ETS	164.71	ZAE	155.95	ETE	8.53	ZAC	93.79	ETC	255.84	CLP	164.95

PLANETOCENTRIC CONIC

C3	24.734	VHL	4.973	DLA	19.17	RAL	146.52	RAD	6568.0	VEL	12.088	PTH	2.16	VHP	7.716	DPA	.19	RAP	192.06	ECC	1.4071

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 7 27	2909.37	-28.29	89.82	18.86	88.81	12 55 57	2309.4	-28.16	81.16
90.00	5 29 59	4266.35	2.18	175.68	10.76	61.76	6 41 6	3666.3	-1.61	169.05
100.00	13 40 38	2608.88	-29.89	67.73	18.88	90.22	14 24 7	2008.9	-29.54	58.94
100.00	6 39 29	4042.07	3.58	158.42	9.98	60.30	7 46 52	3442.1	-.40	151.89
110.00	15 14 30	2315.20	-33.98	45.25	18.70	93.94	15 53 5	1715.2	-33.06	36.13
110.00	7 22 7	3908.51	7.06	146.14	7.83	56.47	8 27 15	3308.5	2.61	139.89

DIFFERENTIAL CORRECTIONS

TDE	.0437	TRA	-.4731	TC3	1.6961	BAU	.5621				
RDE	-.5634	RRA	-.1342	RC3	.1142	FAU	.10162				
FDE	.5074	FRA	-.8199	FC3	-3.5568	BSP	5773				
BDE	.5651	BRA	.4918	BC3	1.7000	FSP	944				

MID-COURSE EXECUTION ACCURACY

SGT	1783.8	SGR	679.0	SG3	321.6		
RRT	.2093	RRF	-.2444	RTF	-.8075		
SGB	1908.6	R23	-.0495	R13	-.8097		
SG1	1790.3	SG2	661.6	THA	5.28		

ORBIT DETERMINATION ACCURACY

ST	187.3	SR	651.0	SS	443.7		
CRT	-.1968	CRS	.8426	CST	-.6096		
LSA	763.5	MSA	258.0	SSA	78.5		
EL1	652.1	EL2	183.3	ALF	93.52		

LAUNCH DATE DEC 26 1964 FLIGHT TIME 158.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 366.855 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	34.050	GAL	5.53	AZL	89.24	HCA	112.64	SMA	205.84	ECC	.29986	INC	.7634	V1	30.282
RP	239.88	LAP	.70	LOP	206.90	VP	21.488	GAP	14.69	AZP	90.29	TAL	24.29	TAP	136.93	RCA	144.12	APO	267.57	V2	22.897
RC	168.857	GL	5.24	GP	3.92	ZAL	47.30	ZAP	163.69	ETS	165.01	ZAE	156.50	ETE	9.19	ZAC	93.94	ETC	255.83	CLP	164.16

PLANETOCENTRIC CONIC

C3	24.455	VHL	4.945	DLA	19.35	RAL	145.50	RAD	6568.0	VEL	12.076	PTH	2.16	VHP	7.523	DPA	.24	RAP	192.24	ECC	1.4025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 1 27	2913.74	-28.29	90.14	17.70	88.65	12 50 1	2313.7	-28.18	81.48
90.00	5 27 50	4256.41	1.86	175.13	9.62	61.74	6 38 46	3656.4	-1.93	168.50
100.00	13 34 50	2612.63	-29.89	68.01	17.72	90.07	14 18 23	2012.6	-29.56	59.22
100.00	6 37 8	4032.75	3.26	157.91	8.84	60.27	7 44 21	3432.8	-.72	151.38
110.00	15 9 4	2317.78	-33.99	45.45	17.55	93.83	15 47 42	1717.8	-33.09	36.33
110.00	7 19 23	3900.36	6.76	145.71	6.68	56.41	8 24 24	3300.4	2.30	139.46

DIFFERENTIAL CORRECTIONS

TDE	.0325	TRA	-.4458	TC3	1.7350	BAU	.5687				
RDE	-.5599	RRA	-.1254	RC3	.1267	FAU	.10607				
FDE	.5368	FRA	-.9085	FC3	-3.7550	BSP	5877				
BDE	.5608	BRA	.4631	BC3	1.7396	FSP	1002				

MID-COURSE EXECUTION ACCURACY

SGT	1801.5	SGR	678.4	SG3	339.3		
RRT	.2249	RRF	-.2616	RTF	-.8111		
SGB	1925.0	R23	-.0524	R13	-.8135		
SG1	1809.0	SG2	658.3	THA	5.58		

ORBIT DETERMINATION ACCURACY

ST	176.2	SR	650.4	SS	464.7		
CRT	-.1455	CRS	.8353	CST	-.5769		
LSA	771.5	MSA	262.0	SSA	78.4		
EL1	650.9	EL2	174.2	ALF	92.43		

LAUNCH DATE DEC 26 1964 FLIGHT TIME 160.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 370.114 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.982 GAL 5.62 AZL 89.26 HCA 113.58 SMA 204.36 ECC .29544 INC .7380 V1 30.282
RP 239.58 LAP .68 LOP 207.85 VP 21.413 GAP 14.10 AZP 90.30 TAL 24.96 TAP 138.55 RCA 143.99 APO 264.74 V2 22.928
RC 171.174 GL 5.08 GP 4.04 ZAL 46.35 ZAP 162.88 ETS 165.27 ZAE 157.09 ETE 9.90 ZAC 94.09 ETC 255.83 CLP 163.35

PLANETOCENTRIC CONIC

C3 24.207 VHL 4.920 DLA 19.50 RAL 144.51 RAD 6568.0 VEL 12.066 PTH 2.16 VHP 7.335 DPA .30 RAP 192.42 ECC 1.3984

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 55 46	2917.61	-28.28	90.42	16.57	88.50	12 44 24	2317.6	-28.19	81.76
90.00	5 25 34	4247.53	1.57	174.63	8.52	61.72	6 36 22	3647.5	-2.22	168.00
100.00	13 29 20	2615.93	-29.89	68.26	16.60	89.94	14 12 55	2015.9	-29.58	59.46
100.00	6 34 42	4024.44	2.98	157.45	7.74	60.24	7 41 47	3424.4	-1.00	150.93
110.00	15 3 54	2320.04	-34.00	45.63	16.44	93.72	15 42 34	1720.0	-33.12	36.50
110.00	7 16 37	3893.10	6.48	145.32	5.57	56.36	8 21 30	3293.1	2.02	139.08

DIFFERENTIAL CORRECTIONS

TDE .0228 TRA -.4190 TC3 1.7718 BAU .5752
RDE -.5565 RRA -.1164 RC3 .1400 FAU .11075
FDE .5667 FRA-1.0019 FC3-3.9608 BSP 5971
BDE .5570 BRA .4348 BC3 1.7773 FSP 1065

MID-COURSE EXECUTION ACCURACY

SGT 1818.9 SGR 678.0 SG3 357.9
RRT .2412 RRF -.2801 RTF -.8146
SGB 1941.1 R23 -.0559 R13 -.8172
SG1 1827.3 SG2 655.0 THA 5.90

ORBIT DETERMINATION ACCURACY

ST 166.0 SR 649.5 SS 485.6
CRT -.0952 CRS .8282 CST -.5428
LSA 779.8 MSA 266.6 SSA 78.0
EL1 649.7 EL2 165.2 ALF 91.49

LAUNCH DATE DEC 26 1964 FLIGHT TIME 162.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 373.412 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.916 GAL 5.70 AZL 89.29 HCA 114.53 SMA 202.98 ECC .29127 INC .7121 V1 30.282
RP 239.26 LAP .65 LOP 208.79 VP 21.343 GAP 13.52 AZP 90.30 TAL 25.62 TAP 140.15 RCA 143.86 APO 262.10 V2 22.959
RC 173.485 GL 4.91 GP 4.17 ZAL 45.44 ZAP 162.05 ETS 165.52 ZAE 157.72 ETE 10.69 ZAC 94.24 ETC 255.82 CLP 162.53

PLANETOCENTRIC CONIC

C3 23.986 VHL 4.898 DLA 19.64 RAL 143.54 RAD 6568.0 VEL 12.057 PTH 2.16 VHP 7.152 DPA .37 RAP 192.58 ECC 1.3948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 50 25	2920.95	-28.27	90.67	15.48	88.38	12 39 6	2320.9	-28.20	82.00
90.00	5 23 13	4239.70	1.32	174.19	7.46	61.71	6 33 53	3639.7	-2.47	167.57
100.00	13 24 7	2618.77	-29.89	68.47	15.51	89.83	14 7 46	2018.8	-29.60	59.67
100.00	6 32 12	4017.11	2.73	157.05	6.67	60.22	7 39 9	3417.1	-1.25	150.53
110.00	14 59 0	2321.95	-34.01	45.78	15.37	93.64	15 37 41	1722.0	-33.14	36.65
110.00	7 13 49	3886.69	6.24	144.99	4.50	56.32	8 18 35	3286.7	1.77	138.75

DIFFERENTIAL CORRECTIONS

TDE .0145 TRA -.3921 TC3 1.8065 BAU .5814
RDE -.5533 RRA -.1071 RC3 .1541 FAU .11569
FDE .5966 FRA-1.1019 FC3-4.1756 BSP 6043
BDE .5534 BRA .4065 BC3 1.8131 FSP 1130

MID-COURSE EXECUTION ACCURACY

SGT 1835.4 SGR 677.8 SG3 377.5
RRT .2580 RRF -.2995 RTF -.8179
SGB 1956.6 R23 -.0601 R13 -.8208
SG1 1844.9 SG2 651.5 THA 6.22

ORBIT DETERMINATION ACCURACY

ST 156.4 SR 648.5 SS 506.1
CRT -.0484 CRS .8207 CST -.5100
LSA 788.2 MSA 271.8 SSA 77.4
EL1 648.5 EL2 156.2 ALF 90.71

LAUNCH DATE DEC 26 1964 FLIGHT TIME 164.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 376.747 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.854 GAL 5.77 AZL 89.31 HCA 115.48 SMA 201.68 ECC .28734 INC .6858 V1 30.282
RP 238.95 LAP .62 LOP 209.74 VP 21.279 GAP 12.94 AZP 90.29 TAL 26.27 TAP 141.75 RCA 143.73 APO 259.64 V2 22.991
RC 175.790 GL 4.74 GP 4.31 ZAL 44.55 ZAP 161.20 ETS 165.74 ZAE 158.37 ETE 11.55 ZAC 94.40 ETC 255.82 CLP 161.68

PLANETOCENTRIC CONIC

C3 23.790 VHL 4.878 DLA 19.75 RAL 142.60 RAD 6568.0 VEL 12.049 PTH 2.15 VHP 6.975 DPA .45 RAP 192.74 ECC 1.3915

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 45 23	2923.74	-28.27	90.87	14.44	88.28	12 34 6	2323.7	-28.21	82.21
90.00	5 20 46	4232.89	1.10	173.81	6.44	61.70	6 31 19	3632.9	-2.69	167.19
100.00	13 19 13	2621.12	-29.89	68.64	14.47	89.74	14 2 54	2021.1	-29.61	59.85
100.00	6 29 37	4010.74	2.52	156.70	5.65	60.20	7 36 28	3410.7	-1.46	150.18
110.00	14 54 21	2323.50	-34.02	45.90	14.33	93.56	15 33 4	1723.5	-33.15	36.77
110.00	7 10 59	3881.12	6.03	144.69	3.47	56.29	8 15 40	3281.1	1.56	138.46

DIFFERENTIAL CORRECTIONS

TDE .0070 TRA -.3663 TC3 1.8373 BAU .5868
RDE -.5501 RRA -.0976 RC3 .1690 FAU .12084
FDE .6275 FRA-1.2071 FC3-4.3974 BSP 6111
BDE .5502 BRA .3791 BC3 1.8450 FSP 1199

MID-COURSE EXECUTION ACCURACY

SGT 1849.7 SGR 678.0 SG3 398.0
RRT .2758 RRF -.3202 RTF -.8209
SGB 1970.0 R23 -.0647 R13 -.8241
SG1 1860.4 SG2 647.9 THA 6.57

ORBIT DETERMINATION ACCURACY

ST 147.6 SR 647.3 SS 526.8
CRT -.0007 CRS .8138 CST -.4742
LSA 797.2 MSA 277.4 SSA 76.6
EL1 647.3 EL2 147.6 ALF 90.01

LAUNCH DATE DEC 26 1964 FLIGHT TIME 166.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 380.117 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.795 GAL 5.85 AZL 89.34 HCA 116.43 SMA 200.47 ECC .28365 INC .6590 V1 30.282
RP 238.63 LAP .59 LOP 210.69 VP 21.220 GAP 12.37 AZP 90.29 TAL 26.90 TAP 143.33 RCA 143.60 APO 257.33 V2 23.024
RC 178.086 GL 4.56 GP 4.45 ZAL 43.70 ZAP 160.33 ETS 165.95 ZAE 159.05 ETE 12.51 ZAC 94.56 ETC 255.81 CLP 160.82

PLANETOCENTRIC CONIC

C3 23.617 VHL 4.860 DLA 19.85 RAL 141.69 RAD 6568.0 VEL 12.041 PTH 2.15 VHP 6.802 DPA .54 RAP 192.88 ECC 1.3887

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 40 39	2925.99	-28.26	91.03	13.43	88.20	12 29 25	2326.0	-28.22	82.37
90.00	5 18 14	4227.07	.91	173.49	5.45	61.70	6 28 41	3627.1	-2.88	166.86
100.00	13 14 37	2623.00	-29.89	68.78	13.46	89.66	13 58 20	2023.0	-29.62	59.99
100.00	6 26 57	4005.29	2.33	156.40	4.66	60.19	7 33 43	3405.3	-1.65	149.88
110.00	14 49 58	2324.71	-34.02	45.99	13.33	93.51	15 28 42	1724.7	-33.16	36.86
110.00	7 8 6	3876.35	5.85	144.44	2.48	56.26	8 12 43	3276.4	1.38	138.21

DIFFERENTIAL CORRECTIONS

TDE .0122 TRA -.3292 TC3 1.8854 BAU .5982
RDE -.5470 RRA -.0876 RC3 .1850 FAU .12639
FDE .6565 FRA-1.3217 FC3-4.6329 BSP 5889
BDE .5471 BRA .3407 BC3 1.8945 FSP 1266

MID-COURSE EXECUTION ACCURACY

SGT 1878.5 SGR 678.4 SG3 419.9
RRT .2868 RRF -.3418 RTF -.8278
SGB 1997.2 R23 -.0756 R13 -.8315
SG1 1889.9 SG2 646.0 THA 6.70

ORBIT DETERMINATION ACCURACY

ST 136.2 SR 645.8 SS 546.3
CRT -.0558 CRS .8054 CST -.5152
LSA 805.8 MSA 281.1 SSA 76.3
EL1 645.8 EL2 136.0 ALF 90.71

LAUNCH DATE DEC 26 1964 FLIGHT TIME 168.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 383.518 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.739 GAL 5.92 AZL 89.37 HCA 117.38 SMA 199.33 ECC .28018 INC .6316 V1 30.282
RP 238.31 LAP .56 LOP 211.64 VP 21.166 GAP 11.81 AZP 90.29 TAL 27.52 TAP 144.90 RCA 143.48 APO 255.17 V2 23.056
RC 180.373 GL 4.38 GP 4.60 ZAL 42.88 ZAP 159.44 ETS 166.13 ZAE 159.75 ETE 13.57 ZAC 94.72 ETC 255.81 CLP 159.94

PLANETOCENTRIC CONIC

C3 23.463 VHL 4.844 DLA 19.93 RAL 140.82 RAD 6568.0 VEL 12.035 PTH 2.15 VHP 6.634 DPA .65 RAP 193.01 ECC 1.3861

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 36 18	2927.59	-28.26	91.15	12.46	88.14	12 25 5	2327.6	-28.22	82.49
90.00	5 15 36	4222.26	.76	173.22	4.51	61.69	6 25 59	3622.3	-3.03	166.59
100.00	13 10 21	2624.31	-29.89	68.88	12.50	89.61	13 54 5	2024.3	-29.62	60.08
100.00	6 24 14	4000.78	2.18	156.15	3.71	60.18	7 30 55	3400.8	-1.80	149.63
110.00	14 45 52	2325.48	-34.03	46.05	12.37	93.47	15 24 37	1725.5	-33.17	36.92
110.00	7 5 13	3872.37	5.70	144.23	1.53	56.24	8 9 45	3272.4	1.23	138.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0037 TRA -.3155 TC3 1.8923 BAU .5969 SGT 1875.7 SGR 679.6 SG3 442.3 ST 131.3 SR 644.3 SS 567.6
RDE -.5441 RRA -.0774 RC3 .2016 FAU .13199 RRT .3134 RRF -.3652 RTF -.8264 CRT .0783 CRS .7997 CST -.4099
FDE .6900 FRA-1.4382 FC3-4.8702 BSP 6187 SGB 1995.0 R23 -.0758 R13 -.8305 LSA 815.5 MSA 289.6 SSA 74.7
BDE .5441 BRA .3249 BC3 1.9030 FSP 1346 SG1 1889.3 SG2 640.7 THA 7.33 EL1 644.4 EL2 130.8 ALF 89.05

LAUNCH DATE DEC 26 1964 FLIGHT TIME 170.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 386.950 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.686 GAL 5.99 AZL 89.40 HCA 118.34 SMA 198.26 ECC .27691 INC .6036 V1 30.282
RP 237.98 LAP .53 LOP 212.60 VP 21.117 GAP 11.25 AZP 90.29 TAL 28.12 TAP 146.46 RCA 143.36 APO 253.15 V2 23.089
RC 182.651 GL 4.19 GP 4.76 ZAL 42.09 ZAP 158.53 ETS 166.30 ZAE 160.48 ETE 14.75 ZAC 94.89 ETC 255.80 CLP 159.04

PLANETOCENTRIC CONIC

C3 23.327 VHL 4.830 DLA 19.99 RAL 139.97 RAD 6567.9 VEL 12.029 PTH 2.15 VHP 6.470 DPA .77 RAP 193.12 ECC 1.3839

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 32 15	2928.63	-28.26	91.23	11.53	88.10	12 21 4	2328.6	-28.22	82.56
90.00	5 12 54	4218.38	.63	173.01	3.59	61.69	6 23 12	3618.4	-3.16	166.37
100.00	13 6 23	2625.11	-29.89	68.94	11.56	89.58	13 50 8	2025.1	-29.63	60.14
100.00	6 21 27	3997.13	2.06	155.95	2.80	60.17	7 28 5	3397.1	-1.93	149.43
110.00	14 42 2	2325.87	-34.03	46.08	11.44	93.46	15 20 47	1725.9	-33.18	36.95
110.00	7 2 18	3869.14	5.58	144.06	.61	56.22	8 6 47	3269.1	1.10	137.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0100 TRA -.2941 TC3 1.9108 BAU .5998 SGT 1882.8 SGR 681.3 SG3 466.0 ST 125.0 SR 642.5 SS 588.0
RDE -.5412 RRA -.0668 RC3 .2193 FAU .13796 RRT .3352 RRF -.3896 RTF -.8279 CRT .1339 CRS .7931 CST -.3621
FDE .7223 FRA-1.5629 FC3-5.1204 BSP 6276 SGB 2002.3 R23 -.0809 R13 -.8325 LSA 825.2 MSA 296.4 SSA 73.5
BDE .5413 BRA .3016 BC3 1.9234 FSP 1428 SG1 1898.4 SG2 636.6 THA 7.80 EL1 642.7 EL2 123.8 ALF 88.45

LAUNCH DATE DEC 26 1964 FLIGHT TIME 172.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 390.410 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.635 GAL 6.05 AZL 89.42 HCA 119.30 SMA 197.25 ECC .27384 INC .5751 V1 30.282
RP 237.65 LAP .50 LOP 213.56 VP 21.073 GAP 10.70 AZP 90.28 TAL 28.71 TAP 148.00 RCA 143.24 APO 251.26 V2 23.123
RC 184.919 GL 4.00 GP 4.92 ZAL 41.33 ZAP 157.60 ETS 166.46 ZAE 161.24 ETE 16.08 ZAC 95.05 ETC 255.80 CLP 158.12

PLANETOCENTRIC CONIC

C3 23.206 VHL 4.817 DLA 20.03 RAL 139.15 RAD 6567.9 VEL 12.024 PTH 2.15 VHP 6.312 DPA .90 RAP 193.22 ECC 1.3819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 28 32	2929.06	-28.26	91.26	10.63	88.08	12 17 21	2329.1	-28.22	82.59
90.00	5 10 6	4215.42	.54	172.84	2.72	61.69	6 20 21	3615.4	-3.25	166.21
100.00	13 2 43	2625.39	-29.89	68.96	10.67	89.57	13 46 28	2025.4	-29.63	60.16
100.00	6 18 37	3994.33	1.96	155.80	1.92	60.17	7 25 11	3394.3	-2.02	149.28
110.00	14 38 27	2325.86	-34.03	46.08	10.54	93.46	15 17 13	1725.9	-33.18	36.94
110.00	6 59 22	3866.63	5.48	143.93	359.73	56.21	8 3 48	3266.6	1.01	137.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0136 TRA -.2724 TC3 1.9284 BAU .6028 SGT 1889.7 SGR 683.7 SG3 490.9 ST 118.6 SR 640.6 SS 608.2
RDE -.5382 RRA -.0556 RC3 .2381 FAU .14423 RRT .3567 RRF -.4151 RTF -.8295 CRT .1698 CRS .7865 CST -.3285
FDE .7544 FRA-1.6953 FC3-5.3808 BSP 6315 SGB 2009.6 R23 -.0875 R13 -.8346 LSA 835.0 MSA 303.0 SSA 72.4
BDE .5384 BRA .2780 BC3 1.9430 FSP 1512 SG1 1907.4 SG2 632.8 THA 8.27 EL1 640.9 EL2 116.8 ALF 88.14

LAUNCH DATE DEC 26 1964 FLIGHT TIME 174.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 393.897 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.587 GAL 6.12 AZL 89.45 HCA 120.26 SMA 196.30 ECC .27095 INC .5459 V1 30.282
RP 237.31 LAP .47 LOP 214.52 VP 21.034 GAP 10.16 AZP 90.27 TAL 29.27 TAP 149.53 RCA 143.12 APO 249.49 V2 23.157
RC 187.176 GL 3.80 GP 5.10 ZAL 40.61 ZAP 156.64 ETS 166.61 ZAE 162.02 ETE 17.57 ZAC 95.23 ETC 255.79 CLP 157.18

PLANETOCENTRIC CONIC

C3 23.100 VHL 4.806 DLA 20.05 RAL 138.37 RAD 6567.9 VEL 12.020 PTH 2.15 VHP 6.157 DPA 1.05 RAP 193.31 ECC 1.3802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 25 9	2928.90	-28.26	91.25	9.77	88.09	12 13 58	2328.9	-28.22	82.58
90.00	5 7 13	4213.35	.47	172.73	1.87	61.69	6 17 27	3613.4	-3.32	166.09
100.00	12 59 21	2625.14	-29.89	68.94	9.80	89.58	13 43 6	2025.1	-29.63	60.14
100.00	6 15 42	3992.34	1.90	155.69	1.08	60.16	7 22 15	3392.3	-2.09	149.17
110.00	14 35 8	2325.44	-34.03	46.05	9.67	93.48	15 13 54	1725.4	-33.17	36.91
110.00	6 56 24	3864.81	5.41	143.83	358.89	56.20	8 0 49	3264.8	.94	137.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0135 TRA -.2487 TC3 1.9475 BAU .6067 SGT 1898.5 SGR 686.9 SG3 517.2 ST 111.3 SR 638.4 SS 627.8
RDE -.5353 RRA -.0440 RC3 .2581 FAU .15085 RRT .3775 RRF -.4415 RTF -.8317 CRT .1730 CRS .7794 CST -.3195
FDE .7857 FRA-1.8364 FC3-5.6534 BSP 6276 SGB 2019.0 R23 -.0958 R13 -.8376 LSA 844.6 MSA 309.2 SSA 71.3
BDE .5355 BRA .2526 BC3 1.9645 FSP 1599 SG1 1918.3 SG2 629.5 THA 8.72 EL1 638.7 EL2 109.5 ALF 88.22

2479A

LAUNCH DATE DEC 26 1964 FLIGHT TIME 176.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 397.409 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.541	GAL	6.18	AZL	89.48	HCA	121.22	SMA	195.42	ECC	.26823	INC	.5161
RP	236.98	LAP	.44	LOP	215.48	VP	20.998	GAP	9.63	AZP	90.27	TAL	29.83	TAP	151.05	RCA	143.00	APO	247.83
RC	189.421	GL	3.59	GP	5.28	ZAL	39.92	ZAP	155.66	ETS	166.74	ZAE	162.81	ETE	19.27	ZAC	95.40	ETC	255.79

V1 30.282 V2 23.191 CLP 156.21

PLANETOCENTRIC CONIC

C3	23.006	VHL	4.796	DLA	20.05	RAL	137.61	RAD	6567.9	VEL	12.016	PTH	2.14	VHP	6.007	DPA	1.22	RAP	193.38

ECC 1.3786

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 22 5	2928.11	-28.26	91.19	8.94	88.12	12 10 53	2328.1	-28.22	82.52
90.00	5 4 16	4212.15	.43	172.66	1.06	61.69	6 14 28	3612.1	-3.36	166.03
100.00	12 56 17	2624.33	-29.89	68.88	8.97	89.61	13 40 1	2024.3	-29.62	60.09
100.00	6 12 45	3991.16	1.86	155.62	.26	60.16	7 19 16	3391.2	-2.13	149.10
110.00	14 32 5	2324.60	-34.02	45.98	8.84	93.51	15 10 50	1724.6	-33.16	36.85
110.00	6 53 26	3863.66	5.37	143.77	358.08	56.19	7 57 50	3263.7	.89	137.55

DIFFERENTIAL CORRECTIONS

TDE	-.0182	TRA	-.2326	TC3	1.9525	BAU	.6066
RDE	-.5324	RRA	-.0319	RC3	.2790	FAU	.15767
FDE	.8191	FRA	-1.9824	FC3	-5.9333	BSP	6370
BDE	.5327	BRA	.2347	BC3	1.9723	FSP	1694

MID-COURSE EXECUTION ACCURACY

SGT	1896.3	SGR	691.2	SG3	544.4		
RRT	.4022	RRF	-.4692	RTF	-.8315		
SGB	2018.4	R23	-.1025	R13	-.8382		
SG1	1919.1	SG2	625.4	THA	9.34		

ORBIT DETERMINATION ACCURACY

ST	107.2	SR	636.2	SS	647.9		
CRT	.2247	CRS	.7737	CST	-.2710		
LSA	855.2	MSA	316.0	SSA	70.0		
EL1	636.6	EL2	104.4	ALF	87.77		

LAUNCH DATE DEC 26 1964 FLIGHT TIME 178.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 400.945 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.498	GAL	6.23	AZL	89.51	HCA	122.19	SMA	194.58	ECC	.26567	INC	.4858
RP	236.64	LAP	.41	LOP	216.45	VP	20.967	GAP	9.11	AZP	90.26	TAL	30.36	TAP	152.55	RCA	142.89	APO	246.28
RC	191.655	GL	3.38	GP	5.46	ZAL	39.26	ZAP	154.66	ETS	166.87	ZAE	163.62	ETE	21.20	ZAC	95.58	ETC	255.79

V1 30.282 V2 23.226 CLP 155.22

PLANETOCENTRIC CONIC

C3	22.922	VHL	4.788	DLA	20.04	RAL	136.89	RAD	6567.9	VEL	12.013	PTH	2.14	VHP	5.862	DPA	1.40	RAP	193.44

ECC 1.3772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 19 20	2926.71	-28.26	91.09	8.14	88.17	12 8 6	2326.7	-28.22	82.42
90.00	5 1 14	4211.78	.42	172.64	.28	61.69	6 11 26	3611.8	-3.37	166.01
100.00	12 53 31	2622.98	-29.89	68.78	8.17	89.66	13 37 14	2023.0	-29.62	59.99
100.00	6 9 44	3990.74	1.84	155.60	359.48	60.16	7 16 15	3390.7	-2.14	149.08
110.00	14 29 18	2323.33	-34.02	45.88	8.04	93.57	15 8 1	1723.3	-33.15	36.75
110.00	6 50 27	3863.15	5.35	143.74	357.30	56.19	7 54 50	3263.2	.87	137.52

DIFFERENTIAL CORRECTIONS

TDE	-.0192	TRA	-.2151	TC3	1.9590	BAU	.6074
RDE	-.5295	RRA	-.0191	RC3	.3013	FAU	.16486
FDE	.8521	FRA	-2.1373	FC3	-6.2266	BSP	6390
BDE	.5299	BRA	.2160	BC3	1.9821	FSP	1794

MID-COURSE EXECUTION ACCURACY

SGT	1895.9	SGR	696.7	SG3	573.1		
RRT	.4259	RRF	-.4977	RTF	-.8319		
SGB	2019.9	R23	-.1112	R13	-.8395		
SG1	1921.8	SG2	621.9	THA	9.95		

ORBIT DETERMINATION ACCURACY

ST	102.2	SR	633.8	SS	667.9		
CRT	.2414	CRS	.7679	CST	-.2497		
LSA	865.8	MSA	322.1	SSA	68.9		
EL1	634.3	EL2	99.1	ALF	87.71		

LAUNCH DATE DEC 26 1964 FLIGHT TIME 180.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 404.504 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.457	GAL	6.29	AZL	89.55	HCA	123.16	SMA	193.80	ECC	.26326	INC	.4545
RP	236.29	LAP	.38	LOP	217.42	VP	20.941	GAP	8.59	AZP	90.25	TAL	30.87	TAP	154.03	RCA	142.78	APO	244.82
RC	193.877	GL	3.16	GP	5.66	ZAL	38.63	ZAP	153.63	ETS	166.99	ZAE	164.44	ETE	23.41	ZAC	95.76	ETC	255.78

V1 30.282 V2 23.261 CLP 154.20

PLANETOCENTRIC CONIC

C3	22.948	VHL	4.780	DLA	20.01	RAL	136.19	RAD	6567.9	VEL	12.009	PTH	2.14	VHP	5.720	DPA	1.60	RAP	193.48

ECC 1.3760

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 16 53	2924.70	-28.27	90.94	7.37	88.24	12 5 38	2324.7	-28.21	82.28
90.00	4 58 8	4212.21	.43	172.66	359.52	61.69	6 8 20	3612.2	-3.36	166.03
100.00	12 51 3	2621.08	-29.89	68.64	7.40	89.74	13 34 44	2021.1	-29.61	59.85
100.00	6 6 40	3991.06	1.85	155.62	358.73	60.16	7 13 11	3391.1	-2.13	149.10
110.00	14 26 45	2321.65	-34.01	45.75	7.26	93.65	15 5 27	1721.6	-33.13	36.62
110.00	6 47 27	3863.26	5.36	143.75	356.56	56.19	7 51 50	3263.3	.88	137.53

DIFFERENTIAL CORRECTIONS

TDE	-.0187	TRA	-.1989	TC3	1.9619	BAU	.6075
RDE	-.5265	RRA	-.0058	RC3	.3250	FAU	.17239
FDE	.8842	FRA	-2.3004	FC3	-6.5318	BSP	6390
BDE	.5268	BRA	.1990	BC3	1.9887	FSP	1896

MID-COURSE EXECUTION ACCURACY

SGT	1892.8	SGR	703.5	SG3	603.1		
RRT	.4496	RRF	-.5269	RTF	-.8318		
SGB	2019.3	R23	-.1208	R13	-.8406		
SG1	1922.2	SG2	618.7	THA	10.60		

ORBIT DETERMINATION ACCURACY

ST	97.3	SR	631.2	SS	687.2		
CRT	.2419	CRS	.7619	CST	-.2417		
LSA	876.3	MSA	328.1	SSA	67.8		
EL1	631.6	EL2	94.3	ALF	87.82		

LAUNCH DATE DEC 26 1964 FLIGHT TIME 182.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 408.085 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.417	GAL	6.34	AZL	89.58	HCA	124.13	SMA	193.06	ECC	.26100	INC	.4225
RP	235.94	LAP	.35	LOP	218.39	VP	20.918	GAP	8.08	AZP	90.24	TAL	31.37	TAP	155.50	RCA	142.67	APO	243.45
RC	196.086	GL	2.94	GP	5.87	ZAL	38.03	ZAP	152.58	ETS	167.10	ZAE	165.27	ETE	25.96	ZAC	95.95	ETC	255.78

V1 30.282 V2 23.297 CLP 153.16

PLANETOCENTRIC CONIC

C3	22.782	VHL	4.773	DLA	19.97	RAL	135.53	RAD	6567.9	VEL	12.007	PTH	2.14	VHP	5.583	DPA	1.81	RAP	193.50

ECC 1.3749

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 14 45	2922.08	-28.27	90.75	6.63	88.34	12 3 27	2322.1	-28.20	82.08
90.00	4 54 58	4213.42	.47	172.73	358.80	61.69	6 5 11	3613.4	-3.32	166.10
100.00	12 48 51	2618.64	-29.89	68.46	6.66	89.83	13 32 30	2018.6	-29.59	59.66
100.00	6 3 33	3992.10	1.89	155.67	358.01	60.16	7 10 5	3392.1	-2.10	149.15
110.00	14 24 27	2319.53	-34.00	45.59	6.51	93.75	15 3 7	1719.5	-33.11	36.46
110.00	6 44 26	3863.97	5.38	143.79	355.84	56.19	7 48 50	3264.0	.90	137.56

DIFFERENTIAL CORRECTIONS

TDE	-.0171	TRA	-.1843	TC3	1.9616	BAU	.6069
RDE	-.5235	RRA	.0003	RC3	.3500	FAU	.18025
FDE	.9160	FRA	-2.4717	FC3	-6.8495	BSP	6376
BDE	.5237	BRA	.1845	BC3	1.9926	FSP	2005

MID-COURSE EXECUTION ACCURACY

SGT	1887.4	SGR	711.8	SG3	634.5		
RRT	.4735	RRF	-.5566	RTF	-.8314		
SGB	2017.2	R23	-.1314	R13	-.8415		
SG1	1920.8	SG2	616.0	THA	11.30		

ORBIT DETERMINATION ACCURACY

ST	92.5	SR	628.5	SS	706.4		
CRT	.2274	CRS	.7562	CST	-.2458		
LSA	887.0	MSA	333.7	SSA	66.8		
EL1	628.8	EL2	90.1	ALF	88.04		

2480A

LAUNCH DATE DEC 26 1964 FLIGHT TIME 184.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 411.686 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.380	GAL	6.39	AZL	89.61	HCA	125.10	SMA	192.37	ECC	.25887	INC	.3895	V1	30.282
RP	235.59	LAP	.32	LOP	219.37	VP	20.898	GAP	7.58	AZP	90.22	TAL	31.84	TAP	156.95	RCA	142.57	APO	242.17	V2	23.333
RC	198.280	GL	2.71	GP	6.09	ZAL	37.46	ZAP	151.49	ETS	167.21	ZAE	166.09	ETE	28.92	ZAC	96.14	ETC	255.77	CLP	152.10

PLANETOCENTRIC CONIC

C3	22.723	VHL	4.767	DLA	19.90	RAL	134.89	RAD	6567.9	VEL	12.004	PTH	2.14	VHP	5.450	DPA	2.05	RAP	193.51	ECC	1.3740

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 12 55	2918.85	-28.28	90.51	5.92	88.46	12 1 34	2318.9	-28.19	81.85
90.00	4 51 43	4215.39	.54	172.84	358.11	61.69	6 1 59	3615.4	-3.25	166.21
100.00	12 46 56	2615.66	-29.89	68.24	5.95	89.95	13 30 32	2015.7	-29.58	59.44
100.00	6 0 23	3993.82	1.95	155.77	357.32	60.17	7 6 57	3393.8	-2.04	149.25
110.00	14 22 24	2316.98	-33.99	45.39	5.79	93.86	15 1 1	1717.0	-33.08	36.27
110.00	6 41 24	3865.26	5.43	143.86	355.16	56.20	7 45 49	3265.3	.95	137.63

DIFFERENTIAL CORRECTIONS

TDE	-.0116	TRA	-.1686	TC3	1.9621	BAU	.6070	SGT	1883.0	SGR	721.8	SG3	667.7	ST	86.8	SR	625.4	SS	724.7
RDE	-.5202	RRA	.0233	RC3	.3769	FAU	.18858	RRT	.4962	RRF	-.5866	RTF	-.8313	CRT	.1615	CRS	.7495	CST	-.2879
FDE	.9448	FRA	-2.6548	FC3	-7.1845	BSP	6280	SGB	2016.6	R23	-.1437	R13	-.8430	LSA	896.9	MSA	339.1	SSA	65.9
BDE	.5203	BRA	.1702	BC3	1.9979	FSP	2111	SG1	1920.8	SG2	614.3	THA	12.02	EL1	625.6	EL2	85.6	ALF	88.69

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 26 1964 FLIGHT TIME 186.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 415.306 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.345	GAL	6.43	AZL	89.64	HCA	126.08	SMA	191.72	ECC	.25687	INC	.3557	V1	30.282
RP	235.24	LAP	.29	LOP	220.34	VP	20.883	GAP	7.09	AZP	90.21	TAL	32.30	TAP	158.38	RCA	142.47	APO	240.96	V2	23.369
RC	200.460	GL	2.48	GP	6.31	ZAL	36.92	ZAP	150.38	ETS	167.31	ZAE	166.90	ETE	32.37	ZAC	96.34	ETC	255.77	CLP	151.00

PLANETOCENTRIC CONIC

C3	22.670	VHL	4.761	DLA	19.83	RAL	134.28	RAD	6567.9	VEL	12.002	PTH	2.14	VHP	5.321	DPA	2.30	RAP	193.50	ECC	1.3731

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 11 23	2915.00	-28.29	90.23	5.24	88.60	11 59 58	2315.0	-28.18	81.57
90.00	4 48 25	4218.09	.62	172.99	357.44	61.69	5 58 43	3618.1	-3.17	166.36
100.00	12 45 19	2612.10	-29.89	67.97	5.26	90.09	13 28 51	2012.1	-29.56	59.18
100.00	5 57 10	3996.22	2.03	155.90	356.66	60.17	7 3 46	3396.2	-1.96	149.38
110.00	14 20 36	2313.98	-33.98	45.16	5.09	94.00	14 59 10	1714.0	-33.05	36.04
110.00	6 38 22	3867.11	5.50	143.95	354.50	56.21	7 42 49	3267.1	1.02	137.73

DIFFERENTIAL CORRECTIONS

TDE	-.0130	TRA	-.1632	TC3	1.9448	BAU	.6020	SGT	1863.7	SGR	733.7	SG3	701.3	ST	85.2	SR	622.7	SS	744.4
RDE	-.5172	RRA	.0387	RC3	.4047	FAU	.19695	RRT	.5214	RRF	-.6168	RTF	-.8280	CRT	.1777	CRS	.7459	CST	-.2749
FDE	.9792	FRA	-2.8392	FC3	-7.5215	BSP	6360	SGB	2003.0	R23	-.1554	R13	-.8417	LSA	909.2	MSA	343.9	SSA	64.8
BDE	.5174	BRA	.1677	BC3	1.9865	FSP	2237	SG1	1907.2	SG2	611.8	THA	12.96	EL1	622.9	EL2	83.8	ALF	88.58

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 26 1964 FLIGHT TIME 188.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 418.946 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.312	GAL	6.48	AZL	89.68	HCA	127.06	SMA	191.10	ECC	.25499	INC	.3210	V1	30.282
RP	234.89	LAP	.26	LOP	221.32	VP	20.870	GAP	6.60	AZP	90.19	TAL	32.74	TAP	159.80	RCA	142.37	APO	239.83	V2	23.405
RC	202.623	GL	2.24	GP	6.55	ZAL	36.40	ZAP	149.24	ETS	167.41	ZAE	167.67	ETE	36.40	ZAC	96.54	ETC	255.77	CLP	149.88

PLANETOCENTRIC CONIC

C3	22.621	VHL	4.756	DLA	19.73	RAL	133.70	RAD	6567.9	VEL	12.000	PTH	2.14	VHP	5.196	DPA	2.58	RAP	193.47	ECC	1.3723

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ ~~LONG~~	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 10 7	2910.54	-28.29	89.91	4.58	88.76	11 58 38	2310.5	-28.16	81.24
90.00	4 45 2	4221.50	.73	173.18	356.80	61.69	5 55 24	3621.5	-3.06	166.55
100.00	12 43 57	2608.01	-29.89	67.67	4.60	90.25	13 27 25	2008.0	-29.54	58.88
100.00	5 53 54	3999.27	2.13	156.07	356.02	60.18	7 0 33	3399.3	-1.85	149.55
110.00	14 19 1	2310.54	-33.96	44.89	4.41	94.16	14 57 32	1710.5	-33.01	35.78
110.00	6 35 19	3869.50	5.59	144.08	353.87	56.22	7 39 48	3269.5	1.12	137.85

DIFFERENTIAL CORRECTIONS

TDE	-.0087	TRA	-.1554	TC3	1.9308	BAU	.5985	SGT	1847.4	SGR	747.7	SG3	736.7	ST	81.9	SR	619.6	SS	762.9
RDE	-.5139	RRA	.0552	RC3	.4344	FAU	.20579	RRT	.5440	RRF	-.6468	RTF	-.8253	CRT	.1157	CRS	.7412	CST	-.3196
FDE	1.0095	FRA	-3.0352	FC3	-7.8761	BSP	6319	SGB	1992.9	R23	-.1695	R13	-.8414	LSA	920.4	MSA	348.3	SSA	63.9
BDE	.5140	BRA	.1649	BC3	1.9790	FSP	2360	SG1	1897.0	SG2	611.0	THA	13.89	EL1	619.7	EL2	81.3	ALF	89.11

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 26 1964 FLIGHT TIME 190.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 422.603 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.280	GAL	6.52	AZL	89.71	HCA	128.05	SMA	190.53	ECC	.25321	INC	.2852	V1	30.282
RP	234.53	LAP	.22	LOP	222.31	VP	20.861	GAP	6.13	AZP	90.18	TAL	33.15	TAP	161.20	RCA	142.28	APO	238.77	V2	23.442
RC	204.770	GL	1.99	GP	6.80	ZAL	35.92	ZAP	148.07	ETS	167.50	ZAE	168.41	ETE	41.12	ZAC	96.75	ETC	255.76	CLP	148.73

PLANETOCENTRIC CONIC

C3	22.576	VHL	4.751	DLA	19.62	RAL	133.15	RAD	6567.9	VEL	11.998	PTH	2.14	VHP	5.075	DPA	2.87	RAP	193.42	ECC	1.3715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 9 9	2905.48	-28.30	89.54	3.95	88.95	11 57 35	2305.5	-28.15	80.87
90.00	4 41 36	4225.60	.87	173.41	356.18	61.70	5 52 1	3625.6	-2.93	166.78
100.00	12 42 51	2603.36	-29.89	67.32	3.96	90.43	13 26 14	2003.4	-29.51	58.54
100.00	5 50 35	4002.95	2.26	156.27	355.41	60.18	6 57 18	3403.0	-1.73	149.75
110.00	14 17 41	2306.65	-33.94	44.59	3.76	94.34	14 56 8	1706.7	-32.97	35.48
110.00	6 32 15	3872.42	5.70	144.23	353.27	56.24	7 36 47	3272.4	1.23	138.00

DIFFERENTIAL CORRECTIONS

TDE	-.0039	TRA	-.1501	TC3	1.9122	BAU	.5940	SGT	1827.3	SGR	764.1	SG3	773.6	ST	79.5	SR	616.5	SS	781.3
RDE	-.5106	RRA	.0725	RC3	.4660	FAU	.21500	RRT	.5656	RRF	-.6763	RTF	-.8219	CRT	.0405	CRS	.7370	CST	-.3749
FDE	1.0394	FRA	-3.2400	FC3	-8.2447	BSP	6281	SGB	1980.6	R23	-.1847	R13	-.8409	LSA	932.1	MSA	352.2	SSA	63.1
BDE	.5106	BRA	.1667	BC3	1.9682	FSP	2491	SG1	1884.0	SG2	611.2	THA	14.91	EL1	616.5	EL2	79.4	ALF	89.70

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE DEC 26 1964 FLIGHT TIME 192.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 426.278 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.251	GAL	6.56	AZL	89.75	HCA	129.03	SMA	189.99	ECC	.25154	INC	.2486	V1	30.282
RP	234.17	LAP	.19	LOP	223.29	VP	20.856	GAP	5.66	AZP	90.16	TAL	33.55	TAP	162.58	RCA	142.20	APO	237.78	V2	23.479
RC	206.900	GL	1.73	GP	7.06	ZAL	35.47	ZAP	146.87	ETS	167.59	ZAE	169.07	ETE	46.62	ZAC	96.96	ETC	255.76	CLP	147.55

PLANETOCENTRIC CONIC

C3	22.534	VHL	4.747	DLA	19.49	RAL	132.63	RAD	6567.9	VEL	11.996	PTH	2.14	VHP	4.959	DPA	3.19	RAP	193.35	ECC	1.3708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 8 28	2899.80	-28.31	89.12	3.33	89.16	11 56 47	2299.8	-28.12	80.46
90.00	4 38 5	4230.37	1.02	173.67	355.59	61.70	5 48 36	3630.4	-2.77	167.05
100.00	12 42 0	2598.15	-29.89	66.93	3.34	90.64	13 25 19	1998.2	-29.48	58.15
100.00	5 47 14	4007.25	2.40	156.51	354.82	60.20	6 54 1	3407.3	-1.58	149.99
110.00	14 16 34	2302.31	-33.92	44.25	3.12	94.53	14 54 56	1702.3	-32.92	35.16
110.00	6 29 10	3875.86	5.83	144.41	352.69	56.26	7 33 45	3275.9	1.36	138.18

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0027	TRA	-.1465	TC3	1.8898	BAU	.5889	SGT	1804.0	SGR	783.0	SG3	812.0	ST	78.0	SR	613.1	SS	799.1
RDE	-.5070	RRA	.0910	RC3	.4996	FAU	.22457	RRT	.5856	RRF	-.7051	RTF	-.8177	CRT	-.0663	CRS	.7325	CST	-.4513
FDE	1.0666	FRA	-3.4549	FC3	-8.6277	BSP	6209	SGB	1966.6	R23	-.2012	R13	-.8402	LSA	943.4	MSA	355.8	SSA	62.2
BDE	.5070	BRA	.1725	BC3	1.9547	FSP	2624	SG1	1868.7	SG2	612.7	THA	16.03	EL1	613.2	EL2	77.8	ALF	90.49

LAUNCH DATE DEC 26 1964 FLIGHT TIME 194.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 429.970 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.222	GAL	6.59	AZL	89.79	HCA	130.02	SMA	189.48	ECC	.24997	INC	.2105	V1	30.282
RP	233.80	LAP	.16	LOP	224.28	VP	20.853	GAP	5.20	AZP	90.14	TAL	33.92	TAP	163.95	RCA	142.11	APO	236.84	V2	23.517
RC	209.011	GL	1.47	GP	7.34	ZAL	35.04	ZAP	145.64	ETS	167.68	ZAE	169.64	ETE	52.99	ZAC	97.18	ETC	255.76	CLP	146.34

PLANETOCENTRIC CONIC

C3	22.495	VHL	4.743	DLA	19.35	RAL	132.12	RAD	6567.9	VEL	11.995	PTH	2.14	VHP	4.845	DPA	3.53	RAP	193.27	ECC	1.3702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 8 2	2893.53	-28.31	88.66	2.74	89.39	11 56 15	2293.5	-28.10	80.00
90.00	4 34 31	4235.80	1.19	173.98	355.02	61.71	5 45 7	3635.8	-2.60	167.35
100.00	12 41 25	2592.40	-29.88	66.51	2.74	90.86	13 24 37	1992.4	-29.44	57.73
100.00	5 43 49	4012.16	2.57	156.78	354.25	60.21	6 50 41	3412.2	-1.42	150.25
110.00	14 15 40	2297.52	-33.89	43.88	2.51	94.75	14 53 58	1697.5	-32.86	34.79
110.00	6 26 3	3879.81	5.98	144.62	352.14	56.28	7 30 43	3279.8	1.51	138.39

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0156	TRA	-.1400	TC3	1.8732	BAU	.5859	SGT	1786.0	SGR	804.9	SG3	853.1	ST	78.0	SR	609.2	SS	814.7
RDE	-.5029	RRA	.1110	RC3	.5361	FAU	.23483	RRT	.6029	RRF	-.7331	RTF	-.8145	CRT	-.2723	CRS	.7256	CST	-.5739
FDE	1.0845	FRA	-3.6861	FC3	-9.0379	BSP	6002	SGB	1959.0	R23	-.2189	R13	-.8411	LSA	952.7	MSA	359.8	SSA	61.5
BDE	.5031	BRA	.1787	BC3	1.9484	FSP	2748	SG1	1859.3	SG2	616.8	THA	17.15	EL1	609.6	EL2	75.0	ALF	92.03

LAUNCH DATE DEC 26 1964 FLIGHT TIME 196.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 433.676 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.196	GAL	6.62	AZL	89.83	HCA	131.02	SMA	189.00	ECC	.24849	INC	.1713	V1	30.282
RP	233.44	LAP	.13	LOP	225.28	VP	20.853	GAP	4.75	AZP	90.11	TAL	34.28	TAP	165.29	RCA	142.04	APO	235.97	V2	23.555
RC	211.104	GL	1.19	GP	7.62	ZAL	34.64	ZAP	144.38	ETS	167.78	ZAE	170.07	ETE	60.22	ZAC	97.40	ETC	255.75	CLP	145.10

PLANETOCENTRIC CONIC

C3	22.456	VHL	4.739	DLA	19.19	RAL	131.65	RAD	6567.9	VEL	11.993	PTH	2.14	VHP	4.737	DPA	3.90	RAP	193.16	ECC	1.3696

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 7 53	2886.61	-28.31	88.16	2.17	89.64	11 56 0	2286.6	-28.06	79.50
90.00	4 30 53	4241.88	1.39	174.32	354.47	61.71	5 41 35	3641.9	-2.40	167.69
100.00	12 41 5	2586.05	-29.87	66.03	2.16	91.11	13 24 11	1986.0	-29.40	57.26
100.00	5 40 21	4017.67	2.75	157.08	353.71	60.22	6 47 19	3417.7	-1.23	150.56
110.00	14 15 0	2292.23	-33.86	43.47	1.91	94.99	14 53 12	1692.2	-32.80	34.39
110.00	6 22 56	3884.26	6.15	144.86	351.61	56.31	7 27 40	3284.3	1.68	138.62

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0168	TRA	-.1495	TC3	1.8284	BAU	.5752	SGT	1743.5	SGR	829.4	SG3	892.7	ST	80.1	SR	606.4	SS	833.8
RDE	-.4996	RRA	.1310	RC3	.5729	FAU	.24464	RRT	.6200	RRF	-.7596	RTF	-.8052	CRT	-.2950	CRS	.7255	CST	-.6111
FDE	1.1178	FRA	-3.9079	FC3	-9.4316	BSP	6072	SGB	1930.7	R23	-.2380	R13	-.8377	LSA	967.0	MSA	361.3	SSA	60.7
BDE	.4999	BRA	.1988	BC3	1.9160	FSP	2910	SG1	1828.3	SG2	620.5	THA	18.66	EL1	606.8	EL2	76.4	ALF	92.27

LAUNCH DATE DEC 26 1964 FLIGHT TIME 198.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 437.400 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.171	GAL	6.65	AZL	89.87	HCA	132.01	SMA	188.55	ECC	.24709	INC	.1305	V1	30.282
RP	233.07	LAP	.10	LOP	226.27	VP	20.856	GAP	4.30	AZP	90.09	TAL	34.61	TAP	166.63	RCA	141.96	APO	235.14	V2	23.593
RC	213.179	GL	.91	GP	7.93	ZAL	34.27	ZAP	143.08	ETS	167.87	ZAE	170.34	ETE	68.25	ZAC	97.64	ETC	255.75	CLP	143.82

PLANETOCENTRIC CONIC

C3	22.419	VHL	4.735	DLA	19.02	RAL	131.20	RAD	6567.9	VEL	11.992	PTH	2.14	VHP	4.631	DPA	4.28	RAP	193.04	ECC	1.3690

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 7 59	2879.11	-28.32	87.61	1.61	89.92	11 55 58	2279.1	-28.03	78.95
90.00	4 27 10	4248.59	1.61	174.69	353.94	61.72	5 37 59	3648.6	-2.19	168.06
100.00	12 41 0	2579.16	-29.86	65.52	1.59	91.38	13 23 59	1979.2	-29.35	56.76
100.00	5 36 50	4023.77	2.96	157.41	353.19	60.24	6 43 54	3423.8	-1.02	150.89
110.00	14 14 32	2286.49	-33.83	43.02	1.32	95.25	14 52 39	1686.5	-32.73	33.96
110.00	6 19 47	3889.21	6.34	145.12	351.10	56.34	7 24 36	3289.2	1.87	138.88

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.0334	TRA	-.1469	TC3	1.8048	BAU	.5714	SGT	1719.9	SGR	857.7	SG3	937.2	ST	86.3	SR	601.9	SS	848.0
RDE	-.4948	RRA	.1536	RC3	.6143	FAU	.25572	RRT	.6325	RRF	-.7851	RTF	-.8001	CRT	-.5132	CRS	.7181	CST	-.7158
FDE	1.1275	FRA	-4.1598	FC3	-9.8748	BSP	5798	SGB	1921.9	R23	-.2573	R13	-.8389	LSA	975.7	MSA	365.1	SSA	60.1
BDE	.4959	BRA	.2126	BC3	1.9064	FSP	3034	SG1	1816.0	SG2	629.1	THA	20.0[illegible]	EL1	603.6	EL2	73.9	ALF	94.27

LAUNCH DATE DEC 26 1964 FLIGHT TIME 200.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 441.137 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.147 GAL 6.68 AZL 89.91 HCA 133.01 SMA 188.13 ECC .24578 INC .0887 V1 30.282
RP 232.70 LAP .07 LOP 227.27 VP 20.862 GAP 3.87 AZP 90.06 TAL 34.93 TAP 167.94 RCA 141.89 APO 234.37 V2 23.631
RC 215.236 GL .62 GP 8.24 ZAL 33.92 ZAP 141.75 ETS 167.96 ZAE 170.40 ETE 76.80 ZAC 97.88 ETC 255.75 CLP 142.51

PLANETOCENTRIC CONIC

C3 22.382 VHL 4.731 DLA 18.82 RAL 130.77 RAD 6567.9 VEL 11.990 PTH 2.14 VHP 4.530 DPA 4.70 RAP 192.89 ECC 1.3684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 8 21	2870.94	-28.32	87.01	1.07	90.21	11 56 12	2270.9	-27.99	78.36
90.00	4 23 23	4255.95	1.84	175.10	353.44	61.74	5 34 19	3655.9	-1.95	168.47
100.00	12 41 10	2571.66	-29.85	64.96	1.05	91.67	13 24 1	1971.7	-29.30	56.20
100.00	5 33 16	4030.47	3.19	157.78	352.69	60.26	6 40 26	3430.5	-.80	151.26
110.00	14 14 18	2280.23	-33.79	42.54	.75	95.54	14 52 19	1680.2	-32.65	33.49
110.00	6 16 36	3894.66	6.54	145.41	350.61	56.37	7 21 31	3294.7	2.08	139.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0357 TRA -.1630 TC3 1.7485 BAU .5588 SGT 1668.1 SGR 888.5 SG3 979.0 ST 90.8 SR 599.1 SS 866.4
RDE -.4913 RRA .1760 RC3 .6556 FAU .26602 RRT .6433 RRF -.8085 RTF -.7869 CRT -.5334 CRS .7194 CST -.7547
FDE 1.1582 FRA-4.3955 FC-10.2895 BSP 5871 SGB 1890.0 R23 -.2787 R13 -.8351 LSA 990.4 MSA 365.2 SSA 59.4
BDE .4926 BRA .2399 BC3 1.8674 FSP 3213 SG1 1779.1 SG2 637.8 THA 21.87 EL1 601.1 EL2 76.6 ALF 94.70

LAUNCH DATE DEC 26 1964 FLIGHT TIME 202.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 444.889 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.125 GAL 6.70 AZL 89.95 HCA 134.01 SMA 187.74 ECC .24454 INC .0437 V1 30.282
RP 232.32 LAP .03 LOP 228.27 VP 20.871 GAP 3.44 AZP 90.03 TAL 35.22 TAP 169.23 RCA 141.83 APO 233.65 V2 23.670
RC 217.275 GL .32 GP 8.58 ZAL 33.60 ZAP 140.38 ETS 168.06 ZAE 170.25 ETE 85.54 ZAC 98.13 ETC 255.75 CLP 141.17

PLANETOCENTRIC CONIC

C3 22.345 VHL 4.727 DLA 18.61 RAL 130.36 RAD 6567.9 VEL 11.988 PTH 2.14 VHP 4.433 DPA 5.14 RAP 192.73 ECC 1.3677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 8 58	2862.16	-28.31	86.37	.55	90.54	11 56 40	2262.2	-27.94	77.72
90.00	4 19 32	4263.93	2.10	175.55	352.95	61.75	5 30 36	3663.9	-1.69	168.92
100.00	12 41 33	2563.58	-29.83	64.36	.51	91.99	13 24 17	1963.6	-29.24	55.61
100.00	5 29 38	4037.75	3.43	158.18	352.21	60.29	6 36 56	3437.7	-.55	151.66
110.00	14 14 17	2273.48	-33.74	42.02	.20	95.84	14 52 10	1673.5	-32.56	32.98
110.00	6 13 24	3900.61	6.77	145.72	350.15	56.41	7 18 24	3300.6	2.30	139.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0458 TRA -.1753 TC3 1.6993 BAU .5491 SGT 1623.0 SGR 923.4 SG3 1023.9 ST 99.7 SR 595.4 SS 882.0
RDE -.4868 RRA .2004 RC3 .7007 FAU .27712 RRT .6498 RRF -.8305 RTF -.7743 CRT -.6232 CRS .7170 CST -.8035
FDE 1.1743 FRA-4.6510 FC-10.7369 BSP 5776 SGB 1867.3 R23 -.2998 R13 -.8338 LSA 1002.3 MSA 366.5 SSA 58.7
BDE .4890 BRA .2663 BC3 1.8381 FSP 3374 SG1 1750.2 SG2 650.9 THA 23.78 EL1 598.7 EL2 77.5 ALF 96.06

LAUNCH DATE DEC 26 1964 FLIGHT TIME 204.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 448.655 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.104 GAL 6.73 AZL 90.00 HCA 135.02 SMA 187.37 ECC .24337 INC .0000 V1 30.282
RP 231.95 LAP .00 LOP 229.28 VP 20.882 GAP 3.02 AZP 90.00 TAL 35.49 TAP 170.51 RCA 141.77 APO 232.97 V2 23.709
RC 219.295 GL .00 GP 8.92 ZAL 33.31 ZAP 138.98 ETS 168.17 ZAE 169.86 ETE 94.06 ZAC 98.39 ETC 255.75 CLP 139.80

PLANETOCENTRIC CONIC

C3 22.308 VHL 4.723 DLA 18.38 RAL 129.98 RAD 6567.9 VEL 11.987 PTH 2.14 VHP 4.340 DPA 5.61 RAP 192.54 ECC 1.3671

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 9 50	2852.73	-28.30	85.68	.04	90.88	11 57 23	2252.7	-27.88	77.04
90.00	4 15 36	4272.55	2.38	176.03	352.48	61.77	5 26 49	3672.6	-1.41	169.40
100.00	12 42 12	2554.89	-29.81	63.72	359.99	92.33	13 24 46	1954.9	-29.17	54.97
100.00	5 25 56	4045.62	3.70	158.62	351.75	60.32	6 33 21	3445.6	-.28	152.09
110.00	14 14 28	2266.21	-33.69	41.46	359.65	96.17	14 52 14	1666.2	-32.47	32.44
110.00	6 10 9	3907.07	7.01	146.06	349.70	56.46	7 15 16	3307.1	2.55	139.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0569 TRA -.1910 TC3 1.6448 BAU .5389 SGT 1574.3 SGR 962.1 SG3 1069.9 ST 110.9 SR 591.6 SS 897.0
RDE -.4821 RRA .2263 RC3 .7485 FAU .28847 RRT .6520 RRF -.8507 RTF -.7591 CRT -.6969 CRS .7152 CST -.8388
FDE 1.1868 FRA-4.9131 FC-11.1950 BSP 5666 SGB 1845.0 R23 -.3205 R13 -.8329 LSA 1014.2 MSA 367.3 SSA 58.1
BDE .4855 BRA .2961 BC3 1.8071 FSP 3538 SG1 1720.0 SG2 667.7 THA 25.91 EL1 596.8 EL2 78.8 ALF 97.57

LAUNCH DATE DEC 26 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 452.435 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.084 GAL 6.75 AZL 90.05 HCA 136.03 SMA 187.03 ECC .24226 INC .0464 V1 30.282
RP 231.57 LAP -.03 LOP 230.29 VP 20.895 GAP 2.61 AZP 89.97 TAL 35.75 TAP 171.78 RCA 141.72 APO 232.33 V2 23.748
RC 221.297 GL -.33 GP 9.29 ZAL 33.04 ZAP 137.55 ETS 168.27 ZAE 169.25 ETE 102.01 ZAC 98.65 ETC 255.75 CLP 138.39

PLANETOCENTRIC CONIC

C3 22.270 VHL 4.719 DLA 18.14 RAL 129.62 RAD 6567.9 VEL 11.985 PTH 2.14 VHP 4.250 DPA 6.11 RAP 192.33 ECC 1.3665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 10 57	2842.64	-28.29	84.94	359.54	91.25	11 58 19	2242.6	-27.82	76.31
90.00	4 11 36	4281.81	2.68	176.55	352.03	61.80	5 22 57	3681.8	-1.11	169.92
100.00	12 43 4	2545.59	-29.78	63.03	359.48	92.69	13 25 29	1945.6	-29.09	54.29
100.00	5 22 10	4054.10	3.98	159.08	351.31	60.35	6 29 44	3454.1	.01	152.55
110.00	14 14 51	2258.41	-33.63	40.86	359.11	96.52	14 52 29	1658.4	-32.36	31.85
110.00	6 6 52	3914.04	7.27	146.43	349.28	56.51	7 12 6	3314.0	2.82	140.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0691 TRA -.2098 TC3 1.5849 BAU .5285 SGT 1522.0 SGR 1004.8 SG3 1117.0 ST 124.5 SR 587.7 SS 911.1
RDE -.4770 RRA .2537 RC3 .7992 FAU .30006 RRT .6493 RRF -.8692 RTF -.7406 CRT -.7564 CRS .7135 CST -.8623
FDE 1.1943 FRA-5.1822 FC-11.6647 BSP 5547 SGB 1823.7 R23 -.3397 R13 -.8329 LSA 1025.9 MSA 367.9 SSA 57.5
BDE .4820 BRA .3288 BC3 1.7750 FSP 3704 SG1 1688.7 SG2 688.7 THA 28.33 EL1 595.4 EL2 80.4 ALF 99.28

LAUNCH DATE DEC 26 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 456.228 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.065 GAL 6.76 AZL 90.10 HCA 137.04 SMA 186.70 ECC .24122 INC .0949 V1 30.282
RP 231.20 LAP -.06 LOP 231.30 VP 20.910 GAP 2.21 AZP 89.93 TAL 35.98 TAP 173.02 RCA 141.67 APO 231.74 V2 23.788
RC 223.281 GL -.67 GP 9.67 ZAL 32.79 ZAP 136.08 ETS 168.39 ZAE 168.42 ETE 109.16 ZAC 98.93 ETC 255.75 CLP 136.94

PLANETOCENTRIC CONIC

C3 22.231 VHL 4.715 DLA 17.87 RAL 129.27 RAD 6567.9 VEL 11.984 PTH 2.14 VHP 4.165 DPA 6.63 RAP 192.10 ECC 1.3659

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 12 19	2831.88	-28.27	84.15	359.05	91.65	11 59 30	2231.9	-27.75	75.53
90.00	4 7 29	4291.72	3.00	177.10	351.60	61.83	5 19 1	3691.7	-.79	170.47
100.00	12 44 10	2535.65	-29.75	62.29	358.98	93.07	13 26 26	1935.6	-29.00	53.57
100.00	5 18 19	4063.19	4.29	159.59	350.88	60.39	6 26 2	3463.2	.31	153.05
110.00	14 15 27	2250.06	-33.56	40.21	358.59	96.90	14 52 57	1650.1	-32.25	31.23
110.00	6 3 31	3921.54	7.55	146.83	348.87	56.56	7 8 53	3321.5	3.10	140.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0814 TRA -.2330 TC3 1.5180 BAU .5175 SGT 1465.4 SGR 1051.4 SG3 1164.7 ST 140.0 SR 583.8 SS 924.8
RDE -.4717 RRA .2827 RC3 .8528 FAU .31175 RRT .6407 RRF -.8858 RTF -.7174 CRT -.7993 CRS .7125 CST -.8778
FDE 1.1981 FRA-5.4561 FC-12.1405 BSP 5442 SGB 1803.5 R23 -.3567 R13 -.8340 LSA 1037.8 MSA 368.0 SSA 56.9
BDE .4786 BRA .3663 BC3 1.7411 FSP 3878 SG1 1656.1 SG2 714.3 THA 31.09 EL1 594.6 EL2 82.6 ALF 101.06

LAUNCH DATE DEC 26 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 460.034 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.048 GAL 6.78 AZL 90.15 HCA 138.06 SMA 186.40 ECC .24023 INC .1457 V1 30.282
RP 230.82 LAP -.10 LOP 232.32 VP 20.928 GAP 1.81 AZP 89.89 TAL 36.20 TAP 174.25 RCA 141.62 APO 231.18 V2 23.827
RC 225.247 GL -1.02 GP 10.07 ZAL 32.58 ZAP 134.57 ETS 168.51 ZAE 167.42 ETE 115.44 ZAC 99.22 ETC 255.75 CLP 135.46

PLANETOCENTRIC CONIC

C3 22.190 VHL 4.711 DLA 17.58 RAL 128.95 RAD 6567.9 VEL 11.982 PTH 2.14 VHP 4.083 DPA 7.19 RAP 191.85 ECC 1.3652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 13 55	2820.42	-28.25	83.32	358.57	92.07	12 0 56	2220.4	-27.66	74.70
90.00	4 3 18	4302.30	3.34	177.69	351.18	61.86	5 15 0	3702.3	-.45	171.06
100.00	12 45 31	2525.05	-29.71	61.51	358.48	93.49	13 27 36	1925.0	-28.91	52.79
100.00	5 14 23	4072.91	4.62	160.12	350.48	60.43	6 22 16	3472.9	.04	153.59
110.00	14 16 15	2241.13	-33.49	39.53	358.07	97.30	14 53 37	1641.1	-32.12	30.56
110.00	6 0 8	3929.59	7.85	147.26	348.48	56.62	7 5 37	3329.6	3.41	140.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0948 TRA -.2598 TC3 1.4454 BAU .5067 SGT 1406.3 SGR 1102.5 SG3 1213.3 ST 157.6 SR 579.6 SS 937.2
RDE -.4657 RRA .3134 RC3 .9098 FAU .32365 RRT .6253 RRF -.9008 RTF -.6890 CRT -.8337 CRS .7113 CST -.8864
FDE 1.1941 FRA-5.7361 FC-12.6267 BSP 5337 SGB 1786.9 R23 -.3693 R13 -.8373 LSA 1049.0 MSA 368.0 SSA 56.3
BDE .4752 BRA .4071 BC3 1.7079 FSP 4051 SG1 1624.2 SG2 744.9 THA 34.27 EL1 594.6 EL2 84.8 ALF 103.05

LAUNCH DATE DEC 26 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 463.852 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.032 GAL 6.79 AZL 90.20 HCA 139.07 SMA 186.12 ECC .23930 INC .1992 V1 30.282
RP 230.43 LAP -.13 LOP 233.34 VP 20.948 GAP 1.42 AZP 89.85 TAL 36.39 TAP 175.46 RCA 141.58 APO 230.66 V2 23.867
RC 227.193 GL -1.39 GP 10.49 ZAL 32.38 ZAP 133.03 ETS 168.64 ZAE 166.25 ETE 120.87 ZAC 99.52 ETC 255.76 CLP 133.95

PLANETOCENTRIC CONIC

C3 22.149 VHL 4.706 DLA 17.28 RAL 128.64 RAD 6567.9 VEL 11.980 PTH 2.14 VHP 4.005 DPA 7.77 RAP 191.59 ECC 1.3645

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 15 47	2808.24	-28.21	82.43	358.09	92.51	12 2 35	2208.2	-27.57	73.82
90.00	3 59 0	4313.57	3.70	178.32	350.78	61.91	5 10 53	3713.6	-.09	171.69
100.00	12 47 5	2513.77	-29.66	60.67	358.00	93.92	13 28 59	1913.8	-28.80	51.97
100.00	5 10 22	4083.27	4.96	160.69	350.08	60.48	6 18 25	3483.3	1.00	154.16
110.00	14 17 16	2231.60	-33.40	38.80	357.55	97.72	14 54 28	1631.6	-31.98	29.86
110.00	5 56 40	3938.20	8.18	147.72	348.11	56.69	7 2 18	3338.2	3.74	141.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1081 TRA -.2910 TC3 1.3656 BAU .4959 SGT 1344.3 SGR 1157.8 SG3 1262.0 ST 176.7 SR 575.5 SS 949.3
RDE -.4595 RRA .3457 RC3 .9698 FAU .33552 RRT .6014 RRF -.9141 RTF -.6534 CRT -.8588 CRS .7114 CST -.8919
FDE 1.1870 FRA-6.0188 FC-13.1147 BSP 5253 SGB 1774.2 R23 -.3757 R13 -.8434 LSA 1060.9 MSA 367.5 SSA 55.7
BDE .4721 BRA .4519 BC3 1.6749 FSP 4231 SG1 1593.3 SG2 780.4 THA 38.00 EL1 595.6 EL2 87.5 ALF 105.10

LAUNCH DATE DEC 26 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 467.683 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.017 GAL 6.80 AZL 90.26 HCA 140.10 SMA 185.86 ECC .23842 INC .2545 V1 30.282
RP 230.05 LAP -.16 LOP 234.36 VP 20.970 GAP 1.04 AZP 89.80 TAL 36.56 TAP 176.66 RCA 141.55 APO 230.17 V2 23.907
RC 229.120 GL -1.78 GP 10.93 ZAL 32.21 ZAP 131.46 ETS 168.78 ZAE 164.95 ETE 125.53 ZAC 99.84 ETC 255.76 CLP 132.40

PLANETOCENTRIC CONIC

C3 22.105 VHL 4.702 DLA 16.95 RAL 128.35 RAD 6567.9 VEL 11.979 PTH 2.13 VHP 3.932 DPA 8.39 RAP 191.30 ECC 1.3638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 17 53	2795.32	-28.17	81.48	357.62	92.98	12 4 28	2195.3	-27.46	72.89
90.00	3 54 35	4325.54	4.08	178.99	350.40	61.95	5 6 40	3725.5	.30	172.36
100.00	12 48 54	2501.78	-29.60	59.79	357.52	94.39	13 30 36	1901.8	-28.68	51.10
100.00	5 6 15	4094.31	5.33	161.31	349.71	60.54	6 14 29	3494.3	1.37	154.76
110.00	14 18 30	2221.45	-33.31	38.02	357.04	98.17	14 55 32	1621.5	-31.82	29.11
110.00	5 53 8	3947.41	8.52	148.21	347.75	56.77	6 58 55	3347.4	4.09	141.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1225 TRA -.3260 TC3 1.2797 BAU .4861 SGT 1281.7 SGR 1217.8 SG3 1311.2 ST 197.7 SR 571.0 SS 960.1
RDE -.4525 RRA .3801 RC3 1.0335 FAU .34749 RRT .5677 RRF -.9259 RTF -.6092 CRT -.8799 CRS .7110 CST -.8932
FDE 1.1699 FRA-6.3055 FC-13.6092 BSP 5173 SGB 1768.0 R23 -.3724 R13 -.8538 LSA 1072.0 MSA 367.1 SSA 55.1
BDE .4688 BRA .5007 BC3 1.6449 FSP 4405 SG1 1566.1 SG2 820.5 THA 42.42 EL1 597.6 EL2 89.8 ALF 107.35

LAUNCH DATE DEC 26 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 471.526 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.002 GAL 6.80 AZL 90.31 HCA 141.12 SMA 185.62 ECC .23758 INC .3134 V1 30.282
RP 229.67 LAP -.20 LOP 235.38 VP 20.994 GAP .67 AZP 89.76 TAL 36.72 TAP 177.84 RCA 141.52 APO 229.72 V2 23.948
RC 231.027 GL -2.19 GP 11.40 ZAL 32.07 ZAP 129.85 ETS 168.93 ZAE 163.52 ETE 129.51 ZAC 100.17 ETC 255.77 CLP 130.82

PLANETOCENTRIC CONIC

C3 22.061 VHL 4.697 DLA 16.59 RAL 128.08 RAD 6567.9 VEL 11.977 PTH 2.13 VHP 3.862 DPA 9.04 RAP 190.99 ECC 1.3631

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 20 14	2781.62	-28.12	80.48	357.16	93.48	12 6 36	2181.6	-27.34	71.91
90.00	3 50 3	4338.26	4.49	179.71	350.03	62.01	5 2 21	3738.3	.71	173.06
100.00	12 50 58	2489.06	-29.53	58.85	357.04	94.88	13 32 27	1889.1	-28.54	50.18
100.00	5 2 1	4106.06	5.73	161.96	349.35	60.61	6 10 27	3506.1	1.77	155.41
110.00	14 19 56	2210.65	-33.20	37.19	356.53	98.65	14 56 47	1610.6	-31.65	28.31
110.00	5 49 31	3957.23	8.89	148.73	347.41	56.86	6 55 28	3357.2	4.46	142.44

DIFFERENTIAL CORRECTIONS
TDE .1365 TRA -.3659 TC3 1.1864 BAU .4773
RDE -.4453 RRA .4160 RC3 1.1005 FAU .35931
FDE 1.1494 FRA-6.5897 FC-14.1005 BSP 5132
BDE .4657 BRA .5540 BC3 1.6182 FSP 4586

MID-COURSE EXECUTION ACCURACY
SGT 1219.3 SGR 1282.2 SG3 1360.0
RRT .5213 RRF -.9362 RTF -.5535
SGB 1769.4 R23 -.3558 R13 -.8694
SG1 1544.1 SG2 864.0 THA 47.76

ORBIT DETERMINATION ACCURACY
ST 219.9 SR 566.8 SS 970.4
CRT -.8954 CRS .7121 CST -.8940
LSA 1083.6 MSA 366.1 SSA 54.5
EL1 600.9 EL2 92.4 ALF 109.65

LAUNCH DATE DEC 26 1964 FLIGHT TIME 218.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 475.381 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.989 GAL 6.81 AZL 90.37 HCA 142.15 SMA 185.39 ECC .23679 INC .3739 V1 30.282
RP 229.28 LAP -.23 LOP 236.41 VP 21.019 GAP .31 AZP 89.70 TAL 36.85 TAP 179.01 RCA 141.49 APO 229.29 V2 23.988
RC 232.913 GL -2.61 GP 11.88 ZAL 31.95 ZAP 128.20 ETS 169.10 ZAE 161.99 ETE 132.93 ZAC 100.51 ETC 255.77 CLP 129.20

PLANETOCENTRIC CONIC

C3 22.014 VHL 4.692 DLA 16.21 RAL 127.82 RAD 6567.9 VEL 11.975 PTH 2.13 VHP 3.797 DPA 9.72 RAP 190.67 ECC 1.3623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 22 51	2767.12	-28.06	79.43	356.69	94.01	12 8 58	2167.1	-27.20	70.87
90.00	3 45 23	4351.75	4.92	180.46	349.67	62.08	4 57 55	3751.8	1.14	173.82
100.00	12 53 15	2475.55	-29.45	57.85	356.56	95.39	13 34 31	1875.6	-28.39	49.21
100.00	4 57 40	4118.55	6.14	162.65	349.00	60.69	6 6 18	3518.5	2.19	156.09
110.00	14 21 36	2199.16	-33.08	36.32	356.02	99.16	14 58 15	1599.2	-31.46	27.47
110.00	5 45 49	3967.71	9.28	149.30	347.09	56.95	6 51 56	3367.7	4.86	142.99

DIFFERENTIAL CORRECTIONS
TDE .1513 TRA -.4097 TC3 1.0868 BAU .4703
RDE -.4369 RRA .4543 RC3 1.1716 FAU .37113
FDE 1.1158 FRA-6.8788 FC-14.5952 BSP 5122
BDE .4624 BRA .6118 BC3 1.5981 FSP 4761

MID-COURSE EXECUTION ACCURACY
SGT 1160.0 SGR 1351.8 SG3 1409.0
RRT .4602 RRF -.9453 RTF -.4841
SGB 1781.3 R23 -.3206 R13 -.8910
SG1 1532.1 SG2 908.7 THA 54.23

ORBIT DETERMINATION ACCURACY
ST 243.9 SR 561.9 SS 979.4
CRT -.9094 CRS .7126 CST -.8917
LSA 1094.5 MSA 365.7 SSA 53.8
EL1 605.3 EL2 94.2 ALF 112.11

LAUNCH DATE DEC 26 1964 FLIGHT TIME 220.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 479.246 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.977 GAL 6.81 AZL 90.44 HCA 143.18 SMA 185.18 ECC .23604 INC .4381 V1 30.282
RP 228.89 LAP -.26 LOP 237.45 VP 21.047 GAP -.05 AZP 89.65 TAL 36.97 TAP 180.15 RCA 141.47 APO 228.89 V2 24.029
RC 234.778 GL -3.06 GP 12.39 ZAL 31.86 ZAP 126.53 ETS 169.27 ZAE 160.38 ETE 135.88 ZAC 100.87 ETC 255.78 CLP 127.54

PLANETOCENTRIC CONIC

C3 21.967 VHL 4.687 DLA 15.81 RAL 127.58 RAD 6567.9 VEL 11.973 PTH 2.13 VHP 3.736 DPA 10.44 RAP 190.33 ECC 1.3615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 25 43	2751.76	-27.98	78.31	356.23	94.56	12 11 35	2151.8	-27.05	69.77
90.00	3 40 34	4366.07	5.37	181.27	349.33	62.16	4 53 21	3766.1	1.61	174.62
100.00	12 55 48	2461.24	-29.35	56.80	356.09	95.94	13 36 49	1861.2	-28.22	48.18
100.00	4 53 10	4131.82	6.58	163.39	348.67	60.78	6 2 2	3531.8	2.64	156.82
110.00	14 23 28	2186.94	-32.94	35.39	355.51	99.69	14 59 55	1586.9	-31.26	26.57
110.00	5 42 0	3978.88	9.69	149.90	346.78	57.06	6 48 19	3378.9	5.28	143.58

DIFFERENTIAL CORRECTIONS
TDE .1664 TRA -.4579 TC3 .9802 BAU .4657
RDE -.4276 RRA .4947 RC3 1.2467 FAU .38275
FDE 1.0718 FRA-7.1649 FC-15.0846 BSP 5154
BDE .4588 BRA .6741 BC3 1.5859 FSP 4931

MID-COURSE EXECUTION ACCURACY
SGT 1106.4 SGR 1426.2 SG3 1457.4
RRT .3814 RRF -.9532 RTF -.3981
SGB 1805.0 R23 -.2631 R13 -.9170
SG1 1534.4 SG2 950.6 THA 61.97

ORBIT DETERMINATION ACCURACY
ST 269.4 SR 556.8 SS 987.2
CRT -.9216 CRS .7133 CST -.8876
LSA 1104.9 MSA 365.4 SSA 53.1
EL1 611.2 EL2 95.2 ALF 114.67

LAUNCH DATE DEC 26 1964 FLIGHT TIME 222.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 483.125 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.966 GAL 6.81 AZL 90.51 HCA 144.22 SMA 184.99 ECC .23532 INC .5058 V1 30.282
RP 228.51 LAP -.30 LOP 238.48 VP 21.076 GAP -.40 AZP 89.59 TAL 37.07 TAP 181.29 RCA 141.46 APO 228.52 V2 24.070
RC 236.623 GL -3.54 GP 12.92 ZAL 31.79 ZAP 124.82 ETS 169.47 ZAE 158.68 ETE 138.43 ZAC 101.25 ETC 255.79 CLP 125.86

PLANETOCENTRIC CONIC

C3 21.919 VHL 4.682 DLA 15.37 RAL 127.35 RAD 6567.9 VEL 11.971 PTH 2.13 VHP 3.679 DPA 11.19 RAP 189.98 ECC 1.3607

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 28 51	2735.51	-27.88	77.13	355.77	95.14	12 14 26	2135.5	-26.88	68.61
90.00	3 35 36	4381.25	5.86	182.12	349.00	62.25	4 48 38	3781.3	2.10	175.46
100.00	12 58 36	2446.07	-29.24	55.68	355.61	96.52	13 39 22	1846.1	-28.03	47.09
100.00	4 48 32	4145.92	7.05	164.17	348.35	60.88	5 57 38	3545.9	3.12	157.60
110.00	14 25 34	2173.95	-32.79	34.41	355.00	100.25	15 1 48	1574.0	-31.03	25.63
110.00	5 38 4	3990.80	10.13	150.54	346.48	57.18	6 44 34	3390.8	5.73	144.21

DIFFERENTIAL CORRECTIONS
TDE .1806 TRA -.5114 TC3 .8650 BAU .4637
RDE -.4178 RRA .5370 RC3 1.3251 FAU .39387
FDE 1.0235 FRA-7.4443 FC-15.5572 BSP 5262
BDE .4552 BRA .7415 BC3 1.5824 FSP 5111

MID-COURSE EXECUTION ACCURACY
SGT 1061.2 SGR 1505.1 SG3 1504.1
RRT .2815 RRF -.9600 RTF -.2917
SGB 1841.6 R23 -.1841 R13 -.9425
SG1 1556.1 SG2 984.9 THA 70.86

ORBIT DETERMINATION ACCURACY
ST 295.6 SR 552.0 SS 994.7
CRT -.9313 CRS .7157 CST -.8845
LSA 1116.1 MSA 364.6 SSA 52.3
EL1 618.7 EL2 96.1 ALF 117.21

LAUNCH DATE DEC 26 1964 FLIGHT TIME 224.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 487.014 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.955 GAL 6.81 AZL 90.58 HCA 145.26 SMA 184.81 ECC .23465 INC .5770 V1 30.282
RP 228.12 LAP -.33 LOP 239.52 VP 21.106 GAP -.74 AZP 89.53 TAL 37.15 TAP 182.41 RCA 141.45 APO 228.18 V2 24.111
RC 238.446 GL -4.04 GP 13.48 ZAL 31.76 ZAP 123.08 ETS 169.68 ZAE 156.91 ETE 140.65 ZAC 101.65 ETC 255.80 CLP 124.14

PLANETOCENTRIC CONIC

C3 21.869 VHL 4.676 DLA 14.91 RAL 127.13 RAD 6567.9 VEL 11.969 PTH 2.13 VHP 3.626 DPA 11.97 RAP 189.62 ECC 1.3599

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 32 15	2718.30	-27.77	75.88	355.30	95.76	12 17 33	2118.3	-26.68	67.39
90.00	3 30 28	4397.37	6.37	183.03	348.69	62.35	4 43 45	3797.4	2.61	176.36
100.00	13 1 39	2429.98	-29.11	54.51	355.13	97.12	13 42 9	1830.0	-27.82	45.94
100.00	4 43 44	4160.92	7.55	165.01	348.05	60.99	5 53 5	3560.9	3.62	158.42
110.00	14 27 54	2160.15	-32.62	33.37	354.49	100.84	15 3 54	1560.1	-30.78	24.63
110.00	5 34 0	4003.52	10.60	151.22	346.20	57.31	6 40 43	3403.5	6.22	144.88

DIFFERENTIAL CORRECTIONS
TDE .1952 TRA -.5686 TC3 .7439 BAU .4656
RDE -.4065 RRA .5818 RC3 1.4081 FAU .40475
FDE .9580 FRA-7.7221 FC-16.0227 BSP 5412
BDE .4509 BRA .8135 BC3 1.5926 FSP 5271

MID-COURSE EXECUTION ACCURACY
SGT 1030.0 SGR 1589.6 SG3 1549.9
RRT .1621 RRF -.9659 RTF -.1671
SGB 1894.1 R23 -.0952 R13 -.9613
SG1 1604.1 SG2 1007.2 THA 80.04

ORBIT DETERMINATION ACCURACY
ST 323.1 SR 546.4 SS 1000.9
CRT -.9410 CRS .7174 CST -.8782
LSA 1126.4 MSA 364.9 SSA 51.4
EL1 627.6 EL2 95.2 ALF 119.85

LAUNCH DATE DEC 26 1964 FLIGHT TIME 226.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 490.913 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.946 GAL 6.80 AZL 90.65 HCA 146.30 SMA 184.65 ECC .23400 INC .6521 V1 30.282
RP 227.73 LAP -.36 LOP 240.56 VP 21.138 GAP -1.07 AZP 89.46 TAL 37.21 TAP 183.51 RCA 141.44 APO 227.86 V2 24.152
RC 240.248 GL -4.57 GP 14.06 ZAL 31.75 ZAP 121.31 ETS 169.91 ZAE 155.08 ETE 142.60 ZAC 102.07 ETC 255.82 CLP 122.40

PLANETOCENTRIC CONIC

C3 21.820 VHL 4.671 DLA 14.41 RAL 126.92 RAD 6567.9 VEL 11.967 PTH 2.13 VHP 3.577 DPA 12.79 RAP 189.24 ECC 1.3591

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 35 56	2700.09	-27.64	74.57	354.84	96.41	12 20 56	2100.1	-26.47	66.10
90.00	3 25 7	4414.49	6.91	184.00	348.39	62.47	4 38 42	3814.5	3.16	177.32
100.00	13 4 59	2412.93	-28.96	53.26	354.65	97.76	13 45 12	1812.9	-27.58	44.73
100.00	4 38 46	4176.89	8.07	165.90	347.76	61.12	5 48 23	3576.9	4.16	159.30
110.00	14 30 27	2145.47	-32.42	32.27	353.97	101.47	15 6 13	1545.5	-30.50	23.58
110.00	5 29 46	4017.11	11.10	151.96	345.94	57.46	6 36 43	3417.1	6.73	145.59

DIFFERENTIAL CORRECTIONS
TDE .2091 TRA -.6312 TC3 .6149 BAU .4717
RDE -.3937 RRA .6291 RC3 1.4957 FAU .41522
FDE .8797 FRA-7.9930 FC-16.4741 BSP 5634
BDE .4458 BRA .8912 BC3 1.6172 FSP 5423

MID-COURSE EXECUTION ACCURACY
SGT 1017.2 SGR 1679.4 SG3 1594.3
RRT .0246 RRF -.9710 RTF -.0252
SGB 1963.5 R23 -.0125 R13 -.9709
SG1 1679.7 SG2 1016.7 THA 88.65

ORBIT DETERMINATION ACCURACY
ST 351.5 SR 540.4 SS 1006.3
CRT -.9498 CRS .7197 CST -.8712
LSA 1136.7 MSA 365.5 SSA 50.4
EL1 637.9 EL2 93.2 ALF 122.48

LAUNCH DATE DEC 26 1964 FLIGHT TIME 228.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 494.826 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.937 GAL 6.80 AZL 90.73 HCA 147.35 SMA 184.50 ECC .23339 INC .7323 V1 30.282
RP 227.34 LAP -.39 LOP 241.61 VP 21.172 GAP -1.40 AZP 89.38 TAL 37.26 TAP 184.61 RCA 141.44 APO 227.56 V2 24.193
RC 242.030 GL -5.14 GP 14.68 ZAL 31.76 ZAP 119.52 ETS 170.16 ZAE 153.18 ETE 144.33 ZAC 102.51 ETC 255.83 CLP 120.62

PLANETOCENTRIC CONIC

C3 21.773 VHL 4.666 DLA 13.88 RAL 126.72 RAD 6567.9 VEL 11.965 PTH 2.13 VHP 3.533 DPA 13.65 RAP 188.86 ECC 1.3583

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 39 54	2680.84	-27.49	73.18	354.36	97.09	12 24 35	2080.8	-26.22	64.74
90.00	3 19 34	4432.69	7.48	185.04	348.11	62.61	4 33 26	3832.7	3.75	178.34
100.00	13 8 34	2394.88	-28.78	51.95	354.16	98.43	13 48 29	1794.9	-27.32	43.45
100.00	4 33 35	4193.89	8.63	166.86	347.49	61.27	5 43 28	3593.9	4.73	160.24
110.00	14 33 15	2129.90	-32.21	31.10	353.44	102.13	15 8 45	1529.9	-30.20	22.46
110.00	5 25 23	4031.63	11.63	152.75	345.69	57.63	6 32 35	3431.6	7.27	146.36

DIFFERENTIAL CORRECTIONS
TDE .2322 TRA -.6880 TC3 .4977 BAU .4865
RDE -.3749 RRA .6835 RC3 1.5956 FAU .42729
FDE .7384 FRA-8.3043 FC-16.9898 BSP 5813
BDE .4410 BRA .9698 BC3 1.6714 FSP 5462

MID-COURSE EXECUTION ACCURACY
SGT 1026.7 SGR 1782.3 SG3 1645.1
RRT -.1048 RRF -.9756 RTF .1040
SGB 2056.9 R23 .0480 R13 -.9744
SG1 1787.1 SG2 1018.3 THA 95.12

ORBIT DETERMINATION ACCURACY
ST 386.8 SR 530.3 SS 1011.5
CRT -.9669 CRS .7148 CST -.8384
LSA 1144.5 MSA 376.3 SSA 48.5
EL1 651.4 EL2 80.3 ALF 125.82

LAUNCH DATE DEC 26 1964 FLIGHT TIME 230.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 498.747 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.929 GAL 6.79 AZL 90.82 HCA 148.40 SMA 184.37 ECC .23280 INC .8169 V1 30.282
RP 226.95 LAP -.43 LOP 242.66 VP 21.207 GAP -1.72 AZP 89.30 TAL 37.28 TAP 185.68 RCA 141.44 APO 227.29 V2 24.235
RC 243.792 GL -5.74 GP 15.32 ZAL 31.82 ZAP 117.71 ETS 170.43 ZAE 151.24 ETE 145.86 ZAC 102.97 ETC 255.85 CLP 118.82

PLANETOCENTRIC CONIC

C3 21.725 VHL 4.661 DLA 13.30 RAL 126.53 RAD 6567.9 VEL 11.963 PTH 2.13 VHP 3.494 DPA 14.54 RAP 188.47 ECC 1.3575

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 44 11	2660.39	-27.31	71.71	353.88	97.80	12 28 32	2060.4	-25.94	63.31
90.00	3 13 46	4452.08	8.08	186.14	347.84	62.77	4 27 58	3852.1	4.37	179.43
100.00	13 12 28	2375.67	-28.58	50.55	353.67	99.14	13 52 4	1775.7	-27.03	42.10
100.00	4 28 10	4212.03	9.22	167.88	347.23	61.44	5 38 22	3612.0	5.34	161.24
110.00	14 36 20	2113.28	-31.96	29.87	352.91	102.82	15 11 33	1513.3	-29.87	21.28
110.00	5 20 48	4047.18	12.19	153.60	345.46	57.82	6 28 15	3447.2	7.86	147.19

DIFFERENTIAL CORRECTIONS
TDE .2404 TRA -.7638 TC3 .3469 BAU .5008
RDE -.3604 RRA .7344 RC3 1.6889 FAU .43554
FDE .6514 FRA-8.5356 FC-17.3561 BSP 6234
BDE .4333 BRA 1.0596 BC3 1.7241 FSP 5633

MID-COURSE EXECUTION ACCURACY
SGT 1059.5 SGR 1880.3 SG3 1681.3
RRT -.2594 RRF -.9792 RTF .2622
SGB 2158.3 R23 .0971 R13 -.9744
SG1 1908.3 SG2 1008.3 THA 101.60

ORBIT DETERMINATION ACCURACY
ST 413.8 SR 525.3 SS 1016.5
CRT -.9709 CRS .7224 CST -.8383
LSA 1156.5 MSA 375.3 SSA 47.5
EL1 664.1 EL2 78.5 ALF 128.03

LAUNCH DATE DEC 26 1964 FLIGHT TIME 232.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 502.678 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.921 GAL 6.77 AZL 90.91 HCA 149.45 SMA 184.24 ECC .23224 INC .9071 V1 30.282
RP 226.56 LAP -.46 LOP 243.72 VP 21.243 GAP -2.03 AZP 89.22 TAL 37.29 TAP 186.74 RCA 141.45 APO 227.03 V2 24.277
RC 245.534 GL -6.38 GP 15.99 ZAL 31.90 ZAP 115.87 ETS 170.73 ZAE 149.25 ETE 147.24 ZAC 103.46 ETC 255.87 CLP 116.99

PLANETOCENTRIC CONIC

C3 21.679 VHL 4.656 DLA 12.68 RAL 126.35 RAD 6567.9 VEL 11.961 PTH 2.13 VHP 3.459 DPA 15.47 RAP 188.08 ECC 1.3568

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 48 48	2638.69	-27.10	70.16	353.39	98.55	12 32 46	2038.7	-25.63	61.80
90.00	3 7 42	4472.75	8.72	187.32	347.59	62.95	4 22 15	3872.8	5.03	180.59
100.00	13 16 41	2355.26	-28.36	49.08	353.16	99.88	13 55 56	1755.3	-26.70	40.67
100.00	4 22 30	4231.42	9.85	168.97	346.98	61.64	5 33 2	3631.4	5.99	162.32
110.00	14 39 40	2095.59	-31.69	28.56	352.36	103.55	15 14 35	1495.6	-29.50	20.04
110.00	5 16 1	4063.86	12.80	154.52	345.24	58.03	6 23 44	3463.9	8.48	148.08

DIFFERENTIAL CORRECTIONS
TDE .2480 TRA -.8437 TC3 .1903 BAU .5206
RDE -.3442 RRA .7880 RC3 1.7862 FAU .44289
FDE .5508 FRA-8.7532 FC-17.6866 BSP 6718
BDE .4242 BRA 1.1544 BC3 1.7963 FSP 5794

MID-COURSE EXECUTION ACCURACY
SGT 1121.1 SGR 1983.4 SG3 1714.2
RRT -.4012 RRF -.9823 RTF .4063
SGB 2278.3 R23 .1294 R13 -.9739
SG1 2050.3 SG2 993.4 THA 106.84

ORBIT DETERMINATION ACCURACY
ST 441.7 SR 520.3 SS 1021.2
CRT -.9754 CRS .7308 CST -.8360
LSA 1168.7 MSA 375.1 SSA 46.3
EL1 678.4 EL2 74.7 ALF 130.21

LAUNCH DATE DEC 26 1964 FLIGHT TIME 234.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 506.620 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.915 GAL 6.76 AZL 91.00 HCA 150.51 SMA 184.13 ECC .23171 INC 1.0037 V1 30.282
RP 226.17 LAP -.49 LOP 244.77 VP 21.280 GAP -2.34 AZP 89.13 TAL 37.29 TAP 187.79 RCA 141.47 APO 226.80 V2 24.318
RC 247.256 GL -7.07 GP 16.70 ZAL 32.02 ZAP 114.02 ETS 171.05 ZAE 147.21 ETE 148.48 ZAC 103.99 ETC 255.88 CLP 115.15

PLANETOCENTRIC CONIC

C3 21.637 VHL 4.652 DLA 12.02 RAL 126.17 RAD 6567.9 VEL 11.959 PTH 2.13 VHP 3.429 DPA 16.44 RAP 187.69 ECC 1.3561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 53 44	2615.67	-26.85	68.52	352.89	99.34	12 37 20	2015.7	-25.29	60.20
90.00	3 1 21	4494.84	9.41	188.58	347.35	63.17	4 16 16	3894.8	5.73	181.83
100.00	13 21 12	2333.57	-28.09	47.52	352.65	100.66	14 0 6	1733.6	-26.33	39.16
100.00	4 16 34	4252.13	10.52	170.15	346.76	61.86	5 27 26	3652.1	6.68	163.47
110.00	14 43 17	2076.73	-31.38	27.18	351.81	104.31	15 17 54	1476.7	-29.10	18.72
110.00	5 10 58	4081.77	13.44	155.51	345.04	58.27	6 19 0	3481.8	9.15	149.04

DIFFERENTIAL CORRECTIONS
TDE .2555 TRA -.9271 TC3 .0295 BAU .5465
RDE -.3250 RRA .8448 RC3 1.8890 FAU .44961
FDE .4279 FRA-8.9580 FC-17.9901 BSP 7253
BDE .4134 BRA 1.2542 BC3 1.8893 FSP 5926

MID-COURSE EXECUTION ACCURACY
SGT 1209.5 SGR 2092.9 SG3 1744.4
RRT -.5214 RRF -.9850 RTF .5274
SGB 2417.3 R23 .1494 R13 -.9738
SG1 2211.1 SG2 976.9 THA 111.07

ORBIT DETERMINATION ACCURACY
ST 470.9 SR 514.7 SS 1025.6
CRT -.9809 CRS .7395 CST -.8287
LSA 1180.7 MSA 377.3 SSA 44.8
EL1 694.3 EL2 67.9 ALF 132.40

LAUNCH DATE DEC 26 1964 FLIGHT TIME 236.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 510.572 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.909 GAL 6.74 AZL 91.11 HCA 151.57 SMA 184.03 ECC .23120 INC 1.1072 V1 30.282
RP 225.78 LAP -.53 LOP 245.83 VP 21.319 GAP -2.63 AZP 89.03 TAL 37.26 TAP 188.83 RCA 141.48 APO 226.58 V2 24.360
RC 248.959 GL -7.81 GP 17.45 ZAL 32.18 ZAP 112.15 ETS 171.40 ZAE 145.14 ETE 149.60 ZAC 104.54 ETC 255.90 CLP 113.28

PLANETOCENTRIC CONIC

C3 21.599 VHL 4.648 DLA 11.30 RAL 126.00 RAD 6567.9 VEL 11.957 PTH 2.13 VHP 3.404 DPA 17.45 RAP 187.30 ECC 1.3555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 59 2	2591.18	-26.57	66.78	352.38	100.17	12 42 14	1991.2	-24.90	58.51
90.00	2 54 39	4518.49	10.13	189.94	347.13	63.42	4 9 58	3918.5	6.48	183.17
100.00	13 26 4	2310.49	-27.79	45.87	352.12	101.48	14 4 35	1710.5	-25.92	37.57
100.00	4 10 18	4274.42	11.23	171.42	346.55	62.12	5 21 33	3674.4	7.42	164.71
110.00	14 47 12	2056.62	-31.03	25.72	351.24	105.11	15 21 29	1456.6	-28.65	17.33
110.00	5 5 40	4101.05	14.13	156.58	344.86	58.54	6 14 1	3501.1	9.86	150.07

DIFFERENTIAL CORRECTIONS
TDE .2612 TRA-1.0148 TC3 -.1373 BAU .5777
RDE -.3034 RRA .9047 RC3 1.9957 FAU .45515
FDE .2898 FRA-9.1454 FC-18.2429 BSP 7849
BDE .4004 BRA 1.3595 BC3 2.0004 FSP 6039

MID-COURSE EXECUTION ACCURACY
SGT 1322.0 SGR 2207.9 SG3 1770.4
RRT -.6195 RRF -.9873 RTF .6256
SGB 2573.4 R23 .1609 R13 -.9743
SG1 2387.8 SG2 959.5 THA 114.58

ORBIT DETERMINATION ACCURACY
ST 500.2 SR 509.3 SS 1030.8
CRT -.9862 CRS .7500 CST -.8197
LSA 1193.8 MSA 380.8 SSA 43.1
EL1 711.4 EL2 59.3 ALF 134.48

LAUNCH DATE DEC 26 1964 FLIGHT TIME 238.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 514.535 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.904 GAL 6.72 AZL 91.22 HCA 152.63 SMA 183.94 ECC .23071 INC 1.2183 V1 30.282
RP 225.38 LAP -.56 LOP 246.90 VP 21.358 GAP -2.92 AZP 88.92 TAL 37.22 TAP 189.85 RCA 141.50 APO 226.38 V2 24.402
RC 250.643 GL -8.60 GP 18.23 ZAL 32.38 ZAP 110.27 ETS 171.77 ZAE 143.04 ETE 150.63 ZAC 105.14 ETC 255.92 CLP 111.40

PLANETOCENTRIC CONIC

C3 21.569 VHL 4.644 DLA 10.52 RAL 125.83 RAD 6567.9 VEL 11.956 PTH 2.13 VHP 3.384 DPA 18.50 RAP 186.93 ECC 1.3550

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 4 44	2565.11	-26.24	64.94	351.86	101.04	12 47 29	1965.1	-24.46	56.73
90.00	2 47 35	4543.88	10.90	191.41	346.93	63.70	4 3 19	3943.9	7.28	184.60
100.00	13 31 18	2285.87	-27.44	44.13	351.58	102.34	14 9 24	1685.9	-25.47	35.88
100.00	4 3 41	4298.35	11.99	172.79	346.36	62.41	5 15 19	3698.4	8.20	166.05
110.00	14 51 26	2035.12	-30.64	24.16	350.66	105.95	15 25 22	1435.1	-28.15	15.85
110.00	5 0 2	4121.87	14.86	157.74	344.70	58.86	6 8 44	3521.9	10.63	151.20

DIFFERENTIAL CORRECTIONS
TDE .2649 TRA-1.1066 TC3 -.3089 BAU .6142
RDE -.2783 RRA .9684 RC3 2.1075 FAU .45968
FDE .1307 FRA-9.3161 FC-18.4506 BSP 8497
BDE .3842 BRA 1.4705 BC3 2.1300 FSP 6125

MID-COURSE EXECUTION ACCURACY
SGT 1455.1 SGR 2329.5 SG3 1792.4
RRT -.6966 RRF -.9893 RTF .7024
SGB 2746.6 R23 .1667 R13 -.9753
SG1 2579.7 SG2 942.6 THA 117.49

ORBIT DETERMINATION ACCURACY
ST 529.5 SR 504.2 SS 1037.3
CRT -.9909 CRS .7624 CST -.8079
LSA 1208.2 MSA 386.4 SSA 41.2
EL1 729.5 EL2 49.2 ALF 136.42

LAUNCH DATE DEC 26 1964 FLIGHT TIME 240.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 518.507 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.899	GAL	6.70	AZL	91.34	HCA	153.70	SMA	183.87	ECC	.23025	INC	1.3378	V1	30.282
RP	224.99	LAP	-.59	LOP	247.97	VP	21.399	GAP	-3.21	AZP	88.80	TAL	37.16	TAP	190.86	RCA	141.53	APO	226.20	V2	24.444
RC	252.307	GL	-9.46	GP	19.06	ZAL	32.62	ZAP	108.39	ETS	172.18	ZAE	140.90	ETE	151.58	ZAC	105.77	ETC	255.94	CLP	109.50

PLANETOCENTRIC CONIC

C3	21.548	VHL	4.642	DLA	9.68	RAL	125.65	RAD	6567.9	VEL	11.955	PTH	2.13	VHP	3.369	DPA	19.59	RAP	186.57	ECC	1.3546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 10 50	2537.31	-25.87	62.99	351.33	101.94	12 53 7	1937.3	-23.96	54.84
90.00	2 40 5	4571.21	11.72	193.00	346.76	64.04	3 56 16	3971.2	8.13	186.16
100.00	13 36 56	2259.59	-27.05	42.27	351.03	103.24	14 14 36	1659.6	-24.96	34.10
100.00	3 56 40	4324.16	12.80	174.28	346.20	62.76	5 8 44	3724.2	9.05	167.50
110.00	14 56 1	2012.12	-30.20	22.52	350.07	106.84	15 29 33	1412.1	-27.60	14.29
110.00	4 54 4	4144.39	15.65	159.01	344.57	59.22	6 3 9	3544.4	11.46	152.42

DIFFERENTIAL CORRECTIONS

TDE	.2654	TRA	-1.2035	TC3	-.4871	BAU	.6558
RDE	-.2492	RRA	1.0360	RC3	2.2237	FAU	.46295
FDE	-.0500	FRA	-9.4666	FC	-18.6001	BSP	9193
BDE	.3641	BRA	1.5880	BC3	2.2764	FSP	6187

MID-COURSE EXECUTION ACCURACY

SGT	1607.1	SGR	2457.6	SG3	1809.7		
RRT	-.7569	RRF	-.9909	RTF	.7620		
SGB	2936.4	R23	.1686	R13	-.9767		
SG1	2786.4	SG2	926.4	THA	119.98		

ORBIT DETERMINATION ACCURACY

ST	558.5	SR	499.9	SS	1046.2		
CRT	-.9941	CRS	.7775	CST	-.7944		
LSA	1224.7	MSA	393.8	SSA	39.1		
EL1	748.5	EL2	40.3	ALF	138.19		

LAUNCH DATE DEC 26 1964 FLIGHT TIME 242.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 522.490 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.895	GAL	6.68	AZL	91.47	HCA	154.77	SMA	183.80	ECC	.22980	INC	1.4676	V1	30.282
RP	224.60	LAP	-.63	LOP	249.04	VP	21.441	GAP	-3.49	AZP	88.67	TAL	37.09	TAP	191.86	RCA	141.56	APO	226.03	V2	24.485
RC	253.951	GL	-10.39	GP	19.94	ZAL	32.91	ZAP	106.50	ETS	172.62	ZAE	138.74	ETE	152.45	ZAC	106.45	ETC	255.96	CLP	107.59

PLANETOCENTRIC CONIC

C3	21.539	VHL	4.641	DLA	8.77	RAL	125.47	RAD	6567.9	VEL	11.955	PTH	2.13	VHP	3.360	DPA	20.72	RAP	186.23	ECC	1.3545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 17 23	2507.60	-25.43	60.93	350.78	102.89	12 59 11	1907.6	-23.40	52.84
90.00	2 32 6	4600.72	12.59	194.73	346.61	64.43	3 48 47	4000.7	9.05	187.84
100.00	13 43 0	2231.48	-26.59	40.31	350.47	104.18	14 20 11	1631.5	-24.38	32.20
100.00	3 49 11	4352.07	13.67	175.90	346.06	63.15	5 1 43	3752.1	9.96	169.08
110.00	15 0 58	1987.48	-29.70	20.77	349.46	107.76	15 34 6	1387.5	-26.98	12.64
110.00	4 47 42	4168.84	16.50	160.40	344.46	59.63	5 57 11	3568.8	12.34	153.76

DIFFERENTIAL CORRECTIONS

TDE	.2635	TRA	-1.3042	TC3	-.6676	BAU	.7017
RDE	-.2163	RRA	1.1075	RC3	2.3437	FAU	.46472
FDE	-.2461	FRA	-9.5901	FC	-18.6793	BSP	9950
BDE	.3409	BRA	1.7110	BC3	2.4369	FSP	6224

MID-COURSE EXECUTION ACCURACY

SGT	1773.2	SGR	2591.8	SG3	1821.0		
RRT	-.8027	RRF	-.9924	RTF	.8071		
SGB	3140.3	R23	.1681	R13	-.9782		
SG1	3004.9	SG2	912.2	THA	122.08		

ORBIT DETERMINATION ACCURACY

ST	587.4	SR	497.8	SS	1057.8		
CRT	-.9949	CRS	.7962	CST	-.7789		
LSA	1244.1	MSA	403.5	SSA	36.7		
EL1	769.1	EL2	38.4	ALF	139.75		

LAUNCH DATE DEC 26 1964 FLIGHT TIME 244.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 526.482 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.892	GAL	6.65	AZL	91.61	HCA	155.85	SMA	183.74	ECC	.22937	INC	1.6087	V1	30.282
RP	224.21	LAP	-.66	LOP	250.12	VP	21.483	GAP	-3.76	AZP	88.53	TAL	37.00	TAP	192.84	RCA	141.60	APO	225.88	V2	24.527
RC	255.576	GL	-11.39	GP	20.86	ZAL	33.26	ZAP	104.62	ETS	173.10	ZAE	136.55	ETE	153.27	ZAC	107.18	ETC	255.97	CLP	105.67

PLANETOCENTRIC CONIC

C3	21.545	VHL	4.642	DLA	7.78	RAL	125.29	RAD	6567.9	VEL	11.955	PTH	2.13	VHP	3.357	DPA	21.90	RAP	185.91	ECC	1.3546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 24 26	2475.77	-24.93	58.73	350.22	103.88	13 5 42	1875.8	-22.78	50.72
90.00	2 23 35	4632.69	13.52	196.61	346.49	64.88	3 40 48	4032.7	10.03	189.68
100.00	13 49 31	2201.34	-26.07	38.22	349.89	105.16	14 26 13	1601.3	-23.74	30.20
100.00	3 41 11	4382.36	14.59	177.68	345.96	63.62	4 54 13	3782.4	10.93	170.80
110.00	15 6 19	1961.00	-29.13	18.92	348.84	108.73	15 39 0	1361.0	-26.30	10.88
110.00	4 40 52	4195.46	17.41	161.93	344.39	60.11	5 50 48	3595.5	13.30	155.22

DIFFERENTIAL CORRECTIONS

TDE	.2572	TRA	-1.4099	TC3	-.8530	BAU	.7515
RDE	-.1795	RRA	1.1824	RC3	2.4656	FAU	.46459
FDE	-.4527	FRA	-9.6788	FC	-18.6684	BSP	10767
BDE	.3136	BRA	1.8401	BC3	2.6090	FSP	6249

MID-COURSE EXECUTION ACCURACY

SGT	1952.8	SGR	2731.0	SG3	1824.8		
RRT	-.8383	RRF	-.9936	RTF	.8420		
SGB	3357.3	R23	.1660	R13	-.9797		
SG1	3234.8	SG2	898.9	THA	123.91		

ORBIT DETERMINATION ACCURACY

ST	615.7	SR	499.1	SS	1072.2		
CRT	-.9921	CRS	.8186	CST	-.7650		
LSA	1267.1	MSA	413.6	SSA	34.3		
EL1	791.1	EL2	48.8	ALF	141.02		

LAUNCH DATE DEC 26 1964 FLIGHT TIME 246.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 530.485 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.889	GAL	6.63	AZL	91.76	HCA	156.93	SMA	183.69	ECC	.22896	INC	1.7621	V1	30.282
RP	223.82	LAP	-.69	LOP	251.20	VP	21.527	GAP	-4.02	AZP	88.38	TAL	36.89	TAP	193.82	RCA	141.63	APO	225.75	V2	24.569
RC	257.180	GL	-12.49	GP	21.85	ZAL	33.67	ZAP	102.75	ETS	173.62	ZAE	134.34	ETE	154.03	ZAC	107.96	ETC	255.98	CLP	103.75

PLANETOCENTRIC CONIC

C3	21.573	VHL	4.645	DLA	6.70	RAL	125.09	RAD	6567.9	VEL	11.956	PTH	2.13	VHP	3.360	DPA	23.13	RAP	185.63	ECC	1.3550

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 32 2	2441.62	-24.35	56.39	349.64	104.92	13 12 43	1841.6	-22.07	48.47
90.00	2 14 26	4667.46	14.52	198.68	346.41	65.42	3 32 13	4067.5	11.08	191.69
100.00	13 56 34	2168.96	-25.48	36.00	349.30	106.19	14 32 43	1569.0	-23.02	28.06
100.00	3 32 35	4415.35	15.58	179.63	345.89	64.16	4 46 10	3815.4	11.98	172.69
110.00	15 12 7	1932.52	-28.50	16.95	348.20	109.73	15 44 19	1332.5	-25.54	9.02
110.00	4 33 31	4224.55	18.39	163.61	344.36	60.66	5 43 56	3624.5	14.34	156.84

DIFFERENTIAL CORRECTIONS

TDE	.2465	TRA	-1.5196	TC3	-1.0397	BAU	.8071
RDE	-.1330	RRA	1.2663	RC3	2.5981	FAU	.46416
FDE	-.7083	FRA	-9.7675	FC	-18.6274	BSP	11551
BDE	.2801	BRA	1.9781	BC3	2.7984	FSP	6184

MID-COURSE EXECUTION ACCURACY

SGT	2142.0	SGR	2885.4	SG3	1827.4		
RRT	-.8656	RRF	-.9946	RTF	.8685		
SGB	3593.5	R23	.1625	R13	-.9814		
SG1	3481.8	SG2	888.9	THA	125.37		

ORBIT DETERMINATION ACCURACY

ST	643.4	SR	504.8	SS	1096.9		
CRT	-.9828	CRS	.8449	CST	-.7446		
LSA	1298.5	MSA	429.7	SSA	31.4		
EL1	814.4	EL2	73.7	ALF	142.00		

LAUNCH DATE DEC 26 1964 FLIGHT TIME 248.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 534.497 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.886	GAL	6.60	AZL	91.93	HCA	158.01	SMA	183.65	ECC	.22856	INC	1.9308	V1	30.282
RP	223.44	LAP	-.72	LOP	252.28	VP	21.571	GAP	-4.28	AZP	88.21	TAL	36.77	TAP	194.78	RCA	141.68	APO	225.63	V2	24.611
RC	258.763	GL	-13.69	GP	22.89	ZAL	34.16	ZAP	100.89	ETS	174.18	ZAE	132.13	ETE	154.75	ZAC	108.81	ETC	255.99	CLP	101.84

PLANETOCENTRIC CONIC

C3	21.626	VHL	4.650	DLA	5.52	RAL	124.88	RAD	6567.9	VEL	11.958	PTH	2.13	VHP	3.369	DPA	24.41	RAP	185.40	ECC	1.3559

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 40 14	2404.83	-23.68	53.91	349.05	105.99	13 20 18	1804.8	-21.26	46.07
90.00	2 4 33	4705.44	15.58	200.96	346.37	66.05	3 22 58	4105.4	12.22	193.90
100.00	14 4 10	2134.06	-24.80	33.63	348.69	107.25	14 39 45	1534.1	-22.20	25.79
100.00	3 23 17	4451.44	16.64	181.79	345.87	64.80	4 37 29	3851.4	13.10	174.77
110.00	15 18 23	1901.80	-27.77	14.85	347.55	110.78	15 50 5	1301.8	-24.69	7.03
110.00	4 25 34	4256.47	19.44	165.49	344.37	61.31	5 36 30	3656.5	15.46	158.63

DIFFERENTIAL CORRECTIONS

TDE	.2301	TRA	-1.6346	TC3	-1.2287	BAU	.8654
RDE	-.0817	RRA	1.3543	RC3	2.7294	FAU	.46113
FDE	-.9654	FRA	-9.8114	FC	-18.4601	BSP	12407
BDE	.2442	BRA	2.1228	BC3	2.9932	FSP	6118

MID-COURSE EXECUTION ACCURACY

SGT	2341.0	SGR	3043.8	SG3	1819.9		
RRT	-.8872	RRF	-.9955	RTF	.8894		
SGB	3839.9	R23	.1585	R13	-.9829		
SG1	3737.8	SG2	879.7	THA	126.67		

ORBIT DETERMINATION ACCURACY

ST	670.8	SR	518.5	SS	1125.7
CRT	-.9672	CRS	.8736	CST	-.7293
LSA	1336.9	MSA	444.9	SSA	28.7
EL1	841.3	EL2	105.0	ALF	142.54

LAUNCH DATE DEC 26 1964 FLIGHT TIME 250.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 538.516 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.884	GAL	6.57	AZL	92.12	HCA	159.09	SMA	183.62	ECC	.22818	INC	2.1163	V1	30.282
RP	223.05	LAP	-.75	LOP	253.37	VP	21.616	GAP	-4.53	AZP	88.02	TAL	36.64	TAP	195.73	RCA	141.72	APO	225.52	V2	24.653
RC	260.326	GL	-15.01	GP	24.01	ZAL	34.73	ZAP	99.06	ETS	174.78	ZAE	129.90	ETE	155.43	ZAC	109.73	ETC	255.98	CLP	99.92

PLANETOCENTRIC CONIC

C3	21.712	VHL	4.660	DLA	4.22	RAL	124.65	RAD	6567.9	VEL	11.962	PTH	2.13	VHP	3.386	DPA	25.75	RAP	185.22	ECC	1.3573

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 49 7	2365.07	-22.91	51.25	348.46	107.11	13 28 32	1765.1	-20.35	43.51
90.00	1 53 50	4747.12	16.72	203.50	346.39	66.81	3 12 57	4147.1	13.44	196.36
100.00	14 12 26	2096.32	-24.01	31.10	348.08	108.36	14 47 23	1496.3	-21.28	23.37
100.00	3 13 12	4491.10	17.77	184.18	345.91	65.56	4 28 3	3891.1	14.32	177.09
110.00	15 25 13	1868.54	-26.95	12.61	346.88	111.87	15 56 22	1268.5	-23.74	4.92
110.00	4 16 54	4291.65	20.58	167.59	344.44	62.08	5 28 26	3691.6	16.68	160.63

DIFFERENTIAL CORRECTIONS

TDE	.2042	TRA	-1.7583	TC3	-1.4243	BAU	.9247
RDE	-.0303	RRA	1.4412	RC3	2.8494	FAU	.45397
FDE	-1.1873	FRA	-9.7694	FC	-18.1012	BSP	13405
BDE	.2065	BRA	2.2735	BC3	3.1856	FSP	6123

MID-COURSE EXECUTION ACCURACY

SGT	2554.4	SGR	3195.4	SG3	1795.3		
RRT	-.9049	RRF	-.9962	RTF	.9069		
SGB	4090.9	R23	.1542	R13	-.9843		
SG1	3997.5	SG2	868.8	THA	128.00		

ORBIT DETERMINATION ACCURACY

ST	698.3	SR	540.3	SS	1149.8
CRT	-.9521	CRS	.9006	CST	-.7301
LSA	1377.6	MSA	450.9	SSA	26.4
EL1	873.0	EL2	132.1	ALF	142.62

LAUNCH DATE DEC 26 1964 FLIGHT TIME 252.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 542.544 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.883	GAL	6.53	AZL	92.32	HCA	160.18	SMA	183.60	ECC	.22780	INC	2.3224	V1	30.282
RP	222.66	LAP	-.79	LOP	254.46	VP	21.661	GAP	-4.78	AZP	87.81	TAL	36.48	TAP	196.67	RCA	141.77	APO	225.42	V2	24.695
RC	261.869	GL	-16.46	GP	25.21	ZAL	35.39	ZAP	97.25	ETS	175.43	ZAE	127.66	ETE	156.07	ZAC	110.73	ETC	255.97	CLP	98.02

PLANETOCENTRIC CONIC

C3	21.842	VHL	4.674	DLA	2.79	RAL	124.40	RAD	6567.9	VEL	11.968	PTH	2.13	VHP	3.412	DPA	27.15	RAP	185.10	ECC	1.3595

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 58 48	2321.95	-22.02	48.40	347.86	108.27	13 37 30	1722.0	-19.32	40.77
90.00	1 42 7	4793.11	17.93	206.33	346.48	67.71	3 2 1	4193.1	14.75	199.10
100.00	14 21 26	2055.39	-23.11	28.40	347.46	109.51	14 55 42	1455.4	-20.23	20.78
100.00	3 2 10	4534.91	18.98	186.87	346.01	66.47	4 17 45	3934.9	15.64	179.68
110.00	15 32 40	1832.46	-26.01	10.23	346.22	113.00	16 3 12	1232.5	-22.67	2.67
110.00	4 7 26	4330.60	21.80	169.95	344.59	63.00	5 19 36	3730.6	18.01	162.87

DIFFERENTIAL CORRECTIONS

TDE	.1720	TRA	-1.8869	TC3	-1.6163	BAU	.9848
RDE	.0250	RRA	1.5302	RC3	2.9601	FAU	.44341
FDE	-1.3966	FRA	-9.6617	FC	-17.5754	BSP	14554
BDE	.1738	BRA	2.4294	BC3	3.3726	FSP	6155

MID-COURSE EXECUTION ACCURACY

SGT	2773.2	SGR	3344.2	SG3	1756.8		
RRT	-.9190	RRF	-.9968	RTF	.9208		
SGB	4344.5	R23	.1499	R13	-.9855		
SG1	4258.8	SG2	858.4	THA	129.21		

ORBIT DETERMINATION ACCURACY

ST	727.5	SR	570.4	SS	1172.8
CRT	-.9370	CRS	.9245	CST	-.7370
LSA	1422.4	MSA	454.2	SSA	24.3
EL1	910.6	EL2	159.2	ALF	142.35

LAUNCH DATE DEC 26 1964 FLIGHT TIME 254.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 546.585 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.882	GAL	6.50	AZL	92.55	HCA	161.28	SMA	183.58	ECC	.22745	INC	2.5520	V1	30.282
RP	222.28	LAP	-.82	LOP	255.55	VP	21.708	GAP	-5.02	AZP	87.58	TAL	36.32	TAP	197.60	RCA	141.83	APO	225.34	V2	24.737
RC	263.392	GL	-18.06	GP	26.49	ZAL	36.16	ZAP	95.48	ETS	176.14	ZAE	125.42	ETE	156.69	ZAC	111.82	ETC	255.94	CLP	96.13

PLANETOCENTRIC CONIC

C3	22.031	VHL	4.694	DLA	1.21	RAL	124.11	RAD	6567.9	VEL	11.975	PTH	2.13	VHP	3.446	DPA	28.62	RAP	185.05	ECC	1.3626

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 9 21	2275.12	-20.99	45.35	347.26	109.45	13 47 16	1675.1	-18.15	37.83
90.00	1 29 16	4844.12	19.21	209.52	346.66	68.79	2 50 0	4244.1	16.16	202.17
100.00	14 31 16	2010.92	-22.06	25.50	346.84	110.70	15 4 46	1410.9	-19.05	18.00
100.00	2 50 2	4583.54	20.28	189.91	346.21	67.55	4 6 26	3983.5	17.06	182.59
110.00	15 40 48	1793.27	-24.94	7.68	345.55	114.17	16 10 41	1193.3	-21.47	.26
110.00	3 57 0	4373.96	23.12	172.62	344.84	64.09	5 9 53	3774.0	19.44	165.41

DIFFERENTIAL CORRECTIONS

TDE	.1334	TRA	-2.0175	TC3	-1.7963	BAU	1.0561
RDE	.1103	RRA	1.6473	RC3	3.1034	FAU	.43603
FDE	-1.7373	FRA	-9.6354	FC	-17.1344	BSP	15382
BDE	.1731	BRA	2.6046	BC3	3.5857	FSP	5904

MID-COURSE EXECUTION ACCURACY

SGT	2989.6	SGR	3542.7	SG3	1731.5		
RRT	-.9295	RRF	-.9973	RTF	.9306		
SGB	4635.6	R23	.1449	R13	-.9868		
SG1	4555.6	SG2	857.2	THA	129.80		

ORBIT DETERMINATION ACCURACY

ST	758.4	SR	624.4	SS	1234.3
CRT	-.9047	CRS	.9493	CST	-.7274
LSA	1504.1	MSA	475.2	SSA	21.3
EL1	959.6	EL2	210.2	ALF	141.10

LAUNCH DATE DEC 26 1964 FLIGHT TIME 256.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 550.634 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.882	GAL	6.46	AZL	92.81	HCA	162.37	SMA	183.57	ECC	.22711	INC	2.8099	V1	30.282
RP	221.89	LAP	-.85	LOP	256.65	VP	21.755	GAP	-5.25	AZP	87.32	TAL	36.14	TAP	198.51	RCA	141.88	APO	225.27	V2	24.779
RC	264.895	GL	-19.83	GP	27.88	ZAL	37.06	ZAP	93.76	ETS	176.90	ZAE	123.18	ETE	157.28	ZAC	113.02	ETC	255.90	CLP	94.25

PLANETOCENTRIC CONIC

C3	22.294	VHL	4.722	DLA	-.54	RAL	123.78	RAD	6567.9	VEL	11.986	PTH	2.14	VHP	3.491	DPA	30.17	RAP	185.10	ECC	1.3669

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 20 58	2223.88	-19.79	42.07	346.68	110.67	13 58 2	1623.9	-16.80	34.67
90.00	1 15 0	4901.10	20.58	213.14	346.95	70.11	2 36 41	4301.1	17.68	205.67
100.00	14 42 4	1962.29	-20.86	22.39	346.24	111.91	15 14 46	1362.3	-17.70	15.02
100.00	2 36 36	4637.91	21.65	193.36	346.52	68.87	3 53 54	4037.9	18.59	185.91
110.00	15 49 44	1750.46	-23.72	4.96	344.88	115.37	16 18 55	1150.5	-20.11	357.68
110.00	3 45 25	4422.51	24.53	175.69	345.20	65.41	4 59 7	3822.5	21.00	168.32

DIFFERENTIAL CORRECTIONS

TDE	.0830	TRA-2.1574	TC3-1.9736	BAU	1.1272		
RDE	.1986	RRA 1.7653	RC3 3.2260	FAU	.42373		
FDE-2.0278		FRA-9.5078	FC-16.4550	BSP	16397		
BDE	.2153	BRA 2.7876	BC3 3.7818	FSP	5736		

MID-COURSE EXECUTION ACCURACY

SGT	3215.2	SGR	3732.0	SG3	1685.7		
RRT	-.9385	RRF	-.9978	RTF	.9393		
SGB	4926.0	R23	.1401	R13	-.9879		
SG1	4851.5	SG2	853.7	THA	130.47		

ORBIT DETERMINATION ACCURACY

ST	793.8	SR	692.5	SS	1288.6
CRT	-.8834	CRS	.9668	CST	-.7362
LSA	1592.0	MSA	485.2	SSA	18.9
EL1	1022.9	EL2	251.8	ALF	139.41

LAUNCH DATE DEC 26 1964 FLIGHT TIME 258.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 554.691 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.882	GAL	6.42	AZL	93.10	HCA	163.47	SMA	183.57	ECC	.22678	INC	3.1021	V1	30.282
RP	221.51	LAP	-.88	LOP	257.76	VP	21.802	GAP	-5.48	AZP	87.03	TAL	35.95	TAP	199.42	RCA	141.94	APO	225.21	V2	24.820
RC	266.379	GL	-21.81	GP	29.38	ZAL	38.11	ZAP	92.09	ETS	177.72	ZAE	120.94	ETE	157.85	ZAC	114.34	ETC	255.84	CLP	92.39

PLANETOCENTRIC CONIC

C3	22.655	VHL	4.760	DLA	-2.48	RAL	123.40	RAD	6567.9	VEL	12.001	PTH	2.14	VHP	3.548	DPA	31.81	RAP	185.25	ECC	1.3729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 33 51	2167.57	-18.40	38.53	346.13	111.91	14 9 58	1567.6	-15.27	31.25
90.00	0 59 4	4965.22	22.01	217.30	347.38	71.72	2 21 49	4365.2	19.30	209.67
100.00	14 54 2	1908.90	-19.47	19.04	345.66	113.14	15 25 51	1308.9	-16.17	11.80
100.00	2 21 33	4699.13	23.10	197.33	346.97	70.48	3 39 53	4099.1	20.23	189.71
110.00	15 59 38	1703.55	-22.32	2.04	344.24	116.59	16 28 2	1103.6	-18.57	354.91
110.00	3 32 27	4477.23	26.03	179.23	345.72	67.02	4 47 4	3877.2	22.69	171.67

DIFFERENTIAL CORRECTIONS

TDE	.0221	TRA-2.3036	TC3-2.1365	BAU	1.2009		
RDE	.3028	RRA 1.8957	RC3 3.3399	FAU	.40881		
FDE-2.3249		FRA-9.3343	FC-15.6218	BSP	17456		
BDE	.3036	BRA 2.9833	BC3 3.9648	FSP	5529		

MID-COURSE EXECUTION ACCURACY

SGT	3441.1	SGR	3931.7	SG3	1629.0		
RRT	-.9458	RRF	-.9981	RTF	.9462		
SGB	5224.9	R23	.1353	R13	-.9889		
SG1	5154.9	SG2	852.2	THA	130.98		

ORBIT DETERMINATION ACCURACY

ST	835.3	SR	782.0	SS	1350.8
CRT	-.8676	CRS	.9794	CST	-.7505
LSA	1699.7	MSA	494.4	SSA	16.5
EL1	1105.9	EL2	293.8	ALF	137.18

LAUNCH DATE DEC 26 1964 FLIGHT TIME 260.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 558.757 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.882	GAL	6.38	AZL	93.44	HCA	164.57	SMA	183.58	ECC	.22646	INC	3.4360	V1	30.282
RP	221.13	LAP	-.91	LOP	258.86	VP	21.850	GAP	-5.70	AZP	86.69	TAL	35.74	TAP	200.31	RCA	142.01	APO	225.16	V2	24.862
RC	267.844	GL	-24.02	GP	31.01	ZAL	39.34	ZAP	90.48	ETS	178.61	ZAE	118.71	ETE	158.40	ZAC	115.78	ETC	255.75	CLP	90.56

PLANETOCENTRIC CONIC

C3	23.150	VHL	4.811	DLA	-4.64	RAL	122.94	RAD	6567.9	VEL	12.022	PTH	2.15	VHP	3.620	DPA	33.54	RAP	185.54	ECC	1.3810

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 48 15	2105.29	-16.78	34.68	345.63	113.15	14 23 20	1505.3	-13.50	27.53
90.00	0 41 3	5038.01	23.48	222.13	347.99	73.70	2 5 1	4438.0	21.02	214.32
100.00	15 7 25	1849.93	-17.85	15.41	345.13	114.38	15 38 15	1249.9	-14.41	8.30
100.00	2 4 34	4768.61	24.60	201.94	347.62	72.46	3 24 3	4168.6	21.97	194.13
110.00	16 10 39	1651.94	-20.72	358.89	343.65	117.82	16 38 11	1051.9	-16.83	351.92
110.00	3 17 49	4539.36	27.61	183.37	346.45	69.00	4 33 28	3939.4	24.51	175.57

DIFFERENTIAL CORRECTIONS

TDE	-.0517	TRA-2.4583	TC3-2.2822	BAU	1.2776		
RDE	.4245	RRA 2.0403	RC3 3.4399	FAU	.39108		
FDE-2.6151		FRA-9.1060	FC-14.6250	BSP	18571		
BDE	.4276	BRA 3.1947	BC3 4.1281	FSP	5294		

MID-COURSE EXECUTION ACCURACY

SGT	3667.9	SGR	4141.8	SG3	1560.3		
RRT	-.9519	RRF	-.9984	RTF	.9519		
SGB	5532.4	R23	.1307	R13	-.9899		
SG1	5466.4	SG2	852.0	THA	131.35		

ORBIT DETERMINATION ACCURACY

ST	885.7	SR	894.5	SS	1417.2
CRT	-.8608	CRS	.9876	CST	-.7713
LSA	1828.0	MSA	501.3	SSA	14.4
EL1	1214.2	EL2	332.1	ALF	134.67

LAUNCH DATE DEC 26 1964 FLIGHT TIME 262.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 562.831 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.883	GAL	6.33	AZL	93.82	HCA	165.68	SMA	183.59	ECC	.22616	INC	3.8211	V1	30.282
RP	220.75	LAP	-.94	LOP	259.97	VP	21.898	GAP	-5.92	AZP	86.30	TAL	35.52	TAP	201.20	RCA	142.07	APO	225.12	V2	24.903
RC	269.292	GL	-26.50	GP	32.80	ZAL	40.77	ZAP	88.96	ETS	179.56	ZAE	116.49	ETE	158.93	ZAC	117.39	ETC	255.62	CLP	88.77

PLANETOCENTRIC CONIC

C3	23.825	VHL	4.881	DLA	-7.07	RAL	122.40	RAD	6568.0	VEL	12.050	PTH	2.15	VHP	3.710	DPA	35.38	RAP	185.99	ECC	1.3921

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 34	2035.85	-14.87	30.47	345.22	114.38	14 38 30	1435.8	-11.45	23.46
90.00	0 20 25	5121.50	24.96	227.80	348.84	76.17	1 45 46	4521.5	22.81	219.79
100.00	15 22 32	1784.34	-15.96	11.45	344.70	115.61	15 52 16	1184.3	-12.39	4.49
100.00	1 45 8	4848.24	26.13	207.37	348.51	74.93	3 5 56	4248.2	23.80	199.34
110.00	16 23 3	1594.86	-18.86	355.50	343.12	119.05	16 49 38	994.9	-14.85	348.69
110.00	3 1 6	4610.48	29.25	188.25	347.44	71.47	4 17 57	4010.5	26.44	180.19

DIFFERENTIAL CORRECTIONS

TDE	-.1425	TRA-2.6250	TC3-2.4074	BAU	1.3591		
RDE	.5707	RRA 2.2049	RC3 3.5229	FAU	.37076		
FDE-2.9030		FRA-8.8283	FC-13.4722	BSP	19669		
BDE	.5882	BRA 3.4281	BC3 4.2669	FSP	5006		

MID-COURSE EXECUTION ACCURACY

SGT	3897.6	SGR	4367.8	SG3	1480.5		
RRT	-.9570	RRF	-.9987	RTF	.9568		
SGB	5854.0	R23	.1259	R13	-.9907		
SG1	5791.5	SG2	852.8	THA	131.60		

ORBIT DETERMINATION ACCURACY

ST	949.0	SR	1035.1	SS	1489.2
CRT	-.8633	CRS	.9928	CST	-.7975
LSA	1983.4	MSA	505.7	SSA	12.4
EL1	1355.9	EL2	365.6	ALF	132.12

LAUNCH DATE DEC 26 1964 FLIGHT TIME 264.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 566.912 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.884	GAL	6.29	AZL	94.27	HCA	166.79	SMA	183.61	ECC	.22586	INC	4.2712	V1	30.282
RP	220.37	LAP	-.97	LOP	261.09	VP	21.947	GAP	-6.13	AZP	85.84	TAL	35.28	TAP	202.07	RCA	142.14	APO	225.09	V2	24.945
RC	270.721	GL	-29.30	GP	34.75	ZAL	42.46	ZAP	87.54	ETS	180.60	ZAE	114.28	ETE	159.44	ZAC	119.17	ETC	255.45	CLP	87.01

PLANETOCENTRIC CONIC

C3	24.751	VHL	4.975	DLA	-9.79	RAL	121.75	RAD	6568.0	VEL	12.088	PTH	2.16	VHP	3.823	DPA	37.34	RAP	186.63	ECC	1.4073

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 23 22	1957.61	-12.62	25.83	344.97	115.56	14 56 0	1357.6	-9.08	18.94
90.00	23 52 28	5218.46	26.36	234.55	349.98	79.27	25 19 27	4618.5	24.62	226.32
100.00	15 39 54	1710.74	-13.75	7.11	344.40	116.81	16 8 24	1110.7	-10.04	.28
100.00	1 22 34	4940.55	27.60	213.83	349.70	78.03	2 44 54	4340.6	25.67	205.56
110.00	16 37 10	1531.37	-16.73	351.82	342.72	120.26	17 2 42	931.4	-12.58	345.16
110.00	2 41 46	4692.69	30.89	194.09	348.78	74.57	3 59 59	4092.7	28.46	185.73

DIFFERENTIAL CORRECTIONS

TDE	-.2496	TRA	-2.8032	TC3	-2.4994	BAU	1.4434
RDE	.7437	RRA	2.3904	RC3	3.5748	FAU	.34706
FDE	-3.1644	FRA	-8.4791	FC	-12.1394	BSP	20855
BDE	.7845	BRA	3.6840	BC3	4.3619	FSP	4691

MID-COURSE EXECUTION ACCURACY

SGT	4123.1	SGR	4603.2	SG3	1386.1		
RRT	-.9612	RRF	-.9989	RTF	.9608		
SGB	6179.8	R23	.1215	R13	-.9915		
SG1	6120.4	SG2	854.9	THA	131.72		

ORBIT DETERMINATION ACCURACY

ST	1026.7	SR	1203.1	SS	1558.0
CRT	-.8726	CRS	.9959	CST	-.8252
LSA	2161.0	MSA	508.7	SSA	10.6
EL1	1531.8	EL2	393.9	ALF	129.83

LAUNCH DATE DEC 26 1964 FLIGHT TIME 266.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 571.002 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.886	GAL	6.24	AZL	94.80	HCA	167.90	SMA	183.64	ECC	.22558	INC	4.8040	V1	30.282
RP	220.00	LAP	-1.01	LOP	262.21	VP	21.996	GAP	-6.33	AZP	85.30	TAL	35.04	TAP	202.94	RCA	142.21	APO	225.07	V2	24.986
RC	272.134	GL	-32.45	GP	36.90	ZAL	44.43	ZAP	86.24	ETS	181.71	ZAE	112.10	ETE	159.95	ZAC	121.14	ETC	255.23	CLP	85.30

PLANETOCENTRIC CONIC

C3	26.034	VHL	5.102	DLA	-12.84	RAL	120.95	RAD	6568.1	VEL	12.141	PTH	2.18	VHP	3.965	DPA	39.43	RAP	187.52	ECC	1.4284

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 45 33	1868.07	-9.93	20.62	344.94	116.65	15 16 41	1268.1	-6.28	13.85
90.00	23 23 54	5332.92	27.55	242.71	351.46	83.20	24 52 47	4732.9	26.32	234.26
100.00	16 0 15	1627.07	-11.13	2.28	344.32	117.92	16 27 22	1027.1	-7.31	355.57
100.00	0 55 49	5049.16	28.88	221.65	351.26	81.95	2 19 58	4449.2	27.47	213.13
110.00	16 53 32	1460.19	-14.24	347.80	342.50	121.41	17 17 52	860.2	-9.98	341.29
110.00	2 19 2	4788.80	32.41	201.17	350.55	78.50	3 38 51	4188.8	30.49	192.48

DIFFERENTIAL CORRECTIONS

TDE	-.3774	TRA	-2.9983	TC3	-2.5526	BAU	1.5339
RDE	.9546	RRA	2.6084	RC3	3.5926	FAU	.32064
FDE	-3.3987	FRA	-8.0698	FC	-10.6627	BSP	22022
BDE	1.0265	BRA	3.9741	BC3	4.4071	FSP	4314

MID-COURSE EXECUTION ACCURACY

SGT	4346.3	SGR	4859.5	SG3	1279.6		
RRT	-.9649	RRF	-.9991	RTF	.9641		
SGB	6519.6	R23	.1170	R13	-.9922		
SG1	6462.8	SG2	858.8	THA	131.69		

ORBIT DETERMINATION ACCURACY

ST	1122.1	SR	1404.8	SS	1622.9
CRT	-.8860	CRS	.9976	CST	-.8524
LSA	2367.5	MSA	511.1	SSA	9.0
EL1	1748.7	EL2	417.9	ALF	127.83

LAUNCH DATE DEC 26 1964 FLIGHT TIME 268.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 575.099 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.887	GAL	6.19	AZL	95.45	HCA	169.02	SMA	183.67	ECC	.22531	INC	5.4455	V1	30.282
RP	219.62	LAP	-1.04	LOP	263.33	VP	22.045	GAP	-6.53	AZP	84.65	TAL	34.78	TAP	203.80	RCA	142.29	APO	225.05	V2	25.027
RC	273.529	GL	-36.02	GP	39.27	ZAL	46.74	ZAP	85.09	ETS	182.89	ZAE	109.95	ETE	160.44	ZAC	123.34	ETC	254.92	CLP	83.65

PLANETOCENTRIC CONIC

C3	27.836	VHL	5.276	DLA	-16.28	RAL	119.95	RAD	6568.1	VEL	12.215	PTH	2.19	VHP	4.145	DPA	41.65	RAP	188.70	ECC	1.4581

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 12 39	1762.98	-6.67	14.63	345.31	117.58	15 42 2	1163.0	-2.92	7.95
90.00	22 48 51	5471.27	28.26	252.77	353.30	88.18	24 20 2	4871.3	27.71	244.15
100.00	16 24 53	1529.94	-7.98	356.79	344.60	118.90	16 50 22	929.9	-4.06	350.19
100.00	0 23 15	5179.53	29.75	231.24	353.23	86.92	1 49 34	4579.5	29.00	222.51
110.00	17 12 55	1379.46	-11.33	343.35	342.58	122.47	17 35 54	779.5	-6.97	336.98
110.00	1 51 42	4902.79	33.63	209.84	352.85	83.49	3 13 25	4302.8	32.37	200.83

DIFFERENTIAL CORRECTIONS

TDE	-.5258	TRA	-3.2125	TC3	-2.5523	BAU	1.6289
RDE	1.2088	RRA	2.8637	RC3	3.5558	FAU	.29066
FDE	-3.5735	FRA	-7.5757	FC3	-9.0397	BSP	23290
BDE	1.3182	BRA	4.3036	BC3	4.3770	FSP	3903

MID-COURSE EXECUTION ACCURACY

SGT	4559.4	SGR	5128.2	SG3	1157.6		
RRT	-.9678	RRF	-.9992	RTF	.9667		
SGB	6861.9	R23	.1129	R13	-.9928		
SG1	6807.3	SG2	864.0	THA	131.53		

ORBIT DETERMINATION ACCURACY

ST	1233.4	SR	1637.3	SS	1670.2
CRT	-.9004	CRS	.9986	CST	-.8765
LSA	2593.8	MSA	513.7	SSA	7.6
EL1	2002.4	EL2	438.7	ALF	126.16

LAUNCH DATE DEC 26 1964 FLIGHT TIME 270.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 579.202 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	32.890	GAL	6.14	AZL	96.23	HCA	170.13	SMA	183.71	ECC	.22505	INC	6.2322	V1	30.282
RP	219.25	LAP	-1.07	LOP	264.45	VP	22.095	GAP	-6.73	AZP	83.86	TAL	34.51	TAP	204.64	RCA	142.37	APO	225.05	V2	25.067
RC	274.906	GL	-40.06	GP	41.88	ZAL	49.43	ZAP	84.11	ETS	184.14	ZAE	107.84	ETE	160.91	ZAC	125.79	ETC	254.52	CLP	82.07

PLANETOCENTRIC CONIC

C3	30.425	VHL	5.516	DLA	-20.15	RAL	118.69	RAD	6568.2	VEL	12.321	PTH	2.22	VHP	4.378	DPA	44.03	RAP	190.26	ECC	1.5007

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 47 53	1633.47	-2.54	7.35	346.32	118.21	16 15 6	1033.5	1.25	.72
90.00	22 3 35	5645.25	27.98	265.47	355.39	94.54	23 37 40	5045.3	28.32	256.82
100.00	16 56 14	1412.85	-4.08	350.28	345.47	119.64	17 19 47	812.8	-.10	343.75
100.00	23 37 54	5341.11	29.73	243.24	355.52	93.23	25 6 55	4741.1	29.86	234.43
110.00	17 36 43	1286.01	-7.87	338.33	343.13	123.37	17 58 9	686.0	-3.43	332.06
110.00	1 17 51	5040.71	34.18	220.56	355.66	89.81	2 41 51	4440.7	33.78	211.34

DIFFERENTIAL CORRECTIONS

TDE	-.7053	TRA	-3.4605	TC3	-2.4997	BAU	1.7373
RDE	1.5274	RRA	3.1792	RC3	3.4632	FAU	.25820
FDE	-3.6841	FRA	-7.0090	FC3	-7.3470	BSP	24339
BDE	1.6823	BRA	4.6992	BC3	4.2711	FSP	3411

MID-COURSE EXECUTION ACCURACY

SGT	4775.0	SGR	5430.2	SG3	1024.0		
RRT	-.9706	RRF	-.9993	RTF	.9691		
SGB	7231.0	R23	.1088	R13	-.9934		
SG1	7178.5	SG2	870.0	THA	131.22		

ORBIT DETERMINATION ACCURACY

ST	1364.9	SR	1908.9	SS	1696.5
CRT	-.9150	CRS	.9992	CST	-.8978
LSA	2849.3	MSA	516.1	SSA	6.3
EL1	2301.8	EL2	456.7	ALF	124.76

LAUNCH DATE DEC 26 1964 FLIGHT TIME 272.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 583.310 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.892 GAL 6.09 AZL 97.22 HCA 171.25 SMA 183.75 ECC .22480 INC 7.2219 V1 30.282
RP 218.89 LAP -1.10 LOP 265.58 VP 22.145 GAP -6.92 AZP 82.86 TAL 34.23 TAP 205.48 RCA 142.44 APO 225.06 V2 25.108
RC 276.266 GL -44.63 GP 44.75 ZAL 52.56 ZAP 83.34 ETS 185.43 ZAE 105.79 ETE 161.35 ZAC 128.50 ETC 253.98 CLP 80.60

PLANETOCENTRIC CONIC

C3 34.251 VHL 5.852 DLA -24.48 RAL 117.07 RAD 6568.4 VEL 12.475 PTH 2.26 VHP 4.686 DPA 46.53 RAP 192.29 ECC 1.5637

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 13	1453.18	3.27	357.29	348.63	118.14	17 4 26	853.2	7.01	350.60
90.00	20 58 16	5885.19	25.50	282.57	357.11	102.74	22 36 21	5285.2	27.01	274.22
100.00	17 40 27	1258.73	1.14	341.82	347.44	119.87	18 1 26	658.7	5.11	335.28
100.00	22 40 43	5554.87	27.89	258.83	357.68	101.22	24 13 18	4954.9	29.15	250.26
110.00	18 7 42	1173.25	-3.61	332.38	344.48	124.02	18 27 16	573.3	.88	326.18
110.00	0 33 53	5213.11	33.41	233.94	358.74	97.68	2 0 46	4613.1	34.11	224.77

DIFFERENTIAL CORRECTIONS
TDE -.8988 TRA-3.7366 TC3-2.3635 BAU 1.8496
RDE 1.9070 RRA 3.5565 RC3 3.2756 FAU .22146
FDE-3.6542 FRA-6.3123 FC3-5.5977 BSP 25767
BDE 2.1082 BRA 5.1586 BC3 4.0392 FSP 2919

MID-COURSE EXECUTION ACCURACY
SGT 4958.1 SGR 5729.0 SG3 871.9
RRT -.9726 RRF -.9994 RTF .9707
SGB 7576.5 R23 .1056 R13 -.9938
SG1 7525.5 SG2 877.7 THA 130.76

ORBIT DETERMINATION ACCURACY
ST 1495.0 SR 2194.5 SS 1668.6
CRT -.9254 CRS .9994 CST -.9122
LSA 3092.4 MSA 522.0 SSA 5.3
EL1 2612.4 EL2 475.9 ALF 123.49

LAUNCH DATE DEC 26 1964 FLIGHT TIME 304.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 650.839 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.969 GAL 4.87 AZL 81.27 HCA 190.02 SMA 185.04 ECC .22111 INC 8.7343 V1 30.282
RP 213.46 LAP -1.51 LOP 284.16 VP 22.939 GAP -9.26 AZP 98.60 TAL 27.43 TAP 217.45 RCA 144.13 APO 225.96 V2 25.714
RC 295.805 GL 54.14 GP -38.44 ZAL 62.23 ZAP 66.21 ETS 158.59 ZAE 88.24 ETE 177.32 ZAC 46.73 ETC 253.53 CLP 59.01

PLANETOCENTRIC CONIC

C3 37.887 VHL 6.155 DLA 66.61 RAL 100.43 RAD 6568.5 VEL 12.620 PTH 2.29 VHP 4.778 DPA -26.97 RAP 149.10 ECC 1.6235

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
10.33	9 9 18	4277.04	-54.91	243.49	133.59	15.94	10 20 35	3677.0	-62.53	239.16
10.33	0 4 20	4912.89	-12.52	251.96	8.09	9.30	1 26 12	4312.9	-20.41	251.00
20.33	7 44 32	4351.34	-46.59	231.46	100.61	26.43	8 57 3	3751.3	-53.62	225.88
20.33	2 9 12	4804.14	-17.97	243.44	30.42	18.76	3 29 16	4204.1	-25.52	241.01
26.80	5 10 54	4559.53	-31.17	231.77	63.28	27.64	6 26 53	3959.5	-38.17	227.47
153.20	15 21 20	2829.82	-31.16	85.95	63.26	27.64	16 8 30	2229.8	-38.16	81.66

DIFFERENTIAL CORRECTIONS
TDE 7.9698 TRA -.4943 TC3-3.8980 BAU 2.2728
RDE 3.4987 RRA .1145 RC3-2.2223 FAU .21392
FDE 6.6092 FRA .3158 FC3-4.8881 BSP 33925
BDE 8.7039 BRA .5074 BC3 4.4870 FSP 2785

MID-COURSE EXECUTION ACCURACY
SGT 8911.0 SGR 4261.9 SG3 746.3
RRT .9737 RRF .9969 RTF .9570
SGB 9877.8 R23 .2452 R13 .9681
SG1 9838.5 SG2 879.9 THA 25.19

ORBIT DETERMINATION ACCURACY
ST 7428.1 SR 3258.8 SS 2542.6
CRT .9974 CRS -.9999 CST -.9965
LSA 8496.2 MSA 276.1 SSA 6.1
EL1 8108.7 EL2 214.1 ALF 23.65

LAUNCH DATE DEC 26 1964 FLIGHT TIME 306.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 655.095 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.975 GAL 4.78 AZL 82.07 HCA 191.20 SMA 185.15 ECC .22100 INC 7.9293 V1 30.282
RP 213.16 LAP -1.53 LOP 285.35 VP 22.987 GAP -9.38 AZP 97.78 TAL 26.93 TAP 218.13 RCA 144.23 APO 226.07 V2 25.748
RC 296.904 GL 51.43 GP -35.39 ZAL 60.92 ZAP 64.08 ETS 158.92 ZAE 86.74 ETE 176.50 ZAC 49.62 ETC 254.31 CLP 57.58

PLANETOCENTRIC CONIC

C3 33.617 VHL 5.798 DLA 63.97 RAL 165.88 RAD 6568.3 VEL 12.449 PTH 2.25 VHP 4.602 DPA -24.15 RAP 150.39 ECC 1.5532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
29.90	5 7 50	4518.38	-32.21	227.41	57.98	31.24	6 23 8	3918.4	-38.94	222.50
150.10	15 4 4	2810.55	-32.20	85.06	57.97	31.23	15 50 55	2210.6	-38.93	80.15
29.90	5 7 50	4518.38	-32.21	227.41	57.98	31.24	6 23 8	3918.4	-38.94	222.50
150.10	15 4 4	2810.55	-32.20	85.06	57.97	31.23	15 50 55	2210.6	-38.93	80.15
29.90	5 7 50	4518.38	-32.21	227.41	57.98	31.24	6 23 8	3918.4	-38.94	222.50
150.10	15 4 4	2810.55	-32.20	85.06	57.97	31.23	15 50 55	2210.6	-38.93	80.15

DIFFERENTIAL CORRECTIONS
TDE 7.4307 TRA -.6926 TC3-4.4374 BAU 2.2380
RDE 2.9697 RRA .0345 RC3-2.2600 FAU .23103
FDE 6.6942 FRA .1612 FC3-5.9498 BSP 33820
BDE 8.0022 BRA .6934 BC3 4.9797 FSP 3020

MID-COURSE EXECUTION ACCURACY
SGT 9101.1 SGR 3935.3 SG3 826.4
RRT .9748 RRF .9968 RTF .9593
SGB 9915.5 R23 .2432 R13 .9683
SG1 9882.5 SG2 808.2 THA 23.02

ORBIT DETERMINATION ACCURACY
ST 7359.5 SR 2935.8 SS 2631.7
CRT .9974 CRS-1.0000 CST -.9967
LSA 8344.9 MSA 263.7 SSA 7.1
EL1 7921.1 EL2 195.6 ALF 21.71

LAUNCH DATE DEC 26 1964 FLIGHT TIME 308.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 659.361 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.982 GAL 4.69 AZL 82.73 HCA 192.39 SMA 185.26 ECC .22088 INC 7.2749 V1 30.282
RP 212.87 LAP -1.56 LOP 286.55 VP 23.034 GAP -9.49 AZP 97.11 TAL 26.42 TAP 218.80 RCA 144.34 APO 226.19 V2 25.782
RC 297.989 GL 49.04 GP -32.66 ZAL 59.87 ZAP 62.12 ETS 159.32 ZAE 85.26 ETE 175.84 ZAC 52.24 ETC 254.91 CLP 56.26

PLANETOCENTRIC CONIC

C3 30.386 VHL 5.512 DLA 61.58 RAL 164.14 RAD 6568.2 VEL 12.319 PTH 2.22 VHP 4.479 DPA -21.63 RAP 151.54 ECC 1.5001

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
32.73	5 7 38	4481.53	-32.88	223.30	53.67	34.52	6 22 20	3881.5	-39.33	217.87
147.27	14 50 19	2796.55	-32.87	84.26	53.66	34.52	15 36 56	2196.6	-39.33	78.83
32.73	5 7 38	4481.53	-32.88	223.30	53.67	34.52	6 22 20	3881.5	-39.33	217.87
147.27	14 50 19	2796.55	-32.87	84.26	53.66	34.52	15 36 56	2196.6	-39.33	78.83
32.73	5 7 38	4481.53	-32.88	223.30	53.67	34.52	6 22 20	3881.5	-39.33	217.87
147.27	14 50 19	2796.55	-32.87	84.26	53.66	34.52	15 36 56	2196.6	-39.33	78.83

DIFFERENTIAL CORRECTIONS
TDE 6.9988 TRA -.8436 TC3-4.9590 BAU 2.2138
RDE 2.5476 RRA -.0121 RC3-2.2595 FAU .24320
FDE 6.6372 FRA .0352 FC3-6.9292 BSP 34040
BDE 7.4480 BRA .8436 BC3 5.4495 FSP 3214

MID-COURSE EXECUTION ACCURACY
SGT 9284.6 SGR 3635.6 SG3 889.4
RRT .9756 RRF .9966 RTF .9606
SGB 9971.0 R23 .2426 R13 .9680
SG1 9943.1 SG2 745.8 THA 21.03

ORBIT DETERMINATION ACCURACY
ST 7297.4 SR 2649.0 SS 2671.0
CRT .9973 CRS-1.0000 CST -.9968
LSA 8206.0 MSA 255.8 SSA 8.1
EL1 7761.2 EL2 181.7 ALF 19.91

LAUNCH DATE DEC 26 1964 FLIGHT TIME 310.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 663.636 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.989 GAL 4.60 AZL 83.27 HCA 193.58 SMA 185.38 ECC .22078 INC 6.7318 V1 30.282
RP 212.57 LAP -1.58 LOP 287.75 VP 23.081 GAP -9.60 AZP 96.55 TAL 25.89 TAP 219.47 RCA 144.45 APO 226.31 V2 25.815
RC 299.061 GL 46.91 GP -30.22 ZAL 59.05 ZAP 60.30 ETS 159.75 ZAE 83.79 ETE 175.32 ZAC 54.59 ETC 255.37 CLP 55.01

PLANETOCENTRIC CONIC

C3 27.860 VHL 5.278 DLA 59.40 RAL 162.94 RAD 6568.1 VEL 12.216 PTH 2.20 VHP 4.394 DPA -19.40 RAP 152.59 ECC 1.4585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
35.33	5 9 23	4447.99	-33.27	219.46	50.12	37.51	6 23 31	3848.0	-39.46	213.57
144.67	14 39 2	2786.68	-33.26	83.58	50.10	37.50	15 25 28	2186.7	-39.45	77.69
35.33	5 9 23	4447.99	-33.27	219.46	50.12	37.51	6 23 31	3848.0	-39.46	213.57
144.67	14 39 2	2786.68	-33.26	83.58	50.10	37.50	15 25 28	2186.7	-39.45	77.69
35.33	5 9 23	4447.99	-33.27	219.46	50.12	37.51	6 23 31	3848.0	-39.46	213.57
144.67	14 39 2	2786.68	-33.26	83.58	50.10	37.50	15 25 28	2186.7	-39.45	77.69

DIFFERENTIAL CORRECTIONS
TDE 6.6399 TRA -.9673 TC3-5.4757 BAU 2.2028
RDE 2.2057 RRA -.0396 RC3-2.2350 FAU .25165
FDE 6.4829 FRA -.0681 FC3-7.8197 BSP 34245
BDE 6.9967 BRA .9681 BC3 5.9143 FSP 3353

MID-COURSE EXECUTION ACCURACY
SGT 9466.7 SGR 3362.5 SG3 937.3
RRT .9761 RRF .9962 RTF .9614
SGB10046.1 R23 .2423 R13 .9675
SG110022.3 SG2 690.7 THA 19.22

ORBIT DETERMINATION ACCURACY
ST 7236.2 SR 2395.5 SS 2673.4
CRT .9972 CRS-1.0000 CST -.9968
LSA 8073.8 MSA 250.7 SSA 9.1
EL1 7620.5 EL2 171.0 ALF 18.28

LAUNCH DATE DEC 26 1964 FLIGHT TIME 312.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 667.920 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 32.995 GAL 4.50 AZL 83.73 HCA 194.77 SMA 185.50 ECC .22068 INC 6.2739 V1 30.282
RP 212.29 LAP -1.60 LOP 288.95 VP 23.127 GAP -9.71 AZP 96.07 TAL 25.35 TAP 220.12 RCA 144.56 APO 226.43 V2 25.847
RC 300.120 GL 45.01 GP -28.05 ZAL 58.43 ZAP 58.61 ETS 160.21 ZAE 82.35 ETE 174.91 ZAC 56.71 ETC 255.74 CLP 53.83

PLANETOCENTRIC CONIC

C3 25.831 VHL 5.082 DLA 57.41 RAL 162.14 RAD 6568.0 VEL 12.133 PTH 2.17 VHP 4.338 DPA -17.43 RAP 153.55 ECC 1.4251

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
37.72	5 12 25	4417.18	-33.46	215.86	47.16	40.21	6 26 2	3817.2	-39.39	209.61
142.28	14 29 36	2779.94	-33.45	83.01	47.15	40.20	15 15 56	2179.9	-39.38	76.76
37.72	5 12 25	4417.18	-33.46	215.86	47.16	40.21	6 26 2	3817.2	-39.39	209.61
142.28	14 29 36	2779.94	-33.45	83.01	47.15	40.20	15 15 56	2179.9	-39.38	76.76
37.72	5 12 25	4417.18	-33.46	215.86	47.16	40.21	6 26 2	3817.2	-39.39	209.61
142.28	14 29 36	2779.94	-33.45	83.01	47.15	40.20	15 15 56	2179.9	-39.38	76.76

DIFFERENTIAL CORRECTIONS
TDE 6.3418 TRA-1.0640 TC3-5.9811 BAU 2.1998
RDE 1.9271 RRA -.0531 RC3-2.1917 FAU .25688
FDE 6.2685 FRA -.1438 FC3-8.6095 BSP 34551
BDE 6.6282 BRA 1.0653 BC3 6.3701 FSP 3451

MID-COURSE EXECUTION ACCURACY
SGT 9645.5 SGR 3113.7 SG3 972.2
RRT .9764 RRF .9956 RTF .9619
SGB10135.7 R23 .2418 R13 .9669
SG110115.3 SG2 641.6 THA 17.57

ORBIT DETERMINATION ACCURACY
ST 7182.9 SR 2173.7 SS 2650.6
CRT .9970 CRS-1.0000 CST -.9967
LSA 7955.1 MSA 247.0 SSA 10.2
EL1 7502.8 EL2 162.1 ALF 16.80

LAUNCH DATE DEC 26 1964 FLIGHT TIME 314.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 672.212 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.002 GAL 4.41 AZL 84.12 HCA 195.97 SMA 185.62 ECC .22059 INC 5.8821 V1 30.282
RP 212.01 LAP -1.62 LOP 290.16 VP 23.173 GAP -9.81 AZP 95.66 TAL 24.79 TAP 220.76 RCA 144.67 APO 226.57 V2 25.879
RC 301.167 GL 43.32 GP -26.10 ZAL 57.99 ZAP 57.04 ETS 160.66 ZAE 80.93 ETE 174.58 ZAC 58.62 ETC 256.02 CLP 52.71

PLANETOCENTRIC CONIC

C3 24.161 VHL 4.915 DLA 55.59 RAL 161.63 RAD 6568.0 VEL 12.064 PTH 2.16 VHP 4.303 DPA -15.68 RAP 154.45 ECC 1.3976

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
39.94	5 16 26	4388.46	-33.50	212.50	44.69	42.67	6 29 35	3788.5	-39.19	205.93
140.06	14 21 33	2775.75	-33.49	82.57	44.67	42.66	15 7 49	2175.8	-39.18	76.00
39.94	5 16 26	4388.46	-33.50	212.50	44.69	42.67	6 29 35	3788.5	-39.19	205.93
140.06	14 21 33	2775.75	-33.49	82.57	44.67	42.66	15 7 49	2175.8	-39.18	76.00
39.94	5 16 26	4388.46	-33.50	212.50	44.69	42.67	6 29 35	3788.5	-39.19	205.93
140.06	14 21 33	2775.75	-33.49	82.57	44.67	42.66	15 7 49	2175.8	-39.18	76.00

DIFFERENTIAL CORRECTIONS
TDE 6.0868 TRA-1.1422 TC3-6.4819 BAU 2.2047
RDE 1.6960 RRA -.0586 RC3-2.1379 FAU .25978
FDE 6.0107 FRA -.2000 FC3-9.3085 BSP 34843
BDE 6.3187 BRA 1.1437 BC3 6.8254 FSP 3500

MID-COURSE EXECUTION ACCURACY
SGT 9823.2 SGR 2888.0 SG3 996.4
RRT .9766 RRF .9949 RTF .9621
SGB10238.9 R23 .2406 R13 .9663
SG110221.5 SG2 597.4 THA 16.08

ORBIT DETERMINATION ACCURACY
ST 7132.7 SR 1978.3 SS 2607.1
CRT .9967 CRS-1.0000 CST -.9966
LSA 7843.9 MSA 243.5 SSA 11.3
EL1 7400.3 EL2 154.4 ALF 15.46

LAUNCH DATE DEC 26 1964 FLIGHT TIME 316.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 676.513 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.010 GAL 4.31 AZL 84.46 HCA 197.18 SMA 185.74 ECC .22052 INC 5.5431 V1 30.282
RP 211.73 LAP -1.63 LOP 291.36 VP 23.218 GAP -9.91 AZP 95.30 TAL 24.22 TAP 221.40 RCA 144.78 APO 226.70 V2 25.911
RC 302.203 GL 41.80 GP -24.36 ZAL 57.70 ZAP 55.56 ETS 161.11 ZAE 79.54 ETE 174.31 ZAC 60.34 ETC 256.25 CLP 51.63

PLANETOCENTRIC CONIC

C3 22.760 VHL 4.771 DLA 53.91 RAL 161.36 RAD 6567.9 VEL 12.006 PTH 2.14 VHP 4.284 DPA -14.14 RAP 155.29 ECC 1.3746

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
42.00	5 21 13	4361.40	-33.43	209.34	42.61	44.90	6 33 54	3761.4	-38.89	202.50
138.00	14 14 37	2773.62	-33.42	82.24	42.59	44.89	15 0 50	2173.6	-38.88	75.41
42.00	5 21 13	4361.40	-33.43	209.34	42.61	44.90	6 33 54	3761.4	-38.89	202.50
138.00	14 14 37	2773.62	-33.42	82.24	42.59	44.89	15 0 50	2173.6	-38.88	75.41
42.00	5 21 13	4361.40	-33.43	209.34	42.61	44.90	6 33 54	3761.4	-38.89	202.50
138.00	14 14 37	2773.62	-33.42	82.24	42.59	44.89	15 0 50	2173.6	-38.88	75.41

DIFFERENTIAL CORRECTIONS
TDE 5.8742 TRA-1.1959 TC3-6.9661 BAU 2.2113
RDE 1.5062 RRA -.0549 RC3-2.0714 FAU .26011
FDE 5.7419 FRA -.2213 FC3-9.8942 BSP 35334
BDE 6.0642 BRA 1.1972 BC3 7.2675 FSP 3541

MID-COURSE EXECUTION ACCURACY
SGT 9994.7 SGR 2681.5 SG3 1010.8
RRT .9765 RRF .9939 RTF .9621
SGB10348.2 R23 .2390 R13 .9656
SG110333.0 SG2 559.3 THA 14.72

ORBIT DETERMINATION ACCURACY
ST 7095.5 SR 1810.2 SS 2555.1
CRT .9964 CRS-1.0000 CST -.9964
LSA 7752.0 MSA 242.2 SSA 12.3
EL1 7321.3 EL2 148.7 ALF 14.27

LAUNCH DATE DEC 26 1964 FLIGHT TIME 318.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 680.821 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.017 GAL 4.21 AZL 84.75 HCA 198.39 SMA 185.87 ECC .22045 INC 5.2465 V1 30.282
RP 211.47 LAP -1.65 LOP 292.57 VP 23.263 GAP -10.01 AZP 94.98 TAL 23.64 TAP 222.02 RCA 144.89 APO 226.84 V2 25.941
RC 303.228 GL 40.42 GP -22.79 ZAL 57.56 ZAP 54.17 ETS 161.54 ZAE 78.18 ETE 174.10 ZAC 61.90 ETC 256.43 CLP 50.59

PLANETOCENTRIC CONIC

C3 21.562 VHL 4.643 DLA 52.35 RAL 161.28 RAD 6567.9 VEL 11.956 PTH 2.13 VHP 4.278 DPA -12.77 RAP 156.09 ECC 1.3549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.93	5 26 36	4335.67	-33.29	206.35	40.87	46.94	6 38 52	3735.7	-38.53	199.30
136.07	14 8 33	2773.17	-33.27	82.02	40.85	46.93	14 54 47	2173.2	-38.52	74.97
43.93	5 26 36	4335.67	-33.29	206.35	40.87	46.94	6 38 52	3735.7	-38.53	199.30
136.07	14 8 33	2773.17	-33.27	82.02	40.85	46.93	14 54 47	2173.2	-38.52	74.97
43.93	5 26 36	4335.67	-33.29	206.35	40.87	46.94	6 38 52	3735.7	-38.53	199.30
136.07	14 8 33	2773.17	-33.27	82.02	40.85	46.93	14 54 47	2173.2	-38.52	74.97

DIFFERENTIAL CORRECTIONS
TDE 5.6861 TRA-1.2387 TC3-7.4498 BAU 2.2237
RDE 1.3458 RRA -.0489 RC3-2.0015 FAU .25902
FDE 5.4584 FRA -.2312 FC-10.4000 BSP 35755
BDE 5.8432 BRA 1.2397 BC3 7.7140 FSP 3545

MID-COURSE EXECUTION ACCURACY
SGT10166.3 SGR 2494.5 SG3 1018.1
RRT .9763 RRF .9928 RTF .9620
SGB10467.9 R23 .2361 R13 .9649
SG110454.7 SG2 525.1 THA 13.51

ORBIT DETERMINATION ACCURACY
ST 7059.1 SR 1661.8 SS 2492.1
CRT .9961 CRS-1.0000 CST -.9962
LSA 7664.6 MSA 240.5 SSA 13.5
EL1 7250.7 EL2 143.5 ALF 13.20

LAUNCH DATE DEC 26 1964 FLIGHT TIME 320.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 685.136 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.024 GAL 4.10 AZL 85.02 HCA 199.60 SMA 185.99 ECC .22039 INC 4.9847 V1 30.282
RP 211.20 LAP -1.67 LOP 293.79 VP 23.307 GAP -10.10 AZP 94.70 TAL 23.04 TAP 222.64 RCA 145.00 APO 226.99 V2 25.971
RC 304.242 GL 39.18 GP -21.38 ZAL 57.53 ZAP 52.87 ETS 161.95 ZAE 76.86 ETE 173.94 ZAC 63.32 ETC 256.57 CLP 49.59

PLANETOCENTRIC CONIC

C3 20.523 VHL 4.530 DLA 50.90 RAL 161.35 RAD 6567.8 VEL 11.912 PTH 2.12 VHP 4.282 DPA -11.55 RAP 156.86 ECC 1.3378

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.75	5 32 28	4310.99	-33.08	203.53	39.41	48.81	6 44 19	3711.0	-38.12	196.29
134.25	14 3 14	2774.12	-33.08	81.90	39.40	48.80	14 49 28	2174.1	-38.10	74.67
45.75	5 32 28	4310.99	-33.08	203.53	39.41	48.81	6 44 19	3711.0	-38.12	196.29
134.25	14 3 14	2774.12	-33.08	81.90	39.40	48.80	14 49 28	2174.1	-38.10	74.67
45.75	5 32 28	4310.99	-33.08	203.53	39.41	48.81	6 44 19	3711.0	-38.12	196.29
134.25	14 3 14	2774.12	-33.08	81.90	39.40	48.80	14 49 28	2174.1	-38.10	74.67

DIFFERENTIAL CORRECTIONS
TDE 5.5223 TRA-1.2856 TC3-7.9252 BAU 2.2379
RDE 1.2108 RRA -.0395 RC3-1.9278 FAU .25651
FDE 5.1740 FRA -.2209 FC-10.8207 BSP 36248
BDE 5.6534 BRA 1.2662 BC3 8.1563 FSP 3533

MID-COURSE EXECUTION ACCURACY
SGT10333.6 SGR 2324.1 SG3 1019.1
RRT .9759 RRF .9914 RTF .9617
SGB10591.8 R23 .2323 R13 .9642
SG110580.2 SG2 495.5 THA 12.41

ORBIT DETERMINATION ACCURACY
ST 7029.0 SR 1532.2 SS 2423.7
CRT .9957 CRS -.9999 CST -.9960
LSA 7587.6 MSA 239.5 SSA 14.5
EL1 7192.7 EL2 139.2 ALF 12.25

LAUNCH DATE DEC 26 1964 FLIGHT TIME 322.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 689.458 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.032 GAL 4.00 AZL 85.25 HCA 200.81 SMA 186.12 ECC .22035 INC 4.7517 V1 30.282
RP 210.95 LAP -1.69 LOP 295.01 VP 23.350 GAP -10.19 AZP 94.44 TAL 22.43 TAP 223.24 RCA 145.11 APO 227.14 V2 26.001
RC 305.247 GL 38.05 GP -20.11 ZAL 57.62 ZAP 51.63 ETS 162.35 ZAE 75.56 ETE 173.81 ZAC 64.62 ETC 256.68 CLP 48.62

PLANETOCENTRIC CONIC

C3 19.609 VHL 4.428 DLA 49.55 RAL 161.54 RAD 6567.8 VEL 11.874 PTH 2.11 VHP 4.294 DPA -10.48 RAP 157.59 ECC 1.3227

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.48	5 38 47	4287.14	-32.82	200.83	38.20	50.54	6 50 14	3687.1	-37.67	193.45
132.52	13 58 30	2776.28	-32.81	81.86	38.18	50.53	14 44 46	2176.3	-37.66	74.48
47.48	5 38 47	4287.14	-32.82	200.83	38.20	50.54	6 50 14	3687.1	-37.67	193.45
132.52	13 58 30	2776.28	-32.81	81.86	38.18	50.53	14 44 46	2176.3	-37.66	74.48
47.48	5 38 47	4287.14	-32.82	200.83	38.20	50.54	6 50 14	3687.1	-37.67	193.45
132.52	13 58 30	2776.28	-32.81	81.86	38.18	50.53	14 44 46	2176.3	-37.66	74.48

DIFFERENTIAL CORRECTIONS
TDE 5.3756 TRA-1.2819 TC3-8.4000 BAU 2.2551
RDE 1.0953 RRA -.0287 RC3-1.8532 FAU .25302
FDE 4.8919 FRA -.1977 FC-11.1706 BSP 36726
BDE 5.4861 BRA 1.2822 BC3 8.6020 FSP 3503

MID-COURSE EXECUTION ACCURACY
SGT10500.4 SGR 2169.2 SG3 1015.3
RRT .9752 RRF .9898 RTF .9614
SGB10722.1 R23 .2273 R13 .9635
SG110711.8 SG2 470.3 THA 11.41

ORBIT DETERMINATION ACCURACY
ST 7001.1 SR 1418.2 SS 2351.0
CRT .9952 CRS -.9999 CST -.9957
LSA 7516.4 MSA 239.0 SSA 15.6
EL1 7142.0 EL2 135.6 ALF 11.40

LAUNCH DATE DEC 26 1964 FLIGHT TIME 324.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 693.788 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.039 GAL 3.89 AZL 85.46 HCA 202.03 SMA 186.26 ECC .22031 INC 4.5428 V1 30.282
RP 210.70 LAP -1.70 LOP 296.23 VP 23.393 GAP -10.28 AZP 94.21 TAL 21.81 TAP 223.84 RCA 145.22 APO 227.29 V2 26.029
RC 306.243 GL 37.03 GP -18.95 ZAL 57.81 ZAP 50.45 ETS 162.72 ZAE 74.29 ETE 173.70 ZAC 65.81 ETC 256.77 CLP 47.68

PLANETOCENTRIC CONIC

C3 18.797 VHL 4.336 DLA 48.27 RAL 161.85 RAD 6567.8 VEL 11.840 PTH 2.10 VHP 4.312 DPA -9.53 RAP 158.31 ECC 1.3093

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.12	5 45 30	4263.88	-32.53	198.24	37.19	52.14	6 56 33	3663.9	-37.20	190.73
130.88	13 54 15	2779.55	-32.52	81.91	37.18	52.13	14 40 34	2179.6	-37.19	74.40
49.12	5 45 30	4263.88	-32.53	198.24	37.19	52.14	6 56 33	3663.9	-37.20	190.73
130.88	13 54 15	2779.55	-32.52	81.91	37.18	52.13	14 40 34	2179.6	-37.19	74.40
49.12	5 45 30	4263.88	-32.53	198.24	37.19	52.14	6 56 33	3663.9	-37.20	190.73
130.88	13 54 15	2779.55	-32.52	81.91	37.18	52.13	14 40 34	2179.6	-37.19	74.40

DIFFERENTIAL CORRECTIONS
TDE 5.2435 TRA-1.2863 TC3-8.8726 BAU 2.2740
RDE .9965 RRA -.0165 RC3-1.7781 FAU .24868
FDE 4.6162 FRA -.1610 FC-11.4537 BSP 37236
BDE 5.3374 BRA 1.2864 BC3 9.0490 FSP 3465

MID-COURSE EXECUTION ACCURACY
SGT10664.4 SGR 2027.9 SG3 1007.4
RRT .9743 RRF .9878 RTF .9610
SGB10855.5 R23 .2211 R13 .9627
SG110846.2 SG2 449.1 THA 10.51

ORBIT DETERMINATION ACCURACY
ST 6975.6 SR 1317.8 SS 2275.8
CRT .9947 CRS -.9999 CST -.9954
LSA 7451.0 MSA 239.0 SSA 16.7
EL1 7097.7 EL2 132.7 ALF 10.65

LAUNCH DATE DEC 26 1964 FLIGHT TIME 326.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 698.124 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.047 GAL 3.78 AZL 85.65 HCA 203.25 SMA 186.39 ECC .22029 INC 4.3544 V1 30.282
RP 210.46 LAP -1.72 LOP 297.45 VP 23.435 GAP -10.37 AZP 94.00 TAL 21.17 TAP 224.42 RCA 145.33 APO 227.45 V2 26.057
RC 307.229 GL 36.09 GP -17.90 ZAL 58.09 ZAP 49.33 ETS 163.08 ZAE 73.05 ETE 173.63 ZAC 66.90 ETC 256.83 CLP 46.78

PLANETOCENTRIC CONIC

C3 18.066 VHL 4.250 DLA 47.06 RAL 162.26 RAD 6567.7 VEL 11.809 PTH 2.09 VHP 4.336 DPA -8.68 RAP 159.02 ECC 1.2973

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.70	5 52 35	4241.01	-32.22	195.74	36.38	53.63	7 3 16	3641.0	-36.71	188.13
129.30	13 50 24	2783.84	-32.20	82.04	36.36	53.62	14 36 47	2183.8	-36.70	74.43
50.70	5 52 35	4241.01	-32.22	195.74	36.38	53.63	7 3 16	3641.0	-36.71	188.13
129.30	13 50 24	2783.84	-32.20	82.04	36.36	53.62	14 36 47	2183.8	-36.70	74.43
50.70	5 52 35	4241.01	-32.22	195.74	36.38	53.63	7 3 16	3641.0	-36.71	188.13
129.30	13 50 24	2783.84	-32.20	82.04	36.36	53.62	14 36 47	2183.8	-36.70	74.43

DIFFERENTIAL CORRECTIONS
TDE 5.1244 TRA-1.2787 TC3-9.3408 BAU 2.2933
RDE .9114 RRA -.0033 RC3-1.7030 FAU .24364
FDE 4.3493 FRA -.1121 FC-11.6753 BSP 37786
BDE 5.2048 BRA 1.2787 BC3 9.4948 FSP 3416

MID-COURSE EXECUTION ACCURACY
SGT10824.5 SGR 1898.8 SG3 996.1
RRT .9730 RRF .9854 RTF .9605
SGB10989.7 R23 .2140 R13 .9620
SG110981.3 SG2 431.8 THA 9.70

ORBIT DETERMINATION ACCURACY
ST 6953.3 SR 1229.4 SS 2199.4
CRT .9942 CRS -.9998 CST -.9951
LSA 7391.9 MSA 239.5 SSA 17.7
EL1 7060.0 EL2 130.3 ALF 9.97

LAUNCH DATE DEC 26 1964 FLIGHT TIME 328.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 702.466 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.055 GAL 3.66 AZL 85.82 HCA 204.47 SMA 186.52 ECC .22029 INC 4.1834 V1 30.282
RP 210.22 LAP -1.73 LOP 298.68 VP 23.476 GAP -10.45 AZP 93.81 TAL 20.53 TAP 225.00 RCA 145.44 APO 227.61 V2 26.085
RC 308.206 GL 35.23 GP -16.94 ZAL 58.46 ZAP 48.26 ETS 163.41 ZAE 71.83 ETE 173.57 ZAC 67.91 ETC 256.88 CLP 45.90

PLANETOCENTRIC CONIC

C3 17.404 VHL 4.172 DLA 45.91 RAL 162.75 RAD 6567.7 VEL 11.781 PTH 2.08 VHP 4.364 DPA -7.93 RAP 159.71 ECC 1.2864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.23	6 0 2	4218.43	-31.87	193.32	35.72	55.02	7 10 20	3618.4	-36.20	185.61
127.77	13 46 53	2789.07	-31.86	82.25	35.71	55.01	14 33 22	2189.1	-36.19	74.54
52.23	6 0 2	4218.43	-31.87	193.32	35.72	55.02	7 10 20	3618.4	-36.20	185.61
127.77	13 46 53	2789.07	-31.86	82.25	35.71	55.01	14 33 22	2189.1	-36.19	74.54
52.23	6 0 2	4218.43	-31.87	193.32	35.72	55.02	7 10 20	3618.4	-36.20	185.61
127.77	13 46 53	2789.07	-31.86	82.25	35.71	55.01	14 33 22	2189.1	-36.19	74.54

DIFFERENTIAL CORRECTIONS
TDE 5.0122 TRA-1.2647 TC3-9.8139 BAU 2.3147
RDE .8371 RRA .0093 RC3-1.6301 FAU .23824
FDE 4.0888 FRA -.0603 FC-11.8509 BSP 38275
BDE 5.0817 BRA 1.2648 BC3 9.9483 FSP 3353

MID-COURSE EXECUTION ACCURACY
SGT10984.9 SGR 1781.0 SG3 982.5
RRT .9714 RRF .9827 RTF .9600
SGB11128.3 R23 .2055 R13 .9612
SG111120.5 SG2 417.5 THA 8.96

ORBIT DETERMINATION ACCURACY
ST 6928.8 SR 1150.4 SS 2120.5
CRT .9936 CRS -.9998 CST -.9947
LSA 7332.8 MSA 239.8 SSA 18.8
EL1 7022.5 EL2 128.1 ALF 9.37

LAUNCH DATE DEC 26 1964 FLIGHT TIME 330.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 706.814 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.063 GAL 3.55 AZL 85.97 HCA 205.70 SMA 186.66 ECC .22029 INC 4.0274 V1 30.282
RP 209.99 LAP -1.75 LOP 299.90 VP 23.517 GAP -10.54 AZP 93.63 TAL 19.87 TAP 225.57 RCA 145.54 APO 227.78 V2 26.111
RC 309.174 GL 34.43 GP -16.06 ZAL 58.91 ZAP 47.24 ETS 163.73 ZAE 70.65 ETE 173.53 ZAC 68.84 ETC 256.91 CLP 45.04

PLANETOCENTRIC CONIC

C3 16.799 VHL 4.099 DLA 44.80 RAL 163.32 RAD 6567.7 VEL 11.755 PTH 2.07 VHP 4.397 DPA -7.27 RAP 160.40 ECC 1.2765

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.71	6 7 52	4195.89	-31.51	190.94	35.21	56.34	7 17 47	3595.9	-35.69	183.16
126.29	13 43 36	2795.28	-31.50	82.53	35.20	56.33	14 30 11	2195.3	-35.68	74.75
53.71	6 7 52	4195.89	-31.51	190.94	35.21	56.34	7 17 47	3595.9	-35.69	183.16
126.29	13 43 36	2795.28	-31.50	82.53	35.20	56.33	14 30 11	2195.3	-35.68	74.75
53.71	6 7 52	4195.89	-31.51	190.94	35.21	56.34	7 17 47	3595.9	-35.69	183.16
126.29	13 43 36	2795.28	-31.50	82.53	35.20	56.33	14 30 11	2195.3	-35.68	74.75

DIFFERENTIAL CORRECTIONS
TDE 4.9093 TRA-1.2391 TC-10.2842 BAU 2.3361
RDE .7727 RRA .0228 RC3-1.5578 FAU .23236
FDE 3.8416 FRA .0018 FC-11.9747 BSP 38822
BDE 4.9697 BRA 1.2394 BC310.4015 FSP 3292

MID-COURSE EXECUTION ACCURACY
SGT11141.3 SGR 1673.1 SG3 966.7
RRT .9694 RRF .9794 RTF .9594
SGB11266.2 R23 .1962 R13 .9604
SG111258.8 SG2 406.7 THA 8.29

ORBIT DETERMINATION ACCURACY
ST 6906.3 SR 1080.9 SS 2043.1
CRT .9930 CRS -.9997 CST -.9942
LSA 7278.8 MSA 240.8 SSA 19.8
EL1 6989.3 EL2 126.4 ALF 8.84

LAUNCH DATE DEC 26 1964 FLIGHT TIME 332.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 711.168 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.071 GAL 3.43 AZL 86.12 HCA 206.93 SMA 186.80 ECC .22032 INC 3.8844 V1 30.282
RP 209.77 LAP -1.76 LOP 301.14 VP 23.556 GAP -10.62 AZP 93.46 TAL 19.20 TAP 226.12 RCA 145.65 APO 227.96 V2 26.137
RC 310.132 GL 33.70 GP -15.26 ZAL 59.44 ZAP 46.25 ETS 164.03 ZAE 69.48 ETE 173.50 ZAC 69.71 ETC 256.93 CLP 44.21

PLANETOCENTRIC CONIC

C3 16.243 VHL 4.030 DLA 43.74 RAL 163.96 RAD 6567.7 VEL 11.731 PTH 2.07 VHP 4.432 DPA -6.69 RAP 161.08 ECC 1.2673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.16	6 16 2	4173.36	-31.14	188.60	34.83	57.58	7 25 36	3573.4	-35.16	180.76
124.84	13 40 32	2802.40	-31.12	82.89	34.82	57.57	14 27 15	2202.4	-35.15	75.05
55.16	6 16 2	4173.36	-31.14	188.60	34.83	57.58	7 25 36	3573.4	-35.16	180.76
124.84	13 40 32	2802.40	-31.12	82.89	34.82	57.57	14 27 15	2202.4	-35.15	75.05
55.16	6 16 2	4173.36	-31.14	188.60	34.83	57.58	7 25 36	3573.4	-35.16	180.76
124.84	13 40 32	2802.40	-31.12	82.89	34.82	57.57	14 27 15	2202.4	-35.15	75.05

DIFFERENTIAL CORRECTIONS
TDE 4.8090 TRA-1.2077 TC-10.7605 BAU 2.3590
RDE .7155 RRA .0351 RC3-1.4881 FAU .22635
FDE 3.5995 FRA .0649 FC-12.0640 BSP 39309
BDE 4.8619 BRA 1.2083 BC310.8629 FSP 3219

MID-COURSE EXECUTION ACCURACY
SGT11296.8 SGR 1574.2 SG3 949.5
RRT .9668 RRF .9756 RTF .9588
SGB11405.9 R23 .1860 R13 .9597
SG111399.0 SG2 398.4 THA 7.68

ORBIT DETERMINATION ACCURACY
ST 6878.6 SR 1018.0 SS 1962.9
CRT .9923 CRS -.9997 CST -.9936
LSA 7221.2 MSA 241.7 SSA 20.8
EL1 6952.4 EL2 124.8 ALF 8.36

LAUNCH DATE DEC 26 1964 FLIGHT TIME 334.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 715.528 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.079	GAL	3.31	AZL	86.25	HCA	208.16	SMA	186.94	ECC	.22036	INC	3.7527	V1	30.282
RP	209.55	LAP	-1.77	LOP	302.37	VP	23.595	GAP	-10.69	AZP	93.31	TAL	18.51	TAP	226.67	RCA	145.75	APO	228.13	V2	26.162
RC	311.080	GL	33.02	GP	-14.52	ZAL	60.03	ZAP	45.31	ETS	164.31	ZAE	68.35	ETE	173.48	ZAC	70.52	ETC	256.94	CLP	43.41

PLANETOCENTRIC CONIC

C3	15.729	VHL	3.966	DLA	42.71	RAL	164.67	RAD	6567.6	VEL	11.710	PTH	2.06	VHP	4.471	DPA	-6.18	RAP	161.76	ECC	1.2589

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.59	6 24 38	4150.56	-30.74	186.28	34.57	58.76	7 33 49	3550.6	-34.63	178.39
123.41	13 37 35	2810.60	-30.73	83.34	34.56	58.74	14 24 26	2210.6	-34.62	75.44
56.59	6 24 38	4150.56	-30.74	186.28	34.57	58.76	7 33 49	3550.6	-34.63	178.39
123.41	13 37 35	2810.60	-30.73	83.34	34.56	58.74	14 24 26	2210.6	-34.62	75.44
56.59	6 24 38	4150.56	-30.74	186.28	34.57	58.76	7 33 49	3550.6	-34.63	178.39
123.41	13 37 35	2810.60	-30.73	83.34	34.56	58.74	14 24 26	2210.6	-34.62	75.44

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	4.7148	TRA	-1.1673	TC	-11.2378	BAU	2.3819	SGT	11450.7	SGR	1483.7	SG3	931.0	ST	6851.3	SR	962.2	SS	1884.1
RDE	.6654	RRA	.0474	RC3	-1.4200	FAU	.22011	RRT	.9638	RRF	.9712	RTF	.9581	CRT	.9916	CRS	-.9996	CST	-.9930
FDE	3.3698	FRA	.1324	FC	-12.1147	BSP	39820	SGB	11546.4	R23	.1752	R13	.9589	LSA	7166.3	MSA	242.9	SSA	21.8
BDE	4.7616	BRA	1.1682	BC	311.3271	FSP	3145	SG	111539.7	SG2	392.7	THA	7.13	EL1	6917.4	EL2	123.3	ALF	7.93

LAUNCH DATE DEC 26 1964 FLIGHT TIME 336.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 719.891 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.087	GAL	3.19	AZL	86.37	HCA	209.39	SMA	187.08	ECC	.22041	INC	3.6309	V1	30.282
RP	209.34	LAP	-1.78	LOP	303.61	VP	23.634	GAP	-10.77	AZP	93.16	TAL	17.81	TAP	227.21	RCA	145.85	APO	228.32	V2	26.186
RC	312.019	GL	32.39	GP	-13.84	ZAL	60.70	ZAP	44.40	ETS	164.57	ZAE	67.23	ETE	173.47	ZAC	71.27	ETC	256.95	CLP	42.62

PLANETOCENTRIC CONIC

C3	15.252	VHL	3.905	DLA	41.70	RAL	165.44	RAD	6567.6	VEL	11.689	PTH	2.06	VHP	4.512	DPA	-5.74	RAP	162.44	ECC	1.2510

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
58.00	6 33 38	4127.44	-30.33	183.97	34.42	59.88	7 42 25	3527.4	-34.08	176.03
122.00	13 34 44	2819.81	-30.32	83.86	34.41	59.87	14 21 44	2219.8	-34.07	75.93
58.00	6 33 38	4127.44	-30.33	183.97	34.42	59.88	7 42 25	3527.4	-34.08	176.03
122.00	13 34 44	2819.81	-30.32	83.86	34.41	59.87	14 21 44	2219.8	-34.07	75.93
58.00	6 33 38	4127.44	-30.33	183.97	34.42	59.88	7 42 25	3527.4	-34.08	176.03
122.00	13 34 44	2819.81	-30.32	83.86	34.41	59.87	14 21 44	2219.8	-34.07	75.93

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	4.6463	TRA	-1.0970	TC	-11.6605	BAU	2.3933	SGT	11570.5	SGR	1398.1	SG3	907.7	ST	6852.7	SR	918.0	SS	1823.2
RDE	.6846	RRA	.0636	RC3	-1.3420	FAU	.21204	RRT	.9591	RRF	.9661	RTF	.9571	CRT	.9908	CRS	-.9996	CST	-.9921
FDE	3.1608	FRA	.2369	FC	-12.0359	BSP	40869	SGB	11662.6	R23	.1662	R13	.9578	LSA	7145.9	MSA	249.0	SSA	22.3
BDE	4.6881	BRA	1.0988	BC	311.7375	FSP	3135	SG	111656.0	SG2	393.1	THA	6.61	EL1	6912.8	EL2	122.9	ALF	7.56

LAUNCH DATE DEC 26 1964 FLIGHT TIME 338.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 724.262 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.095	GAL	3.07	AZL	86.48	HCA	210.63	SMA	187.23	ECC	.22048	INC	3.5180	V1	30.282
RP	209.14	LAP	-1.79	LOP	304.85	VP	23.671	GAP	-10.85	AZP	93.03	TAL	17.10	TAP	227.73	RCA	145.95	APO	228.51	V2	26.209
RC	312.950	GL	31.80	GP	-13.21	ZAL	61.44	ZAP	43.53	ETS	164.82	ZAE	66.14	ETE	173.46	ZAC	71.98	ETC	256.94	CLP	41.86

PLANETOCENTRIC CONIC

C3	14.807	VHL	3.848	DLA	40.72	RAL	166.27	RAD	6567.6	VEL	11.670	PTH	2.05	VHP	4.555	DPA	-5.35	RAP	163.11	ECC	1.2437

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.41	6 43 5	4103.76	-29.90	181.65	34.37	60.96	7 51 29	3503.8	-33.52	173.67
120.59	13 31 52	2830.26	-29.89	84.49	34.36	60.95	14 19 2	2230.3	-33.51	76.51
59.41	6 43 5	4103.76	-29.90	181.65	34.37	60.96	7 51 29	3503.8	-33.52	173.67
120.59	13 31 52	2830.26	-29.89	84.49	34.36	60.95	14 19 2	2230.3	-33.51	76.51
59.41	6 43 5	4103.76	-29.90	181.65	34.37	60.96	7 51 29	3503.8	-33.52	173.67
120.59	13 31 52	2830.26	-29.89	84.49	34.36	60.95	14 19 2	2230.3	-33.51	76.51

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	4.5490	TRA	-1.0490	TC	-12.1623	BAU	2.4210	SGT	11736.2	SGR	1322.6	SG3	888.9	ST	6807.3	SR	870.5	SS	1737.7
RDE	.5836	RRA	.0733	RC3	-1.2820	FAU	.20625	RRT	.9550	RRF	.9602	RTF	.9565	CRT	.9901	CRS	-.9995	CST	-.9913
FDE	2.9572	FRA	.2946	FC	-12.0589	BSP	41188	SGB	11810.5	R23	.1541	R13	.9571	LSA	7074.9	MSA	248.6	SSA	23.4
BDE	4.5863	BRA	1.0515	BC	312.2297	FSP	3032	SG	111804.0	SG2	390.0	THA	6.15	EL1	6861.6	EL2	121.2	ALF	7.22

LAUNCH DATE DEC 26 1964 FLIGHT TIME 340.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 728.639 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.104	GAL	2.94	AZL	86.59	HCA	211.87	SMA	187.37	ECC	.22058	INC	3.4127	V1	30.282
RP	208.94	LAP	-1.80	LOP	306.09	VP	23.708	GAP	-10.92	AZP	92.90	TAL	16.38	TAP	228.25	RCA	146.04	APO	228.70	V2	26.232
RC	313.871	GL	31.25	GP	-12.63	ZAL	62.23	ZAP	42.68	ETS	165.05	ZAE	65.06	ETE	173.46	ZAC	72.65	ETC	256.93	CLP	41.12

PLANETOCENTRIC CONIC

C3	14.392	VHL	3.794	DLA	39.76	RAL	167.15	RAD	6567.6	VEL	11.652	PTH	2.05	VHP	4.600	DPA	-5.01	RAP	163.79	ECC	1.2369

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.83	6 53 3	4079.30	-29.46	179.29	34.41	61.99	8 1 2	3479.3	-32.95	171.29
119.17	13 28 56	2842.07	-29.45	85.21	34.40	61.98	14 16 18	2242.1	-32.94	77.21
60.83	6 53 3	4079.30	-29.46	179.29	34.41	61.99	8 1 2	3479.3	-32.95	171.29
119.17	13 28 56	2842.07	-29.45	85.21	34.40	61.98	14 16 18	2242.1	-32.94	77.21
60.83	6 53 3	4079.30	-29.46	179.29	34.41	61.99	8 1 2	3479.3	-32.95	171.29
119.17	13 28 56	2842.07	-29.45	85.21	34.40	61.98	14 16 18	2242.1	-32.94	77.21

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	4.4561	TRA	-.9912	TC	-12.6618	BAU	2.4476	SGT	11890.3	SGR	1253.0	SG3	869.3	ST	6761.4	SR	828.4	SS	1655.4
RDE	.5472	RRA	.0834	RC3	-1.2223	FAU	.20022	RRT	.9499	RRF	.9535	RTF	.9559	CRT	.9893	CRS	-.9994	CST	-.9903
FDE	2.7483	FRA	.3589	FC	-12.0442	BSP	41522	SGB	11956.1	R23	.1425	R13	.9563	LSA	7005.7	MSA	249.4	SSA	24.5
BDE	4.4895	BRA	.9947	BC	312.7207	FSP	2931	SG	111949.8	SG2	389.6	THA	5.72	EL1	6810.9	EL2	119.8	ALF	6.91

LAUNCH DATE DEC 26 1964 FLIGHT TIME 342.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 733.019 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.112 GAL 2.81 AZL 86.69 HCA 213.11 SMA 187.52 ECC .22069 INC 3.3144 V1 30.282
RP 208.76 LAP -1.81 LOP 307.33 VP 23.743 GAP -10.99 AZP 92.78 TAL 15.65 TAP 228.76 RCA 146.14 APO 228.90 V2 26.254
RC 314.784 GL 30.73 GP -12.09 ZAL 63.09 ZAP 41.86 ETS 165.27 ZAE 64.01 ETE 173.47 ZAC 73.29 ETC 256.91 CLP 40.39

PLANETOCENTRIC CONIC

C3 14.003 VHL 3.742 DLA 38.81 RAL 168.08 RAD 6567.6 VEL 11.636 PTH 2.04 VHP 4.647 DPA -4.72 RAP 164.48 ECC 1.2305

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.27	7 3 34	4053.89	-29.00	176.89	34.53	62.99	8 11 8	3453.9	-32.37	168.86
117.73	13 25 51	2855.40	-28.99	86.05	34.52	62.98	14 13 27	2255.4	-32.36	78.03
62.27	7 3 34	4053.89	-29.00	176.89	34.53	62.99	8 11 8	3453.9	-32.37	168.86
117.73	13 25 51	2855.40	-28.99	86.05	34.52	62.98	14 13 27	2255.4	-32.36	78.03
62.27	7 3 34	4053.89	-29.00	176.89	34.53	62.99	8 11 8	3453.9	-32.37	168.86
117.73	13 25 51	2855.40	-28.99	86.05	34.52	62.98	14 13 27	2255.4	-32.36	78.03

DIFFERENTIAL CORRECTIONS

TDE 4.3664 TRA -.9234 TC-13.1579 BAU 2.4729
RDE .5150 RRA .0935 RC3-1.1627 FAU .19398
FDE 2.5511 FRA .4271 FC-11.9927 BSP 41956
BDE 4.3967 BRA .9281 BC313.2092 FSP 2843

MID-COURSE EXECUTION ACCURACY

SGT12040.1 SGR 1188.6 SG3 848.8
RRT .9439 RRF .9458 RTF .9551
SGB12098.6 R23 .1312 R13 .9555
SG112092.3 SG2 390.8 THA 5.33

ORBIT DETERMINATION ACCURACY

ST 6714.1 SR 790.9 SS 1575.2
CRT .9886 CRS -.9993 CST -.9891
LSA 6937.1 MSA 250.7 SSA 25.5
EL1 6759.5 EL2 118.4 ALF 6.64

LAUNCH DATE DEC 26 1964 FLIGHT TIME 344.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 737.404 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.121 GAL 2.68 AZL 86.78 HCA 214.36 SMA 187.67 ECC .22082 INC 3.2223 V1 30.282
RP 208.58 LAP -1.82 LOP 308.58 VP 23.778 GAP -11.06 AZP 92.66 TAL 14.90 TAP 229.26 RCA 146.23 APO 229.11 V2 26.274
RC 315.690 GL 30.24 GP -11.59 ZAL 64.01 ZAP 41.07 ETS 165.48 ZAE 62.98 ETE 173.48 ZAC 73.89 ETC 256.88 CLP 39.69

PLANETOCENTRIC CONIC

C3 13.639 VHL 3.693 DLA 37.87 RAL 169.06 RAD 6567.5 VEL 11.620 PTH 2.04 VHP 4.695 DPA -4.48 RAP 165.16 ECC 1.2245

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.74	7 14 41	4027.33	-28.52	174.42	34.74	63.96	8 21 48	3427.3	-31.77	166.38
116.26	13 22 35	2870.40	-28.51	87.02	34.73	63.95	14 10 25	2270.4	-31.76	78.98
63.74	7 14 41	4027.33	-28.52	174.42	34.74	63.96	8 21 48	3427.3	-31.77	166.38
116.26	13 22 35	2870.40	-28.51	87.02	34.73	63.95	14 10 25	2270.4	-31.76	78.98
63.74	7 14 41	4027.33	-28.52	174.42	34.74	63.96	8 21 48	3427.3	-31.77	166.38
116.26	13 22 35	2870.40	-28.51	87.02	34.73	63.95	14 10 25	2270.4	-31.76	78.98

DIFFERENTIAL CORRECTIONS

TDE 4.2776 TRA -.8473 TC-13.6492 BAU 2.4969
RDE .4862 RRA .1033 RC3-1.1034 FAU .18757
FDE 2.3640 FRA .4965 FC-11.9063 BSP 42393
BDE 4.3051 BRA .8536 BC313.6938 FSP 2755

MID-COURSE EXECUTION ACCURACY

SGT12184.1 SGR 1128.8 SG3 827.5
RRT .9368 RRF .9370 RTF .9543
SGB12236.3 R23 .1203 R13 .9547
SG112229.9 SG2 393.6 THA 4.97

ORBIT DETERMINATION ACCURACY

ST 6662.1 SR 757.1 SS 1496.4
CRT .9878 CRS -.9992 CST -.9877
LSA 6865.3 MSA 252.5 SSA 26.4
EL1 6704.0 EL2 117.0 ALF 6.41

LAUNCH DATE DEC 26 1964 FLIGHT TIME 346.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 741.793 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.129 GAL 2.55 AZL 86.86 HCA 215.60 SMA 187.82 ECC .22097 INC 3.1356 V1 30.282
RP 208.40 LAP -1.82 LOP 309.82 VP 23.812 GAP -11.13 AZP 92.55 TAL 14.14 TAP 229.74 RCA 146.32 APO 229.32 V2 26.294
RC 316.588 GL 29.77 GP -11.13 ZAL 64.99 ZAP 40.31 ETS 165.67 ZAE 61.96 ETE 173.49 ZAC 74.46 ETC 256.85 CLP 39.00

PLANETOCENTRIC CONIC

C3 13.297 VHL 3.646 DLA 36.93 RAL 170.09 RAD 6567.5 VEL 11.605 PTH 2.03 VHP 4.745 DPA -4.27 RAP 165.86 ECC 1.2188

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.24	7 26 31	3999.20	-28.02	171.86	35.02	64.90	8 33 10	3399.2	-31.16	163.81
114.76	13 18 58	2887.47	-28.01	88.14	35.02	64.89	14 7 5	2287.5	-31.15	80.09
65.24	7 26 31	3999.20	-28.02	171.86	35.02	64.90	8 33 10	3399.2	-31.16	163.81
114.76	13 18 58	2887.47	-28.01	88.14	35.02	64.89	14 7 5	2287.5	-31.15	80.09
65.24	7 26 31	3999.20	-28.02	171.86	35.02	64.90	8 33 10	3399.2	-31.16	163.81
114.76	13 18 58	2887.47	-28.01	88.14	35.02	64.89	14 7 5	2287.5	-31.15	80.09

DIFFERENTIAL CORRECTIONS

TDE 4.1900 TRA -.7630 TC-14.1414 BAU 2.5207
RDE .4603 RRA .1127 RC3-1.0457 FAU .18125
FDE 2.1864 FRA .5663 FC-11.8008 BSP 42883
BDE 4.2153 BRA .7713 BC314.1800 FSP 2672

MID-COURSE EXECUTION ACCURACY

SGT12327.1 SGR 1074.1 SG3 806.4
RRT .9285 RRF .9271 RTF .9535
SGB12373.8 R23 .1099 R13 .9538
SG112367.4 SG2 397.4 THA 4.63

ORBIT DETERMINATION ACCURACY

ST 6606.3 SR 726.7 SS 1419.1
CRT .9872 CRS -.9991 CST -.9861
LSA 6791.1 MSA 254.5 SSA 27.4
EL1 6645.1 EL2 115.4 ALF 6.20

LAUNCH DATE DEC 26 1964 FLIGHT TIME 348.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 746.185 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.138 GAL 2.41 AZL 86.95 HCA 216.85 SMA 187.97 ECC .22114 INC 3.0540 V1 30.282
RP 208.24 LAP -1.83 LOP 311.07 VP 23.845 GAP -11.20 AZP 92.44 TAL 13.37 TAP 230.22 RCA 146.40 APO 229.54 V2 26.314
RC 317.480 GL 29.32 GP -10.69 ZAL 66.03 ZAP 39.57 ETS 165.85 ZAE 60.97 ETE 173.51 ZAC 75.01 ETC 256.82 CLP 38.33

PLANETOCENTRIC CONIC

C3 12.976 VHL 3.602 DLA 35.99 RAL 171.17 RAD 6567.5 VEL 11.591 PTH 2.03 VHP 4.796 DPA -4.11 RAP 166.55 ECC 1.2135

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.80	7 39 9	3969.19	-27.50	169.17	35.38	65.82	8 45 18	3369.2	-30.52	161.11
113.20	13 14 54	2906.93	-27.49	89.44	35.38	65.81	14 3 21	2306.9	-30.51	81.38
66.80	7 39 9	3969.19	-27.50	169.17	35.38	65.82	8 45 18	3369.2	-30.52	161.11
113.20	13 14 54	2906.93	-27.49	89.44	35.38	65.81	14 3 21	2306.9	-30.51	81.38
66.80	7 39 9	3969.19	-27.50	169.17	35.38	65.82	8 45 18	3369.2	-30.52	161.11
113.20	13 14 54	2906.93	-27.49	89.44	35.38	65.81	14 3 21	2306.9	-30.51	81.38

DIFFERENTIAL CORRECTIONS

TDE 4.1007 TRA -.6722 TC-14.6371 BAU 2.5450
RDE .4369 RRA .1216 RC3 -.9895 FAU .17500
FDE 2.0167 FRA .6346 FC-11.6761 BSP 43321
BDE 4.1240 BRA .6831 BC314.6705 FSP 2588

MID-COURSE EXECUTION ACCURACY

SGT12469.6 SGR 1023.9 SG3 785.3
RRT .9191 RRF .9160 RTF .9528
SGB12511.5 R23 .1000 R13 .9530
SG112505.1 SG2 402.2 THA 4.32

ORBIT DETERMINATION ACCURACY

ST 6542.2 SR 699.0 SS 1342.4
CRT .9865 CRS -.9988 CST -.9840
LSA 6710.1 MSA 256.8 SSA 28.3
EL1 6578.5 EL2 113.7 ALF 6.02

LAUNCH DATE DEC 26 1964 FLIGHT TIME 350.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 750.582 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.146	GAL	2.27	AZL	87.02	HCA	218.10	SMA	188.12	ECC	.22134	INC	2.9768
RP	208.08	LAP	-1.84	LOP	312.33	VP	23.877	GAP	-11.26	AZP	92.34	TAL	12.58	TAP	230.69	RCA	146.48	APO	229.76
RC	318.367	GL	28.89	GP	-10.29	ZAL	67.13	ZAP	38.85	ETS	166.02	ZAE	59.99	ETE	173.52	ZAC	75.53	ETC	256.79

V1	30.282	V2	26.332	CLP	37.67														

PLANETOCENTRIC CONIC

C3	12.675	VHL	3.560	DLA	35.04	RAL	172.29	RAD	6567.5	VEL	11.579	PTH	2.02	VHP	4.849	DPA	-3.98	RAP	167.26

ECC	1.2086	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		68.43	7 52 48	3936.67	-26.96	166.32	35.82	66.71	8 58 24	3336.7	-29.87	158.26							
		111.57	13 10 12	2929.38	-26.95	90.95	35.81	66.70	13 59 2	2329.4	-29.86	82.90							
		68.43	7 52 48	3936.67	-26.96	166.32	35.82	66.71	8 58 24	3336.7	-29.87	158.26							
		111.57	13 10 12	2929.38	-26.95	90.95	35.81	66.70	13 59 2	2329.4	-29.86	82.90							
		68.43	7 52 48	3936.67	-26.96	166.32	35.82	66.71	8 58 24	3336.7	-29.87	158.26							
		111.57	13 10 12	2929.38	-26.95	90.95	35.81	66.70	13 59 2	2329.4	-29.86	82.90							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	4.0108	TRA	-.5733	TC	-15.1236	BAU	2.5677	SGT	12605.5	SGR	977.1	SG3	763.3	ST	6471.7	SR	673.9	SS	1266.9
RDE	.4158	RRA	.1301	RC3	-.9330	FAU	.16861	RRT	.9082	RRF	.9034	RTF	.9519	CRT	.9860	CRS	-.9984	CST	-.9815
FDE	1.8550	FRA	.7026	FC	-11.5160	BSP	43818	SGB	12643.3	R23	.0908	R13	.9521	LSA	6623.7	MSA	259.4	SSA	29.2
BDE	4.0323	BRA	.5879	BC	315.1524	FSP	2510	SG1	12636.7	SG2	407.9	THA	4.03	EL1	6505.7	EL2	111.8	ALF	5.86

LAUNCH DATE DEC 26 1964 FLIGHT TIME 352.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 754.981 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.155	GAL	2.13	AZL	87.10	HCA	219.35	SMA	188.27	ECC	.22156	INC	2.9038
RP	207.93	LAP	-1.84	LOP	313.58	VP	23.908	GAP	-11.33	AZP	92.25	TAL	11.79	TAP	231.14	RCA	146.56	APO	229.99
RC	319.247	GL	28.47	GP	-9.91	ZAL	68.29	ZAP	38.15	ETS	166.18	ZAE	59.03	ETE	173.54	ZAC	76.03	ETC	256.75

V1	30.282	V2	26.349	CLP	37.03														

PLANETOCENTRIC CONIC

C3	12.394	VHL	3.520	DLA	34.10	RAL	173.45	RAD	6567.5	VEL	11.566	PTH	2.02	VHP	4.902	DPA	-3.88	RAP	167.97

ECC	1.2040	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		70.16	8 7 35	3901.11	-26.40	163.26	36.32	67.59	9 12 36	3301.1	-29.19	155.21							
		109.84	13 4 42	2955.37	-26.39	92.73	36.31	67.58	13 53 57	2355.4	-29.19	84.67							
		70.16	8 7 35	3901.11	-26.40	163.26	36.32	67.59	9 12 36	3301.1	-29.19	155.21							
		109.84	13 4 42	2955.37	-26.39	92.73	36.31	67.58	13 53 57	2355.4	-29.19	84.67							
		110.00	13 24 6	2896.23	-27.86	88.76	36.96	69.34	14 12 22	2296.2	-30.41	80.50							
		110.00	12 47 21	3008.24	-24.94	96.17	35.62	65.83	13 37 30	2408.2	-27.99	88.32							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.9189	TRA	-.4677	TC	-15.6123	BAU	2.5910	SGT	12742.1	SGR	934.4	SG3	741.9	ST	6392.5	SR	651.1	SS	1192.3
RDE	.5967	RRA	.1382	RC3	-.8784	FAU	.16241	RRT	.8959	RRF	.8895	RTF	.9511	CRT	.9856	CRS	-.9977	CST	-.9785
FDE	1.7006	FRA	.7685	FC	-11.3443	BSP	44283	SGB	12776.4	R23	.0821	R13	.9513	LSA	6529.9	MSA	262.2	SSA	30.1
BDE	3.9390	BRA	.4877	BC	315.6370	FSP	2429	SG1	12769.6	SG2	414.2	THA	3.76	EL1	6424.6	EL2	109.7	ALF	5.73

LAUNCH DATE DEC 26 1964 FLIGHT TIME 354.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 759.384 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.164	GAL	1.99	AZL	87.17	HCA	220.61	SMA	188.43	ECC	.22180	INC	2.8344
RP	207.79	LAP	-1.84	LOP	314.83	VP	23.938	GAP	-11.40	AZP	92.15	TAL	10.98	TAP	231.59	RCA	146.63	APO	230.22
RC	320.122	GL	28.07	GP	-9.55	ZAL	69.50	ZAP	37.47	ETS	166.33	ZAE	58.08	ETE	173.56	ZAC	76.50	ETC	256.71

V1	30.282	V2	26.366	CLP	36.41														

PLANETOCENTRIC CONIC

C3	12.131	VHL	3.483	DLA	33.14	RAL	174.66	RAD	6567.5	VEL	11.555	PTH	2.02	VHP	4.957	DPA	-3.81	RAP	168.68

ECC	1.1997	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		72.02	8 23 51	3861.41	-25.81	159.92	36.89	68.45	9 28 12	3261.4	-28.50	151.87							
		107.98	12 58 3	2985.99	-25.80	94.84	36.88	68.44	13 47 49	2386.0	-28.49	86.79							
		72.02	8 23 51	3861.41	-25.81	159.92	36.89	68.45	9 28 12	3261.4	-28.50	151.87							
		107.98	12 58 3	2985.99	-25.80	94.84	36.88	68.44	13 47 49	2386.0	-28.49	86.79							
		110.00	14 14 18	2751.85	-30.91	78.64	38.82	74.62	15 0 10	2151.9	-32.71	69.88							
		110.00	12 6 46	3143.55	-20.91	104.59	34.44	62.32	12 59 9	2543.5	-24.44	97.23							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.8242	TRA	-.3552	TC	-16.0965	BAU	2.6140	SGT	12875.9	SGR	895.1	SG3	720.5	ST	6303.2	SR	630.1	SS	1118.2
RDE	.3793	RRA	.1458	RC3	-.8245	FAU	.15627	RRT	.8820	RRF	.8739	RTF	.9502	CRT	.9853	CRS	-.9967	CST	-.9747
FDE	1.5524	FRA	.8326	FC	-11.1520	BSP	44744	SGB	12907.0	R23	.0741	R13	.9503	LSA	6427.1	MSA	265.3	SSA	31.0
BDE	3.8429	BRA	.3839	BC	316.1176	FSP	2350	SG1	12900.1	SG2	421.0	THA	3.51	EL1	6333.8	EL2	107.3	ALF	5.63

LAUNCH DATE DEC 26 1964 FLIGHT TIME 356.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 763.786 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.172	GAL	1.84	AZL	87.23	HCA	221.86	SMA	188.58	ECC	.22207	INC	2.7684
RP	207.66	LAP	-1.85	LOP	316.09	VP	23.967	GAP	-11.46	AZP	92.06	TAL	10.16	TAP	232.02	RCA	146.70	APO	230.46
RC	320.992	GL	27.68	GP	-9.22	ZAL	70.77	ZAP	36.82	ETS	166.47	ZAE	57.15	ETE	173.58	ZAC	76.97	ETC	256.67

V1	30.282	V2	26.381	CLP	35.80														

PLANETOCENTRIC CONIC

C3	11.887	VHL	3.448	DLA	32.17	RAL	175.90	RAD	6567.5	VEL	11.544	PTH	2.01	VHP	5.013	DPA	-3.77	RAP	169.40

ECC	1.1956	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		74.05	8 42 3	3816.10	-25.19	156.18	37.52	69.30	9 45 39	3216.1	-27.78	148.14							
		105.95	12 49 47	3022.72	-25.18	97.39	37.52	69.28	13 40 10	2422.7	-27.77	89.35							
		74.05	8 42 3	3816.10	-25.19	156.18	37.52	69.30	9 45 39	3216.1	-27.78	148.14							
		105.95	12 49 47	3022.72	-25.18	97.39	37.52	69.28	13 40 10	2422.7	-27.77	89.35							
		110.00	14 43 50	2670.12	-32.23	72.63	39.88	77.94	15 28 20	2070.1	-33.55	63.65							
		110.00	11 47 10	3216.70	-18.53	108.94	34.18	60.75	12 40 47	2616.7	-22.29	101.82							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	3.7521	TRA	-.2117	TC	-16.4955	BAU	2.6242	SGT	12978.1	SGR	859.8	SG3	696.2	ST	6246.0	SR	614.7	SS	1062.6
RDE	.3657	RRA	.1549	RC3	-.7639	FAU	.14902	RRT	.8652	RRF	.8570	RTF	.9489	CRT	.9854	CRS	-.9951	CST	-.9701
FDE	1.4337	FRA	.9172	FC	-10.8536	BSP	45795	SGB	13006.6	R23	.0701	R13	.9491	LSA	6359.6	MSA	271.8	SSA	31.3
BDE	3.7699	BRA	.2624	BC	316.5132	FSP	2321	SG1	12999.4	SG2	430.4	THA	3.28	EL1	6275.3	EL2	104.3	ALF	5.54

LAUNCH DATE DEC 26 1964 FLIGHT TIME 358.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 768.194 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.181 GAL 1.69 AZL 87.29 HCA 223.12 SMA 188.74 ECC .22237 INC 2.7055 V1 30.282
RP 207.54 LAP -1.85 LOP 317.35 VP 23.996 GAP -11.53 AZP 91.98 TAL 9.32 TAP 232.44 RCA 146.77 APO 230.71 V2 26.396
RC 321.856 GL 27.29 GP -8.91 ZAL 72.10 ZAP 36.17 ETS 166.60 ZAE 56.24 ETE 173.60 ZAC 77.41 ETC 256.62 CLP 35.21

PLANETOCENTRIC CONIC

C3 11.661 VHL 3.415 DLA 31.19 RAL 177.19 RAD 6567.4 VEL 11.535 PTH 2.01 VHP 5.070 DPA -3.75 RAP 170.13 ECC 1.1919

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.34	9 2 52	3762.86	-24.55	151.88	38.22	70.13	10 5 35	3162.9	-27.03	143.85
103.66	12 39 12	3067.92	-24.54	100.56	38.22	70.12	13 30 19	2467.9	-27.02	92.52
76.34	9 2 52	3762.86	-24.55	151.88	38.22	70.13	10 5 35	3162.9	-27.03	143.85
103.66	12 39 12	3067.92	-24.54	100.56	38.22	70.12	13 30 19	2467.9	-27.02	92.52
110.00	15 8 6	2604.38	-33.06	67.68	40.74	80.76	15 51 31	2004.4	-33.98	58.57
110.00	11 33 8	3274.39	-16.58	112.27	34.24	59.67	12 27 42	2674.4	-20.48	105.32

DIFFERENTIAL CORRECTIONS
TDE 3.6519 TRA -.0858 TC-16.9677 BAU 2.6475
RDE .3512 RRA .1614 RC3 -.7127 FAU .14322
FDE 1.2966 FRA .9749 FC-10.6330 BSP 46219
BDE 3.6687 BRA .1828 BC316.9826 FSP 2241

MID-COURSE EXECUTION ACCURACY
SGT13109.6 SGR 827.2 SG3 675.5
RRT .8482 RRF .8384 RTF .9480
SGB13135.6 R23 .0631 R13 .9481
SG113128.4 SG2 437.6 THA 3.07

ORBIT DETERMINATION ACCURACY
ST 6137.4 SR 597.0 SS 990.1
CRT .9854 CRS -.9926 CST -.9642
LSA 6239.2 MSA 275.1 SSA 32.1
EL1 6165.5 EL2 101.1 ALF 5.48

LAUNCH DATE DEC 26 1964 FLIGHT TIME 360.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 772.606 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.190 GAL 1.54 AZL 87.35 HCA 224.38 SMA 188.90 ECC .22270 INC 2.6454 V1 30.282
RP 207.42 LAP -1.85 LOP 318.61 VP 24.023 GAP -11.59 AZP 91.89 TAL 8.48 TAP 232.86 RCA 146.83 APO 230.96 V2 26.409
RC 322.714 GL 26.90 GP -8.61 ZAL 73.48 ZAP 35.55 ETS 166.73 ZAE 55.34 ETE 173.61 ZAC 77.84 ETC 256.58 CLP 34.63

PLANETOCENTRIC CONIC

C3 11.453 VHL 3.384 DLA 30.20 RAL 178.50 RAD 6567.4 VEL 11.526 PTH 2.01 VHP 5.127 DPA -3.76 RAP 170.86 ECC 1.1885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.05	9 27 50	3696.70	-23.88	146.66	38.98	70.95	10 29 27	3096.7	-26.26	138.65
100.95	12 24 44	3126.59	-23.87	104.69	38.98	70.94	13 16 51	2526.6	-26.25	96.68
79.05	9 27 50	3696.70	-23.88	146.66	38.98	70.95	10 29 27	3096.7	-26.26	138.65
100.95	12 24 44	3126.59	-23.87	104.69	38.98	70.94	13 16 51	2526.6	-26.25	96.68
110.00	15 29 41	2546.93	-33.60	63.29	41.51	83.31	16 12 8	1946.9	-34.16	54.09
110.00	11 22 4	3324.35	-14.84	115.10	34.50	58.85	12 17 29	2724.4	-18.86	108.29

DIFFERENTIAL CORRECTIONS
TDE 3.5277 TRA .0245 TC-17.5014 BAU 2.6818
RDE .3365 RRA .1655 RC3 -.6683 FAU .13847
FDE 1.1486 FRA 1.0075 FC-10.4665 BSP 46164
BDE 3.5437 BRA .1673 BC317.5142 FSP 2125

MID-COURSE EXECUTION ACCURACY
SGT13266.4 SGR 796.4 SG3 657.2
RRT .8307 RRF .8174 RTF .9476
SGB13290.3 R23 .0528 R13 .9477
SG113282.9 SG2 442.8 THA 2.86

ORBIT DETERMINATION ACCURACY
ST 5982.9 SR 578.1 SS 905.5
CRT .9855 CRS -.9888 CST -.9566
LSA 6072.3 MSA 275.4 SSA 33.6
EL1 6010.0 EL2 97.5 ALF 5.44

LAUNCH DATE DEC 26 1964 FLIGHT TIME 362.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 777.018 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.199 GAL 1.39 AZL 87.41 HCA 225.64 SMA 189.05 ECC .22305 INC 2.5878 V1 30.282
RP 207.31 LAP -1.85 LOP 319.87 VP 24.049 GAP -11.65 AZP 91.81 TAL 7.62 TAP 233.26 RCA 146.89 APO 231.22 V2 26.422
RC 323.566 GL 26.52 GP -8.33 ZAL 74.91 ZAP 34.94 ETS 166.84 ZAE 54.45 ETE 173.63 ZAC 78.26 ETC 256.53 CLP 34.06

PLANETOCENTRIC CONIC

C3 11.263 VHL 3.356 DLA 29.18 RAL 179.86 RAD 6567.4 VEL 11.517 PTH 2.01 VHP 5.186 DPA -3.79 RAP 171.60 ECC 1.1854

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.63	10 0 53	3604.77	-23.18	139.59	39.81	71.76	11 0 57	3004.8	-25.46	131.59
97.37	12 2 30	3211.58	-23.18	110.74	39.80	71.75	12 56 2	2611.6	-25.45	102.74
100.00	13 17 38	2970.65	-27.03	94.11	41.00	76.71	14 7 9	2370.7	-28.58	85.66
100.00	11 28 26	3320.94	-19.44	117.31	38.29	66.84	12 23 47	2720.9	-22.41	109.77
110.00	15 49 37	2494.67	-33.94	59.25	42.25	85.68	16 31 11	1894.7	-34.17	50.01
110.00	11 12 57	3369.68	-13.23	117.62	34.93	58.19	12 9 6	2769.7	-17.34	110.93

DIFFERENTIAL CORRECTIONS
TDE 3.4202 TRA .1630 TC-17.9568 BAU 2.7056
RDE .3247 RRA .1710 RC3 -.6185 FAU .13286
FDE 1.0240 FRA 1.0592 FC-10.2120 BSP 46575
BDE 3.4356 BRA .2362 BC317.9675 FSP 2050

MID-COURSE EXECUTION ACCURACY
SGT13396.7 SGR 769.1 SG3 636.8
RRT .8102 RRF .7951 RTF .9467
SGB13418.8 R23 .0464 R13 .9468
SG113411.2 SG2 450.3 THA 2.67

ORBIT DETERMINATION ACCURACY
ST 5851.1 SR 563.5 SS 836.4
CRT .9860 CRS -.9830 CST -.9468
LSA 5930.7 MSA 279.4 SSA 34.5
EL1 5877.4 EL2 93.4 ALF 5.43

LAUNCH DATE DEC 26 1964 FLIGHT TIME 364.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 781.431 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.208 GAL 1.23 AZL 87.47 HCA 226.90 SMA 189.21 ECC .22344 INC 2.5327 V1 30.282
RP 207.21 LAP -1.85 LOP 321.14 VP 24.074 GAP -11.72 AZP 91.73 TAL 6.75 TAP 233.65 RCA 146.94 APO 231.49 V2 26.434
RC 324.413 GL 26.14 GP -8.07 ZAL 76.40 ZAP 34.35 ETS 166.95 ZAE 53.57 ETE 173.65 ZAC 78.67 ETC 256.49 CLP 33.50

PLANETOCENTRIC CONIC

C3 11.092 VHL 3.330 DLA 28.15 RAL 181.25 RAD 6567.4 VEL 11.510 PTH 2.00 VHP 5.246 DPA -3.84 RAP 172.35 ECC 1.1825

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	11 33 56	3318.32	-24.24	118.91	41.26	74.90	12 29 15	2718.3	-26.08	110.73
90.00	10 40 31	3491.69	-20.69	130.37	40.05	70.22	11 38 42	2891.7	-23.20	122.60
100.00	13 54 0	2866.74	-28.43	86.71	42.29	80.36	14 41 47	2266.7	-29.47	78.06
100.00	11 3 8	3418.51	-16.72	123.28	38.32	64.85	12 0 6	2818.5	-19.97	115.99
110.00	16 8 25	2446.02	-34.13	55.46	42.97	87.91	16 49 11	1846.0	-34.04	46.21
110.00	11 5 12	3411.99	-11.70	119.95	35.48	57.65	12 2 4	2812.0	-15.89	113.34

DIFFERENTIAL CORRECTIONS
TDE 3.3131 TRA .3121 TC-18.3829 BAU 2.7272
RDE .3144 RRA .1763 RC3 -.5686 FAU .12721
FDE .9080 FRA 1.1110 FC3-9.9288 BSP 47041
BDE 3.3280 BRA .3585 BC318.3917 FSP 1976

MID-COURSE EXECUTION ACCURACY
SGT13519.9 SGR 744.5 SG3 616.3
RRT .7877 RRF .7712 RTF .9457
SGB13540.4 R23 .0411 R13 .9458
SG113532.6 SG2 458.2 THA 2.49

ORBIT DETERMINATION ACCURACY
ST 5714.6 SR 550.7 SS 772.1
CRT .9868 CRS -.9744 CST -.9342
LSA 5785.7 MSA 284.2 SSA 35.4
EL1 5740.4 EL2 88.6 ALF 5.43

LAUNCH DATE DEC 26 1964 FLIGHT TIME 366.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 785.844 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.217 GAL 1.07 AZL 87.52 HCA 228.16 SMA 189.37 ECC .22386 INC 2.4797 V1 30.282
RP 207.12 LAP -1.85 LOP 322.40 VP 24.098 GAP -11.78 AZP 91.65 TAL 5.86 TAP 234.03 RCA 146.98 APO 231.77 V2 26.444
RC 325.253 GL 25.75 GP -7.82 ZAL 77.94 ZAP 33.77 ETS 167.05 ZAE 52.71 ETE 173.66 ZAC 79.06 ETC 256.44 CLP 32.96

PLANETOCENTRIC CONIC

C3 10.938 VHL 3.307 DLA 27.10 RAL 182.67 RAD 6567.4 VEL 11.503 PTH 2.00 VHP 5.306 DPA -3.91 RAP 173.10 ECC 1.1800

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 25 35	3164.71	-26.54	108.26	42.91	79.75	13 18 20	2564.7	-27.69	99.78
90.00	10 0 12	3639.58	-17.01	139.66	39.85	67.01	11 0 51	3039.6	-19.98	132.24
100.00	14 22 17	2788.52	-29.19	81.02	43.36	83.27	15 8 45	2188.5	-29.82	72.27
100.00	10 46 11	3491.01	-14.57	127.59	38.69	63.61	11 44 22	2891.0	-18.00	120.48
110.00	16 26 25	2400.05	-34.18	51.87	43.70	90.03	17 6 26	1800.0	-33.80	42.65
110.00	10 58 32	3452.24	-10.23	122.13	36.16	57.20	11 56 4	2852.2	-14.48	115.61

DIFFERENTIAL CORRECTIONS
TDE 3.2002 TRA .4641 TC-18.7985 BAU 2.7500
RDE .3050 RRA .1808 RC3 -.5199 FAU .12174
FDE .7955 FRA 1.1536 FC3-9.6353 BSP 47489
BDE 3.2147 BRA .4980 BC318.8057 FSP 1906

MID-COURSE EXECUTION ACCURACY
SGT13644.3 SGR 721.9 SG3 595.8
RRT .7637 RRF .7451 RTF .9450
SGB13663.4 R23 .0350 R13 .9450
SG113655.5 SG2 465.6 THA 2.32

ORBIT DETERMINATION ACCURACY
ST 5563.1 SR 538.8 SS 708.6
CRT .9879 CRS -.9618 CST -.9180
LSA 5626.4 MSA 288.2 SSA 36.3
EL1 5588.5 EL2 83.2 ALF 5.47

LAUNCH DATE DEC 26 1964 FLIGHT TIME 368.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 790.259 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.226 GAL .91 AZL 87.57 HCA 229.43 SMA 189.54 ECC .22431 INC 2.4287 V1 30.282
RP 207.04 LAP -1.84 LOP 323.66 VP 24.121 GAP -11.85 AZP 91.58 TAL 4.97 TAP 234.40 RCA 147.02 APO 232.05 V2 26.454
RC 326.088 GL 25.36 GP -7.59 ZAL 79.53 ZAP 33.21 ETS 167.14 ZAE 51.86 ETE 173.68 ZAC 79.45 ETC 256.40 CLP 32.43

PLANETOCENTRIC CONIC

C3 10.803 VHL 3.287 DLA 26.03 RAL 184.11 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 5.367 DPA -4.00 RAP 173.86 ECC 1.1778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	12 58 17	3072.14	-27.49	101.65	44.12	82.93	13 49 30	2472.1	-28.19	93.05
90.00	9 39 3	3727.08	-14.61	144.96	40.22	65.47	10 41 10	3127.1	-17.80	137.74
100.00	14 46 57	2721.84	-29.62	76.11	44.36	85.81	15 32 19	2121.8	-29.89	67.32
100.00	10 33 5	3552.62	-12.68	131.18	39.26	62.70	11 32 17	2952.6	-16.24	124.20
110.00	16 43 50	2356.14	-34.13	48.44	44.45	92.06	17 23 6	1756.1	-33.47	39.26
110.00	10 52 41	3491.08	-8.79	124.22	36.95	56.83	11 50 52	2891.1	-13.09	117.77

DIFFERENTIAL CORRECTIONS
TDE 3.0855 TRA .6265 TC-19.1840 BAU 2.7716
RDE .2968 RRA .1853 RC3 -.4710 FAU .11621
FDE .6908 FRA 1.2001 FC3-9.3126 BSP 47932
BDE 3.0998 BRA .6533 BC319.1898 FSP 1833

MID-COURSE EXECUTION ACCURACY
SGT13763.9 SGR 701.9 SG3 575.4
RRT .7374 RRF .7178 RTF .9438
SGB13781.8 R23 .0311 R13 .9439
SG113773.7 SG2 473.8 THA 2.16

ORBIT DETERMINATION ACCURACY
ST 5404.2 SR 528.5 SS 651.1
CRT .9892 CRS -.9432 CST -.8962
LSA 5460.9 MSA 294.4 SSA 37.1
EL1 5429.5 EL2 77.2 ALF 5.53

LAUNCH DATE DEC 26 1964 FLIGHT TIME 370.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 794.674 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.235 GAL .74 AZL 87.62 HCA 230.69 SMA 189.70 ECC .22479 INC 2.3796 V1 30.282
RP 206.96 LAP -1.84 LOP 324.93 VP 24.143 GAP -11.91 AZP 91.51 TAL 4.06 TAP 234.75 RCA 147.05 APO 232.34 V2 26.463
RC 326.917 GL 24.96 GP -7.37 ZAL 81.17 ZAP 32.67 ETS 167.23 ZAE 51.03 ETE 173.69 ZAC 79.82 ETC 256.35 CLP 31.91

PLANETOCENTRIC CONIC

C3 10.688 VHL 3.269 DLA 24.94 RAL 185.59 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 5.429 DPA -4.11 RAP 174.63 ECC 1.1759

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 25 33	2997.16	-28.00	96.22	45.21	85.61	14 15 30	2397.2	-28.32	87.57
90.00	9 23 35	3797.68	-12.57	149.15	40.82	64.42	10 26 53	3197.7	-15.91	142.06
100.00	15 9 30	2662.01	-29.84	71.68	45.32	88.14	15 53 52	2062.0	-29.78	62.88
100.00	10 22 19	3608.05	-10.93	134.37	39.97	62.00	11 22 27	3008.1	-14.59	127.49
110.00	17 0 46	2313.90	-33.98	45.15	45.23	94.00	17 39 20	1713.9	-33.05	36.04
110.00	10 47 32	3528.94	-7.37	126.23	37.83	56.53	11 46 21	2928.9	-11.72	119.84

DIFFERENTIAL CORRECTIONS
TDE 2.9659 TRA .7917 TC-19.5489 BAU 2.7939
RDE .2896 RRA .1887 RC3 -.4239 FAU .11098
FDE .5905 FRA 1.2340 FC3-8.9892 BSP 48368
BDE 2.9800 BRA .8138 BC319.5535 FSP 1766

MID-COURSE EXECUTION ACCURACY
SGT13883.1 SGR 683.6 SG3 555.3
RRT .7101 RRF .6883 RTF .9432
SGB13899.9 R23 .0253 R13 .9432
SG113891.6 SG2 481.1 THA 2.00

ORBIT DETERMINATION ACCURACY
ST 5232.3 SR 519.2 SS 596.0
CRT .9907 CRS -.9171 CST -.8688
LSA 5283.1 MSA 299.0 SSA 38.0
EL1 5257.6 EL2 70.4 ALF 5.62

LAUNCH DATE DEC 26 1964 FLIGHT TIME 372.00 ARRIVAL DATE JAN 2 1966

HELIOCENTRIC CONIC DISTANCE 799.089 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.244 GAL .58 AZL 87.67 HCA 231.96 SMA 189.86 ECC .22532 INC 2.3322 V1 30.282
RP 206.89 LAP -1.84 LOP 326.20 VP 24.164 GAP -11.98 AZP 91.44 TAL 3.14 TAP 235.10 RCA 147.08 APO 232.64 V2 26.471
RC 327.742 GL 24.56 GP -7.16 ZAL 82.86 ZAP 32.13 ETS 167.31 ZAE 50.20 ETE 173.70 ZAC 80.19 ETC 256.31 CLP 31.41

PLANETOCENTRIC CONIC

C3 10.592 VHL 3.254 DLA 23.83 RAL 187.10 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 5.492 DPA -4.23 RAP 175.41 ECC 1.1743

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 49 56	2931.51	-28.25	91.44	46.27	88.00	14 38 48	2331.5	-28.23	82.77
90.00	9 11 11	3859.66	-10.72	152.76	41.59	63.63	10 15 31	3259.7	-14.18	145.79
100.00	15 30 38	2606.85	-29.89	67.58	46.29	90.30	16 14 5	2006.8	-29.53	58.79
100.00	10 13 11	3659.55	-9.27	137.29	40.82	61.45	11 14 10	3059.5	-13.01	130.50
110.00	17 17 20	2273.03	-33.74	41.98	46.05	95.86	17 55 13	1673.0	-32.56	32.95
110.00	10 42 58	3566.13	-5.97	128.20	38.81	56.28	11 42 24	2966.1	-10.36	121.86

DIFFERENTIAL CORRECTIONS
TDE 2.8445 TRA .9669 TC-19.8878 BAU 2.8167
RDE .2834 RRA .1921 RC3 -.3783 FAU .10593
FDE .4970 FRA 1.2714 FC3-8.6585 BSP 48820
BDE 2.8586 BRA .9858 BC319.8914 FSP 1703

MID-COURSE EXECUTION ACCURACY
SGT14004.0 SGR 668.1 SG3 536.2
RRT .6813 RRF .6582 RTF .9422
SGB14020.0 R23 .0211 R13 .9423
SG114011.4 SG2 488.7 THA 1.86

ORBIT DETERMINATION ACCURACY
ST 5053.8 SR 511.2 SS 547.9
CRT .9923 CRS -.8797 CST -.8324
LSA 5099.7 MSA 306.0 SSA 38.9
EL1 5079.2 EL2 63.1 ALF 5.73

LAUNCH DATE DEC 26 1964 FLIGHT TIME 374.00 ARRIVAL DATE JAN 4 1966

HELIOCENTRIC CONIC DISTANCE 803.503 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.253 GAL .41 AZL 87.71 HCA 233.22 SMA 190.02 ECC .22587 INC 2.2864 V1 30.282
RP 206.84 LAP -1.83 LOP 327.46 VP 24.184 GAP -12.04 AZP 91.37 TAL 2.21 TAP 235.43 RCA 147.10 APO 232.94 V2 26.477
RC 328.562 GL 24.15 GP -6.96 ZAL 84.59 ZAP 31.61 ETS 167.38 ZAE 49.39 ETE 173.71 ZAC 80.55 ETC 256.26 CLP 30.91

PLANETOCENTRIC CONIC

C3 10.516 VHL 3.243 DLA 22.70 RAL 188.62 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 5.556 DPA -4.37 RAP 176.19 ECC 1.1731

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 12 32	2871.82	-28.32	87.07	47.31	90.18	15 0 24	2271.8	-27.99	78.42
90.00	9 0 47	3916.42	-8.99	156.03	42.48	63.03	10 6 3	3316.4	-12.53	149.15
100.00	15 50 46	2555.10	-29.81	63.74	47.28	92.32	16 33 21	1955.1	-29.17	54.99
100.00	10 5 14	3708.38	-7.67	140.03	41.77	61.02	11 7 3	3108.4	-11.47	133.31
110.00	17 33 36	2233.34	-33.42	38.93	46.91	97.65	18 10 50	1633.3	-32.00	29.99
110.00	10 38 53	3602.90	-4.58	130.14	39.87	56.09	11 38 56	3002.9	-9.00	123.84

DIFFERENTIAL CORRECTIONS
TDE 2.7170 TRA 1.1494 TC-20.1885 BAU 2.8396
RDE .2779 RRA .1951 RC3 -.3326 FAU .10082
FDE .4037 FRA 1.3061 FC3-8.3002 BSP 49217
BDE 2.7312 BRA 1.1658 BC320.1912 FSP 1634

MID-COURSE EXECUTION ACCURACY
SGT14118.4 SGR 653.7 SG3 516.6
RRT .6506 RRF .6259 RTF .9408
SGB14133.5 R23 .0172 R13 .9409
SG114124.8 SG2 496.2 THA 1.73

ORBIT DETERMINATION ACCURACY
ST 4861.8 SR 503.8 SS 503.0
CRT .9939 CRS -.8250 CST -.7819
LSA 4903.4 MSA 314.7 SSA 39.7
EL1 4887.5 EL2 55.5 ALF 5.88

LAUNCH DATE DEC 26 1964 FLIGHT TIME 376.00 ARRIVAL DATE JAN 6 1966

HELIOCENTRIC CONIC DISTANCE 807.917 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.262 GAL .23 AZL 87.76 HCA 234.49 SMA 190.19 ECC .22647 INC 2.2420 V1 30.282
RP 206.79 LAP -1.82 LOP 328.73 VP 24.203 GAP -12.11 AZP 91.30 TAL 1.26 TAP 235.75 RCA 147.12 APO 233.26 V2 26.483
RC 329.378 GL 23.72 GP -6.78 ZAL 86.36 ZAP 31.10 ETS 167.45 ZAE 48.59 ETE 173.72 ZAC 80.90 ETC 256.22 CLP 30.43

PLANETOCENTRIC CONIC

C3 10.460 VHL 3.234 DLA 21.55 RAL 190.17 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 5.621 DPA -4.53 RAP 176.97 ECC 1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 52	2816.38	-28.24	83.02	48.38	92.21	15 20 48	2216.4	-27.63	74.41
90.00	8 51 49	3969.73	-7.33	159.07	43.49	62.57	9 57 58	3369.7	-10.94	152.26
100.00	16 10 7	2506.00	-29.62	60.10	48.29	94.22	16 51 53	1906.0	-28.72	51.41
100.00	9 58 14	3755.34	-6.11	142.65	42.83	60.68	11 0 50	3155.3	-9.97	135.99
110.00	17 49 38	2194.68	-33.03	35.98	47.81	99.35	18 26 12	1594.7	-31.39	27.14
110.00	10 35 13	3639.42	-3.19	132.05	41.02	55.95	11 35 53	3039.4	-7.63	125.79

DIFFERENTIAL CORRECTIONS
TDE 2.5885 TRA 1.3367 TC-20.4529 BAU 2.8605
RDE .2735 RRA .1971 RC3 -.2878 FAU .09576
FDE .3177 FRA 1.3285 FC3-7.9253 BSP 49611
BDE 2.6029 BRA 1.3511 BC320.4549 FSP 1556

MID-COURSE EXECUTION ACCURACY
SGT14231.7 SGR 640.6 SG3 496.3
RRT .6187 RRF .5915 RTF .9399
SGB14246.1 R23 .0118 R13 .9400
SG114237.2 SG2 503.1 THA 1.60

ORBIT DETERMINATION ACCURACY
ST 4665.6 SR 497.5 SS 465.0
CRT .9953 CRS -.7538 CST -.7212
LSA 4703.9 MSA 322.1 SSA 40.5
EL1 4691.8 EL2 48.1 ALF 6.06

LAUNCH DATE DEC 26 1964 FLIGHT TIME 378.00 ARRIVAL DATE JAN 8 1966

HELIOCENTRIC CONIC DISTANCE 812.329 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.271 GAL .06 AZL 87.80 HCA 235.76 SMA 190.35 ECC .22711 INC 2.1990 V1 30.282
RP 206.75 LAP -1.82 LOP 330.00 VP 24.221 GAP -12.18 AZP 91.24 TAL .31 TAP 236.06 RCA 147.12 APO 233.58 V2 26.488
RC 330.190 GL 23.29 GP -6.60 ZAL 88.18 ZAP 30.60 ETS 167.51 ZAE 47.80 ETE 173.72 ZAC 81.25 ETC 256.18 CLP 29.95

PLANETOCENTRIC CONIC

C3 10.426 VHL 3.229 DLA 20.38 RAL 191.74 RAD 6567.4 VEL 11.481 PTH 2.00 VHP 5.687 DPA -4.69 RAP 177.77 ECC 1.1716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 54 16	2764.15	-28.04	79.21	49.46	94.11	15 40 20	2164.1	-27.18	70.65
90.00	8 43 56	4020.65	-5.72	161.95	44.61	62.22	9 50 56	3420.6	-9.39	155.19
100.00	16 28 52	2459.06	-29.33	56.64	49.33	96.02	17 9 52	1859.1	-28.19	48.02
100.00	9 52 0	3800.97	-4.58	145.17	43.98	60.43	10 55 21	3201.0	-8.49	138.56
110.00	18 5 26	2156.97	-32.58	33.13	48.77	100.98	18 41 23	1557.0	-30.72	24.40
110.00	10 31 56	3675.82	-1.80	133.95	42.25	55.86	11 33 12	3075.8	-6.26	127.72

DIFFERENTIAL CORRECTIONS
TDE 2.4503 TRA 1.5099 TC-20.6899 BAU 2.8842
RDE .2691 RRA .1965 RC3 -.2474 FAU .09142
FDE .2228 FRA 1.3142 FC3-7.5912 BSP 50043
BDE 2.4650 BRA 1.5227 BC320.6914 FSP 1482

MID-COURSE EXECUTION ACCURACY
SGT14338.8 SGR 626.1 SG3 476.2
RRT .5875 RRF .5499 RTF .9406
SGB14352.5 R23 -.0042 R13 .9406
SG114343.5 SG2 506.4 THA 1.47

ORBIT DETERMINATION ACCURACY
ST 4449.6 SR 490.4 SS 421.2
CRT .9962 CRS -.6488 CST -.6338
LSA 4484.3 MSA 325.3 SSA 41.2
EL1 4476.3 EL2 42.7 ALF 6.27

LAUNCH DATE DEC 26 1964 FLIGHT TIME 380.00 ARRIVAL DATE JAN 10 1966

HELIOCENTRIC CONIC DISTANCE 816.739 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.280 GAL -.12 AZL 87.84 HCA 237.03 SMA 190.52 ECC .22779 INC 2.1572 V1 30.282
RP 206.71 LAP -1.81 LOP 331.27 VP 24.237 GAP -12.25 AZP 91.17 TAL 359.34 TAP 236.36 RCA 147.12 APO 233.92 V2 26.492
RC 331.000 GL 22.84 GP -6.43 ZAL 90.03 ZAP 30.12 ETS 167.57 ZAE 47.02 ETE 173.73 ZAC 81.59 ETC 256.14 CLP 29.49

PLANETOCENTRIC CONIC

C3 10.415 VHL 3.227 DLA 19.19 RAL 193.33 RAD 6567.4 VEL 11.481 PTH 2.00 VHP 5.753 DPA -4.87 RAP 178.57 ECC 1.1714

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 13 56	2714.50	-27.75	75.61	50.58	95.90	15 59 10	2114.5	-26.64	67.12
90.00	8 36 54	4069.84	-4.15	164.71	45.82	61.96	9 44 44	3469.8	-7.87	158.00
100.00	16 47 8	2413.94	-28.97	53.33	50.42	97.72	17 27 22	1813.9	-27.60	44.80
100.00	9 46 23	3845.63	-3.08	147.63	45.23	60.25	10 50 29	3245.6	-7.01	141.06
110.00	18 21 3	2120.13	-32.07	30.38	49.78	102.53	18 56 23	1520.1	-30.01	21.77
110.00	10 28 58	3712.21	-.41	135.85	43.56	55.82	11 30 50	3112.2	-4.89	129.63

DIFFERENTIAL CORRECTIONS
TDE 2.3315 TRA 1.7462 TC-20.8357 BAU 2.9012
RDE .2692 RRA .2022 RC3 -.1993 FAU .08549
FDE .1873 FRA 1.3995 FC3-7.1062 BSP 50642
BDE 2.3470 BRA 1.7578 BC320.8366 FSP 1463

MID-COURSE EXECUTION ACCURACY
SGT14448.5 SGR 624.1 SG3 457.7
RRT .5497 RRF .5290 RTF .9366
SGB14462.0 R23 .0162 R13 .9366
SG114452.6 SG2 521.2 THA 1.36

ORBIT DETERMINATION ACCURACY
ST 4273.9 SR 491.3 SS 431.2
CRT .9962 CRS -.5853 CST -.5959
LSA 4309.6 MSA 345.7 SSA 41.9
EL1 4301.9 EL2 42.3 ALF 6.53

LAUNCH DATE DEC 26 1964 FLIGHT TIME 382.00 ARRIVAL DATE JAN 12 1966

HELIOCENTRIC CONIC DISTANCE 821.148 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.289 GAL -.31 AZL 87.88 HCA 238.30 SMA 190.68 ECC .22851 INC 2.1167 V1 30.282
RP 206.69 LAP -1.80 LOP 332.54 VP 24.253 GAP -12.32 AZP 91.11 TAL 358.36 TAP 236.65 RCA 147.11 APO 234.26 V2 26.494
RC 331.806 GL 22.38 GP -6.27 ZAL 91.91 ZAP 29.65 ETS 167.63 ZAE 46.24 ETE 173.73 ZAC 81.92 ETC 256.10 CLP 29.04

PLANETOCENTRIC CONIC

C3 10.426 VHL 3.229 DLA 17.99 RAL 194.93 RAD 6567.4 VEL 11.481 PTH 2.00 VHP 5.820 DPA -5.07 RAP 179.38 ECC 1.1716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 1	2667.00	-27.37	72.19	51.75	97.57	16 17 28	2067.0	-26.04	63.77
90.00	8 30 36	4117.77	-2.61	167.39	47.12	61.79	9 39 13	3517.8	-6.37	160.72
100.00	17 4 59	2370.41	-28.53	50.17	51.55	99.33	17 44 30	1770.4	-26.94	41.73
100.00	9 41 18	3889.59	-1.59	150.05	46.55	60.15	10 46 8	3289.6	-5.55	143.50
110.00	18 36 29	2084.13	-31.50	27.72	50.84	104.01	19 11 13	1484.1	-29.26	19.24
110.00	10 26 18	3748.64	.99	137.75	44.94	55.83	11 28 46	3148.6	-3.50	131.54

DIFFERENTIAL CORRECTIONS
TDE 2.1858 TRA 1.9520 TC-20.9861 BAU 2.9252
RDE .2662 RRA .2026 RC3 -.1608 FAU .08118
FDE .0963 FRA 1.4062 FC3-6.7409 BSP 51030
BDE 2.2019 BRA 1.9625 BC320.9867 FSP 1395

MID-COURSE EXECUTION ACCURACY
SGT14559.3 SGR 613.8 SG3 439.4
RRT .5165 RRF .4883 RTF .9348
SGB14572.2 R23 .0056 R13 .9348
SG114562.7 SG2 525.5 THA 1.25

ORBIT DETERMINATION ACCURACY
ST 4050.0 SR 485.8 SS 410.3
CRT .9948 CRS -.4297 CST -.4768
LSA 4083.5 MSA 361.2 SSA 42.4
EL1 4078.8 EL2 49.1 ALF 6.81

LAUNCH DATE DEC 26 1964 FLIGHT TIME 384.00 ARRIVAL DATE JAN 14 1966

HELIOCENTRIC CONIC DISTANCE 825.553 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.298 GAL -.49 AZL 87.92 HCA 239.57 SMA 190.85 ECC .22928 INC 2.0772 V1 30.282
RP 206.68 LAP -1.79 LOP 333.81 VP 24.267 GAP -12.39 AZP 91.05 TAL 357.36 TAP 236.93 RCA 147.09 APO 234.61 V2 26.496
RC 332.609 GL 21.91 GP -6.11 ZAL 93.83 ZAP 29.19 ETS 167.67 ZAE 45.48 ETE 173.73 ZAC 82.25 ETC 256.06 CLP 28.59

PLANETOCENTRIC CONIC

C3 10.461 VHL 3.234 DLA 16.77 RAL 196.54 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 5.888 DPA -5.27 RAP 180.19 ECC 1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 51 36	2621.36	-26.92	68.92	52.95	99.15	16 35 18	2021.4	-25.37	60.59
90.00	8 24 52	4164.76	-1.10	170.02	48.50	61.70	9 34 17	3564.8	-4.87	163.37
100.00	17 22 29	2328.31	-28.02	47.15	52.73	100.85	18 1 17	1728.3	-26.24	38.80
100.00	9 36 41	3933.04	-.11	152.43	47.96	60.11	10 42 14	3333.0	-4.09	145.90
110.00	18 51 46	2048.94	-30.89	25.16	51.96	105.42	19 25 55	1448.0	-28.47	16.80
110.00	10 23 53	3785.17	2.38	139.66	46.39	55.89	11 26 58	3185.2	-2.11	133.45

DIFFERENTIAL CORRECTIONS
TDE 2.0501 TRA 2.1709 TC-21.0729 BAU 2.9471
RDE .2659 RRA .2031 RC3 -.1222 FAU .07666
FDE .0379 FRA 1.4187 FC3-6.3448 BSP 51474
BDE 2.0673 BRA 2.1804 BC321.0733 FSP 1334

MID-COURSE EXECUTION ACCURACY
SGT14667.4 SGR 607.8 SG3 421.0
RRT .4821 RRF .4534 RTF .9338
SGB14680.0 R23 .0029 R13 .9338
SG114670.3 SG2 532.4 THA 1.15

ORBIT DETERMINATION ACCURACY
ST 3848.2 SR 484.4 SS 406.9
CRT .9912 CRS -.3115 CST -.4038
LSA 3881.6 MSA 375.2 SSA 42.8
EL1 3878.1 EL2 63.6 ALF 7.11

LAUNCH DATE DEC 26 1964 FLIGHT TIME 386.00 ARRIVAL DATE JAN 16 1966

HELIOCENTRIC CONIC DISTANCE 829.956 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.307 GAL -.68 AZL 87.96 HCA 240.83 SMA 191.02 ECC .23009 INC 2.0387 V1 30.282
RP 206.67 LAP -1.78 LOP 335.08 VP 24.281 GAP -12.46 AZP 90.99 TAL 356.36 TAP 237.19 RCA 147.07 APO 234.97 V2 26.497
RC 333.409 GL 21.43 GP -5.97 ZAL 95.76 ZAP 28.73 ETS 167.72 ZAE 44.73 ETE 173.73 ZAC 82.58 ETC 256.03 CLP 28.16

PLANETOCENTRIC CONIC

C3 10.520 VHL 3.244 DLA 15.54 RAL 198.16 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 5.957 DPA -5.49 RAP 181.01 ECC 1.1731

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 46	2577.39	-26.40	65.81	54.21	100.63	16 52 44	1977.4	-24.67	57.57
90.00	8 19 39	4211.04	.39	172.60	49.97	61.69	9 29 50	3611.0	-3.39	165.96
100.00	17 39 39	2287.53	-27.47	44.24	53.96	102.28	18 17 47	1687.5	-25.50	35.99
100.00	9 32 27	3976.12	1.35	154.80	49.44	60.14	10 38 43	3376.1	-2.64	148.28
110.00	19 6 53	2014.58	-30.25	22.69	53.14	106.74	19 40 28	1414.6	-27.66	14.46
110.00	10 21 42	3821.84	3.78	141.58	47.92	56.00	11 25 24	3221.8	-.71	135.37

DIFFERENTIAL CORRECTIONS
TDE 1.9063 TRA 2.3965 TC-21.1123 BAU 2.9694
RDE .2661 RRA .2035 RC3 -.0848 FAU .07214
FDE -.0225 FRA 1.4319 FC3-5.9366 BSP 51866
BDE 1.9248 BRA 2.4052 BC321.1124 FSP 1275

MID-COURSE EXECUTION ACCURACY
SGT14772.2 SGR 602.6 SG3 402.7
RRT .4466 RRF .4175 RTF .9316
SGB14784.4 R23 .0010 R13 .9316
SG114774.6 SG2 539.1 THA 1.05

ORBIT DETERMINATION ACCURACY
ST 3639.6 SR 483.2 SS 410.2
CRT .9844 CRS -.1809 CST -.3281
LSA 3673.0 MSA 394.3 SSA 43.2
EL1 3670.5 EL2 84.4 ALF 7.45

LAUNCH DATE DEC 26 1964 FLIGHT TIME 388.00 ARRIVAL DATE JAN 18 1966

HELIOCENTRIC CONIC DISTANCE 834.355 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.316 GAL -.87 AZL 88.00 HCA 242.10 SMA 191.19 ECC .23095 INC 2.0012 V1 30.282
RP 206.67 LAP -1.77 LOP 336.35 VP 24.293 GAP -12.53 AZP 90.94 TAL 355.34 TAP 237.45 RCA 147.03 APO 235.34 V2 26.497
RC 334.204 GL 20.93 GP -5.83 ZAL 97.72 ZAP 28.29 ETS 167.76 ZAE 43.99 ETE 173.72 ZAC 82.90 ETC 255.99 CLP 27.74

PLANETOCENTRIC CONIC

C3 10.606 VHL 3.257 DLA 14.30 RAL 199.79 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 6.027 DPA -5.72 RAP 181.83 ECC 1.1745

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 27 34	2534.93	-25.83	62.83	55.51	102.02	17 9 49	1934.9	-23.92	54.68
90.00	8 14 51	4256.78	1.87	175.15	51.51	61.74	9 25 48	3656.8	-1.92	168.52
100.00	17 56 32	2248.01	-26.86	41.46	55.25	103.63	18 34 0	1648.0	-24.72	33.31
100.00	9 28 34	4018.93	2.80	157.15	51.00	60.23	10 35 33	3418.9	-1.19	150.63
110.00	19 21 51	1981.05	-29.56	20.32	54.38	108.00	19 54 52	1381.0	-26.82	12.21
110.00	10 19 44	3858.65	5.18	143.51	49.51	56.16	11 24 3	3258.7	.70	137.29

DIFFERENTIAL CORRECTIONS
TDE 1.7643 TRA 2.6294 TC-21.0978 BAU 2.9915
RDE .2672 RRA .2031 RC3 -.0494 FAU .06775
FDE -.0772 FRA 1.4366 FC3-5.5305 BSP 52304
BDE 1.7844 BRA 2.6372 BC321.0978 FSP 1218

MID-COURSE EXECUTION ACCURACY
SGT14874.8 SGR 598.4 SG3 384.4
RRT .4115 RRF .3809 RTF .9297
SGB14886.8 R23 -.0024 R13 .9297
SG114876.8 SG2 545.3 THA .95

ORBIT DETERMINATION ACCURACY
ST 3443.3 SR 482.9 SS 417.4
CRT .9730 CRS -.0589 CST -.2694
LSA 3477.0 MSA 414.8 SSA 43.2
EL1 3475.2 EL2 110.4 ALF 7.78

LAUNCH DATE DEC 26 1964 FLIGHT TIME 390.00 ARRIVAL DATE JAN 20 1966

HELIOCENTRIC CONIC DISTANCE 838.750 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.326 GAL -1.07 AZL 88.04 HCA 243.37 SMA 191.36 ECC .23187 INC 1.9646 V1 30.282
RP 206.68 LAP -1.76 LOP 337.62 VP 24.304 GAP -12.61 AZP 90.88 TAL 354.32 TAP 237.69 RCA 146.99 APO 235.72 V2 26.495
RC 334.996 GL 20.42 GP -5.70 ZAL 99.70 ZAP 27.86 ETS 167.80 ZAE 43.26 ETE 173.72 ZAC 83.22 ETC 255.96 CLP 27.32

PLANETOCENTRIC CONIC

C3 10.718 VHL 3.274 DLA 13.06 RAL 201.43 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 6.098 DPA -5.95 RAP 182.66 ECC 1.1764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 45 1	2493.91	-25.22	59.98	56.86	103.32	17 26 35	1893.9	-23.14	51.93
90.00	8 10 26	4302.08	3.33	177.68	53.12	61.86	9 22 8	3702.1	-.46	171.05
100.00	18 13 8	2209.69	-26.22	38.79	56.59	104.89	18 49 58	1609.7	-23.92	30.75
100.00	9 25 0	4061.53	4.23	159.49	52.62	60.38	10 32 41	3461.5	.26	152.96
110.00	19 36 39	1948.37	-28.86	18.04	55.68	109.18	20 9 8	1348.4	-25.97	10.05
110.00	10 17 58	3895.62	6.58	145.46	51.17	56.38	11 22 54	3295.6	2.11	139.22

DIFFERENTIAL CORRECTIONS
TDE 1.6197 TRA 2.8717 TC-21.0287 BAU 3.0132
RDE .2691 RRA .2026 RC3 -.0158 FAU .06340
FDE -.1283 FRA 1.4422 FC3-5.1212 BSP 52735
BDE 1.6419 BRA 2.8788 BC321.0287 FSP 1163

MID-COURSE EXECUTION ACCURACY
SGT14974.6 SGR 595.3 SG3 366.6
RRT .3764 RRF .3452 RTF .9269
SGB14986.4 R23 -.0045 R13 .9269
SG114976.2 SG2 551.5 THA .86

ORBIT DETERMINATION ACCURACY
ST 3255.9 SR 483.4 SS 429.6
CRT .9556 CRS .0529 CST -.2291
LSA 3290.0 MSA 439.6 SSA 43.1
EL1 3288.6 EL2 141.1 ALF 8.09

LAUNCH DATE DEC 26 1964 FLIGHT TIME 392.00 ARRIVAL DATE JAN 22 1966

HELIOCENTRIC CONIC DISTANCE 843.141 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.335 GAL -1.27 AZL 88.07 HCA 244.64 SMA 191.52 ECC .23283 INC 1.9287 V1 30.282
RP 206.70 LAP -1.74 LOP 338.89 VP 24.314 GAP -12.69 AZP 90.83 TAL 353.28 TAP 237.92 RCA 146.93 APO 236.12 V2 26.493
RC 335.784 GL 19.90 GP -5.57 ZAL 101.69 ZAP 27.44 ETS 167.83 ZAE 42.54 ETE 173.71 ZAC 83.53 ETC 255.94 CLP 26.91

PLANETOCENTRIC CONIC

C3 10.859 VHL 3.295 DLA 11.81 RAL 203.06 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 6.170 DPA -6.20 RAP 183.50 ECC 1.1787

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 2 9	2454.26	-24.57	57.26	58.27	104.54	17 43 3	1854.3	-22.33	49.30
90.00	8 6 21	4347.04	4.77	180.20	54.81	62.05	9 18 49	3747.0	.99	173.55
100.00	18 29 29	2172.57	-25.55	36.24	57.98	106.07	19 5 42	1572.6	-23.10	28.30
100.00	9 21 42	4103.97	5.66	161.84	54.32	60.60	10 30 6	3504.0	1.70	155.29
110.00	19 51 18	1916.57	-28.12	15.85	57.03	110.28	20 23 15	1316.6	-25.10	7.98
110.00	10 18 23	3932.73	7.97	147.43	52.90	56.65	11 21 55	3332.7	3.53	141.16

DIFFERENTIAL CORRECTIONS
TDE 1.4733 TRA 3.1186 TC-20.9166 BAU 3.0364
RDE .2719 RRA .2014 RC3 .0153 FAU .05925
FDE -.1743 FRA 1.4406 FC3-4.7237 BSP 53134
BDE 1.4981 BRA 3.1251 BC320.9166 FSP 1108

MID-COURSE EXECUTION ACCURACY
SGT15075.8 SGR 593.0 SG3 349.2
RRT .3417 RRF .3092 RTF .9243
SGB15087.4 R23 -.0075 R13 .9243
SG115077.1 SG2 557.2 THA .77

ORBIT DETERMINATION ACCURACY
ST 3081.4 SR 484.8 SS 442.8
CRT .9300 CRS .1512 CST -.2103
LSA 3115.6 MSA 466.0 SSA 42.8
EL1 3114.3 EL2 176.3 ALF 8.35

LAUNCH DATE DEC 26 1964 FLIGHT TIME 394.00 ARRIVAL DATE JAN 24 1966

HELIOCENTRIC CONIC DISTANCE 847.526 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.344 GAL -1.47 AZL 88.11 HCA 245.91 SMA 191.69 ECC .23385 INC 1.8936 V1 30.282
RP 206.73 LAP -1.73 LOP 340.16 VP 24.323 GAP -12.77 AZP 90.77 TAL 352.23 TAP 238.14 RCA 146.87 APO 236.52 V2 26.490
RC 336.567 GL 19.37 GP -5.45 ZAL 103.69 ZAP 27.03 ETS 167.86 ZAE 41.83 ETE 173.70 ZAC 83.84 ETC 255.91 CLP 26.52

PLANETOCENTRIC CONIC

C3 11.028 VHL 3.321 DLA 10.57 RAL 204.70 RAD 6567.4 VEL 11.507 PTH 2.00 VHP 6.243 DPA -6.45 RAP 184.35 ECC 1.1815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 59	2415.94	-23.89	54.65	59.73	105.67	17 59 15	1815.9	-21.51	46.79
90.00	8 2 34	4391.71	6.19	182.71	56.56	62.31	9 15 46	3791.7	2.43	176.05
100.00	18 45 35	2136.62	-24.85	33.80	59.42	107.18	19 21 12	1536.6	-22.26	25.96
100.00	9 18 39	4146.27	7.06	164.19	56.09	60.88	10 27 45	3546.3	3.13	157.62
110.00	20 5 47	1885.69	-27.38	13.76	58.44	111.32	20 37 12	1285.7	-24.23	6.01
110.00	10 14 57	3969.96	9.36	149.42	54.69	56.97	11 21 7	3370.0	4.95	143.11

DIFFERENTIAL CORRECTIONS
TDE 1.3276 TRA 3.3757 TC-20.7442 BAU 3.0584
RDE .2755 RRA .1999 RC3 .0447 FAU .05506
FDE -.2158 FRA 1.4368 FC3-4.3225 BSP 53557
BDE 1.3558 BRA 3.3816 BC320.7443 FSP 1052

MID-COURSE EXECUTION ACCURACY
SGT15171.5 SGR 591.6 SG3 331.7
RRT .3073 RRF .2741 RTF .9209
SGB15183.0 R23 -.0098 R13 .9209
SG115172.6 SG2 562.9 THA .69

ORBIT DETERMINATION ACCURACY
ST 2928.5 SR 486.9 SS 457.2
CRT .8946 CRS .2361 CST -.2125
LSA 2962.4 MSA 494.8 SSA 42.3
EL1 2960.9 EL2 215.2 ALF 8.50

LAUNCH DATE DEC 26 1964 FLIGHT TIME 396.00 ARRIVAL DATE JAN 26 1966

HELIOCENTRIC CONIC DISTANCE 851.906 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.353 GAL -1.68 AZL 88.14 HCA 247.18 SMA 191.86 ECC .23493 INC 1.8592 V1 30.282
RP 206.77 LAP -1.71 LOP 341.43 VP 24.331 GAP -12.85 AZP 90.72 TAL 351.17 TAP 238.34 RCA 146.79 APO 236.94 V2 26.485
RC 337.346 GL 18.83 GP -5.33 ZAL 105.69 ZAP 26.63 ETS 167.89 ZAE 41.12 ETE 173.68 ZAC 84.14 ETC 255.89 CLP 26.13

PLANETOCENTRIC CONIC

C3 11.228 VHL 3.351 DLA 9.33 RAL 206.33 RAD 6567.4 VEL 11.516 PTH 2.01 VHP 6.317 DPA -6.72 RAP 185.20 ECC 1.1848

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 32	2378.94	-23.19	52.17	61.24	106.72	18 15 11	1778.9	-20.68	44.40
90.00	7 59 3	4436.12	7.58	185.23	58.38	62.64	9 13 0	3836.1	3.86	178.53
100.00	19 1 26	2101.85	-24.13	31.47	60.92	108.20	19 36 28	1501.9	-21.41	23.72
100.00	9 15 50	4188.44	8.45	166.55	57.91	61.22	10 25 38	3588.4	4.55	159.94
110.00	20 20 5	1855.76	-26.62	11.76	59.90	112.28	20 51 1	1255.8	-23.36	4.12
110.00	10 13 41	4007.30	10.74	151.43	56.54	57.35	11 20 28	3407.3	6.36	145.08

DIFFERENTIAL CORRECTIONS
TDE 1.1811 TRA 3.6395 TC-20.5309 BAU 3.0819
RDE .2800 RRA .1979 RC3 .0718 FAU .05101
FDE -.2526 FRA 1.4293 FC3-3.9328 BSP 53970
BDE 1.2138 BRA 3.6448 BC320.5310 FSP 1002

MID-COURSE EXECUTION ACCURACY
SGT15269.7 SGR 590.9 SG3 314.7
RRT .2735 RRF .2396 RTF .9172
SGB15281.1 R23 -.0120 R13 .9171
SG115270.6 SG2 568.4 THA .61

ORBIT DETERMINATION ACCURACY
ST 2797.9 SR 489.7 SS 471.0
CRT .8473 CRS .3087 CST -.2344
LSA 2830.7 MSA 524.6 SSA 41.7
EL1 2828.8 EL2 257.3 ALF 8.51

LAUNCH DATE DEC 26 1964 FLIGHT TIME 398.00 ARRIVAL DATE JAN 28 1966

HELIOCENTRIC CONIC DISTANCE 856.279 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.362 GAL -1.89 AZL 88.17 HCA 248.44 SMA 192.03 ECC .23606 INC 1.8255 V1 30.282
RP 206.81 LAP -1.70 LOP 342.70 VP 24.338 GAP -12.93 AZP 90.67 TAL 350.09 TAP 238.54 RCA 146.70 APO 237.37 V2 26.480
RC 338.120 GL 18.29 GP -5.22 ZAL 107.69 ZAP 26.24 ETS 167.91 ZAE 40.42 ETE 173.66 ZAC 84.45 ETC 255.86 CLP 25.75

PLANETOCENTRIC CONIC

C3 11.460 VHL 3.385 DLA 8.09 RAL 207.96 RAD 6567.4 VEL 11.526 PTH 2.01 VHP 6.392 DPA -6.99 RAP 186.05 ECC 1.1886

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 48	2343.24	-22.47	49.80	62.80	107.70	18 30 51	1743.2	-19.84	42.12
90.00	7 55 47	4480.29	8.96	187.75	60.26	63.03	9 10 27	3880.3	5.27	181.01
100.00	19 17 3	2068.29	-23.40	29.24	62.46	109.16	19 51 31	1468.3	-20.57	21.59
100.00	9 13 15	4230.48	9.82	168.92	59.80	61.63	10 23 43	3630.5	5.96	162.27
110.00	20 34 12	1826.82	-25.86	9.86	61.41	113.18	21 4 39	1226.8	-22.50	2.32
110.00	10 12 33	4044.72	12.10	153.47	58.45	57.79	11 19 57	3444.7	7.77	147.06

DIFFERENTIAL CORRECTIONS

TDE 1.0344 TRA 3.9115 TC-20.2648 BAU 3.1048
RDE .2853 RRA .1955 RC3 .0965 FAU .04704
FDE -.2861 FRA 1.4177 FC3-3.5536 BSP 54374
BDE 1.0730 BRA 3.9164 BC320.2650 FSP 948

MID-COURSE EXECUTION ACCURACY

SGT15363.2 SGR 590.8 SG3 298.0
RRT .2406 RRF .2056 RTF .9128
SGB15374.5 R23 -.0148 R13 .9128
SG115383.8 SG2 573.5 THA .53

ORBIT DETERMINATION ACCURACY

ST 2694.1 SR 493.2 SS 484.0
CRT .7870 CRS .3725 CST -.2713
LSA 2725.2 MSA 554.5 SSA 40.8
EL1 2722.3 EL2 301.1 ALF 8.30

LAUNCH DATE DEC 26 1964 FLIGHT TIME 400.00 ARRIVAL DATE JAN 30 1966

HELIOCENTRIC CONIC DISTANCE 860.646 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.372 GAL -2.10 AZL 88.21 HCA 249.71 SMA 192.21 ECC .23725 INC 1.7923 V1 30.282
RP 206.87 LAP -1.68 LOP 343.96 VP 24.343 GAP -13.02 AZP 90.62 TAL 349.01 TAP 238.72 RCA 146.60 APO 237.81 V2 26.474
RC 338.890 GL 17.74 GP -5.12 ZAL 109.68 ZAP 25.86 ETS 167.93 ZAE 39.74 ETE 173.65 ZAC 84.75 ETC 255.85 CLP 25.38

PLANETOCENTRIC CONIC

C3 11.725 VHL 3.424 DLA 6.86 RAL 209.58 RAD 6567.4 VEL 11.537 PTH 2.01 VHP 6.467 DPA -7.26 RAP 186.91 ECC 1.1930

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 47	2308.86	-21.74	47.54	64.41	108.61	18 46 16	1708.9	-19.00	39.94
90.00	7 52 43	4524.23	10.30	190.27	62.21	63.48	9 8 8	3924.2	6.66	183.49
100.00	19 32 24	2035.93	-22.66	27.12	64.06	110.04	20 6 20	1435.9	-19.72	19.56
100.00	9 10 47	4272.39	11.17	171.30	61.75	62.09	10 22 0	3672.4	7.35	164.60
110.00	20 48 8	1798.91	-25.10	8.05	62.98	114.01	21 18 7	1198.9	-21.64	.60
110.00	10 11 33	4082.17	13.45	155.53	60.41	58.28	11 19 35	3482.2	9.16	149.06

DIFFERENTIAL CORRECTIONS

TDE .8886 TRA 4.1905 TC-19.9576 BAU 3.1286
RDE .2915 RRA .1926 RC3 .1189 FAU .04315
FDE -.3143 FRA 1.4015 FC3-3.1860 BSP 54774
BDE .9352 BRA 4.1949 BC319.9579 FSP 897

MID-COURSE EXECUTION ACCURACY

SGT15456.4 SGR 591.4 SG3 281.5
RRT .2083 RRF .1725 RTF .9079
SGB15467.7 R23 -.0173 R13 .9079
SG115456.9 SG2 578.4 THA .46

ORBIT DETERMINATION ACCURACY

ST 2620.7 SR 497.3 SS 494.4
CRT .7139 CRS .4264 CST -.3218
LSA 2649.5 MSA 581.7 SSA 39.8
EL1 2645.0 EL2 345.0 ALF 7.85

LAUNCH DATE DEC 26 1964 FLIGHT TIME 402.00 ARRIVAL DATE FEB 1 1966

HELIOCENTRIC CONIC DISTANCE 865.005 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.381 GAL -2.32 AZL 88.24 HCA 250.98 SMA 192.38 ECC .23850 INC 1.7598 V1 30.282
RP 206.93 LAP -1.66 LOP 345.23 VP 24.348 GAP -13.11 AZP 90.57 TAL 347.92 TAP 238.89 RCA 146.49 APO 238.26 V2 26.466
RC 339.657 GL 17.18 GP -5.02 ZAL 111.67 ZAP 25.48 ETS 167.95 ZAE 39.06 ETE 173.82 ZAC 85.04 ETC 255.83 CLP 25.02

PLANETOCENTRIC CONIC

C3 12.026 VHL 3.468 DLA 5.65 RAL 211.19 RAD 6567.5 VEL 11.550 PTH 2.02 VHP 6.544 DPA -7.55 RAP 187.78 ECC 1.1979

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 30	2275.79	-21.01	45.40	66.06	109.44	19 1 26	1675.8	-18.16	37.87
90.00	7 49 52	4567.92	11.62	192.81	64.21	64.00	9 6 0	3967.9	8.03	185.97
100.00	19 47 31	2004.80	-21.92	25.11	65.70	110.85	20 20 56	1404.8	-18.88	17.62
100.00	9 8 32	4314.13	12.49	173.70	63.76	62.62	10 20 26	3714.1	8.72	166.94
110.00	21 1 53	1772.07	-24.34	6.33	64.59	114.77	21 31 25	1172.1	-20.80	358.98
110.00	10 10 40	4119.63	14.79	157.61	62.44	58.82	11 19 19	3519.6	10.55	151.08

DIFFERENTIAL CORRECTIONS

TDE .7427 TRA 4.4782 TC-19.6058 BAU 3.1521
RDE .2984 RRA .1892 RC3 .1390 FAU .03932
FDE -.3388 FRA 1.3824 FC3-2.8310 BSP 55170
BDE .8004 BRA 4.4822 BC319.6063 FSP 846

MID-COURSE EXECUTION ACCURACY

SGT15546.3 SGR 592.5 SG3 265.4
RRT .1769 RRF .1405 RTF .9020
SGB15557.6 R23 -.0196 R13 .9020
SG115546.6 SG2 583.1 THA .39

ORBIT DETERMINATION ACCURACY

ST 2578.3 SR 501.9 SS 502.8
CRT .6290 CRS .4732 CST -.3807
LSA 2604.6 MSA 605.6 SSA 38.7
EL1 2598.0 EL2 387.3 ALF 7.14

LAUNCH DATE DEC 26 1964 FLIGHT TIME 404.00 ARRIVAL DATE FEB 3 1966

HELIOCENTRIC CONIC DISTANCE 869.356 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.390 GAL -2.54 AZL 88.27 HCA 252.24 SMA 192.55 ECC .23982 INC 1.7277 V1 30.282
RP 207.00 LAP -1.65 LOP 346.50 VP 24.352 GAP -13.20 AZP 90.53 TAL 346.81 TAP 239.05 RCA 146.37 APO 238.73 V2 26.458
RC 340.420 GL 16.62 GP -4.92 ZAL 113.64 ZAP 25.12 ETS 167.96 ZAE 38.39 ETE 173.60 ZAC 85.34 ETC 255.82 CLP 24.66

PLANETOCENTRIC CONIC

C3 12.362 VHL 3.516 DLA 4.45 RAL 212.79 RAD 6567.5 VEL 11.565 PTH 2.02 VHP 6.622 DPA -7.84 RAP 188.65 ECC 1.2035

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 56	2244.03	-20.27	43.36	67.76	110.20	19 16 20	1644.0	-17.34	35.91
90.00	7 47 12	4611.35	12.90	195.35	66.26	64.57	9 4 3	4011.4	9.38	188.45
100.00	20 2 22	1974.92	-21.18	23.19	67.39	111.60	20 35 17	1374.9	-18.06	15.79
100.00	9 6 27	4355.70	13.78	176.11	65.82	63.21	10 19 2	3755.7	10.07	169.28
110.00	21 15 25	1746.34	-23.60	4.70	66.25	115.48	21 44 31	1146.3	-19.97	357.43
110.00	10 9 54	4157.05	16.09	159.73	64.51	59.43	11 19 11	3557.0	11.92	153.11

DIFFERENTIAL CORRECTIONS

TDE .5985 TRA 4.7733 TC-19.2211 BAU 3.1768
RDE .3061 RRA .1854 RC3 .1569 FAU .03558
FDE -.3598 FRA 1.3592 FC3-2.4919 BSP 55551
BDE .6722 BRA 4.7769 BC319.2217 FSP 797

MID-COURSE EXECUTION ACCURACY

SGT15636.8 SGR 594.0 SG3 249.7
RRT .1464 RRF .1093 RTF .8951
SGB15648.1 R23 -.0222 R13 .8951
SG115637.1 SG2 587.6 THA .32

ORBIT DETERMINATION ACCURACY

ST 2567.9 SR 507.0 SS 508.8
CRT .5361 CRS .5146 CST -.4421
LSA 2592.0 MSA 624.5 SSA 37.6
EL1 2582.6 EL2 425.6 ALF 6.21

LAUNCH DATE DEC 26 1964 FLIGHT TIME 406.00 ARRIVAL DATE FEB 5 1966

HELIOCENTRIC CONIC DISTANCE 873.698 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.399	GAL	-2.77	AZL	88.30	HCA	253.51	SMA	192.72	ECC	.24121	INC	1.6961
RP	207.08	LAP	-1.63	LOP	347.76	VP	24.354	GAP	-13.30	AZP	90.48	TAL	345.70	TAP	239.20	RCA	146.24	APO	239.21
RC	341.179	GL	16.06	GP	-4.83	ZAL	115.59	ZAP	24.76	ETS	167.98	ZAE	37.73	ETE	173.57	ZAC	85.63	ETC	255.81

V1 30.282 V2 26.449 CLP 24.32

PLANETOCENTRIC CONIC

C3	12.737	VHL	3.569	DLA	3.27	RAL	214.38	RAD	6567.5	VEL	11.581	PTH	2.03	VHP	6.701	DPA	-8.14	RAP	189.53

ECC 1.2096

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 54 7	2213.61	-19.54	41.42	69.50	110.91	19 31 0	1613.6	-16.53	34.04
90.00	7 44 41	4654.52	14.15	197.91	68.37	65.22	9 2 16	4054.5	10.69	190.94
100.00	20 16 59	1946.31	-20.45	21.38	69.12	112.29	20 49 25	1346.3	-17.25	14.05
100.00	9 4 30	4397.06	15.03	178.54	67.94	63.85	10 17 47	3797.1	11.40	171.64
110.00	21 28 44	1721.74	-22.87	3.16	67.95	116.12	21 57 26	1121.7	-19.17	355.98
110.00	10 9 14	4194.40	17.37	161.86	66.64	60.09	11 19 9	3594.4	13.27	155.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4552	TRA	5.0767	TC-18.8046	BAU	3.2022	SGT15726.9	SGR	595.9	SG3	234.3	ST	2587.3	SR	512.5	SS	512.2
RDE	.3145	RRA	.1812	RC3 .1724	FAU	.03193	RRT .1169	RRF	.0789	RTF	.8871	CRT	.4386	CRS	.5515	CST	-.5024
FDE	-.3775	FRA	1.3322	FC3-2.1704	BSP	55916	SGB15738.2	R23	-.0251	R13	.8871	LSA	2609.8	MSA	637.9	SSA	36.4
BDE	.5533	BRA	5.0799	BC318.8054	FSP	747	SG115727.1	SG2	591.8	THA	.25	EL1	2597.4	EL2	458.8	ALF	5.13

LAUNCH DATE DEC 26 1964 FLIGHT TIME 408.00 ARRIVAL DATE FEB 7 1966

HELIOCENTRIC CONIC DISTANCE 878.031 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.409	GAL	-2.99	AZL	88.34	HCA	254.77	SMA	192.89	ECC	.24266	INC	1.6649
RP	207.17	LAP	-1.61	LOP	349.03	VP	24.356	GAP	-13.40	AZP	90.44	TAL	344.57	TAP	239.34	RCA	146.09	APO	239.70
RC	341.936	GL	15.50	GP	-4.74	ZAL	117.52	ZAP	24.42	ETS	167.99	ZAE	37.07	ETE	173.54	ZAC	85.92	ETC	255.80

V1 30.282 V2 26.438 CLP 23.98

PLANETOCENTRIC CONIC

C3	13.152	VHL	3.627	DLA	2.12	RAL	215.95	RAD	6567.5	VEL	11.599	PTH	2.03	VHP	6.782	DPA	-8.44	RAP	190.42

ECC 1.2164

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 0	2184.53	-18.83	39.59	71.28	111.55	19 45 25	1584.5	-15.74	32.28
90.00	7 42 20	4697.40	15.36	200.48	70.53	65.92	9 0 38	4097.4	11.98	193.43
100.00	20 31 20	1918.98	-19.74	19.67	70.88	112.92	21 3 19	1319.0	-16.46	12.40
100.00	9 2 42	4438.19	16.25	180.99	70.10	64.56	10 16 40	3838.2	12.69	174.01
110.00	21 41 50	1698.30	-22.16	1.71	69.68	116.72	22 10 9	1098.3	-18.40	354.60
110.00	10 8 41	4231.63	18.62	164.03	68.82	60.80	11 19 12	3631.6	14.59	157.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3140	TRA	5.3881	TC-18.3548	BAU	3.2274	SGT15812.8	SGR	598.0	SG3	219.3	ST	2633.7	SR	518.2	SS	512.9
RDE	.3237	RRA	.1765	RC3 .1859	FAU	.02832	RRT .0884	RRF	.0494	RTF	.8773	CRT	.3415	CRS	.5849	CST	-.5578
FDE	-.3921	FRA	1.3012	FC3-1.8640	BSP	56297	SGB15824.1	R23	-.0284	R13	.8773	LSA	2655.1	MSA	645.8	SSA	35.2
BDE	.4510	BRA	5.3910	BC318.3558	FSP	698	SG115812.8	SG2	595.7	THA	.19	EL1	2639.9	EL2	486.0	ALF	3.98

LAUNCH DATE DEC 26 1964 FLIGHT TIME 410.00 ARRIVAL DATE FEB 9 1966

HELIOCENTRIC CONIC DISTANCE 882.354 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.418	GAL	-3.23	AZL	88.37	HCA	256.03	SMA	193.07	ECC	.24418	INC	1.6341
RP	207.27	LAP	-1.59	LOP	350.29	VP	24.356	GAP	-13.50	AZP	90.39	TAL	343.44	TAP	239.47	RCA	145.92	APO	240.21
RC	342.690	GL	14.95	GP	-4.65	ZAL	119.42	ZAP	24.08	ETS	167.99	ZAE	36.43	ETE	173.51	ZAC	86.21	ETC	255.80

V1 30.282 V2 26.427 CLP 23.65

PLANETOCENTRIC CONIC

C3	13.608	VHL	3.689	DLA	.98	RAL	217.51	RAD	6567.5	VEL	11.619	PTH	2.04	VHP	6.863	DPA	-8.75	RAP	191.31

ECC 1.2240

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 37	2156.78	-18.13	37.85	73.09	112.13	19 59 34	1556.8	-14.97	30.60
90.00	7 40 8	4739.97	16.52	203.06	72.74	66.67	8 59 8	4140.0	13.23	195.94
100.00	20 45 25	1892.93	-19.04	18.05	72.69	113.49	21 16 58	1292.9	-15.70	10.85
100.00	9 1 1	4479.06	17.43	183.45	72.32	65.32	10 15 40	3879.1	13.96	176.38
110.00	21 54 43	1676.05	-21.47	.35	71.46	117.26	22 22 39	1076.0	-17.65	353.31
110.00	10 8 13	4268.71	19.84	166.21	71.05	61.58	11 19 22	3668.7	15.89	159.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1746	TRA	5.7071	TC-17.8855	BAU	3.2541	SGT15899.6	SGR	600.5	SG3	204.7	ST	2702.6	SR	524.3	SS	510.2
RDE	.3336	RRA	.1714	RC3 .1972	FAU	.02480	RRT .0608	RRF	.0211	RTF	.8661	CRT	.2478	CRS	.6142	CST	-.6078
FDE	-.4026	FRA	1.2659	FC3-1.5780	BSP	56638	SGB15910.9	R23	-.0317	R13	.8661	LSA	2723.5	MSA	648.5	SSA	34.0
BDE	.3766	BRA	5.7097	BC317.8866	FSP	650	SG115899.6	SG2	599.3	THA	.13	EL1	2705.8	EL2	507.4	ALF	2.85

LAUNCH DATE DEC 26 1964 FLIGHT TIME 412.00 ARRIVAL DATE FEB 11 1966

HELIOCENTRIC CONIC DISTANCE 886.666 EARTH TO MARS

RL	147.12	LAL	-.00	LOL	94.26	VL	33.427	GAL	-3.47	AZL	88.40	HCA	257.29	SMA	193.24	ECC	.24578	INC	1.6037
RP	207.37	LAP	-1.56	LOP	351.55	VP	24.355	GAP	-13.61	AZP	90.35	TAL	342.29	TAP	239.58	RCA	145.75	APO	240.74
RC	343.441	GL	14.40	GP	-4.57	ZAL	121.30	ZAP	23.75	ETS	168.00	ZAE	35.79	ETE	173.47	ZAC	86.49	ETC	255.80

V1 30.282 V2 26.415 CLP 23.33

PLANETOCENTRIC CONIC

C3	14.109	VHL	3.756	DLA	-.13	RAL	219.05	RAD	6567.6	VEL	11.640	PTH	2.04	VHP	6.946	DPA	-9.06	RAP	192.21

ECC 1.2322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 58	2130.39	-17.44	36.22	74.94	112.67	20 13 28	1530.4	-14.22	29.03
90.00	7 38 4	4782.21	17.64	205.66	74.99	67.49	8 57 46	4182.2	14.44	198.44
100.00	20 59 15	1868.19	-18.36	16.52	74.53	114.01	21 30 23	1268.2	-14.96	9.38
100.00	8 59 28	4519.64	18.56	185.93	74.58	66.14	10 14 48	3919.6	15.18	178.77
110.00	22 7 22	1654.99	-20.81	359.08	73.27	117.75	22 34 57	1055.0	-16.93	352.10
110.00	10 7 51	4305.60	21.02	168.43	73.32	62.40	11 19 36	3705.6	17.16	161.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0380	TRA	6.0345	TC-17.3933	BAU	3.2810	SGT15983.3	SGR	603.1	SG3	190.5	ST	2789.7	SR	530.6	SS	505.0
RDE	.3442	RRA	.1658	RC3 .2066	FAU	.02133	RRT .0343	RRF	-.0060	RTF	.8524	CRT	.1608	CRS	.6412	CST	-.6500
FDE	-.4104	FRA	1.2270	FC3-1.3089	BSP	56986	SGB15994.7	R23	-.0353	R13	.8524	LSA	2810.4	MSA	647.7	SSA	32.9
BDE	.3463	BRA	6.0368	BC317.3946	FSP	603	SG115983.3	SG2	602.8	THA	.07	EL1	2791.1	EL2	523.4	ALF	1.82

LAUNCH DATE DEC 26 1964 FLIGHT TIME 414.00 ARRIVAL DATE FEB 13 1966

HELIOCENTRIC CONIC DISTANCE 890.967 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.436 GAL -3.71 AZL 88.43 HCA 258.55 SMA 193.41 ECC .24745 INC 1.5736 V1 30.282
RP 207.48 LAP -1.54 LOP 352.81 VP 24.354 GAP -13.72 AZP 90.31 TAL 341.13 TAP 239.69 RCA 145.55 APO 241.28 V2 26.402
RC 344.188 GL 13.85 GP -4.49 ZAL 123.15 ZAP 23.43 ETS 168.01 ZAE 35.16 ETE 173.43 ZAC 86.77 ETC 255.81 CLP 23.02

PLANETOCENTRIC CONIC

C3 14.655 VHL 3.828 DLA -1.21 RAL 220.57 RAD 6567.6 VEL 11.664 PTH 2.05 VHP 7.030 DPA -9.38 RAP 193.11 ECC 1.2412

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 2	2105.33	-16.78	34.68	76.83	113.15	20 27 7	1505.3	-13.50	27.54
90.00	7 36 8	4824.09	18.72	208.26	77.29	68.36	8 56 32	4224.1	15.61	200.96
100.00	21 12 49	1844.75	-17.70	15.09	76.40	114.49	21 43 34	1244.8	-14.25	8.00
100.00	8 58 2	4559.90	19.65	188.43	76.88	67.01	10 14 2	3959.9	16.37	181.17
110.00	22 19 46	1635.15	-20.18	357.89	75.10	118.20	22 47 2	1035.2	-16.25	350.96
110.00	10 7 34	4342.27	22.16	170.66	75.64	63.28	11 19 56	3742.3	18.40	163.55

DIFFERENTIAL CORRECTIONS
TDE -.0970 TRA 6.3694 TC-16.8864 BAU 3.3088
RDE .3556 RRA .1597 RC3 .2140 FAU .01794
FDE -.4149 FRA 1.1840 FC3-1.0596 BSP 57299
BDE .3686 BRA 6.3714 BC316.8878 FSP 556

MID-COURSE EXECUTION ACCURACY
SGT16065.4 SGR 606.0 SG3 176.8
RRT .0086 RRF -.0320 RTF .8361
SGB16076.8 R23 -.0392 R13 .8361
SG116065.4 SG2 605.9 THA .02

ORBIT DETERMINATION ACCURACY
ST 2890.3 SR 537.0 SS 496.8
CRT .0812 CRS .6658 CST -.6856
LSA 2910.9 MSA 644.2 SSA 31.8
EL1 2890.7 EL2 535.1 ALF .89

LAUNCH DATE DEC 26 1964 FLIGHT TIME 416.00 ARRIVAL DATE FEB 15 1966

HELIOCENTRIC CONIC DISTANCE 895.253 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.445 GAL -3.96 AZL 88.46 HCA 259.81 SMA 193.59 ECC .24920 INC 1.5439 V1 30.282
RP 207.61 LAP -1.52 LOP 354.07 VP 24.351 GAP -13.83 AZP 90.27 TAL 339.97 TAP 239.78 RCA 145.35 APO 241.83 V2 26.387
RC 344.932 GL 13.31 GP -4.42 ZAL 124.96 ZAP 23.11 ETS 168.01 ZAE 34.54 ETE 173.39 ZAC 87.06 ETC 255.82 CLP 22.71

PLANETOCENTRIC CONIC

C3 15.250 VHL 3.905 DLA -2.26 RAL 222.07 RAD 6567.6 VEL 11.689 PTH 2.06 VHP 7.115 DPA -9.71 RAP 194.02 ECC 1.2510

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 49	2081.61	-16.14	33.23	78.74	113.59	20 40 31	1481.6	-12.81	26.14
90.00	7 34 19	4865.59	19.74	210.88	79.62	69.27	8 55 24	4265.6	16.74	203.48
100.00	21 26 7	1822.61	-17.07	13.75	78.30	114.91	21 56 29	1222.6	-13.57	6.70
100.00	8 56 42	4599.83	20.70	190.93	79.22	67.94	10 13 22	3999.8	17.52	183.58
110.00	22 31 57	1616.53	-19.58	356.78	76.97	118.60	22 58 53	1016.5	-15.61	349.91
110.00	10 7 22	4378.67	23.26	172.92	77.99	64.21	11 20 20	3778.7	19.60	165.69

DIFFERENTIAL CORRECTIONS
TDE -.2295 TRA 6.7130 TC-16.3701 BAU 3.3378
RDE .3675 RRA .1532 RC3 .2197 FAU .01461
FDE -.4170 FRA 1.1369 FC3 -.8297 BSP 57597
BDE .4332 BRA 6.7147 BC316.3715 FSP 509

MID-COURSE EXECUTION ACCURACY
SGT16147.4 SGR 608.9 SG3 163.5
RRT -.0161 RRF -.0568 RTF .8164
SGB16158.9 R23 .0437 R13 -.8164
SG116147.4 SG2 608.8 THA 179.97

ORBIT DETERMINATION ACCURACY
ST 3000.8 SR 543.4 SS 486.2
CRT .0099 CRS .6891 CST -.7140
LSA 3021.1 MSA 639.3 SSA 30.7
EL1 3000.8 EL2 543.4 ALF .11

LAUNCH DATE DEC 26 1964 FLIGHT TIME 418.00 ARRIVAL DATE FEB 17 1966

HELIOCENTRIC CONIC DISTANCE 899.530 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.455 GAL -4.21 AZL 88.49 HCA 261.07 SMA 193.76 ECC .25103 INC 1.5144 V1 30.282
RP 207.74 LAP -1.50 LOP 355.33 VP 24.348 GAP -13.95 AZP 90.24 TAL 338.79 TAP 239.86 RCA 145.12 APO 242.40 V2 26.372
RC 345.671 GL 12.78 GP -4.35 ZAL 126.74 ZAP 22.81 ETS 168.01 ZAE 33.92 ETE 173.35 ZAC 87.33 ETC 255.83 CLP 22.41

PLANETOCENTRIC CONIC

C3 15.895 VHL 3.987 DLA -3.28 RAL 223.55 RAD 6567.6 VEL 11.717 PTH 2.06 VHP 7.202 DPA -10.03 RAP 194.93 ECC 1.2616

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 19 20	2059.22	-15.52	31.88	80.67	113.98	20 53 39	1459.2	-12.15	24.82
90.00	7 32 36	4906.70	20.71	213.50	81.99	70.24	8 54 23	4306.7	17.83	206.01
100.00	21 39 8	1801.76	-16.47	12.49	80.22	115.30	22 9 10	1201.8	-12.93	5.49
100.00	8 55 28	4639.39	21.69	193.45	81.60	68.91	10 12 48	4039.4	18.63	186.00
110.00	22 43 52	1599.12	-19.01	355.75	78.86	118.96	23 10 31	999.1	-15.00	348.93
110.00	10 7 14	4414.79	24.31	175.20	80.39	65.19	11 20 49	3814.8	20.76	167.85

DIFFERENTIAL CORRECTIONS
TDE -.3578 TRA 7.0647 TC-15.8473 BAU 3.3680
RDE .3800 RRA .1463 RC3 .2239 FAU .01134
FDE -.4163 FRA 1.0860 FC3 -.6177 BSP 57869
BDE .5220 BRA 7.0662 BC315.8488 FSP 464

MID-COURSE EXECUTION ACCURACY
SGT16228.2 SGR 612.0 SG3 150.8
RRT -.0398 RRF -.0801 RTF .7921
SGB16239.7 R23 .0486 R13 -.7921
SG116228.2 SG2 611.5 THA 179.91

ORBIT DETERMINATION ACCURACY
ST 3117.0 SR 549.8 SS 473.2
CRT -.0526 CRS .7110 CST -.7359
LSA 3136.8 MSA 633.7 SSA 29.7
EL1 3117.1 EL2 549.1 ALF 179.45

LAUNCH DATE DEC 26 1964 FLIGHT TIME 420.00 ARRIVAL DATE FEB 19 1966

HELIOCENTRIC CONIC DISTANCE 903.791 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.464 GAL -4.46 AZL 88.51 HCA 262.32 SMA 193.94 ECC .25294 INC 1.4851 V1 30.282
RP 207.87 LAP -1.47 LOP 356.58 VP 24.343 GAP -14.07 AZP 90.20 TAL 337.61 TAP 239.93 RCA 144.88 APO 243.00 V2 26.356
RC 346.405 GL 12.26 GP -4.28 ZAL 128.49 ZAP 22.51 ETS 168.01 ZAE 33.31 ETE 173.30 ZAC 87.61 ETC 255.84 CLP 22.12

PLANETOCENTRIC CONIC

C3 16.594 VHL 4.074 DLA -4.27 RAL 225.00 RAD 6567.7 VEL 11.746 PTH 2.07 VHP 7.290 DPA -10.36 RAP 195.86 ECC 1.2731

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 32 34	2038.14	-14.93	30.61	82.63	114.34	21 6 32	1438.1	-11.52	23.59
90.00	7 31 0	4947.38	21.62	216.14	84.39	71.25	8 53 27	4347.4	18.86	208.55
100.00	21 51 54	1782.20	-15.90	11.32	82.17	115.65	22 21 36	1182.2	-12.32	4.36
100.00	8 54 21	4678.56	22.62	195.99	84.01	69.92	10 12 19	4078.6	19.68	188.42
110.00	22 55 33	1582.92	-18.47	354.80	80.77	119.29	23 21 56	982.9	-14.43	348.02
110.00	10 7 11	4450.60	25.31	177.50	82.83	66.22	11 21 21	3850.6	21.88	170.03

DIFFERENTIAL CORRECTIONS
TDE -.4838 TRA 7.4256 TC-15.3184 BAU 3.3986
RDE .3932 RRA .1389 RC3 .2266 FAU .00812
FDE -.4134 FRA 1.0307 FC3 -.4235 BSP 58141
BDE .6235 BRA 7.4269 BC315.3201 FSP 419

MID-COURSE EXECUTION ACCURACY
SGT16306.6 SGR 615.1 SG3 138.5
RRT -.0626 RRF -.1019 RTF .7622
SGB16318.2 R23 .0542 R13 -.7622
SG116306.7 SG2 613.9 THA 179.86

ORBIT DETERMINATION ACCURACY
ST 3236.6 SR 556.2 SS 457.9
CRT -.1076 CRS .7321 CST -.7523
LSA 3255.7 MSA 627.8 SSA 28.7
EL1 3237.2 EL2 552.9 ALF 178.91

LAUNCH DATE DEC 26 1964 FLIGHT TIME 422.00 ARRIVAL DATE FEB 21 1966

HELIOCENTRIC CONIC DISTANCE 908.037 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.473 GAL -4.73 AZL 88.54 HCA 263.58 SMA 194.11 ECC .25494 INC 1.4560 V1 30.282
RP 208.02 LAP -1.45 LOP 357.84 VP 24.337 GAP -14.20 AZP 90.16 TAL 336.42 TAP 240.00 RCA 144.63 APO 243.60 V2 26.339
RC 347.135 GL 11.74 GP -4.21 ZAL 130.19 ZAP 22.22 ETS 168.01 ZAE 32.71 ETE 173.25 ZAC 87.89 ETC 255.86 CLP 21.84

PLANETOCENTRIC CONIC

C3 17.348 VHL 4.165 DLA -5.23 RAL 226.44 RAD 6567.7 VEL 11.778 PTH 2.08 VHP 7.380 DPA -10.70 RAP 196.78 ECC 1.2855

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 45 31	2018.36	-14.37	29.43	84.61	114.66	21 19 9	1418.4	-10.93	22.44
90.00	7 29 30	4987.63	22.48	218.78	86.83	72.31	8 52 38	4387.6	19.85	211.09
100.00	22 4 23	1763.90	-15.36	10.23	84.13	115.96	22 33 47	1163.9	-11.74	3.31
100.00	8 53 18	4717.32	23.51	198.53	86.45	70.98	10 11 56	4117.3	20.70	190.86
110.00	23 6 59	1567.93	-17.97	353.93	82.70	119.58	23 33 7	967.9	-13.89	347.18
110.00	10 7 12	4486.06	26.26	179.81	85.30	67.29	11 21 58	3886.1	22.96	172.21

DIFFERENTIAL CORRECTIONS
TDE -.6053 TRA 7.7941 TC-14.7911 BAU 3.4308
RDE .4069 RRA .1311 RC3 .2279 FAU .00497
FDE -.4080 FRA .9718 FC3 -.2478 BSP 58396
BDE .7294 BRA 7.7952 BC314.7928 FSP 374

MID-COURSE EXECUTION ACCURACY
SGT16383.6 SGR 618.2 SG3 127.0
RRT -.0845 RRF -.1215 RTF .7253
SGB16395.2 R23 .0603 R13 -.7253
SG116383.7 SG2 616.0 THA 179.82

ORBIT DETERMINATION ACCURACY
ST 3356.0 SR 562.5 SS 440.5
CRT -.1551 CRS .7524 CST -.7636
LSA 3374.2 MSA 622.1 SSA 27.8
EL1 3357.2 EL2 555.5 ALF 178.47

LAUNCH DATE DEC 26 1964 FLIGHT TIME 424.00 ARRIVAL DATE FEB 23 1966

HELIOCENTRIC CONIC DISTANCE 912.267 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.482 GAL -4.99 AZL 88.57 HCA 264.83 SMA 194.29 ECC .25703 INC 1.4272 V1 30.282
RP 208.17 LAP -1.42 LOP 359.09 VP 24.331 GAP -14.33 AZP 90.13 TAL 335.22 TAP 240.05 RCA 144.35 APO 244.23 V2 26.322
RC 347.858 GL 11.24 GP -4.15 ZAL 131.86 ZAP 21.94 ETS 168.01 ZAE 32.12 ETE 173.19 ZAC 88.16 ETC 255.89 CLP 21.56

PLANETOCENTRIC CONIC

C3 18.160 VHL 4.261 DLA -6.15 RAL 227.85 RAD 6567.7 VEL 11.813 PTH 2.09 VHP 7.471 DPA -11.04 RAP 197.71 ECC 1.2989

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 58 11	1999.84	-13.85	28.32	86.61	114.95	21 31 31	1399.8	-10.37	21.37
90.00	7 28 6	5027.43	23.28	221.42	89.28	73.40	8 51 53	4427.4	20.78	213.64
100.00	22 16 37	1746.86	-14.85	9.23	86.12	116.25	22 45 43	1146.9	-11.20	2.33
100.00	8 52 22	4755.65	24.33	201.07	88.92	72.08	10 11 37	4155.7	21.66	193.30
110.00	23 18 10	1554.11	-17.50	353.13	84.65	119.84	23 44 4	954.1	-13.40	346.42
110.00	10 7 17	4521.16	27.16	182.14	87.80	68.40	11 22 38	3921.2	23.99	174.42

DIFFERENTIAL CORRECTIONS
TDE -.7242 TRA 8.1717 TC-14.2652 BAU 3.4638
RDE .4212 RRA .1228 RC3 .2280 FAU .00185
FDE -.4008 FRA .9085 FC3 -.0882 BSP 58620
BDE .8378 BRA 8.1726 BC314.2670 FSP 330

MID-COURSE EXECUTION ACCURACY
SGT16458.5 SGR 621.4 SG3 116.1
RRT -.1055 RRF -.1387 RTF .6789
SGB16470.2 R23 .0673 R13 -.6790
SG116458.6 SG2 617.9 THA 179.77

ORBIT DETERMINATION ACCURACY
ST 3474.4 SR 568.6 SS 421.4
CRT -.1966 CRS .7728 CST -.7703
LSA 3491.6 MSA 616.7 SSA 27.0
EL1 3476.2 EL2 557.2 ALF 178.11

LAUNCH DATE DEC 26 1964 FLIGHT TIME 426.00 ARRIVAL DATE FEB 25 1966

HELIOCENTRIC CONIC DISTANCE 916.481 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.492 GAL -5.26 AZL 88.60 HCA 266.08 SMA 194.47 ECC .25921 INC 1.3985 V1 30.282
RP 208.33 LAP -1.40 LOP .34 VP 24.323 GAP -14.47 AZP 90.10 TAL 334.01 TAP 240.08 RCA 144.06 APO 244.88 V2 26.303
RC 348.577 GL 10.75 GP -4.08 ZAL 133.50 ZAP 21.67 ETS 168.01 ZAE 31.54 ETE 173.13 ZAC 88.43 ETC 255.91 CLP 21.30

PLANETOCENTRIC CONIC

C3 19.034 VHL 4.363 DLA -7.04 RAL 229.24 RAD 6567.8 VEL 11.850 PTH 2.10 VHP 7.564 DPA -11.38 RAP 198.65 ECC 1.3132

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 10 35	1982.57	-13.35	27.30	88.63	115.21	21 43 38	1382.6	-9.84	20.37
90.00	7 26 47	5066.77	24.02	224.07	91.76	74.53	8 51 14	4466.8	21.66	216.19
100.00	22 28 34	1731.03	-14.37	8.29	88.12	116.50	22 57 25	1131.0	-10.69	1.43
100.00	8 51 30	4793.54	25.10	203.63	91.42	73.22	10 11 23	4193.5	22.57	195.75
110.00	23 29 7	1541.46	-17.07	352.40	86.61	120.08	23 54 48	941.5	-12.95	345.72
110.00	10 7 26	4555.87	28.01	184.49	90.32	69.56	11 23 22	3955.9	24.97	176.63

DIFFERENTIAL CORRECTIONS
TDE -.8390 TRA 8.5579 TC-13.7458 BAU 3.4983
RDE .4360 RRA .1141 RC3 .2272 FAU-.00123
FDE -.3914 FRA .8415 FC3 .0559 BSP 58818
BDE .9456 BRA 8.5587 BC313.7476 FSP 287

MID-COURSE EXECUTION ACCURACY
SGT16532.2 SGR 624.5 SG3 106.0
RRT -.1257 RRF -.1519 RTF .6205
SGB16544.0 R23 .0744 R13 -.6205
SG116532.4 SG2 619.6 THA 179.73

ORBIT DETERMINATION ACCURACY
ST 3589.6 SR 574.5 SS 400.6
CRT -.2324 CRS .7928 CST -.7729
LSA 3605.7 MSA 611.8 SSA 26.2
EL1 3592.2 EL2 558.3 ALF 177.82

LAUNCH DATE DEC 26 1964 FLIGHT TIME 428.00 ARRIVAL DATE FEB 27 1966

HELIOCENTRIC CONIC DISTANCE 920.676 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.501 GAL -5.54 AZL 88.63 HCA 267.33 SMA 194.64 ECC .26149 INC 1.3699 V1 30.282
RP 208.50 LAP -1.37 LOP 1.59 VP 24.315 GAP -14.61 AZP 90.06 TAL 332.79 TAP 240.11 RCA 143.75 APO 245.54 V2 26.283
RC 349.289 GL 10.28 GP -4.02 ZAL 135.09 ZAP 21.40 ETS 168.00 ZAE 30.96 ETE 173.07 ZAC 88.70 ETC 255.95 CLP 21.03

PLANETOCENTRIC CONIC

C3 19.972 VHL 4.469 DLA -7.90 RAL 230.61 RAD 6567.8 VEL 11.889 PTH 2.11 VHP 7.658 DPA -11.72 RAP 199.60 ECC 1.3287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 22 43	1966.52	-12.88	26.35	90.65	115.44	21 55 30	1366.5	-9.35	19.45
90.00	7 25 34	5105.62	24.70	226.71	94.26	75.69	8 50 39	4505.6	22.49	218.74
100.00	22 40 15	1716.39	-13.92	7.44	90.13	116.72	23 8 51	1116.4	-10.22	.60
100.00	8 50 43	4830.98	25.81	206.18	93.93	74.38	10 11 14	4231.0	23.42	198.20
110.00	23 39 48	1529.95	-16.68	351.74	88.58	120.28	24 5 18	929.9	-12.53	345.08
110.00	10 7 39	4590.19	28.81	186.84	92.87	70.75	11 24 10	3990.2	25.91	178.86

DIFFERENTIAL CORRECTIONS
TDE -.9499 TRA 8.9521 TC-13.2343 BAU 3.5342
RDE .4514 RRA .1050 RC3 .2253 FAU-.00425
FDE -.3801 FRA .7700 FC3 .1843 BSP 59003
BDE 1.0517 BRA 8.9528 BC313.2362 FSP 244

MID-COURSE EXECUTION ACCURACY
SGT16603.3 SGR 627.6 SG3 96.9
RRT -.1451 RRF -.1610 RTF .5474
SGB16615.2 R23 .0823 R13 -.5474
SG116603.6 SG2 621.0 THA 179.69

ORBIT DETERMINATION ACCURACY
ST 3700.4 SR 580.1 SS 378.3
CRT -.2632 CRS .8133 CST -.7710
LSA 3715.3 MSA 607.3 SSA 25.4
EL1 3703.6 EL2 559.2 ALF 177.58

LAUNCH DATE DEC 26 1964 FLIGHT TIME 430.00 ARRIVAL DATE MAR 1 1966

HELIOCENTRIC CONIC DISTANCE 924.853 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.510 GAL -5.82 AZL 88.66 HCA 268.57 SMA 194.82 ECC .26386 INC 1.3414 V1 30.282
RP 208.68 LAP -1.34 LOP 2.83 VP 24.305 GAP -14.76 AZP 90.03 TAL 331.56 TAP 240.13 RCA 143.42 APO 246.23 V2 26.263
RC 349.997 GL 9.81 GP -3.97 ZAL 136.64 ZAP 21.14 ETS 168.00 ZAE 30.39 ETE 173.00 ZAC 88.97 ETC 255.98 CLP 20.78

PLANETOCENTRIC CONIC

C3 20.978 VHL 4.580 DLA -8.73 RAL 231.95 RAD 6567.9 VEL 11.931 PTH 2.12 VHP 7.754 DPA -12.06 RAP 200.55 ECC 1.3452

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 34 35	1951.64	-12.44	25.48	92.69	115.64	22 7 6	1351.6	-8.89	18.60
90.00	7 24 25	5143.99	25.31	229.35	96.78	76.87	8 50 9	4544.0	23.26	221.28
100.00	22 51 41	1702.92	-13.51	6.65	92.15	116.92	23 20 3	1102.9	-9.79	359.83
100.00	8 50 1	4867.94	26.47	208.73	96.46	75.57	10 11 9	4267.9	24.22	200.65
110.00	23 50 14	1519.54	-16.32	351.14	90.56	120.46	24 15 34	919.5	-12.15	344.51
110.00	10 7 56	4624.08	29.54	189.20	95.45	71.97	11 25 0	4024.1	26.80	181.10

DIFFERENTIAL CORRECTIONS
TDE-1.0565 TRA 9.3564 TC-12.7338 BAU 3.5719
RDE .4671 RRA .0955 RC3 .2227 FAU-.00723
FDE -.3676 FRA .6946 FC3 .2985 BSP 59149
BDE 1.1552 BRA 9.3569 BC312.7358 FSP 202

MID-COURSE EXECUTION ACCURACY
SGT16674.4 SGR 630.6 SG3 88.9
RRT -.1636 RRF -.1644 RTF .4562
SGB16686.3 R23 .0909 R13 -.4562
SG116674.7 SG2 622.1 THA 179.64

ORBIT DETERMINATION ACCURACY
ST 3806.5 SR 585.5 SS 355.2
CRT -.2897 CRS .8347 CST -.7640
LSA 3820.1 MSA 603.5 SSA 24.7
EL1 3810.3 EL2 559.8 ALF 177.39

LAUNCH DATE DEC 26 1964 FLIGHT TIME 432.00 ARRIVAL DATE MAR 3 1966

HELIOCENTRIC CONIC DISTANCE 929.010 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.519 GAL -6.11 AZL 88.69 HCA 269.82 SMA 195.00 ECC .26633 INC 1.3131 V1 30.282
RP 208.86 LAP -1.31 LOP 4.08 VP 24.295 GAP -14.91 AZP 90.00 TAL 330.32 TAP 240.14 RCA 143.06 APO 246.93 V2 26.241
RC 350.699 GL 9.36 GP -3.91 ZAL 138.16 ZAP 20.89 ETS 168.00 ZAE 29.83 ETE 172.93 ZAC 89.24 ETC 256.02 CLP 20.54

PLANETOCENTRIC CONIC

C3 22.055 VHL 4.696 DLA -9.53 RAL 233.27 RAD 6567.9 VEL 11.976 PTH 2.13 VHP 7.852 DPA -12.41 RAP 201.51 ECC 1.3630

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 46 11	1937.91	-12.04	24.67	94.73	115.82	22 18 28	1337.9	-8.47	17.81
90.00	7 23 22	5181.86	25.87	231.98	99.30	78.07	8 49 43	4581.9	23.97	223.83
100.00	23 2 50	1690.58	-13.13	5.93	94.18	117.10	23 31 1	1090.6	-9.39	359.14
100.00	8 49 23	4904.42	27.06	211.28	99.01	76.79	10 11 7	4304.4	24.97	203.10
110.00	0 4 22	1510.21	-16.00	350.61	92.54	120.62	0 29 32	910.2	-11.81	344.00
110.00	10 8 16	4657.55	30.23	191.57	98.04	73.22	11 25 54	4057.6	27.63	183.34

DIFFERENTIAL CORRECTIONS
TDE-1.1585 TRA 9.7694 TC-12.2434 BAU 3.6107
RDE .4833 RRA .0856 RC3 .2193 FAU-.01017
FDE -.3534 FRA .6149 FC3 .3993 BSP 59292
BDE 1.2553 BRA 9.7697 BC312.2454 FSP 161

MID-COURSE EXECUTION ACCURACY
SGT16742.2 SGR 633.5 SG3 82.2
RRT -.1814 RRF -.1600 RTF .3446
SGB16754.1 R23 .0990 R13 -.3447
SG116742.6 SG2 623.0 THA 179.61

ORBIT DETERMINATION ACCURACY
ST 3906.6 SR 590.5 SS 331.0
CRT -.3123 CRS .8569 CST -.7517
LSA 3919.1 MSA 600.1 SSA 24.1
EL1 3911.1 EL2 560.4 ALF 177.24

LAUNCH DATE DEC 26 1964 FLIGHT TIME 434.00 ARRIVAL DATE MAR 5 1966

HELIOCENTRIC CONIC DISTANCE 933.146 EARTH TO MARS

RL 147.12 LAL -.00 LOL 94.26 VL 33.529 GAL -6.41 AZL 88.72 HCA 271.06 SMA 195.18 ECC .26891 INC 1.2847 V1 30.282
RP 209.05 LAP -1.28 LOP 5.32 VP 24.284 GAP -15.07 AZP 89.98 TAL 329.08 TAP 240.14 RCA 142.69 APO 247.66 V2 26.219
RC 351.395 GL 8.92 GP -3.86 ZAL 139.64 ZAP 20.65 ETS 167.99 ZAE 29.28 ETE 172.86 ZAC 89.50 ETC 256.07 CLP 20.30

PLANETOCENTRIC CONIC

C3 23.207 VHL 4.817 DLA -10.29 RAL 234.57 RAD 6567.9 VEL 12.024 PTH 2.15 VHP 7.951 DPA -12.76 RAP 202.47 ECC 1.3819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 57 30	1925.29	-11.66	23.94	96.78	115.99	22 29 36	1325.3	-8.07	17.10
90.00	7 22 23	5219.22	26.37	234.60	101.83	79.30	8 49 22	4619.2	24.63	226.37
100.00	23 13 45	1679.33	-12.78	5.28	96.21	117.26	23 41 44	1079.3	-9.02	358.50
100.00	8 48 50	4940.41	27.59	213.82	101.56	78.03	10 11 10	4340.4	25.67	205.55
110.00	0 14 20	1501.93	-15.71	350.14	94.54	120.76	0 39 22	901.9	-11.51	343.55
110.00	10 8 40	4690.58	30.85	193.94	100.65	74.49	11 26 50	4090.6	28.42	185.59

DIFFERENTIAL CORRECTIONS
TDE-1.2564 TRA10.1914 TC-11.7656 BAU 3.6510
RDE .4999 RRA .0752 RC3 .2154 FAU-.01309
FDE -.3380 FRA .5314 FC3 .4884 BSP 59415
BDE 1.3522 BRA10.1917 BC311.7675 FSP 120

MID-COURSE EXECUTION ACCURACY
SGT16807.7 SGR 636.3 SG3 77.1
RRT -.1984 RRF -.1462 RTF .2121
SGB16819.8 R23 .1062 R13 -.2121
SG116808.2 SG2 623.7 THA 179.57

ORBIT DETERMINATION ACCURACY
ST 4000.9 SR 595.3 SS 306.4
CRT -.3316 CRS .8802 CST -.7330
LSA 4012.3 MSA 597.2 SSA 23.4
EL1 4005.9 EL2 560.9 ALF 177.12